



Supply Chain Analytics Case Study

DAB 400 - Supply Chain Analytics

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GROUP # 3

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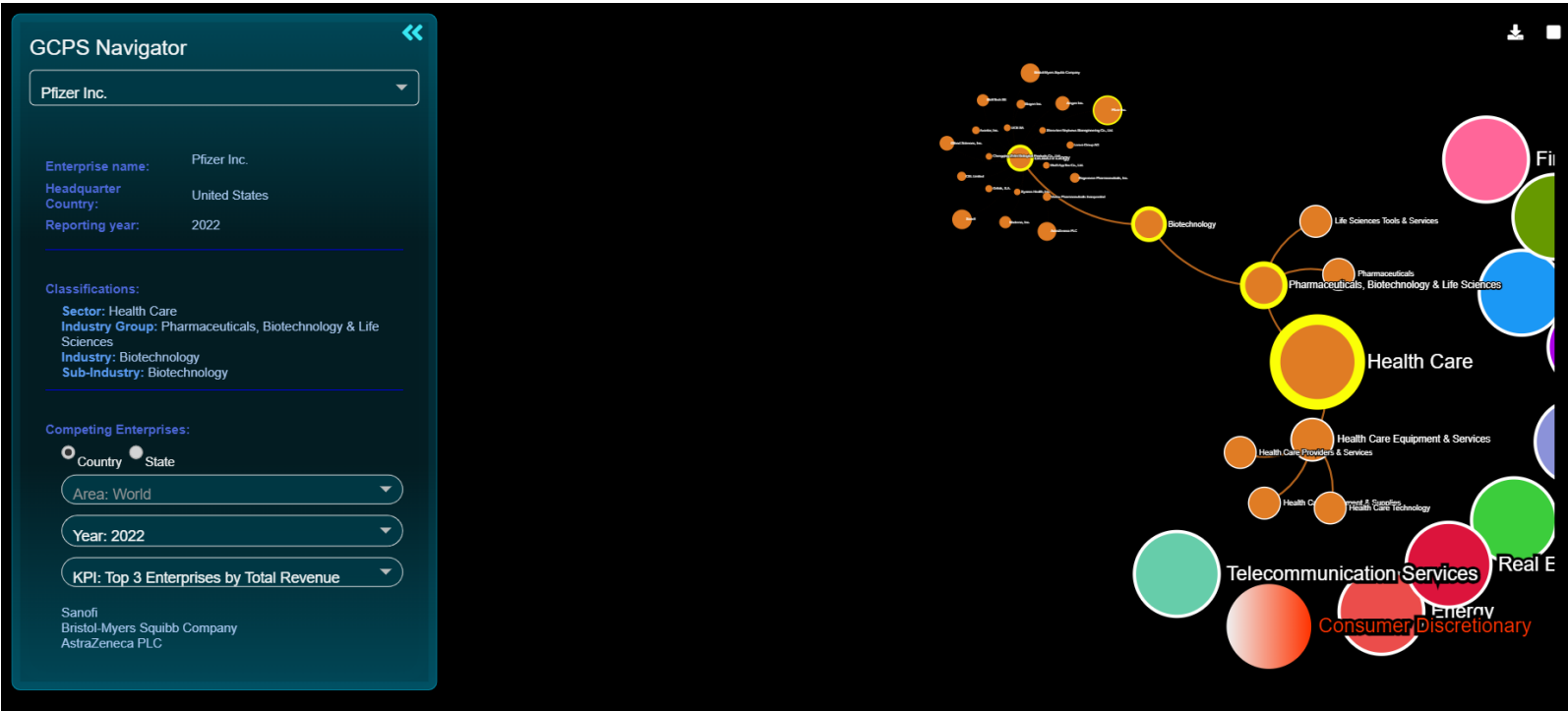
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Abstract

This study provides a comprehensive analysis of three industries: Pharmaceuticals, Automobile, and Technology Hardware, Storage & Peripherals, focusing on the top enterprises globally. Using financial metrics such as net income and inventory, sector-wise comparisons reveal industry trends in revenue breakdown, asset distribution, and total market size. Profitability versus cost analysis sheds light on net income dynamics.

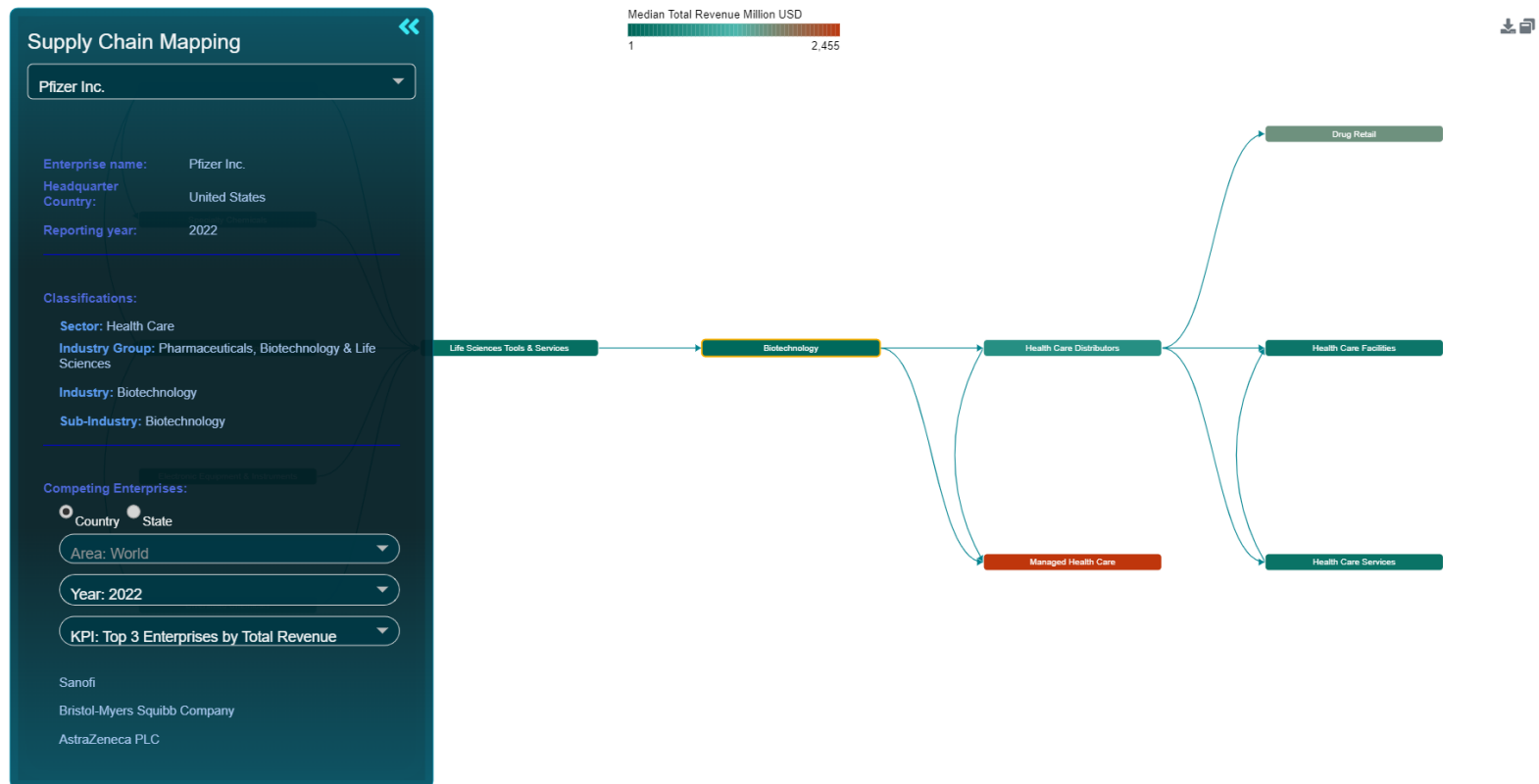
Further enterprise-wide comparisons highlight revenue, assets, and efficiency metrics for the top enterprises in each sector. Key indicators derived from this analysis offer valuable insights into industry performance and competitiveness.

Pharmaceuticals (Pfizer Inc.)



