

Artificial reality

Year I of the virtual reality market!

>The technology used for virtual reality is still crucial to the experience

The concept of virtual reality (VR) has existed for many years, but recent technological advances in miniaturisation of electronic equipment and components have accelerated research and development of virtual reality technology.

For both VR and MR (mixed reality), the user experience is fundamental to the success of this market. It relies on total immersion through the use of a headset and a range of interactive accessories that can track movements and the position of the body, arms and sometimes eyes. These are the primary elements that provide a convincing experience and encourage tech enthusiasts to purchase these devices. The competition between VR solution providers is therefore based primarily on the quality of this experience.

>The question of a VR headset standard

- In the medium term, it is unlikely that the laws of the market will put an end to the heterogeneity of headsets and software environments.
- It is more likely we will see two oligopolistic markets develop, one on mobile and one based on a fixed central unit, before technological progress allows for the two markets to converge.

> What can we expect in terms of capturing value along the chain?

- VR content distribution will be mainly dematerialised.
- There will be little room for new entrants. The distribution and marketing channels that will be used for distributing VR games are already occupied by major players: Sony, Google, Apple, Steam.
- Facebook will have a major impact through Oculus.

> Complementarity between VR on mobile and VR on fixed devices

- VR on mobile is likely to grow faster than VR on fixed devices largely because of the cheaper equipment costs. Furthermore, games are often free or available at a very reasonable price. However, they are not always of equal quality and are still in their infancy.

- VR on fixed devices offers much more spectacular experiences because they take advantage of a central unit with powerful processing and rendering capabilities. The investment required by developers means a successful revenue model is needed.

> Accessorisation is not an obstacle when it improves the user experience

- Accessories help to increase immersion for users. This especially holds true for virtual reality. Because the aim is to be as immersive as possible, VR is fertile ground for accessorising, e.g. HTC's solution.
- This could contribute to excluding certain sections of the public, especially the less tech savvy. However, the solutions offering more accessories are also the most immersive.

> Little change expected along the value chain

- Some established development studios have embraced VR, while other new players will emerge by specialising in VR. Among these, publishers will have to uncover a rare gem, the studio that masters the technology, and also the narrative and interactive potential of headsets to recreate a spectacular and monetisable user experience.
- Some publishers will want to harness third-party skills and buy development studios that have demonstrated their expertise or mastery.
- Publishers will probably also want to develop exclusive content, an approach already widely used for console games. These exclusives will initially focus on licences familiar with users and which already have a large captive audience.

> Waiting for the first global blockbuster games

The first VR games to have massive success will provide some key information about the development of the market. We will then be able to:

- further clarify the size of the addressable market and its potential, estimate how it might develop and predict the pace of growth
- better characterise the targets and understand their expectations
- better understand the psychological pricing of equipment and games
- measure the investment effort needed to create richer experiences on a narrative and visual level

> Spectators plays an important role in the user experience of VR content

Multiplayer took video gaming platforms to another level of success, and now the same is happening with spectators.

