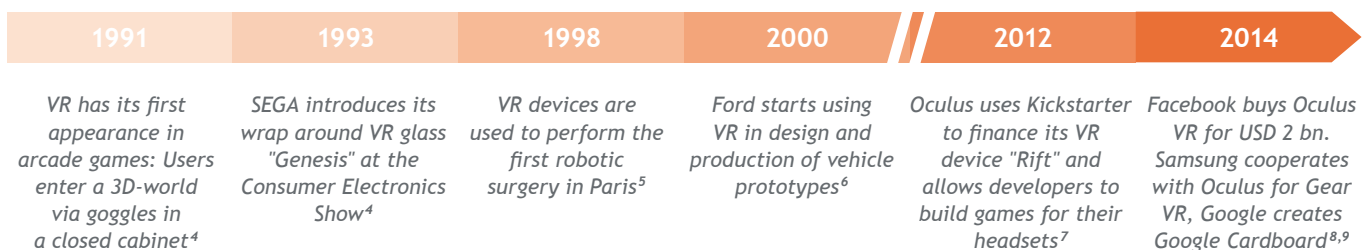


# VIRTUAL REALITY

## SPOTLIGHT

- *After many years of existence with early adopters in gaming and entertainment, Virtual Reality (VR) is just about to break into the mass market.*
- *Headsets running customized software create an immersion into an artificial world inducing reality-like feelings and experiences using 3D visuals and sound.*
- *Oculus VR is the first player to introduce an affordable device for the mass market. Its acquisition by Facebook for USD 2 bn raised awareness for future use of the technology.<sup>1</sup>*
- *It is a fast growing market: Total cumulative headset units by all manufacturers sold from 2014 to 2018 are estimated to reach more than 55 m.<sup>2</sup> Samsung and Google made headlines recently with the announcement of new devices connected to smartphones.*

## TIMELINE OF VR INNOVATION



## DEFINITION

VR immerses the user in an artificial environment created by software on display screens or through wearable devices like head mounted displays, VR glasses etc. These environments are experienced through the senses of sight and sound. The user's conscience moves out of its real world environment. The simplest form of VR is a 3D image. Evolution of VR has led to the emergence of innovative technologies like haptic devices that deliver results based on touch coordination and pressure sensitivity.

## BRANDS USING VR FOR MARKETING

### Virtual Car Design

Nissan and Oculus VR designed a virtual environment, in which young consumers were able to design their own Nissan car at the Tokyo Motor Show.<sup>19</sup>



### Virtual Cliff Diving

Through Oculus Rift, Red Bull let users experience a realistic cliff dive resulting in strong physical reactions.<sup>20</sup>



### Virtual Catwalk

Topshop gave customers the opportunity to watch its fashion show via VR glasses in order to make it accessible to everyone present in the store at that particular time.<sup>21</sup>



### Virtual Newsrooms

BBC provides their viewers with a real time experience of being in the newsroom.<sup>22</sup>



## Business opportunities using Virtual Reality

### >Media & Advertising:

Generates new forms of interactive, social advertising, which puts users in direct contact with the product and the brand<sup>11</sup>

### >Entertainment industry:

Enriches user experience through full immersion of the user in the virtual world of entertainment (virtual museums, interactive theater performances etc.)<sup>12</sup>

### >Sales & E-Commerce:

VR is a great sales tool for things that are hard to visualize remotely - like fashion or real estate<sup>13</sup>

### >Gaming:

Improved gameplay experiences through ever more realistic representation: For instance, Virtuix Omni's hardware records physical movements and transports them into the game.<sup>14</sup>

