

A New Dimension to Gaming

by Arnab Bordoloi - Tuesday, January 19, 2016

<http://gonitsora.com/a-new-dimension-to-gaming/>

Image Source: [Shutterstock](#)

Video Gaming has successfully established itself as a popular form of entertainment of the modern culture. Since its introduction in the 1950's it has undergone through many milestone changes that has always endeavored to bring out more fun and real life experience in gaming. From the nostalgic black and white "Snake" or "Pong" to the colored "Super Mario" or "Super bike" and the introduction of 1st person view to 3rd person view, gaming has become more and more realistic. But gaming is yet to attain new dimensions through the introduction of the concept of virtual environment or better known as the virtual reality.

Virtual Reality can be defined as a virtual world brought into the realms of reality. In other words this concept brings you the experience of a world that does not exist, yet it can be experienced or felt as if you were living it. This wonderful idea mixed with the concepts of video gaming can bring you an experience of gaming so that when you play Halo in virtual reality you are going to get the scare of your life for you could feel the presence of the great invisible monster standing next to you.

Palmer Lucky has been interested in this very topic since his age of 16. By the age of 19 he had successfully made a prototype of virtual reality gaming headset. After a successful and risky meeting in Long Beach Hilton on the afternoon of July 4, 2012, with Brendan Iribe, Nate Mitchell and Michael Antono the first gates of Oculus Rift was opened. Risky because these three giant video game industry veterans had decided to invest huge amounts in this model of Mr Lucky that was still in a format of clingy wires and a big circuit board. Oculus got a new turn when Abrash, an engineer in Valve, a company researching into VR introduced Mr Iribe with its own headset. This prototype successfully removed "the uncomfortable valley"-the term used to describe all the sickness associated with virtual reality. This model was so interesting that Mr Iribe spent a whole of 45 min stuck inside the headset immersed in the world of virtual environment.

Many gaming companies have tried to introduce virtual reality into video gaming, but without much success. Though not one of the fore runner companies to introduce the concept of virtual reality in video gaming yet the most promising one till now— Oculus VR is all set with its headset The Oculus Rift.

The working principle of Oculus Rift:

One of the basic ways to introduce virtual reality is through the concept of stereoscopy. If you close one eye and observe a particular object with the other eye and then again observe the same object with the other eye and this time this eye closed, it can be easily observed that the angle of view of the particular object for the two eyes is different. This concept is used to induce depth in the images of virtual reality and this technique is known as stereoscopy.

This very same technique is also used in Oculus Rift to bring out the feeling of the 3rd dimension in its images. It is just similar to the vertically split game screen of a two player game but with the simple twist that each part of the screen comes with a different angle.

Components of Oculus:

The Oculus Rift comes packed with some very interesting components that provides you with a rich gaming experience. This components make sure that your game play is brought down to a very fine experience thus removing the nausea and million other sickness that comes associated with virtual reality.

Image Source: [Shutterstock](#)

The Cable:

The cable comes equipped with a HDMI and a USB. The HDMI is used to send the video input into the headset with an optional DVI adapter for laptops and some updated graphics card. The USB is used to power the device and also transfer data to and fro between your computers. Now the interesting part in this cable is that it has been provided with the right length (approx. 10m) and weight so that you don't feel restrained carrying a huge load our head during your gameplay.

It also comes with USB port so that you could easily plug-in USB headphones or controllers.

The Positional Tracker:

The Oculus Rift employs a very interesting system called the tracking Constellation System to track the movement of your head very accurately. The headset is fitted in different position with LEDs. This LEDs are tracked by a small microphone shaped wireless pole fitted into a desk at the back of you. As you move your head, the change in position of the LEDs are tracked accordingly by the wireless tracker. The consumer version of the Oculus Rift has LEDs embedded into the rear as well as the front so that you could get a full 360 degree perspective.

The Headset:

The headset is heart of the Oculus Rift. The horizontal and vertical strap hold it tight to your head. The vertical strap is incorporated with the cable. The headset is designed so as to fit any possible face on the earth. Whether naked eye or in glasses, whether a narrow long face or flat plumpy face it can be customized to fit tight into your face. The CEO of Oculus describes the headset as just putting in a pair of glasses and dive into a world of virtual reality.

The headset consist of single motherboard into which is embedded an ARM processor and control chips for the LEDs. It also consists of an Adjacent Reality Tracker. This tracker in return consists of a gyroscope, magnetometer and an accelerometer. This three components in co-ordination can very accurately track even a very slight tilt of your head.

The Screen:

The screen is an amazing part of the Rift that is the ultimate step towards a great VR experience. The

consumer version of the rift provides each screen for each eye with a resolution of 2160 x 1200. The refresh rate is much higher than 60 hz. The adjustments for brightness, contrast and height are done by the Oculus Rift.

The Sound:

The Oculus Rift incorporates Head Related Transfer Function-tech, a very interesting technology to give you a great 3d surround sound. This technology actually calculates the changes in the sound that has to be applied when it comes from a different direction from a different point. It has actually stored the data for innumerable points around your head and by referencing the data it applies the required changes. The HRTF combined with the head tracking system of the Rift provides quite the natural feel of 3d surround sound in your virtual reality experience.

The consumer version of the Oculus Rift has detachable headset with the audio specialized and encoded in 360-degree surround sound to precisely match the video.

The luxury includes in the Oculus Rift:

Oculus is into partnerships with Microsoft which provides each package of Oculus rift with a wireless xbox controller and also a support for windows 10 in a virtual reality experience. This also means that a selection of 2d games for xbox could be played in 3d with a vr experience. However the benchmark set down by Oculus for the graphics card is Nvidia GTX 970 GPU.

Much will not be known about the Oculus Touch till late 2016. But till this it is confirmed that it is wireless and allows you to make hand gestures in your virtual world. It is promised to provide a more natural way of control then the xbox controller.

The oculus Home is the first interface that you encounter when you put in your brand new headset. Oculus home allows you do to everything from chatting with your online contact to buying new games.

The Oculus Rift is very sure to bring out new revolutions in the world of gaming. To what its limits can be extended can only be determined with its consumer ready product that will shipped from March 28, 2016. But till then fingers kept crossed with good hope.

PDF generated from <http://gonitsora.com/a-new-dimension-to-gaming/>.

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.