Analysis of Top 3D Printing Publicly Traded Companies

This report analyzed top 3D printing companies [1] [2] [3] [4] [5] with 3D printing as their main business to get a future vision of the 3D printing industry. The top 3D printing companies include:

- 3D Systems Corporation (DDD)
- Xi'an bright laser technologies (688333.SS)
- Stratasys, Ltd. (SSYS)
- Desktop Metal, Inc. (DM)
- Proto Labs, Inc. (PRLB)
- Velo3D, Inc. (VLD)
- Materialise NV (MTLS)
- Markforged Holding Corporation (MKFG)
- Nano Dimension Ltd. (NNDM)
- SLM solutions grp AG (AM3D.DE)
- Shapeways Holdings, Inc. (SHPW)
- Massivit (MSVT.TA)
- voxeljet AG (VJET)
- Organovo Holdings, Inc. (ONVO)

More than 6,000 companies have 3D printing businesses in the world [6], and the listed fourteen companies (Group 14 in Fig.1) owned about 20% of the total 3D printing market value (Wohlers reports) from 2017 to 2020 (Data of 2021 has not been published).

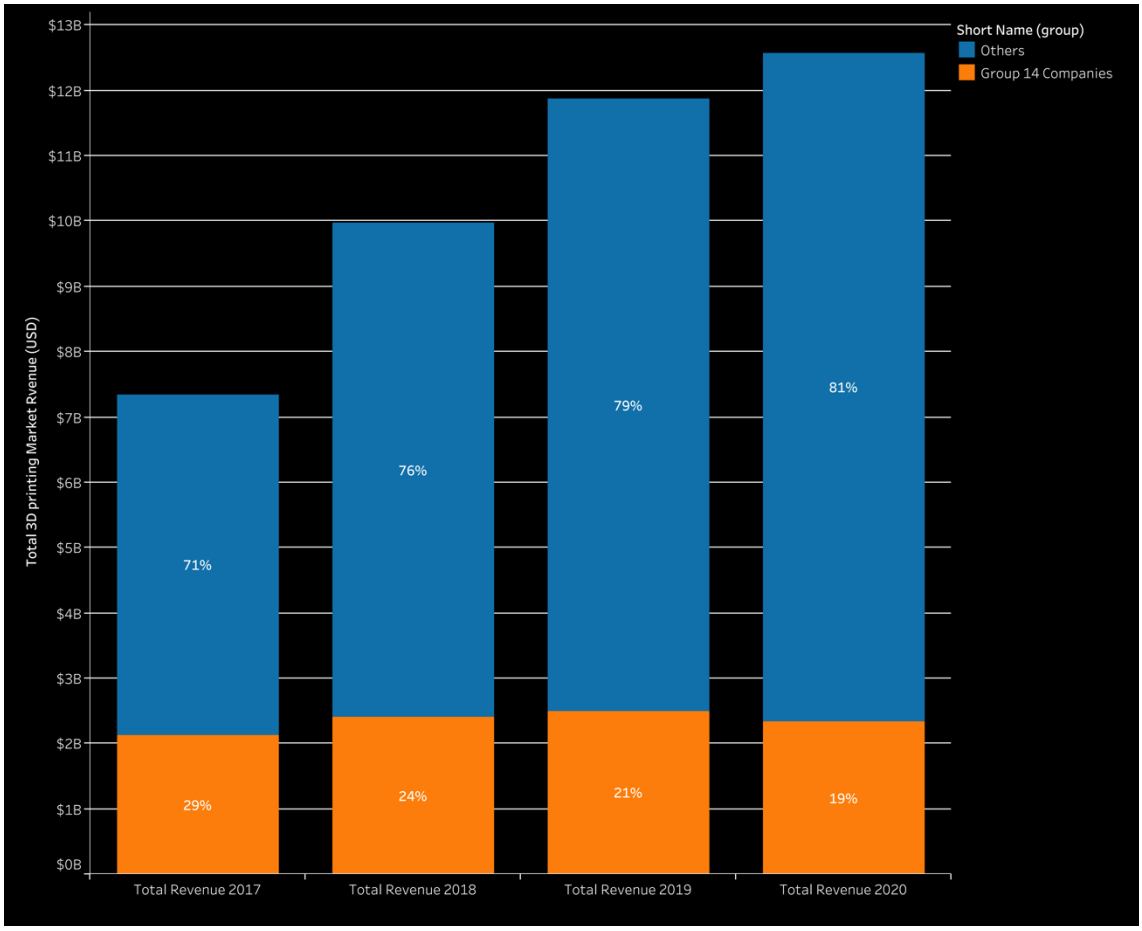

Fig.1. Market share of “Group 14” in 3D printing industry from 2017 to 2020.

In some diversified companies, such as GE and Siemens, 3D printing is also part of their business but not the main business. These diversified companies are not objects of this analysis because their market performance cannot represent the future trend of 3D printing industry.

Market cap, total revenue, research and development (R&D) expenses, net income, market cap history, total revenue per employee, and R&D expenses had been reviewed. The data was scraped from Yahoo finance (https://finance.yahoo.com) by yfinance API. Data cleaning and wrangling were done by python with some libraries, like pandas, beautifulsoup4 and numpy. Data visualization was done in Tableau public.

Regarding market cap (2021/01/05), 3D Systems, Xi'an Bright Laser Technologies and Stratasys are the top 3 3D printing companies. 3D Systems was founded in 1986 and is headquartered in Rock Hill, US. It offers 3D printers, CAD and CAE software, materials, scanner, training services, manufacturing solutions. It primarily serves companies in medical, dental, automotive, aerospace, durable good, government, defense, technology, jewelry, electronic, education, consumer good, energy, as well as partner channels and distributors. Xi'an Bright Laser Technologies was founded in 2011 and is headquartered in Xi'an, China. It offers customized 3D printing products, equipment, raw materials, and other technical services. It serves various industries, mainly in aerospace and national defense, also has customer from energy, medical, mold, automobile, and other industries. Stratasys was incorporated in 1989 and is headquartered in Eden Prairie, US. It provides connected and polymer-based 3D printing equipment, materials and services. Such as

polyjet printers, FDM printers, stereolithography printing systems, filament materials, polyjet cartridge-based resin materials, non-color digital materials, etc. It also offers GrabCAD Print Platform that offers job programming, scheduling, monitoring, order management, and analytics across various 3D printing technologies. Its products and services are primarily used in the automotive, aerospace, medical, dental, education, and consumer goods markets. The company sells its products through a network of resellers and independent sales agents worldwide.