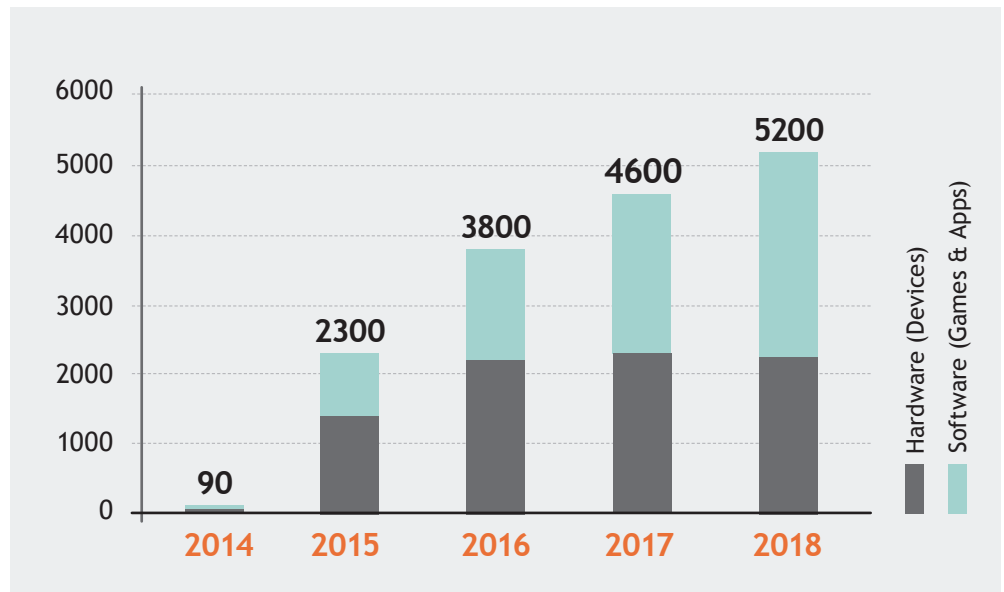
### >Automotive Industry:

VR engineering allows simultaneous work on different entry points of the rendered model as well as product demos.<sup>15</sup>

### >HR & Trainings:

Helps to conduct realistic trainings and virtual meetings that save costs and CO2<sup>16</sup>

## Total Revenue for Consumer VR<sup>17</sup> (in m USD)

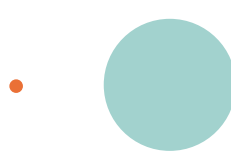


## Market estimates 2014 and 2018<sup>18</sup>



2014 2018

In 2014, a VR device costs around USD 300 per unit and is expected to drop by circa USD 50 per year till 2018.



2014 2018

Unit sales of VR products are expected to rise from 200,000 by the end of 2014 to 23.8 m by 2018.



2014 2018

Active users worldwide are expected to grow from 600,000 in 2014 to 47.6 m by 2018.

# VR Products (Hardware)

## HEAD MOUNTED DISPLAY



### Oculus Rift

- >Acquired by Facebook for USD 2bn
- >"The most advanced immersive entertainment system"<sup>23</sup>
- >Used beyond gaming (architecture, education, etc.)

Price: USD 350<sup>24</sup>

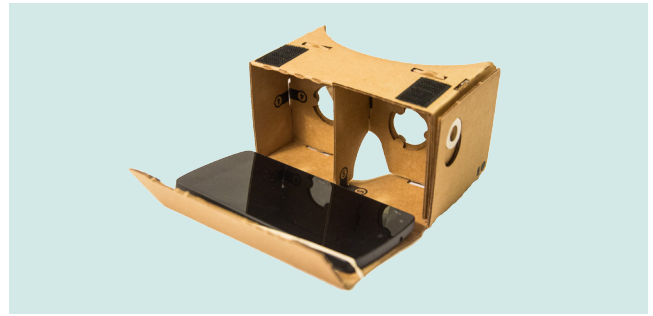


### Sony Project Morpheus

- >First major hardware company entering the market
- >Only VR headset on the market working with other gaming devices

