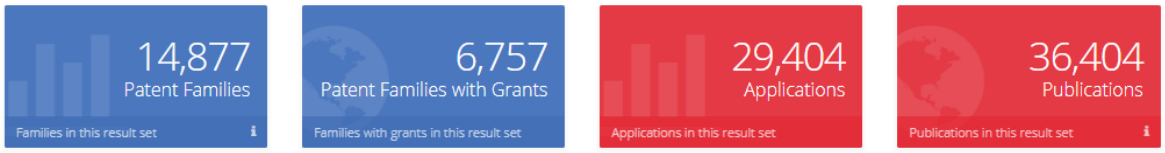
Analysis Report: Virtual Reality

Last update: November 2018

Virtual reality (VR) is an interactive computer-generated experience taking place in a simulated environment.

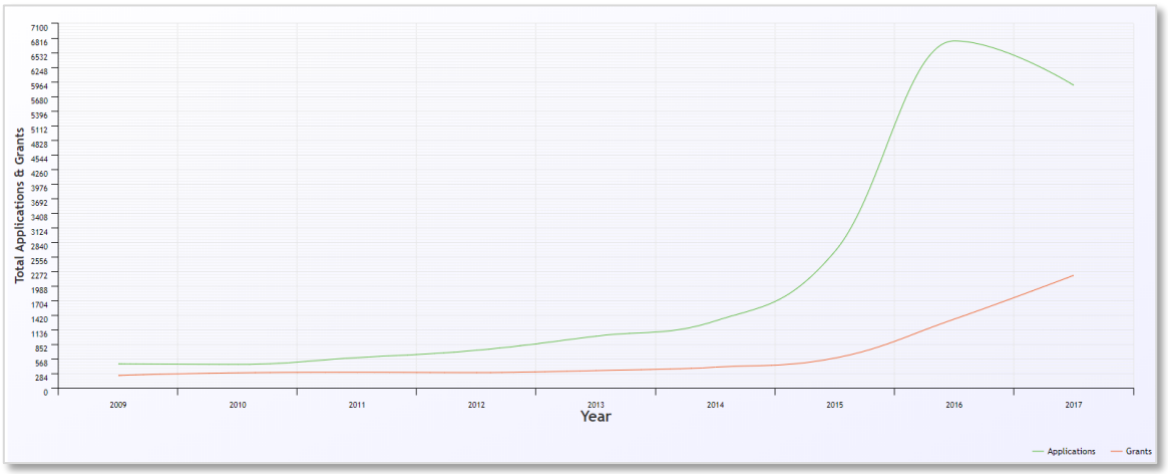
Search query: TAC=(virtual reality)



Years Breakdown

Through observing past trends in the number of patents filed and granted, it is possible to forecast the growth potential of a technology field, indicating investment opportunities.

Most Recent 10 years by Applications and Grants



In the Years analysis for the past 10 years, we can see a huge spike in the number of patent applications for virtual reality in 2016, as well as steady growth in the number of grants issued. This suggests VR technology is still at its infant stage but expected to grow at a rapid rate.