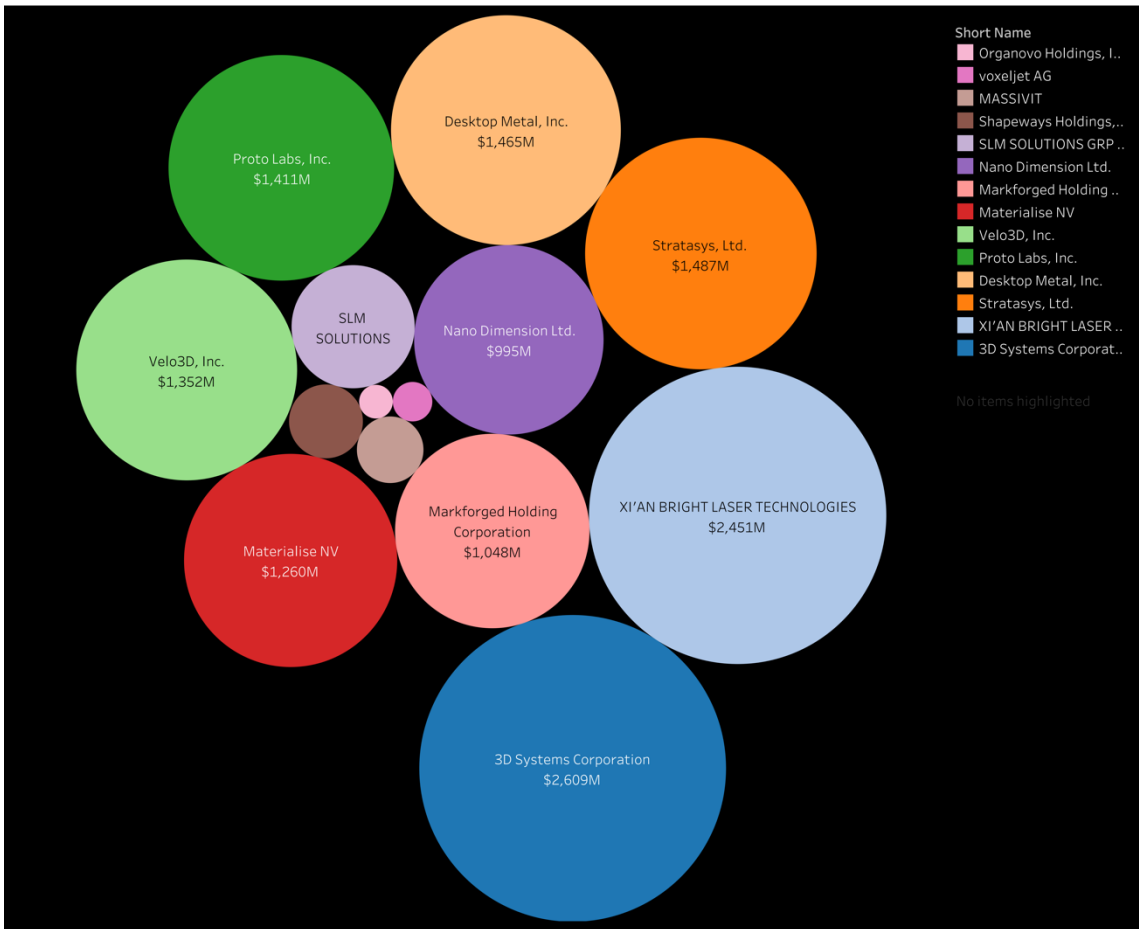

Fig.2. Market cap (2021/01/05) of top 3D printing companies.

Eight of the fourteen top 3D printing companies are located in the US, including Velo3D, Stratasys, Shapeways Holdings, Proto Labs, Organovo, Markforged and Desktop Metal, and 3D Systems, currently the most valuable 3D printing company in the world. Voxeljet, SLM solution, and Materialise are located in Europe. Nano Dimension and Massivit are from Israel. Xi'an Bright Laser Technologies is from China.

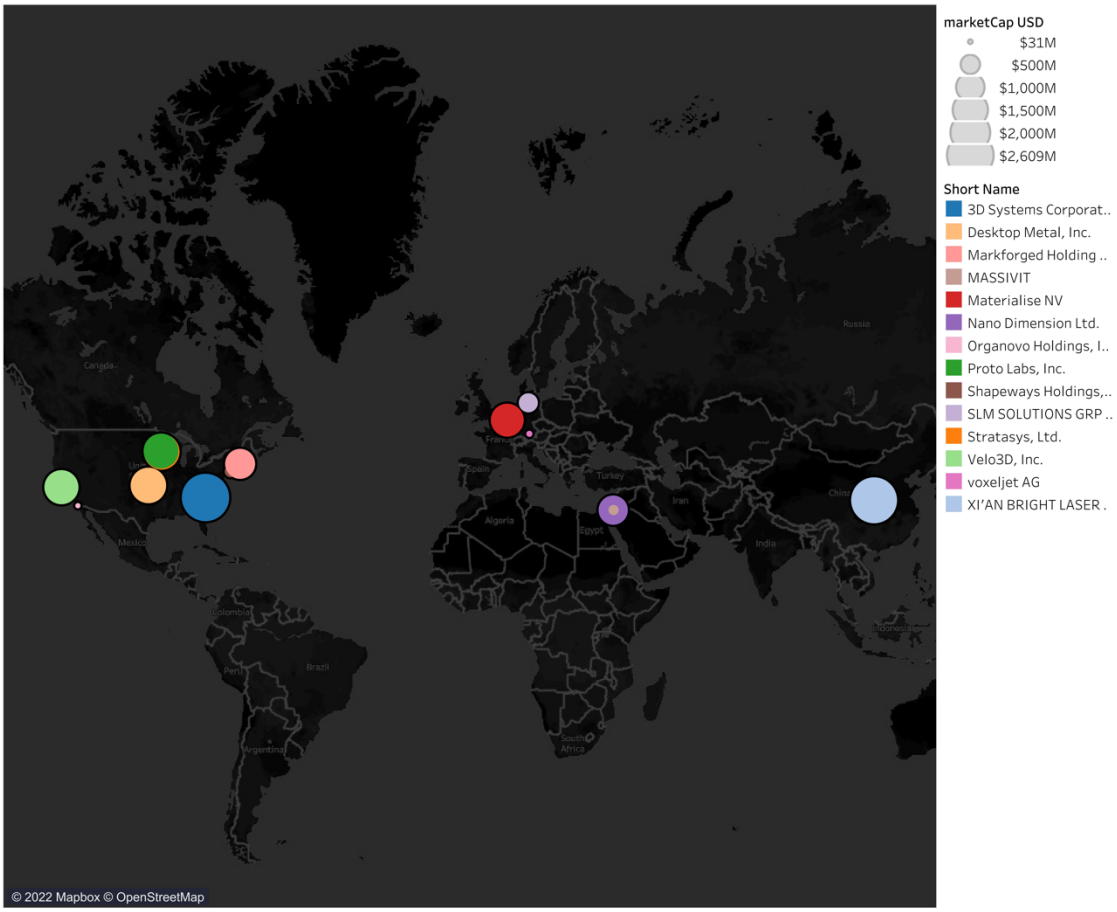

Fig.3. Locations of top 3D printing companies.

