

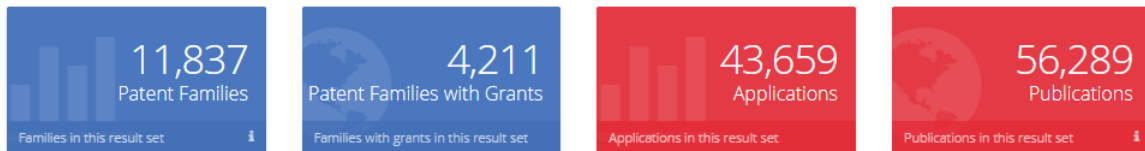


Analysis Report: Fifth Generation (5G)

Last update: January 2019

The fifth generation (5G) of mobile internet connectivity is the latest cellular technology, which will provide much faster data download and upload speeds, wider coverage and more stable connections.

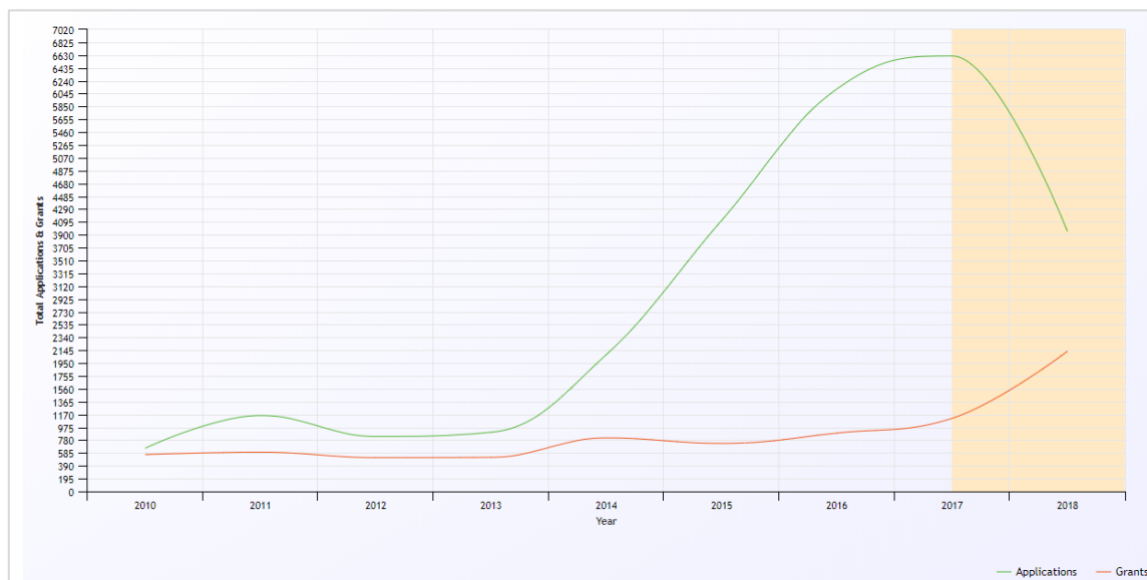
TAC=(5th generation or 5G or fifth generation) and (mobile or communication device or network)



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

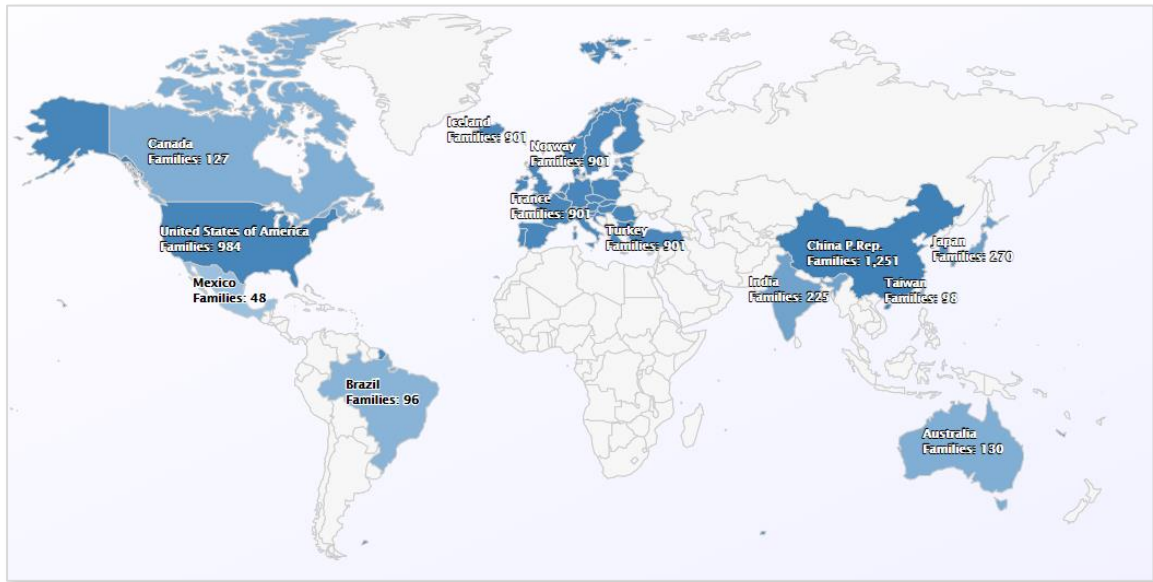


In the Years analysis for the past 10 years, we can see a huge surge of activity in the number of patent applications for 5G technology in 2013, as well as a steady growth in the number of grants issued. Current activity in this technology area is likely to continue seeing more innovation in the near future.