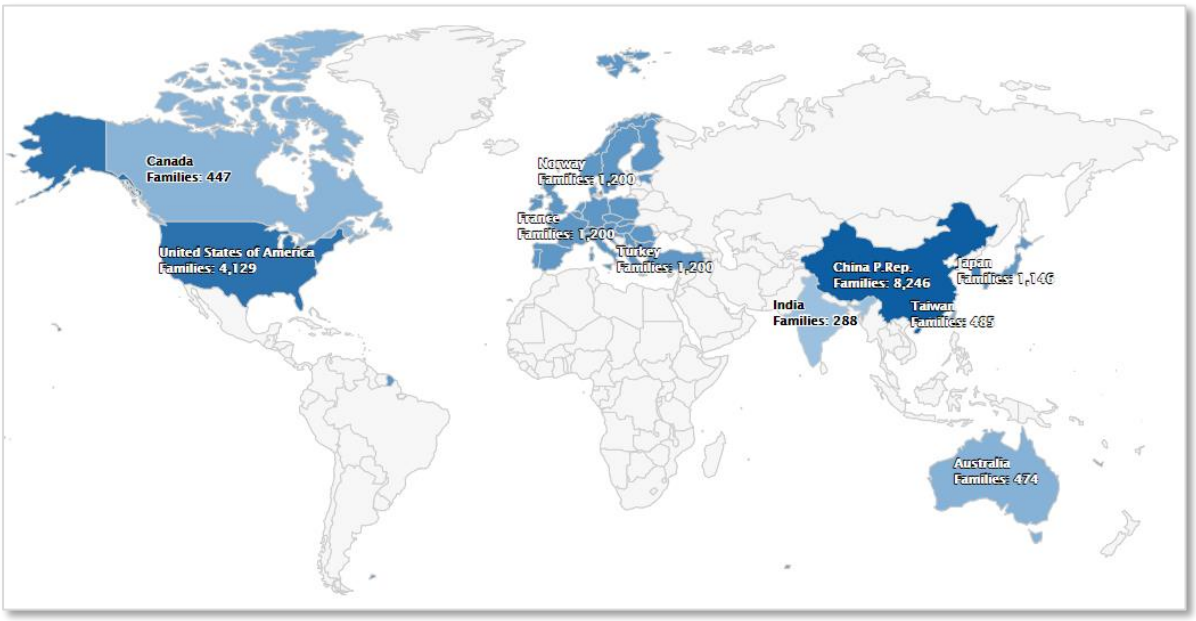
Year	Families	Families (Earliest)	Applications	Grants	Earliest Priority
2018	5074	3686	1527	2215	619
2017	5103	4244	5897	2193	3188
2016	2573	2112	6761	1341	4741
2015	1195	854	2658	582	1484
2014	710	425	1306	404	672
2013	568	298	1008	338	532
2012	516	267	734	299	301
2011	478	228	590	303	256
2010	447	198	458	295	256

Looking deeper into the raw data, the grant to application ratio has increased from 0.198 in 2016 to 0.372 in 2017. As VR technology matures further, we may see this gap closing together.

Geographic Breakdown

Using the world map chart, it is possible to determine which markets are leading the technology field and which markets have opportunities for development.

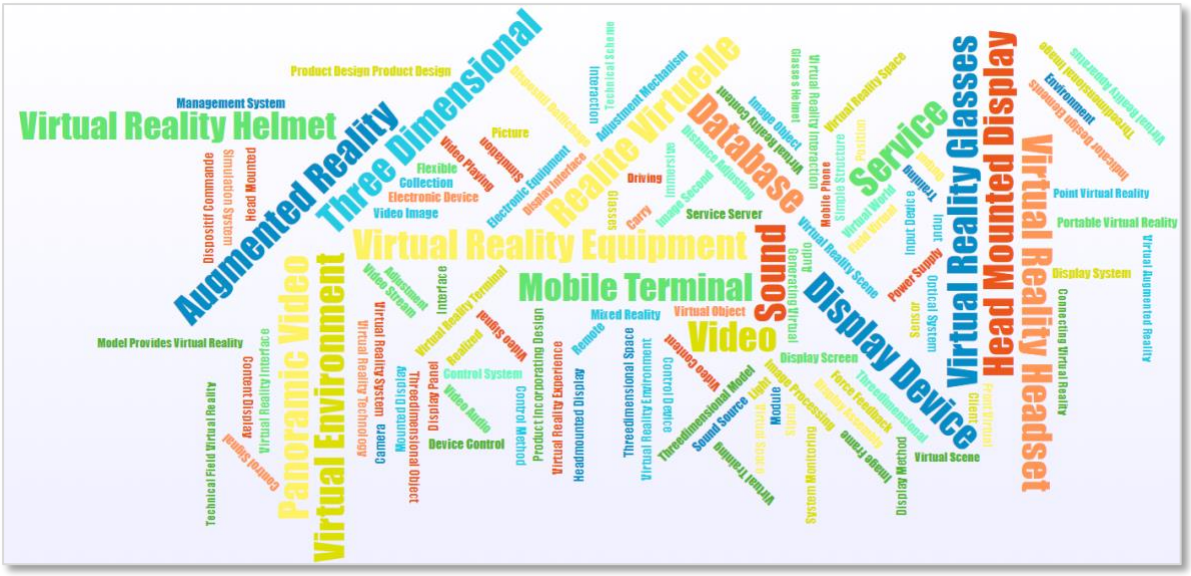
Top 10 Jurisdictions by Families



Looking at the top jurisdictions based on the number of patent families, China and US are the leading markets in virtual reality technology with **8,246** families and **4,126** families respectively.