3D Systems, Stratasys, Xi'an Bright Laser Technologies, Proto Labs and Materialise are top 5 regarding the total revenue. Xi'an Bright Laser Technologies grew very fast in the past five years. Stratasys' total revenue shows a dropping trend.

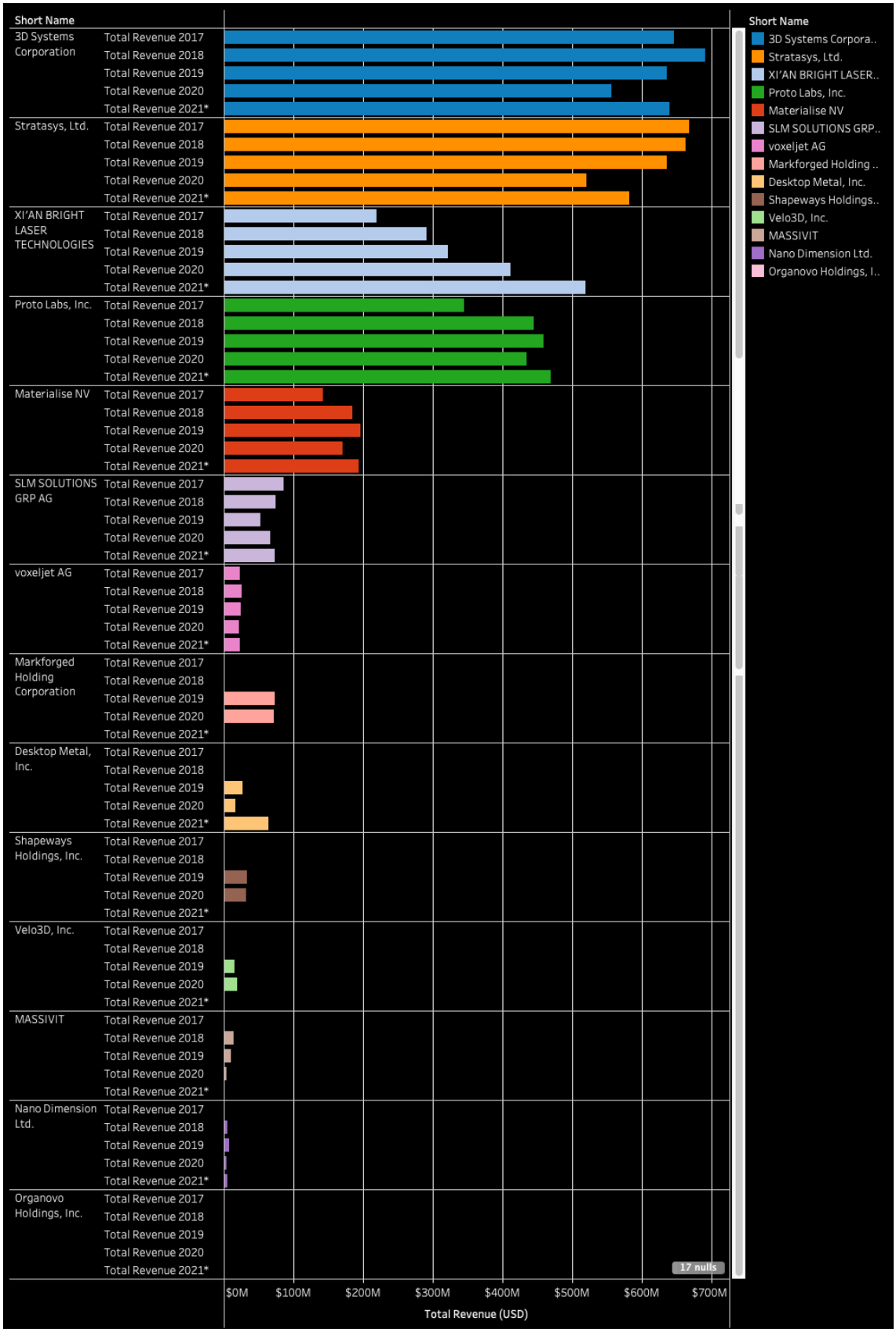

Fig.4. Total revenue of the top 3D printing companies from 2017 to 2021* (Total revenue of 2021* was the sum of 2020 Q4 to 2021 Q3).

Xi'an Bright Laser Technologies' relative market share among the fourteen companies was rapidly growing in the past five years. Stratasys and 3D systems' relative market share show a dropping trend.