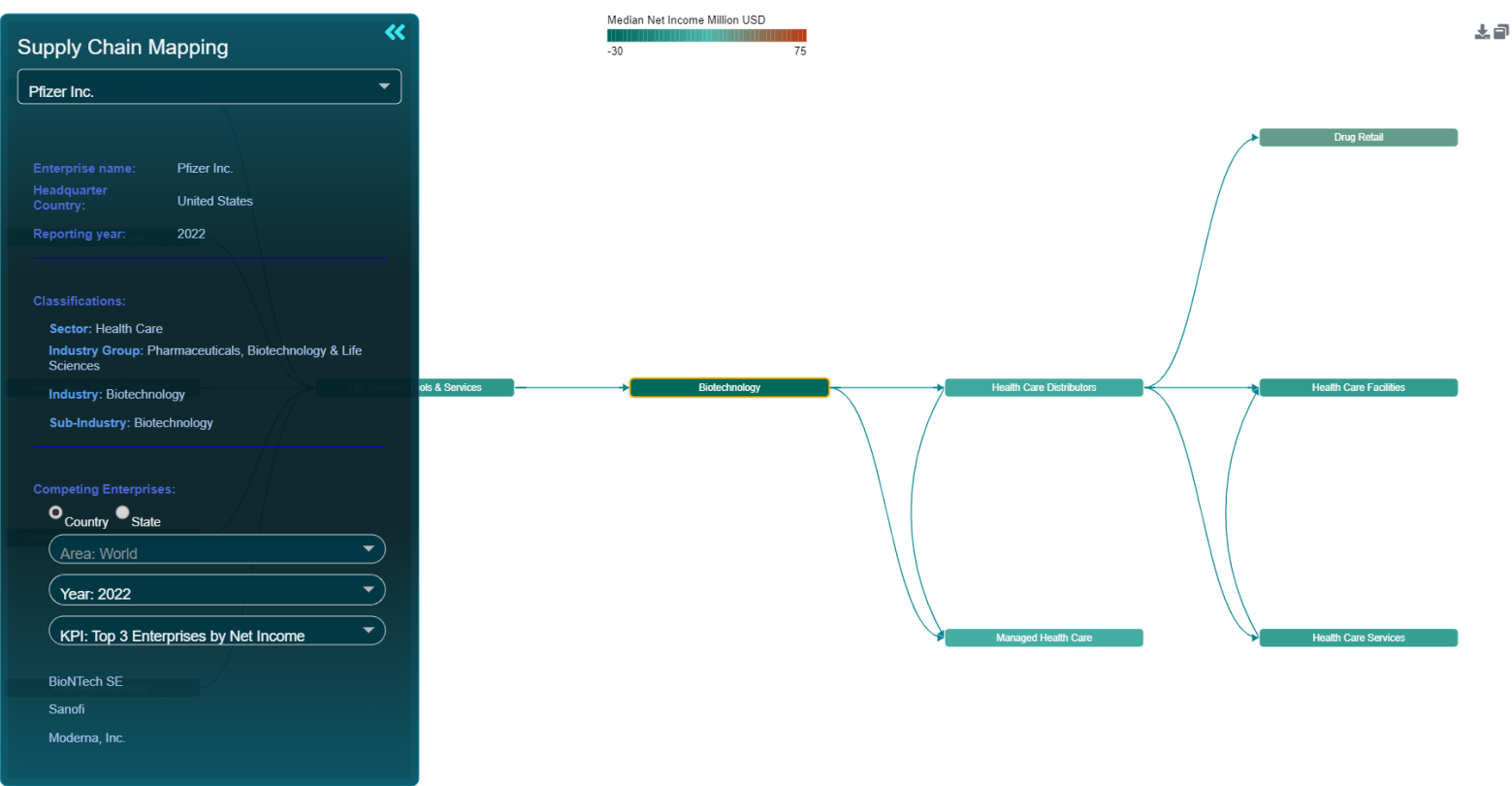
- Pfizer Inc. stands as a prominent leader in the healthcare sector, particularly within the Biotechnology category, boasting a total revenue of \$100.33 billion USD.

Supply Chain Mapping by Total Revenue - Pfizer Inc.



- With Pfizer Inc. being a significant player in the healthcare sector, especially in the biotechnology category, it's essential to compare its performance with other leading enterprises.
- Among the top competitors based on total revenue are Sanofi, Bristol-Myers Squibb Company, and AstraZeneca PLC. These companies operate within similar industries and often vie for market share and dominance.

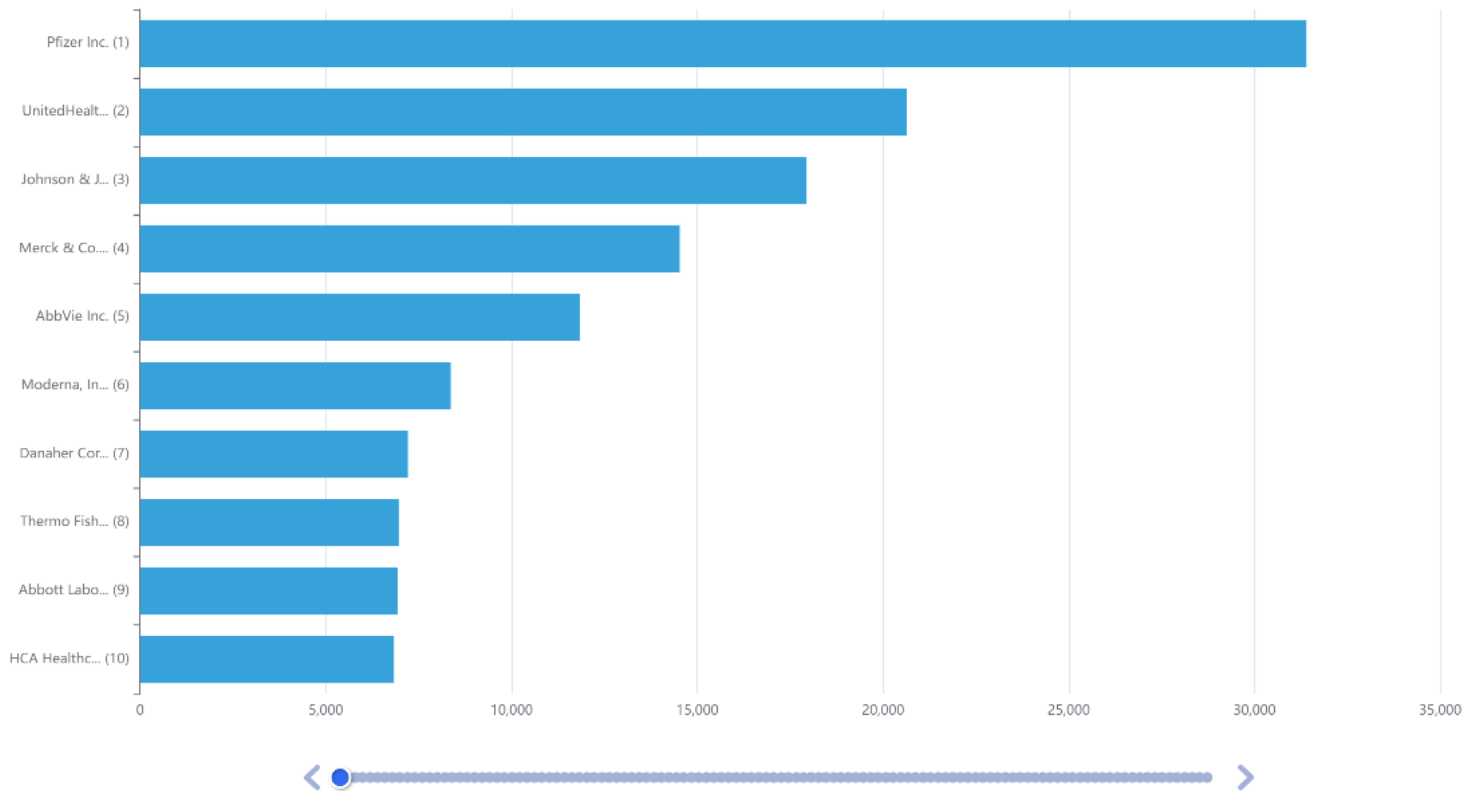
Supply Chain Mapping by Net Income - Pfizer Inc



- Pfizer Inc. faces stiff competition in net income from BioNTech SE, Sanofi, and Moderna, Inc. Each company has demonstrated significant success in the pharmaceutical and biotechnology sectors.