Key Concepts

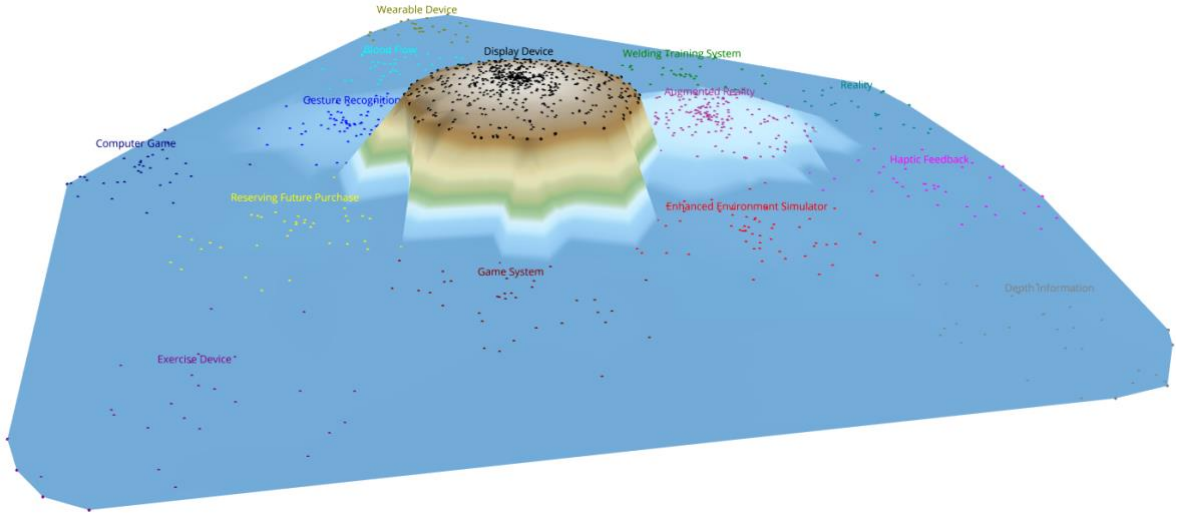
Clustering technology fields into their various technology areas, it is possible to identify the key technology areas of this field.



In the word cloud, **Head Mounted Display**, **Virtual Reality Equipment** and **Augmented Reality** jump out as key concept clusters that may be of interest to search and analyse further.

Landscape Analysis

By visualising the landscape before entering into a new market reduces the risk of infringement and helps identify areas of white space.