Price: USD 249-299<sup>25</sup>

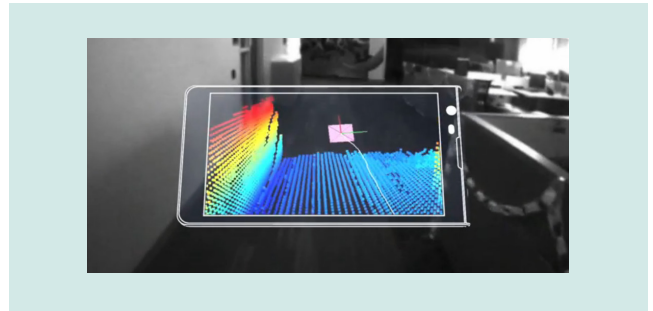
## SMARTPHONE EXTENSIONS



### Google Cardboard

- >Foldable cardboard headset combined with Smartphone
- >Smartphone app serves as VR interface presented at Google I/O in June 2014<sup>26</sup>

Price: USD 20<sup>27</sup>



### Google's Project Tango (cooperation with LG)

- >Prototype of 7"-tablet device that tracks motion and creates a 3D model of an environment
- >Collaboration between nine countries, several companies and universities<sup>28</sup>

Price: n/a



## Samsung's Gear VR (prospective design)

- >This VR headset will have a slot to attach a Galaxy smartphone within
- >Software is developed with Facebook's Oculus



- >Expected to be released by end of 2014
- >Entire sectors and Samsung apps to be dedicated to Gear VR

Price: n/a<sup>29</sup>

# Emergence of VR Software and Apps



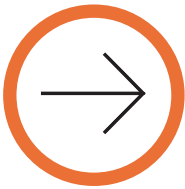
>VR headsets are incomplete without the software. Oculus Rift created the open source software VirtualReality.io that is available for developers to use, modify and run on any VR device.<sup>30</sup>



>VR apps are being developed for gaming and entertainment applications, like Oculus VR Cinema software and the recently released version of “Second Life“, which allows the use of the Oculus Rift headset.<sup>31</sup>



>Agencies and Publishers see great potential in advertising on the VR space. E.g. Oculu is developing a video player to serve pre-roll ads directly into the platforms using VR technologies.<sup>32</sup>



Although VR has recently emerged in terms of hard- and software development, the industry still faces huge challenges, e.g. in terms of lack of technical expertise and under-developed infrastructure.

## COMPANIES WITH VR AS SOLE PRODUCT



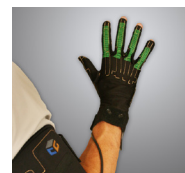
### Myo by Thalmic Labs

The armband tracks muscle movements on the user's forearm and wirelessly connects to different devices to control them (laptop, phone, TV, etc.).<sup>33</sup>



### Virtusphere

The company produces a locomotion sphere that gives users the impression of moving freely while staying in the same place.<sup>34</sup>

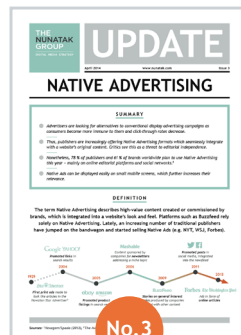
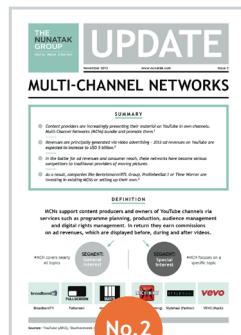
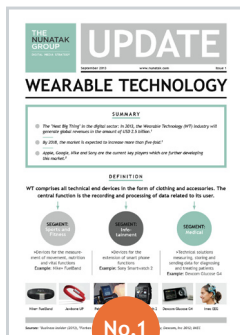


### VR Gloves & Sensors

WorldViz produces a 22-sensor data glove, which helps in tracking gestures, and picking and dropping objects in the virtual world.<sup>35</sup>

## FURTHER READING

If you have enjoyed reading this Nunatak Update, be sure to check out our past issues on [nunatak.com](http://nunatak.com):



The Nunatak Group is a digital strategy consultancy based in Munich. Our focus is on Mobile Media, Social Media, Growth Strategy, Digital Coaching and Investment Support for companies in growth industries.

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