Enterprise Ranking - Net Income

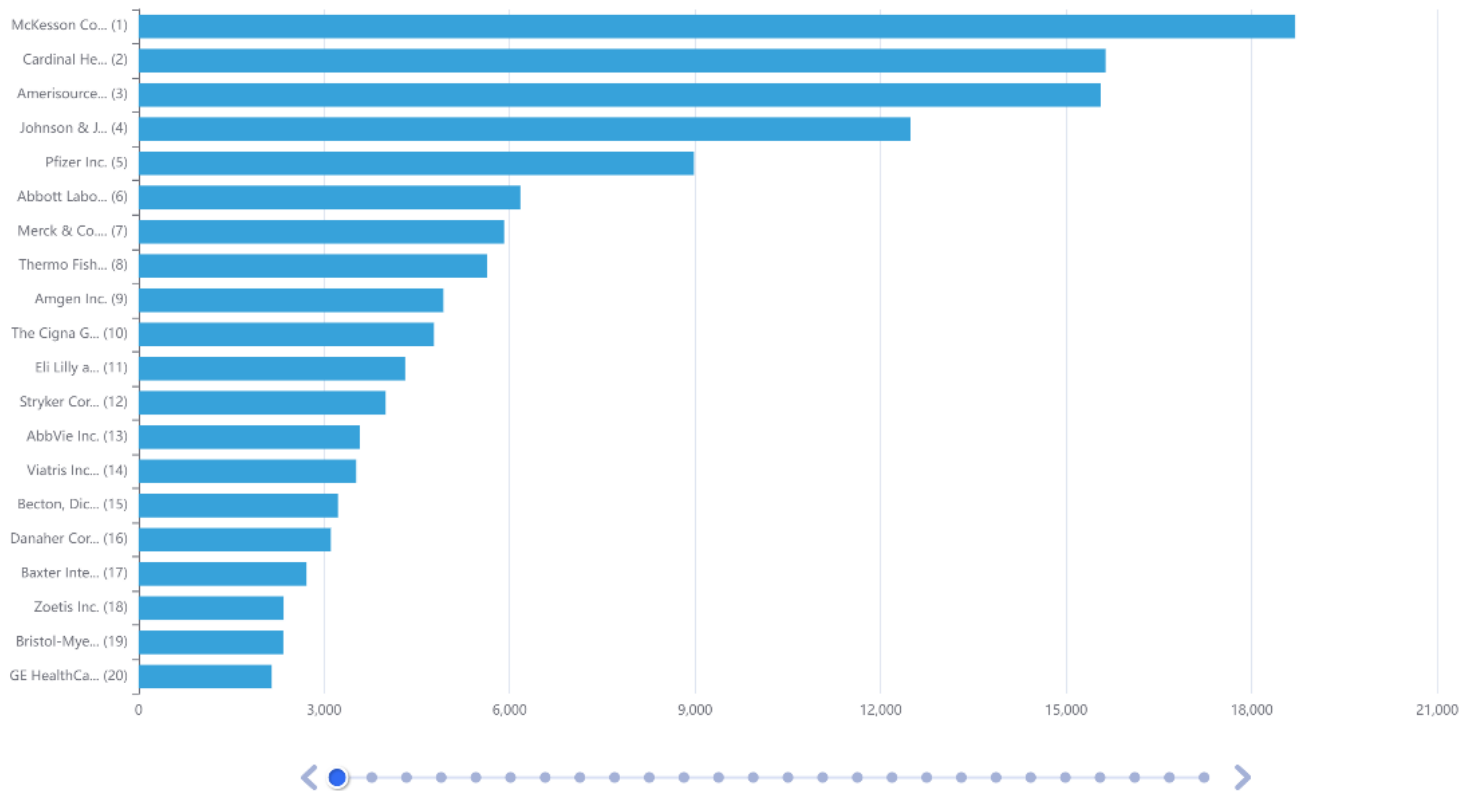
Enterprise Ranking - Net Income (Million USD)



- In the healthcare sector, the ranking based on net income places Pfizer Inc. at the forefront, leading with an impressive net income of \$31,401.00 USD. This indicates Pfizer's strong financial performance and profitability within the industry. Following closely behind is UnitedHealth Group Incorporated, with a substantial net income of \$20,639.00 USD, securing its position as a significant player in the healthcare sector.
- Meanwhile, Johnson & Johnson maintains the third-highest position in net income ranking, highlighting its continued financial strength and stability within the industry. These rankings reflect the financial health and competitive standing of these enterprises within the healthcare sector, with Pfizer Inc. emerging as the leader in net income.

Enterprise Ranking - Inventory

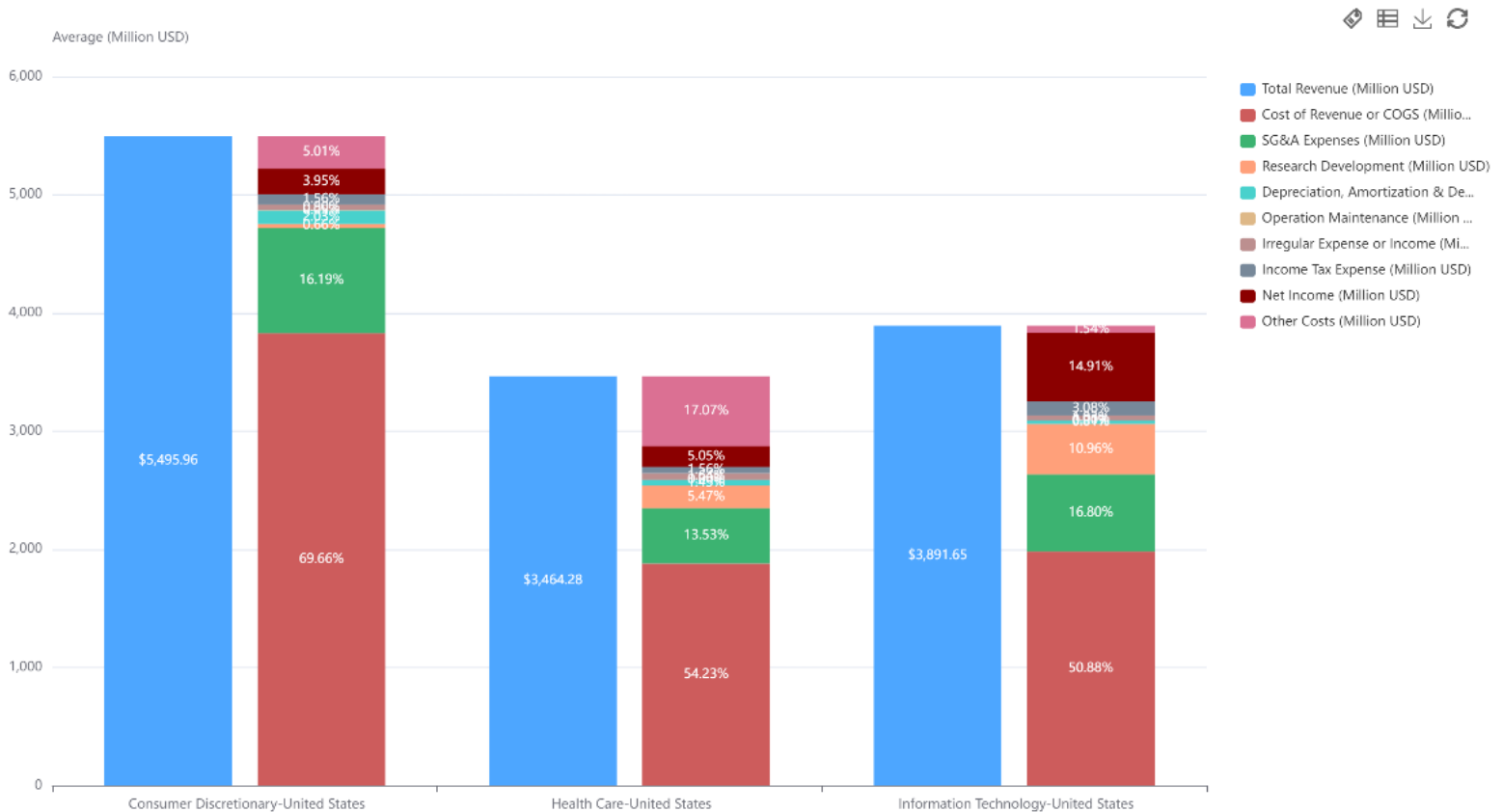
Enterprise Ranking - Inventory (Million USD)



- In the enterprise ranking based on inventory, Pfizer Inc. is positioned within the top 5, securing the 5th position. Leading the inventory ranking is McKesson Corporation, followed closely by Cardinal Health and AmerisourceBergen Corporation, showcasing their strong inventory management capabilities within the healthcare sector. Notably, Johnson & Johnson maintains the 4th top position in this inventory-wise ranking, underscoring its efficient inventory management practices.