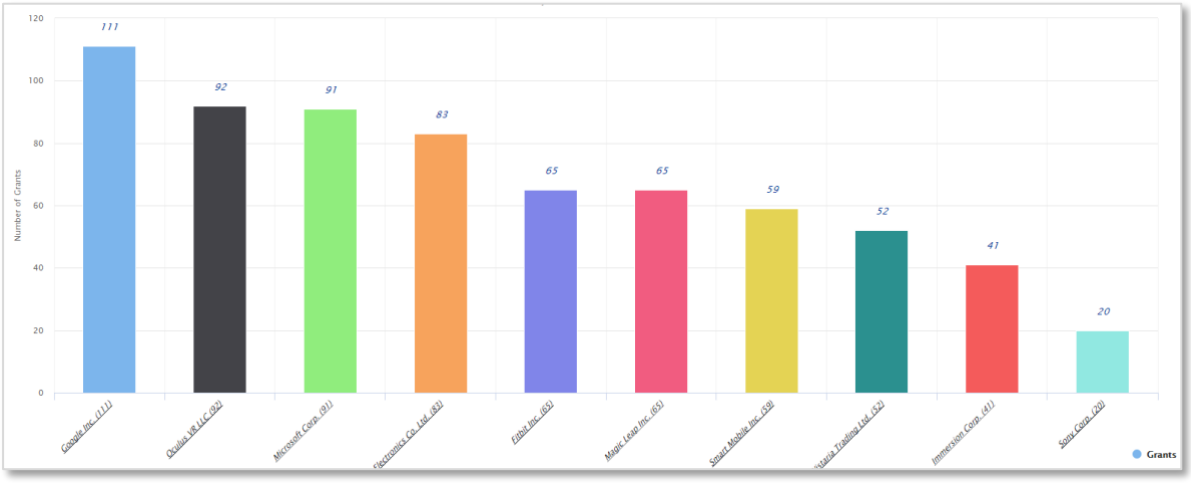


Display Device has the most patent families, determined by the height of the hill. Similar concepts have hills close together, so it may be worthwhile to investigate the surrounding concepts around Display Device like **Augmented Reality**, **Gesture Recognition** and **Enhanced Environment Simulator**.

Main Companies

Recognising the main companies based on their patent fillings provides potential competitors to look out for and an indication of their innovation rate.

Most Recent 10 Years by Top 10 Assignees by Grants



Looking at the most recent 10 years by number of grants, **Google Inc** and **Oculus VR LLC** appear to be winning the VR innovation race with **111** grants and **92** grants respectively.

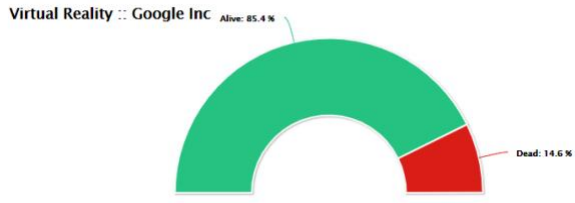
Comparison Analysis

Easily compare two assignees or two concepts, gaining a deeper insight into a competitor's business strategy.

Comparison of top 2 assignees:

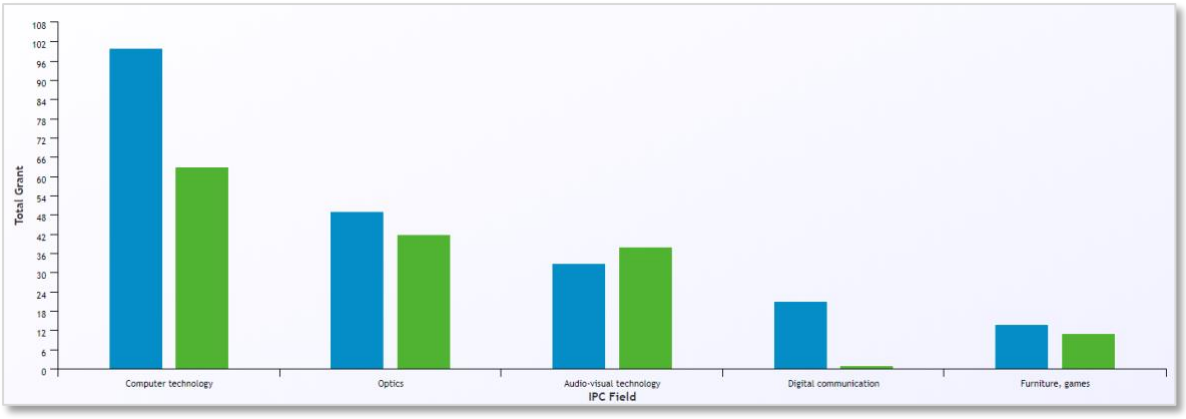
1. Google Inc (111 grants)
2. Oculus VR LLC (92 grants)

Dead or Alive



There is potential opportunity to learn and build on the technologies that are 'dead' in a competitor's patent portfolio.

Top 5 IPC fields by Grants (similarity 46.3%)



Google Inc and Oculus VR LLC have a **46.3%** similarly in IPC patent filings. Google Inc has more patent filings than Oculus VR LLC in **Computer Technology**, **Optics**, **Digital Communication** and **Furniture & Games**, whereas Oculus VR LLC has more patent filings for **Audio-visual Technology**. These comparisons may help patenting and investment strategy by providing insight into which technology areas these companies are focused on.