Geographic Breakdown

The world map chart represents the geographic patent families relating to 5G technology. It is possible to determine which markets are leading the technology field and which markets have the opportunity for development.

Top 12 Jurisdictions by Number of Families

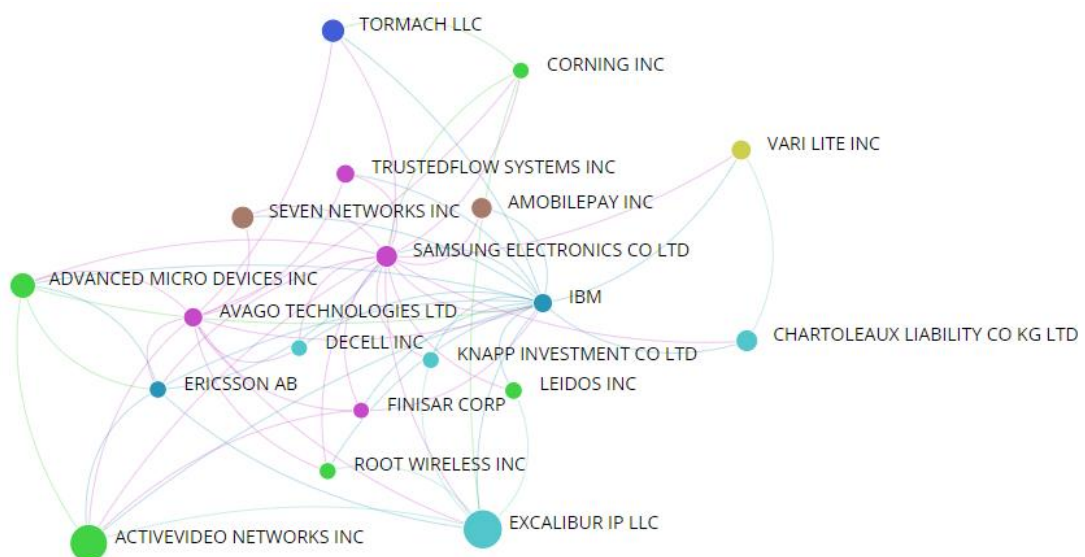


It can be observed that **China** and the **US** have emerged as leading markets in terms of investing in 5G technologies, with **1,251** and **984** patent families respectively.

Citations Breakdown

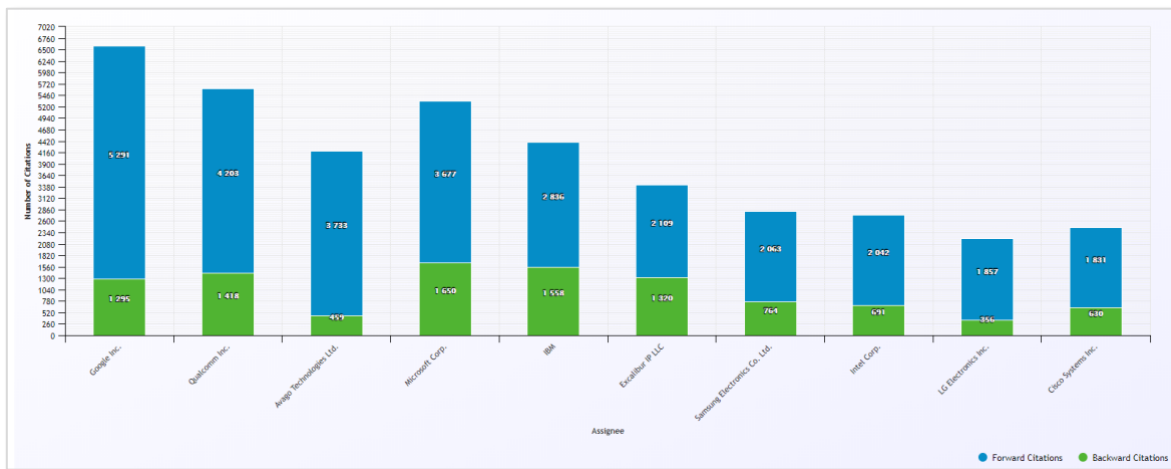
Studying the structure of the citation network can help us understand how innovation knowledge is connected/passed on between different assignees.

Citation Network (20 Nodes)



The Citation Network displays the top 20 assignees with the highest number of total citations in this technology area and the connections between them.