- These rankings signify the diverse approaches and effectiveness of inventory management strategies among key players in the healthcare industry, with Pfizer Inc. demonstrating its competitive standing within the top 5.

Industrial Breakdown - Revenue

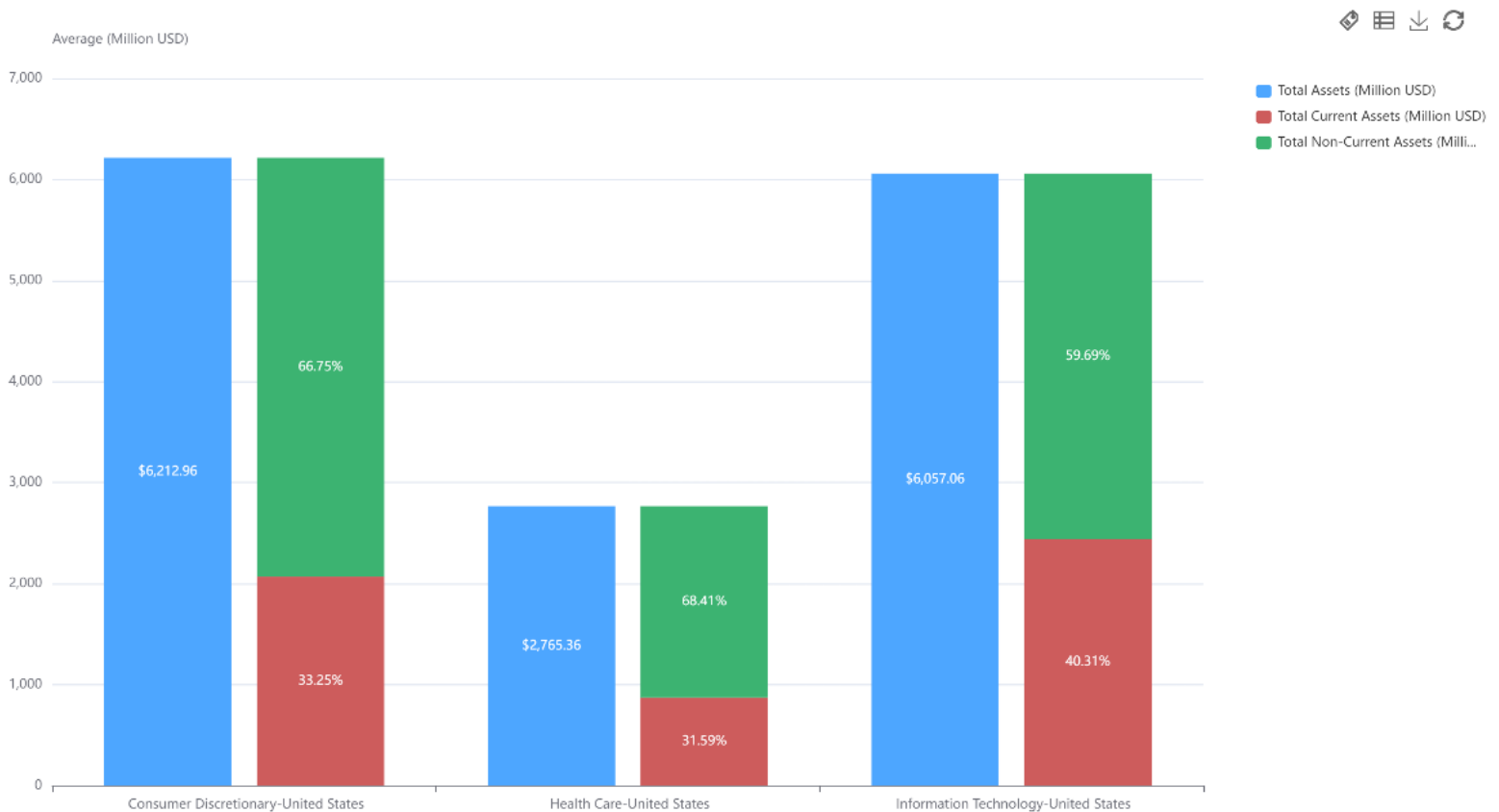


- In the sector-wise comparison for revenue breakdown, Consumer Discretionary stands out as the top revenue-generating sector, boasting a total revenue of \$5,495.96 overall. This sector encompasses industries related to non-essential goods and services, such as retail, automotive, and hospitality, reflecting strong consumer spending and economic activity. Following closely behind is the Information Technology sector, which includes companies involved in software development, hardware manufacturing, and telecommunications. This sector's revenue underscores the importance of technology in driving modern economies and innovation.

- In contrast, the healthcare sector registers the lowest revenue among these three sectors. Despite its critical role in

society, providing essential medical products and services, the comparatively lower revenue in the healthcare sector may be attributed to factors such as regulatory constraints, pricing pressures, and high research and development costs.

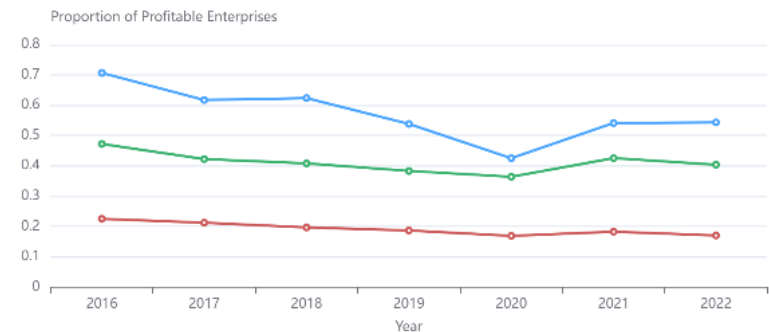
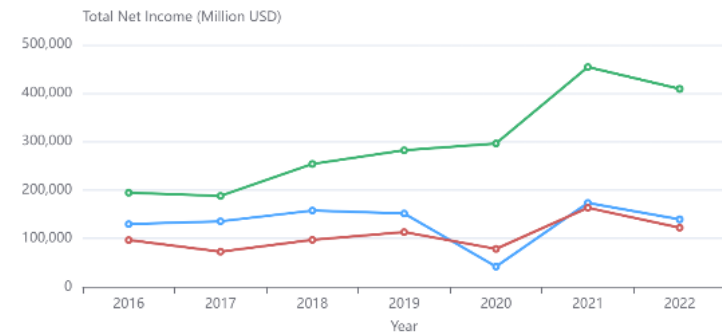
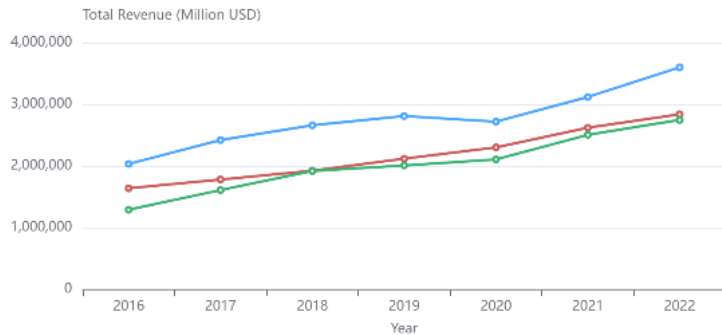
Industrial Breakdown - Assets



- In the sector-wise breakdown of assets, Consumer Discretionary emerges as the top sector with the highest total assets, amounting to \$6,212.96 USD. This sector encompasses various industries catering to non-essential goods and services, indicating substantial investments in tangible and intangible assets to support consumer demand and market competitiveness. Following closely behind is the Information Technology sector, with a total asset value of \$6,057.06 USD, highlighting the significance of technology-driven assets such as intellectual property, research and development, and infrastructure in driving innovation and market leadership. However, the Healthcare sector trails behind with significantly lower total assets, totaling \$2,765.36 USD. Despite its critical

role in society, this sector's lower asset value may reflect unique industry dynamics such as heavy reliance on intellectual property, regulatory constraints, and substantial investments in research and development. It's notable that among all three sectors, total non-current assets outweigh total current assets, indicating a strong focus on long-term investments and strategic assets to drive future growth and sustainability.