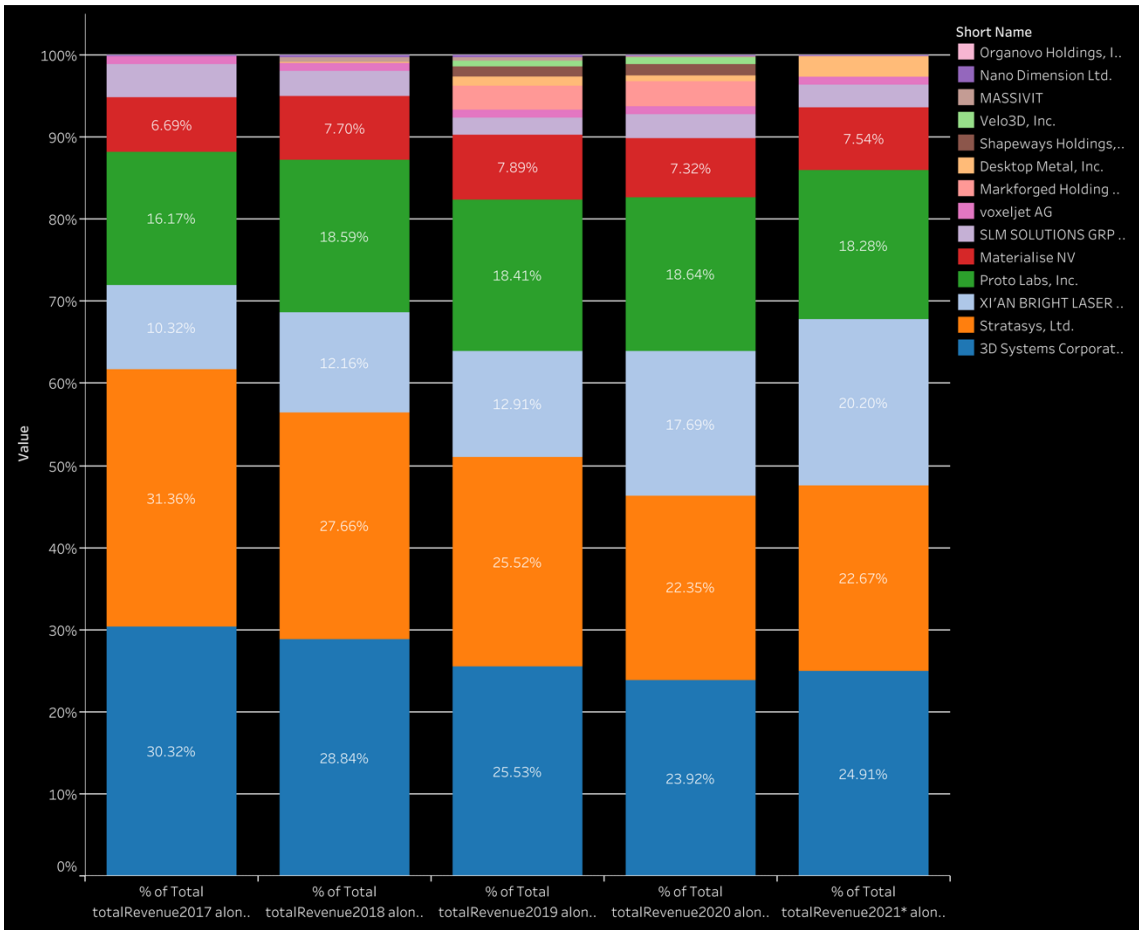

Fig.5. Relative market share of top 3D companies.

3D Systems, Stratasys, Xi'an Bright Laser Technologies are top 3 regarding the R&D expenses. Xi'an Bright Laser Technologies grew rapidly in the past five years and will probably be the No.1 in 2021.

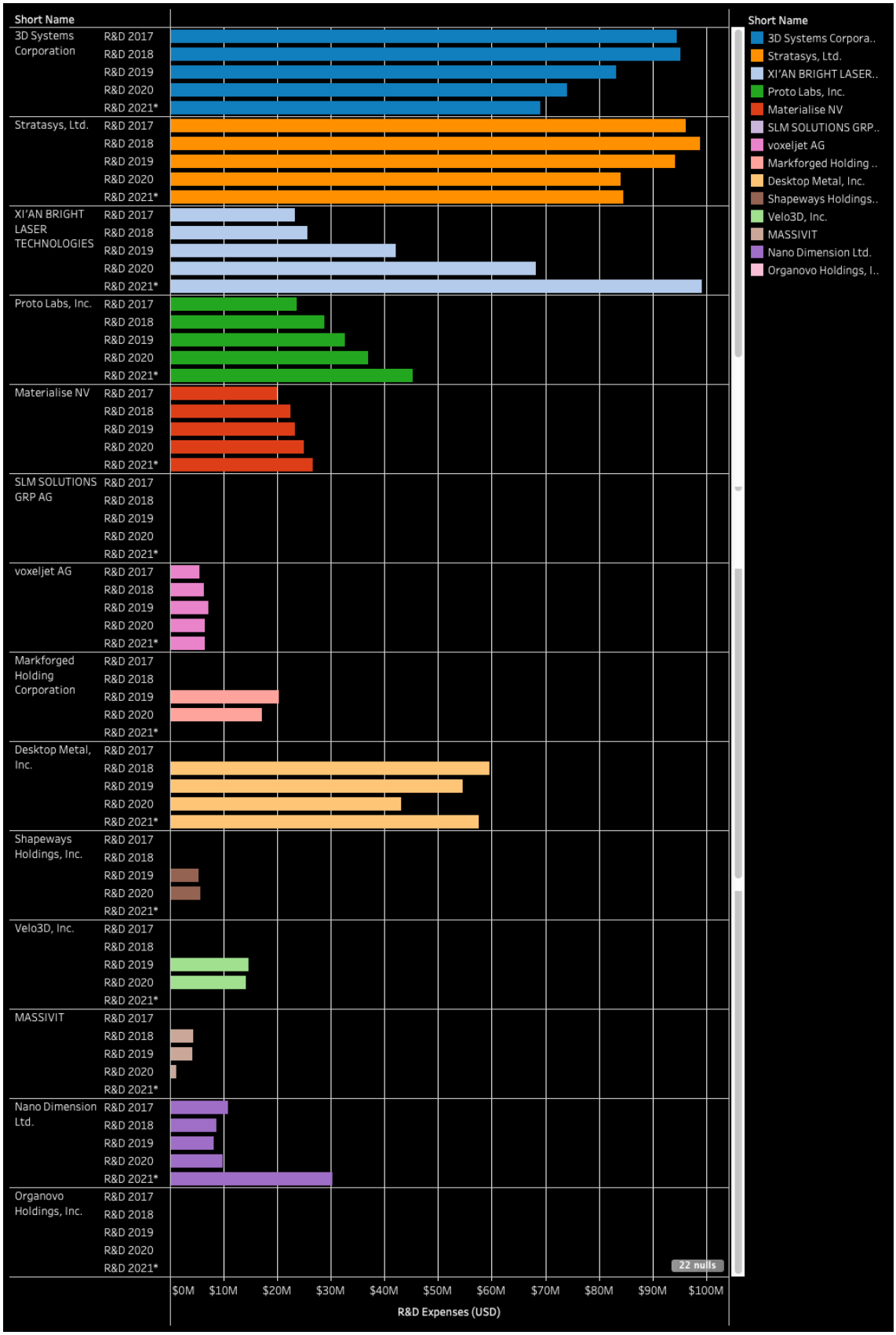

Fig.6. Research and development (R&D) expenses of the top 3D printing companies from 2017 to 2021* (Data of 2021* was the sum of 2020 Q4 to 2021 Q3).

3D Systems, Stratasys, Xi'an Bright Laser Technologies and Proto Labs are the top 4 regarding the net income. Xi'an Bright Laser Technologies grew very fast in the past five years. Stratasys' net income shows a dropping trend.