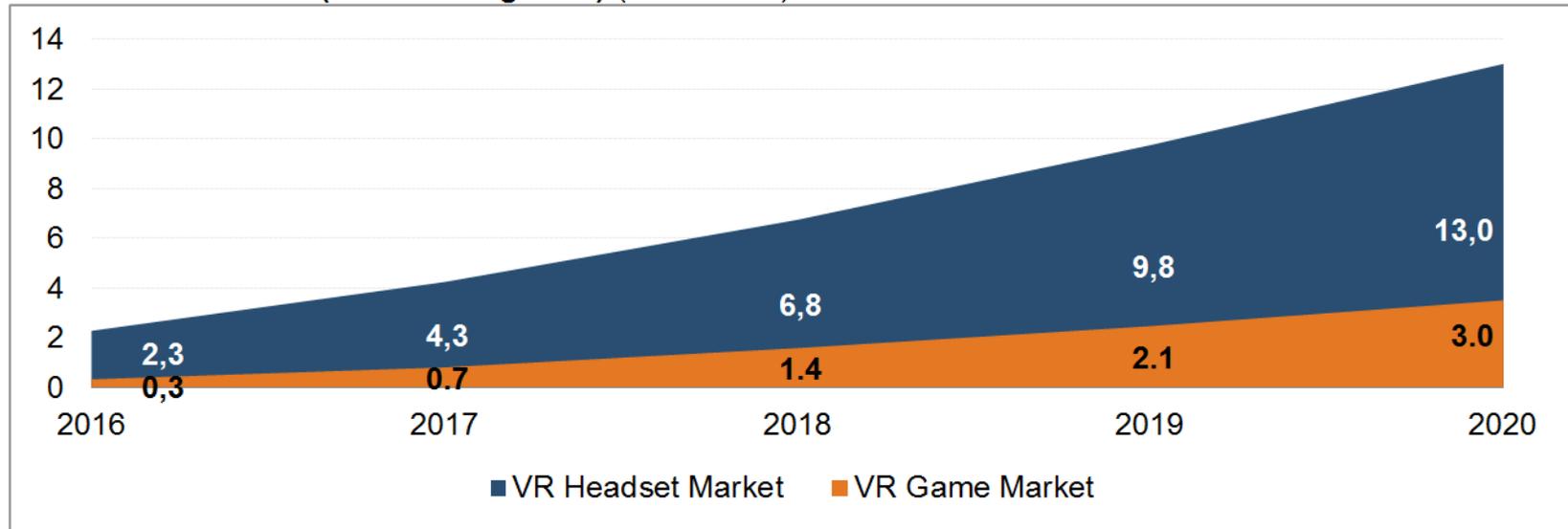
The need or enthusiasm for watching other users play a video game is now a widespread practice among online users.

VR therefore needs to include spectators in the experience and must provide them with the means to assess the performance of the user. Specifically, it is crucial for the success of VR platforms (and MR and AR) to project what the VR user is doing onto a screen.

> E-sports and VR, another spectator sport

- E-sports has established itself as a very popular pastime among younger generations. Competitions are becoming increasingly popular, to the point that businesses such as TV channels, betting companies and advertisers are investing heavily in this segment, in addition to the sector players.
- Artificial reality technology used in video games is a natural fit for e-sports. -VR makes the events more spectacular and intensifies user emotions.
- While more and more Internet users are watching online games and competitions, particularly on Twitch, VR has the perfect qualities for a telegenic product.
- In addition, publishers and developers are increasingly offering games with e-sports and VR components for both users and spectators, the latter being projected inside a virtual stadium or in the heart of the competition.

VR market evolution (headsets + games) (billion EUR)



Source : IDATE DigiWorld, *Artificial Reality*, November 2016

>Nearly 7,4 million VR headsets will be sold worldwide between now and the end of 2017

The majority of VR content experiences are currently deployed on smartphones

In facts, 62% of revenues from this emerging market are generated on these mobile devices.

Although the interactive or passive experience on smartphones is remarkable, it is usually mind-blowing when using a wired headset. This is why VR on fixed devices will gradually predominate in market value by 2020.

Many headsets are already available on the market, but 2016 is the year when the expected major players arrive, such as HTC, Oculus and Sony.

By the end of 2016, 3.9 million headsets will have been bought worldwide. For comparison, almost twice as many Xbox One units were sold in 2014, and three times more PS4 units in the same year.

IDATE DigiWorld considers that the first generation of VR headsets will not be as successful as the hype would suggest. Overall, sales are likely to be lower than most observer estimates. The initial price for this technology is a key factor behind this caution.

Installed base of VR headsets by geographic region (million units)

	2016	2017	2018	2019	2020
Asia Pacific	0.9	2.6	5.5	10.2	17.2
EMEA	1.3	3.6	7.3	12.6	19.8
Latin America	0.2	0.7	1.4	2.4	3.7
North America	1.5	4.0	7.8	13.4	20.9
World	3.9	10.9	22.0	38.5	61.6
<i>Growth rate</i>		<i>178.5%</i>	<i>102.0%</i>	<i>75.1%</i>	<i>60.1%</i>

Source: IDATE DigiWorld, *Artificial Reality*, November 2016

An installed base of over 60 million headsets worldwide by 2020

By the end of 2020, North America and EMEA (Europe / Africa / Middle East) will each have about 20 million equipped households. This year, 15.8% of US households will have a virtual reality headset. Based on its historical tendency for purchasing high-tech goods, especially digital entertainment devices such as home consoles, the United Kingdom could post a penetration rate of 11.7%, followed by Japan with a penetration rate of 10.2%.

Laurent MICHAUD