Industrial Trend - Industry Total Size

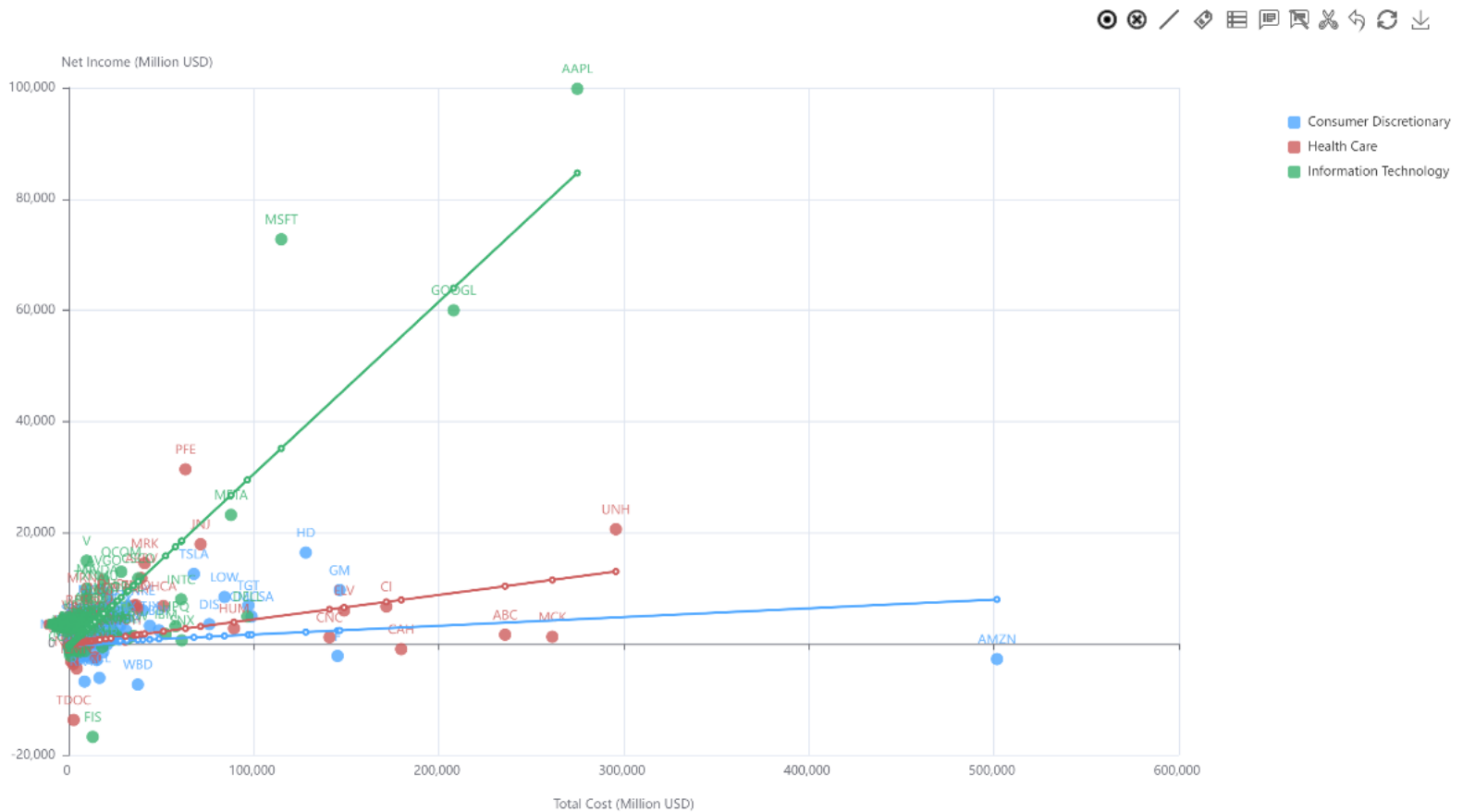


○ Consumer Discretionary ○ Health Care ○ Information Technology

- The industrial trend by total size across all three sectors shows an overall upward trajectory in Total Revenue, albeit with slight fluctuations in 2020 during the COVID-19 pandemic. Consumer sector revenue remains highest throughout, with Information Technology (IT) sector recording the lowest revenue. Similarly, the trend in Total Operating Income or Loss demonstrates an upward trajectory overall, again with 2020 fluctuations across all sectors. In 2020, the IT sector reports the highest operating income, while healthcare records the lowest.
- Total Net Income follows a similar trend to operating income/loss, with proportional fluctuations in 2020. Additionally, the proportion of profitable enterprises experiences a gradual decline until 2020, followed by a gradual rise from 2021

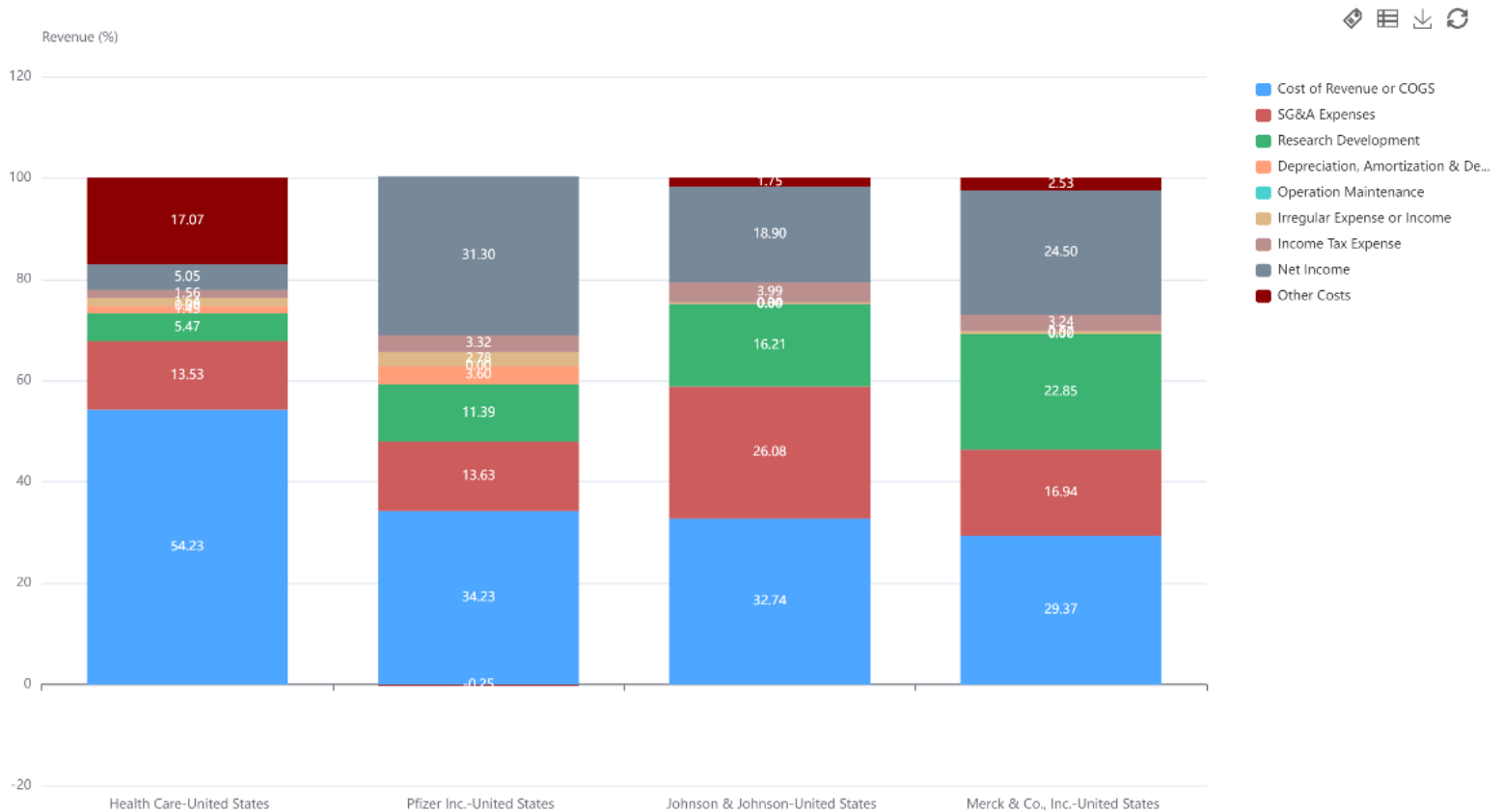
onwards. Among the sectors, Consumer sector enterprises report the highest profitability, while healthcare enterprises report the lowest

Profit vs. Cost - Net Income



- In Profit vs. Cost analysis based on Net Income for these three sectors, Information Technology (IT) emerges as the leader in Net Income, driven by companies like Apple, Microsoft, and Google, with outliers like Pfizer from the healthcare sector.
- However, Consumer Discretionary tops in total cost, prominently featuring companies like Amazon, despite lower net income. Some companies in the healthcare sector report net incomes under 20,000 million with total costs under 300,000, illustrating the diverse financial dynamics across these sectors.