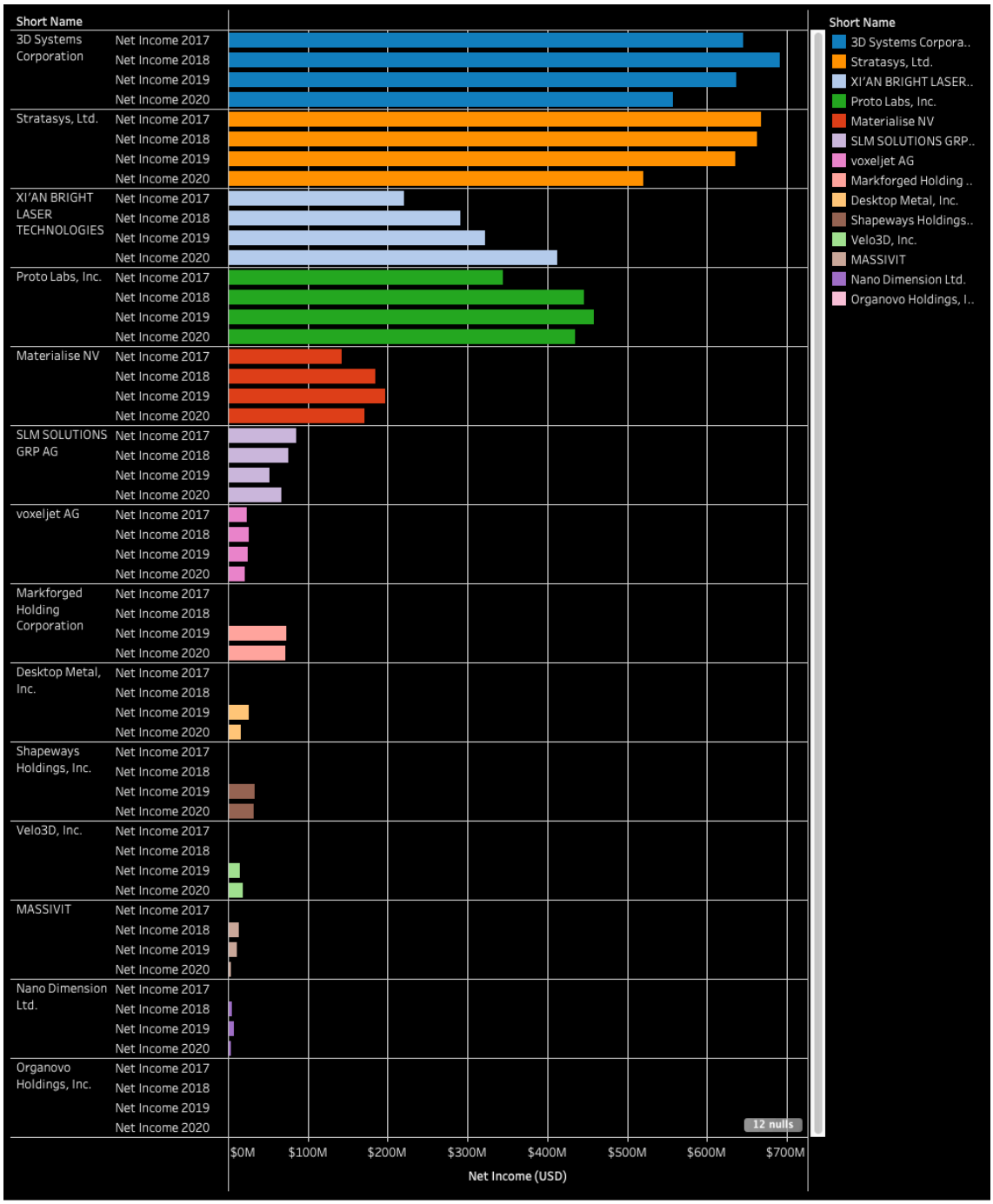

Fig.7. Net incomes of the top 3D printing companies from 2017 to 2020.

Stacked market cap of the top 3D printing companies had dramatically grown to more than $35,000M at the beginning of 2021 but dropped back to of $15,000M and still keep dropping. The dramatically up-and-down may because of the optimistic or pessimistic about Covid-19 pandemic. Generally, the stock market performance shows that investors are not very optimistic about the future of 3D printing. However, because of the growth of Xi'an Bright Laser Technologies' total revenue, R&D expense and net income, the stock

market has drawn attention to its stock and made the market cap increase.