Top 10 Assignees by Number of Forward Citations

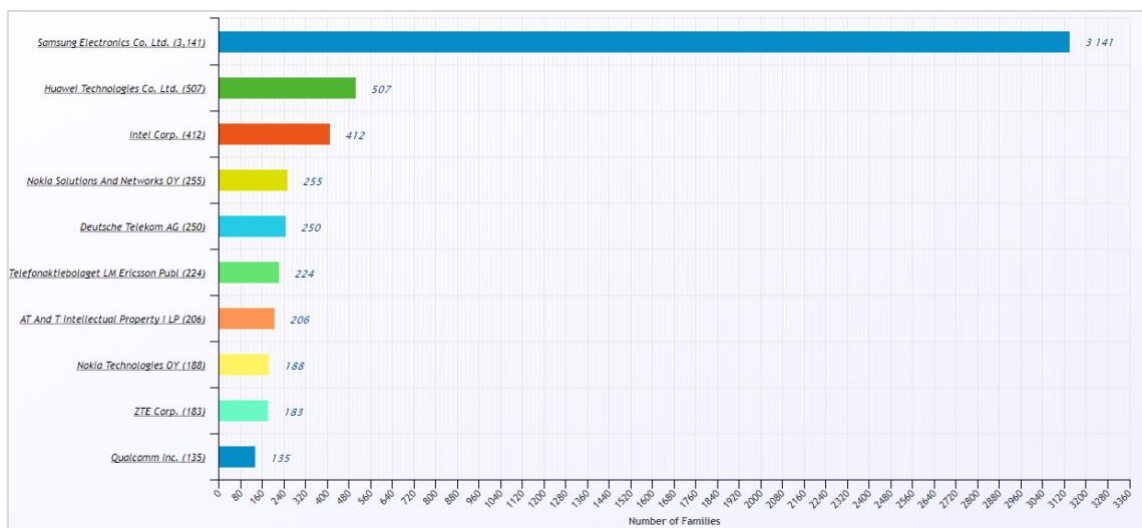


A closer look into the top 10 assignees by number of forward citations, **Google Inc.** with **5,291** forward citations and **Qualcomm Inc.** with **4,203** forward citations, the number of forward citations is a predictor of patent value as many forward citations indicates industry-wide investment.

Main Companies

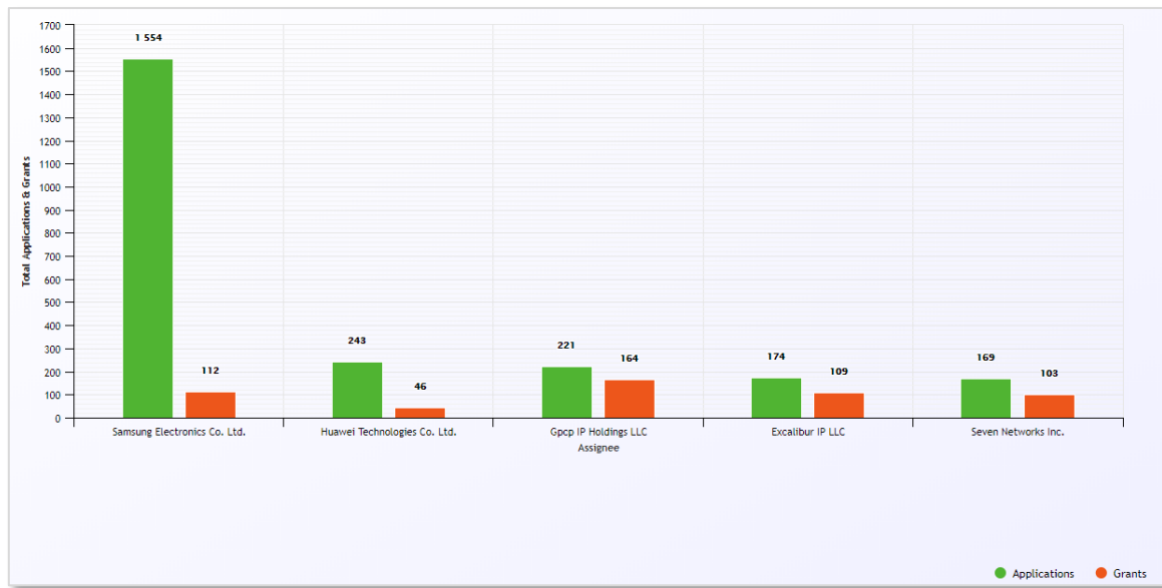
Recognising the main companies based on their patent fillings provides potential competitors to look out for and an indication of their innovation rate.

Most Recent 10 Years by Top 10 Assignees by Families



Looking at the most recent 10 years by number of families, **Samsung Electronics Co.Ltd** appear to be leading the the 5G race with **3,141** patent families, followed by **Huawei Technologies Co, Ltd** with **507** patent families.

Top 5 Assignees in the last 10 Years by Applications and Grants



However, looking deeper into the data, the grant to application ratio is **0.072** for Samsung Electronics Co.Ltd, which is very low in comparison with the other competitors displayed in the chart, whom have an average grant to application ratio of **0.542**. This may be due to the sudden increase in the number of applications filed by Samsung Electronics Co.Ltd, which are yet to receive grants due to the time lags involved.