Enterprise Breakdown - Revenue



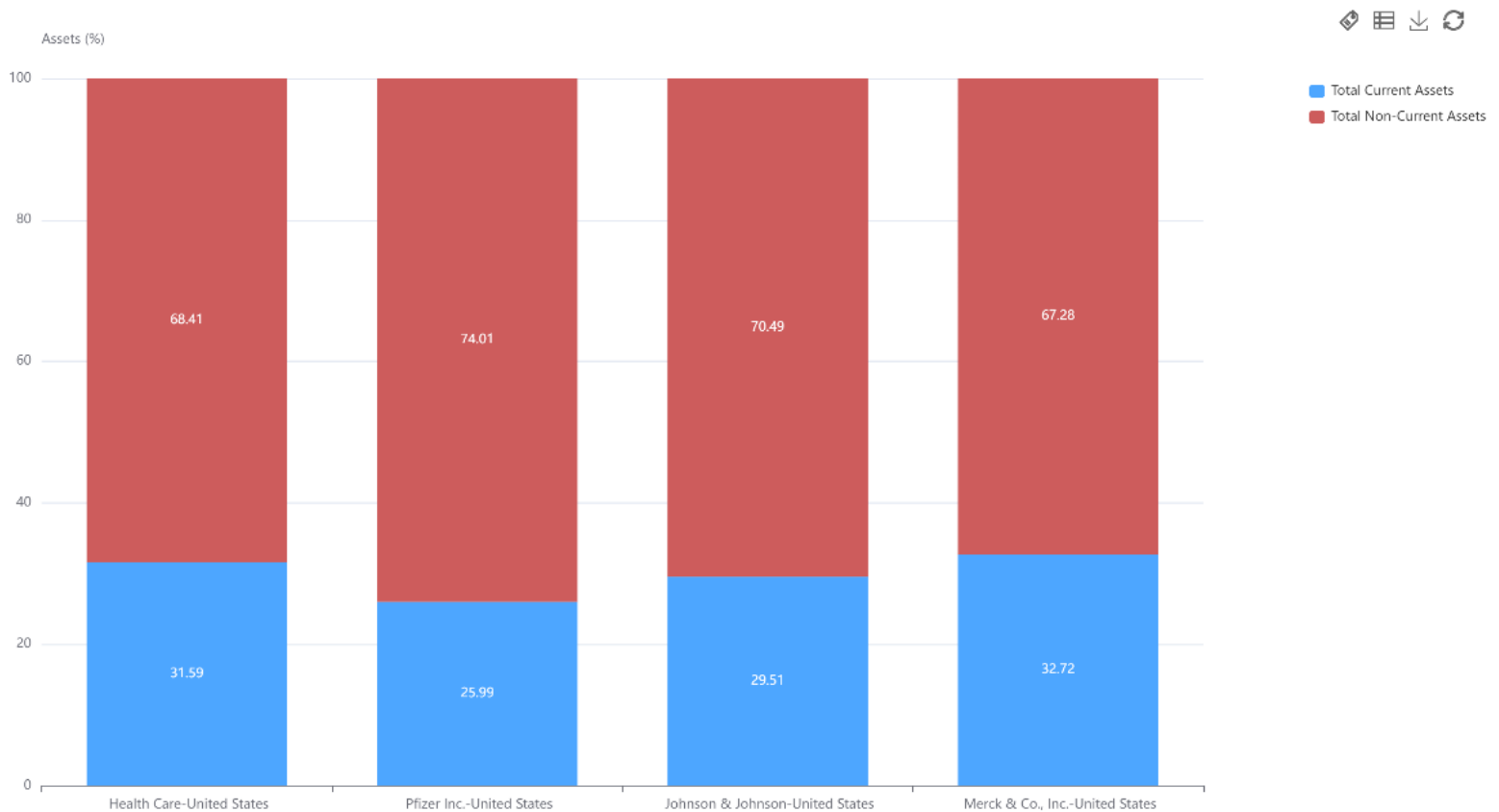
- Observing the top three healthcare enterprises in comparison with the sector overall reveals notable patterns.
- In the healthcare sector breakdown, cost of revenue accounts for 54.23%, SG&A expenses 13.53%, and other costs 17.07%, with remaining categories each under 10%.
- Pfizer allocates 34.23% to cost of goods sold (COGS), 31.30% to net income, 13.63% to SG&A expenses, and 11.39% to research and development, with other categories under 5% each. Exhibits a higher proportion of net income relative to its revenue breakdown, surpassing the sector average.
- Johnson & Johnson assigns 32.74% to COGS, 26.08% to SG&A expenses, 16.21% to research and development, and 18.90% to net income, with other categories under 5% each

with a significant share of net income compared to its peers.

- Meanwhile, Merck & Co. attributes 29.37% to COGS, 16.94% to SG&A expenses, 22.85% to research and development, and 24.50% to net income, with other categories under 5% each demonstrates a particularly strong focus on research and development, exceeding the sector's average allocation in this area.

- Overall, these top enterprises display varying strategic emphases within the healthcare sector, contributing to their distinct financial performances.

Enterprise Breakdown - Assets



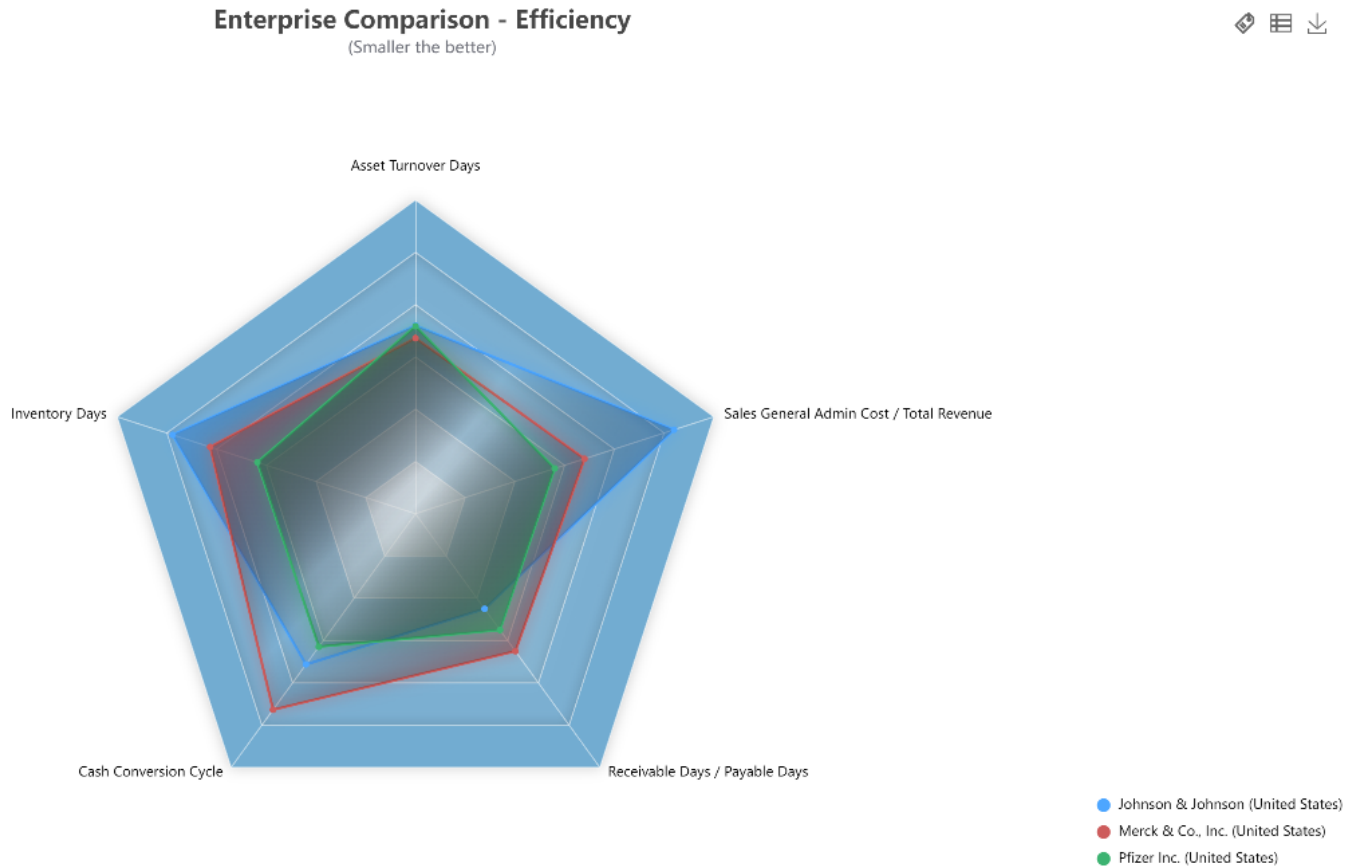
- Pfizer maintains a relatively lower proportion of total current assets compared to the healthcare sector overall, with 25.99% allocated to current assets. This suggests that Pfizer may have a more conservative approach to liquidity management, potentially prioritizing long-term investments over short-term liquidity.
- Johnson & Johnson's allocation of 29.51% to total current assets falls slightly below the healthcare sector average of 31.59%. This indicates a similar trend to Pfizer, implying a focus on long-term asset allocation rather than short-term liquidity.
- Merck & Co., on the other hand, allocates a higher proportion of total current assets compared to both Pfizer and Johnson & Johnson, with 32.72% dedicated to current