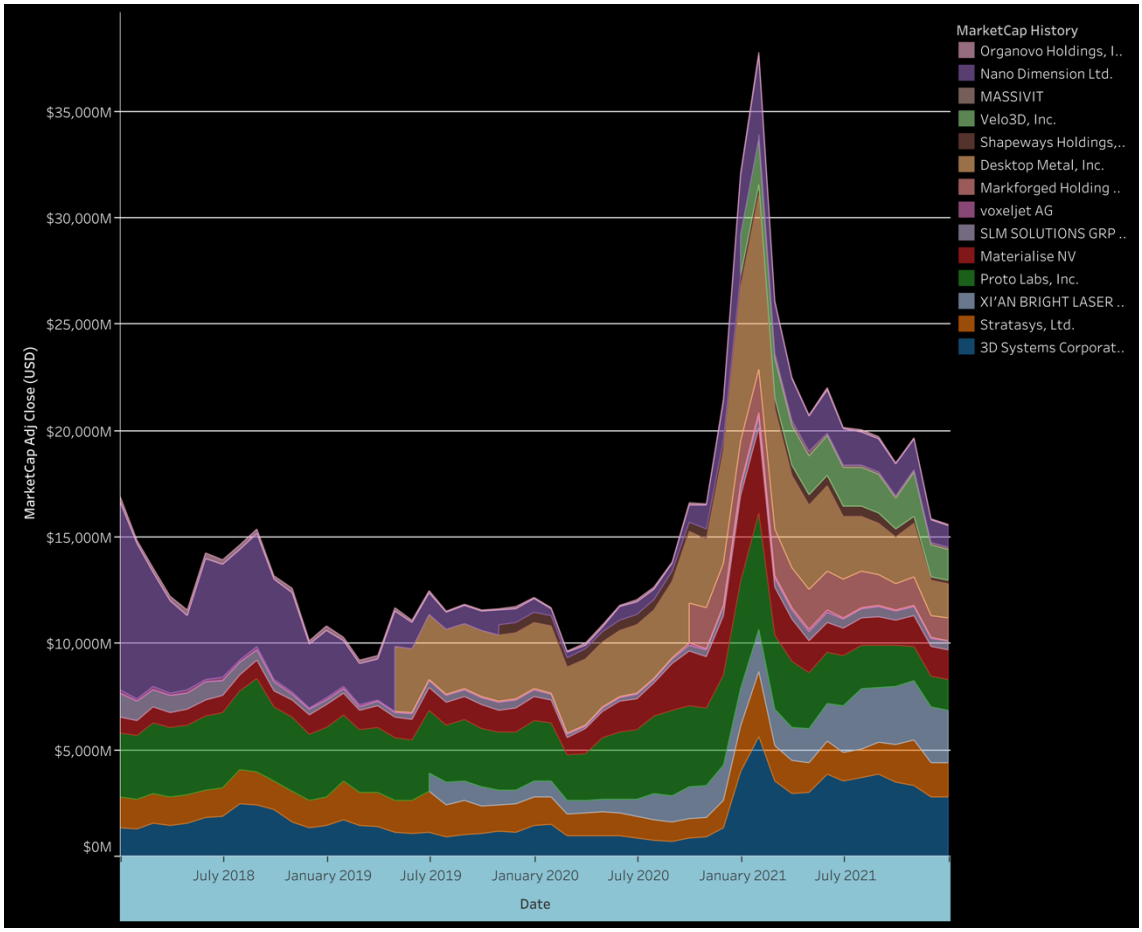

Fig.8. Market cap history of the top 3D printing companies.

On the percentage stacked chart of the market cap , it is very clear that the percentage of Xi'an Bright Laser Technologies is keep growing.

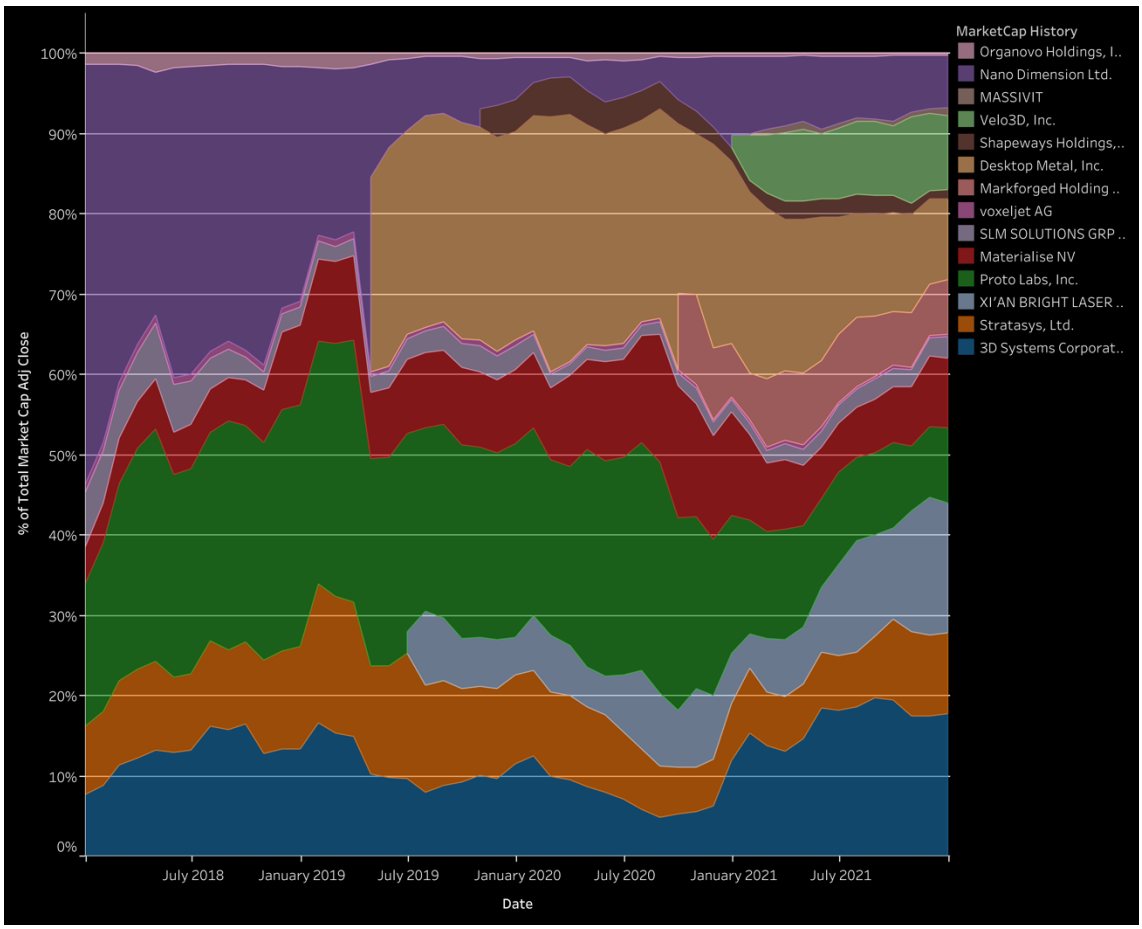

Fig.9. Percentage stacked chart of the market cap.

Regarding both of the market cap and total revenue, 3D printing is still a very small business sector comparing with others (e.g. Tesla and BYD from electric vehicle; GE, a diversified company from traditional manufacturing industry).