assets. This suggests that Merck & Co. may prioritize maintaining higher levels of short-term liquidity to meet immediate financial obligations or capitalize on short-term opportunities.

- In terms of non-current assets, all three enterprises closely align with the healthcare sector overall, with proportions ranging from 67.28% to 74.01%. This indicates a consistent emphasis on long-term investments and asset management strategies across the top healthcare enterprises.

- Overall, while there are variations in the allocation of current assets among Pfizer, Johnson & Johnson, and Merck & Co., all three enterprises demonstrate a strong focus on long-term asset management and investment within the healthcare sector.

Enterprise Comparison - Efficiency

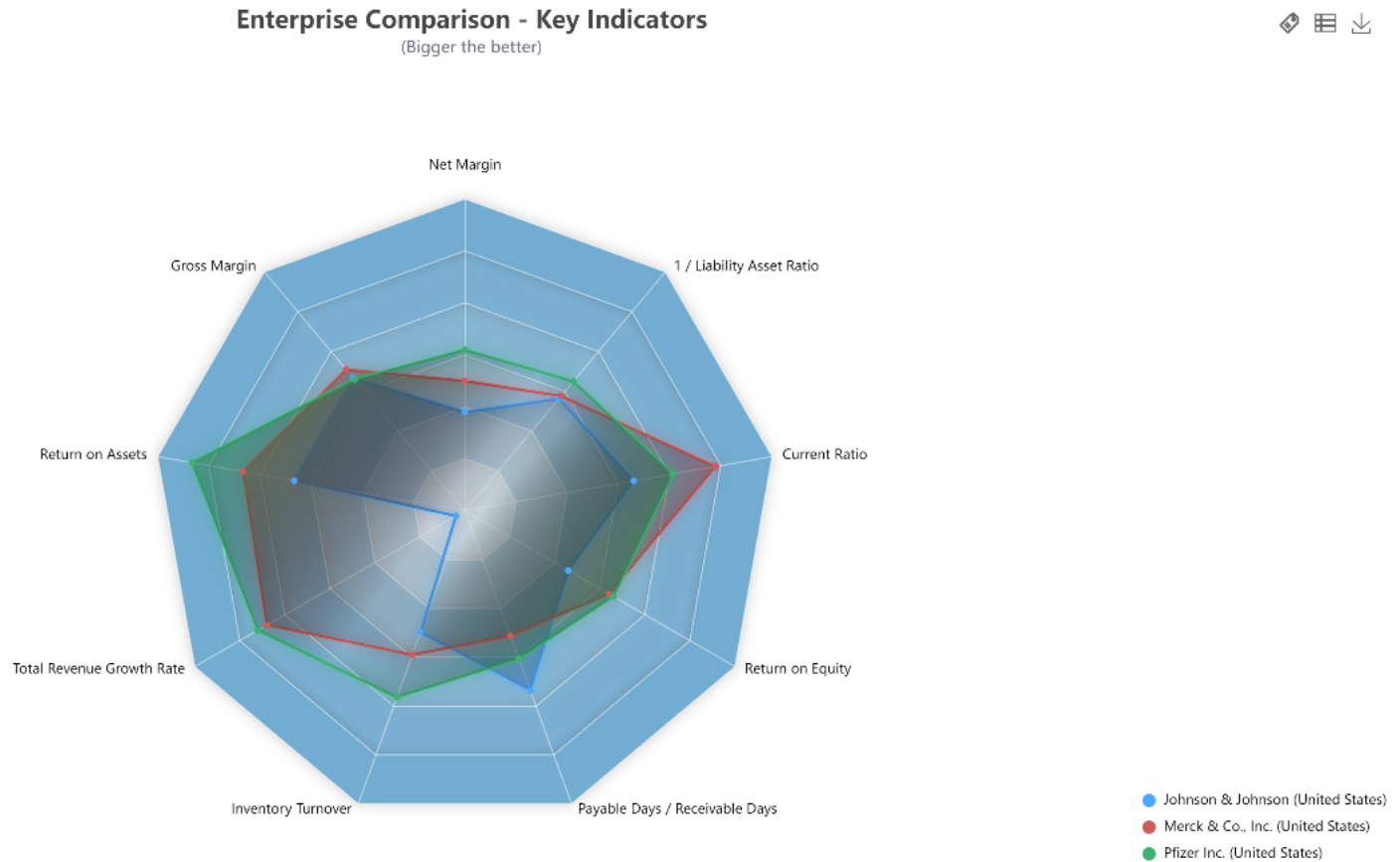


- Pfizer outperforms Johnson & Johnson and Merck & Co. in several efficiency metrics within the healthcare sector. It demonstrates superior performance in inventory days, cash conversion cycle, and the ratio of sales general admin cost to total revenue. These strengths indicate Pfizer's efficient inventory management and cost control measures.
- Johnson & Johnson excels in receivable days and payable days compared to Pfizer and Merck & Co., indicating efficient management of accounts receivable and payable, which can contribute to improved cash flow management and liquidity.
- Merck & Co. demonstrates slightly better efficiency in asset turnover days compared to Pfizer and Johnson & Johnson. However, it lags behind in metrics such as cash conversion cycle and the ratio of receivable/payable days, suggesting

areas for improvement in working capital management.

- In summary, Pfizer excels in inventory management and cost.

Enterprise Comparison - Key Indicators



- In key performance indicators, Pfizer demonstrates superior performance across metrics such as Return on Assets, Total Revenue Growth rate, Inventory Turnover, 1/Liability Asset ratio, and Net Margin. On the other hand, Merck & Co. outperforms Pfizer in metrics including Current Ratio and Gross Margin. However, Johnson & Johnson lags behind in most key indicators, yet it excels in the Payable Days/ Receivable Days metric.
- In summary, Pfizer leads in most key indicators, highlighting strong operational efficiency and profitability. Merck & Co. excels in liquidity and gross margin, while Johnson & Johnson stands out in managing accounts payable and receivable, despite lagging behind in other areas. Each company's focus on specific metrics reflects its unique