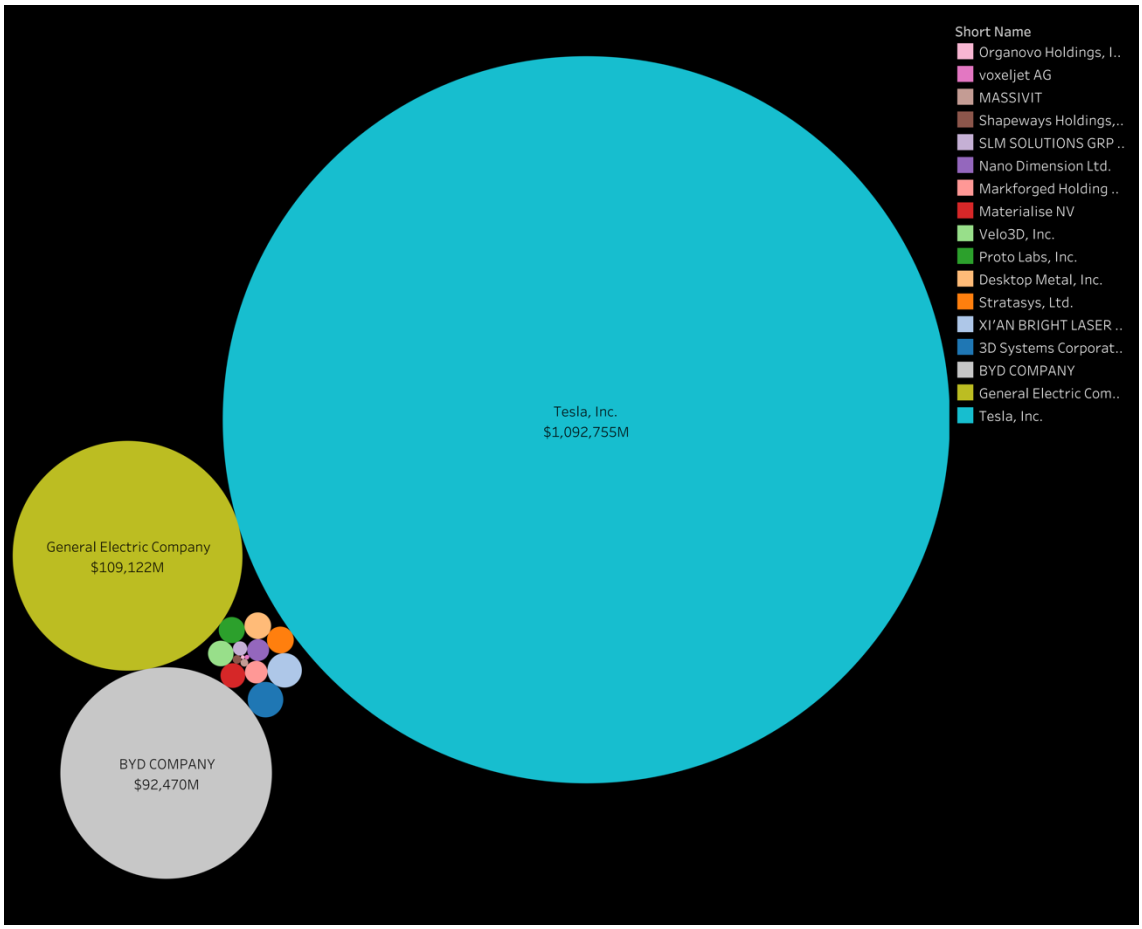

Fig.10. Market cap of top 3D printing companies and companies from other industries.

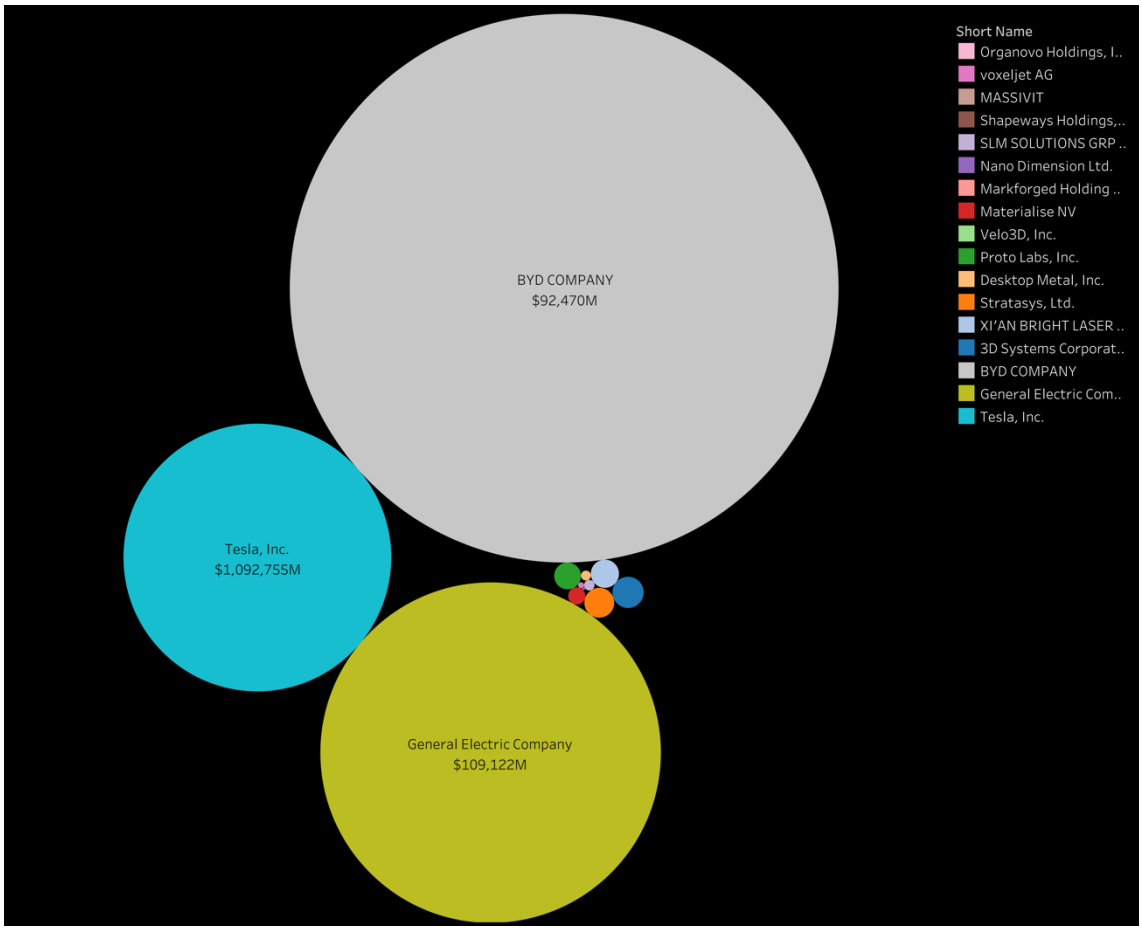

Fig.11. Total revenue of top 3D printing companies and companies from other industries.

And the growth of 3D printing companies is not very fast comparing with other fast growing industries, e.g. electric vehicle. Even Xi'an Bright Laser Technologies, the fastest growing 3D printing company, is growing slower than Tesla.

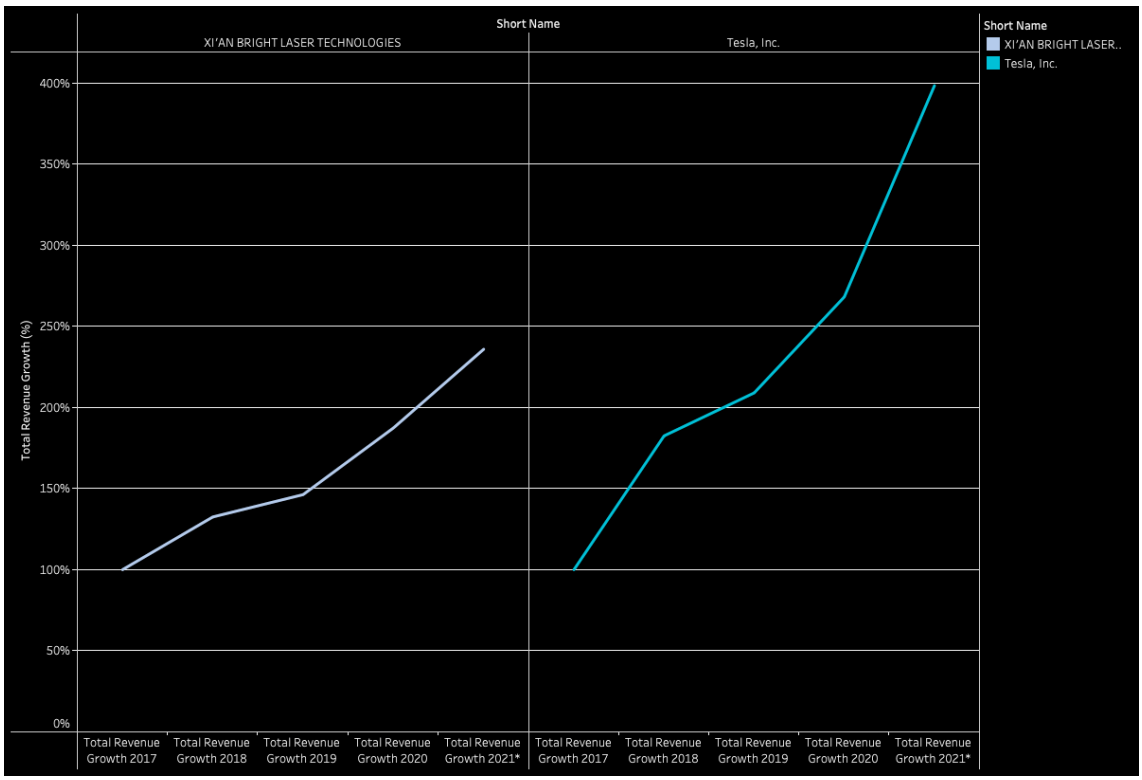

Fig.12. Total revenue growth trend of Xi'an Bright Laser Technologies and Tesla.

However, revenue per employee of 3D printing companies is no less than other fast growing industries, e.g. electric vehicle, and R&D expenses per employee of 3D printing companies is significately higher than electric vehicle industry, that may be a sign of faster growing in the future.

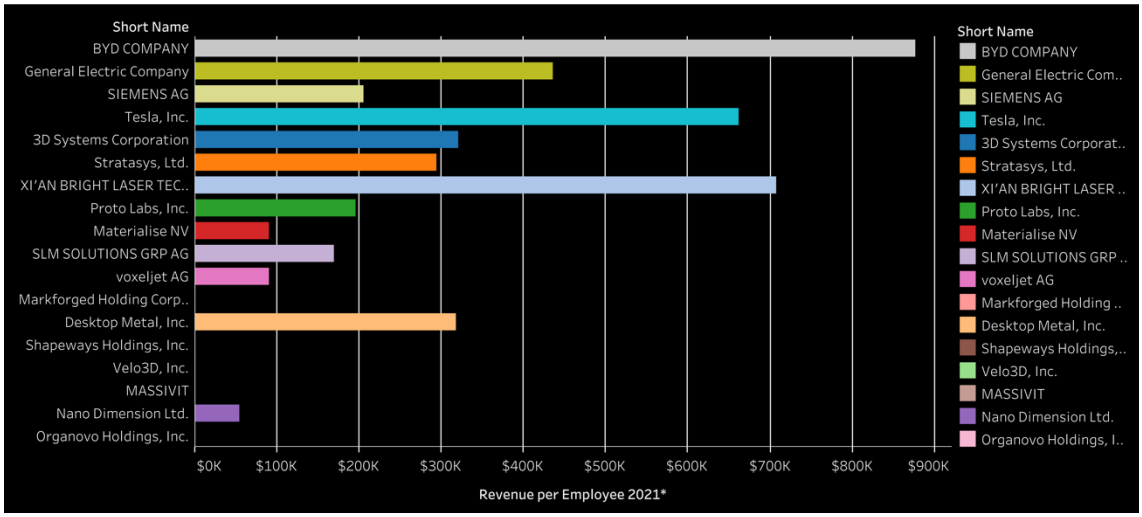

Fig.13. Revenue per employee 2021*(data of 2021* is the sum of 2020 Q4 to 2021 Q3).

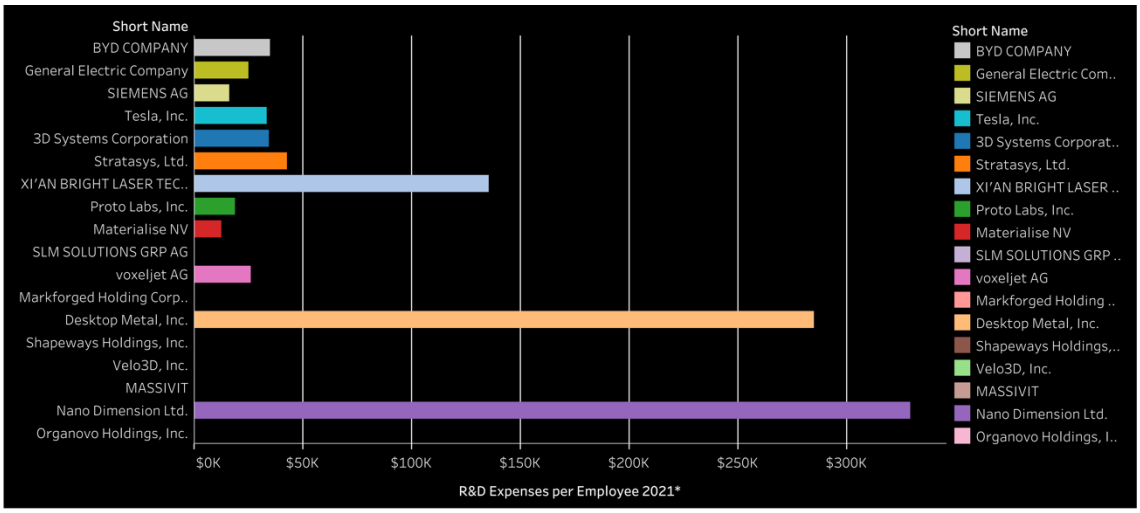

Fig.14. R&D expenses per employee 2021* (data of 2021* is the sum of 2020 Q4 to 2021 Q3).

Summarize:

Bibliography

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