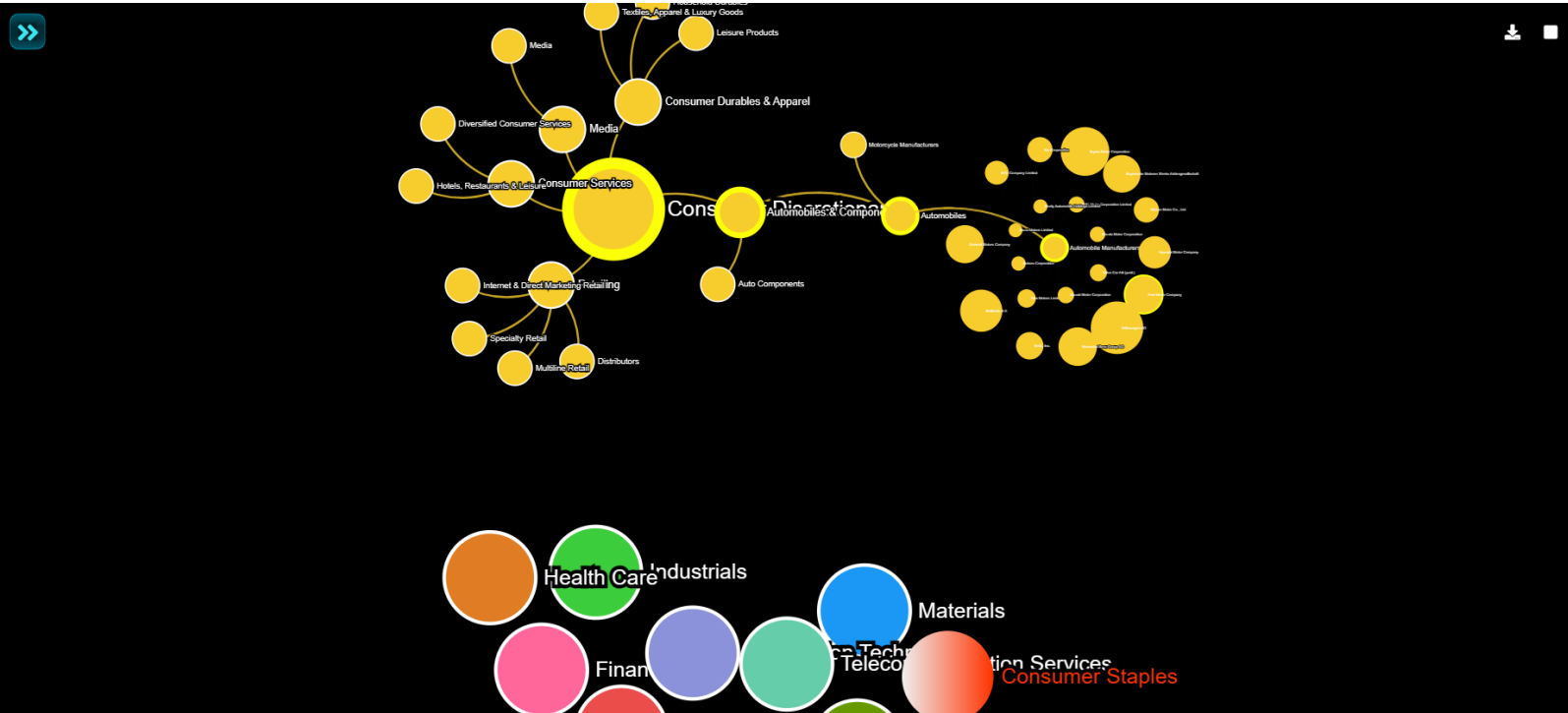
competitive advantage within the healthcare sector.

KPI Examination - Pfizer Inc.

Class	The Value of Pfizer Inc.	The Percentile Rank of Pfizer Inc.	90th Percentile	3rd Quartile (75th Percentile)	Median	1st Quartile (25th Percentile)	10th Percentile	Status	Unit
Profitability									
Gross Margin	0.657	0.62	0.91	0.77	0.57	0.31	0.1	Normal	
Net Margin	0.313	0.96	0.12	-0.02	-1.01	-8.62	-59.86	High	
Total Revenue	100330	0.99	1186.65	120.75	6.91	0	0	High	Million USD
Growth									
Total Revenue Growth Rate	0.234	0.69	1.19	0.34	0.09	-0.12	-0.74	Normal	
Financial Health									
Current Ratio	1.216	0.2	14.62	7.74	3.61	1.48	0.57	Low	
Liability Asset Ratio	0.513	0.6	1.64	0.75	0.42	0.19	0.09	Normal	
Efficiency									
Cash Conversion Cycle	62.926	0.48	327.45	189.29	73.43	-27.8	-491	Normal	Day
Inventory Days	95.448	0.3	705.08	297.66	163.32	79.6	27.98	Normal	Day
Inventory Turnover	3.824	0.7	12.89	4.56	2.2	1.2	0.4	Normal	
Payable Days	72.364	0.48	1683.69	278.64	76.09	39.43	20.24	Normal	Day
Payable Days / Receivable Days	1.816	0.62	22.89	3.65	1.19	0.63	0.31	Normal	
Receivable Days	39.843	0.29	145.62	84.18	57.36	34.29	10.25	Normal	Day
Return on Assets	0.159	0.96	0.05	-0.11	-0.4	-0.82	-1.97	High	
Return on Equity	0.327	0.97	0.12	-0.12	-0.5	-1.14	-3.18	High	

Overall, Pfizer exhibits a solid financial position characterized by strong profitability, moderate growth, sufficient liquidity, manageable debt levels, and efficient operations. Areas for potential improvement include increasing net profit margins and accelerating revenue growth to drive stronger performance.

Ford Motor Company

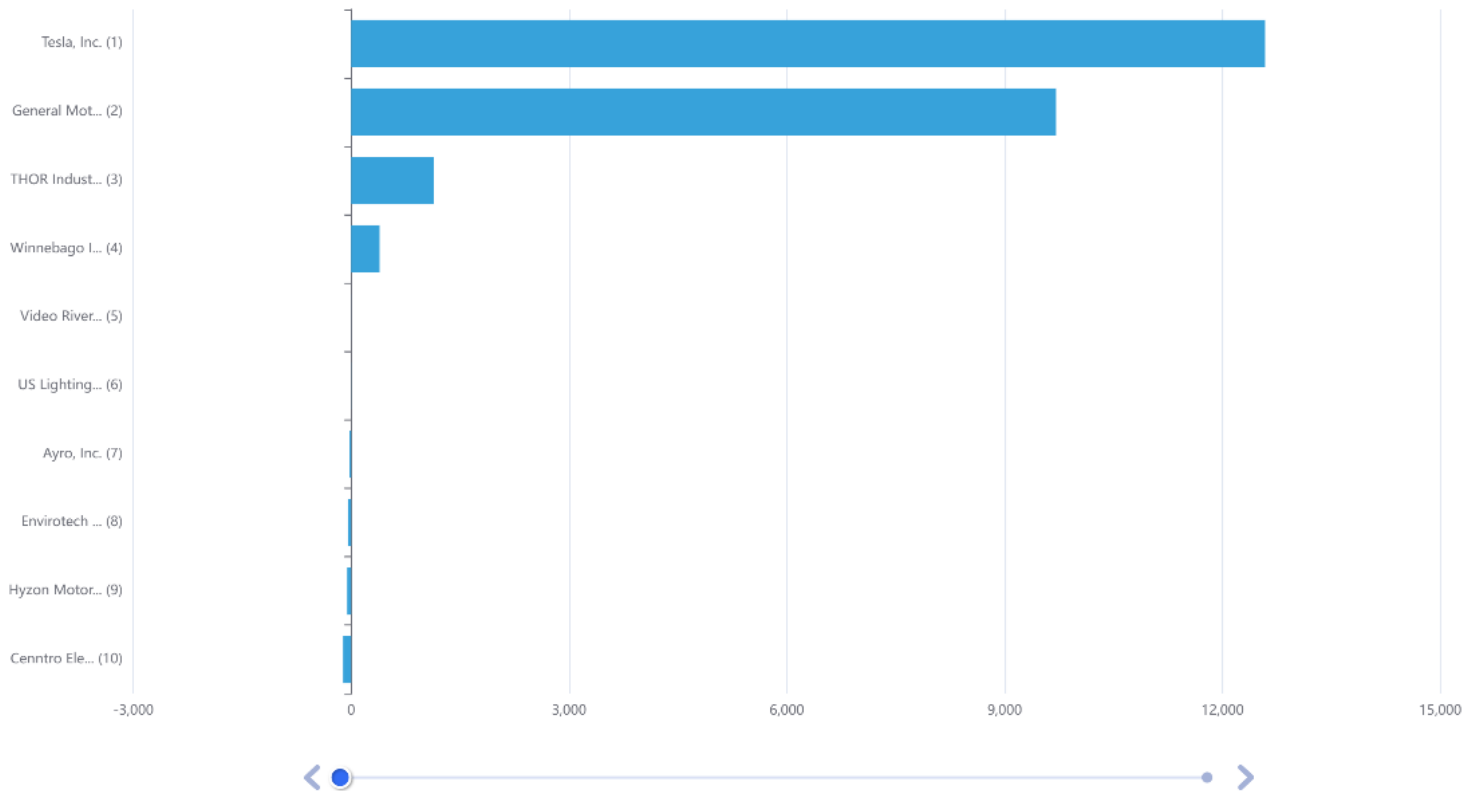


Using GCPS analyze the following for Ford Motor Company:

- Business Geographic Information System
- Industry Analysis
- Enterprise diagnosis

Enterprise Ranking - Net Income

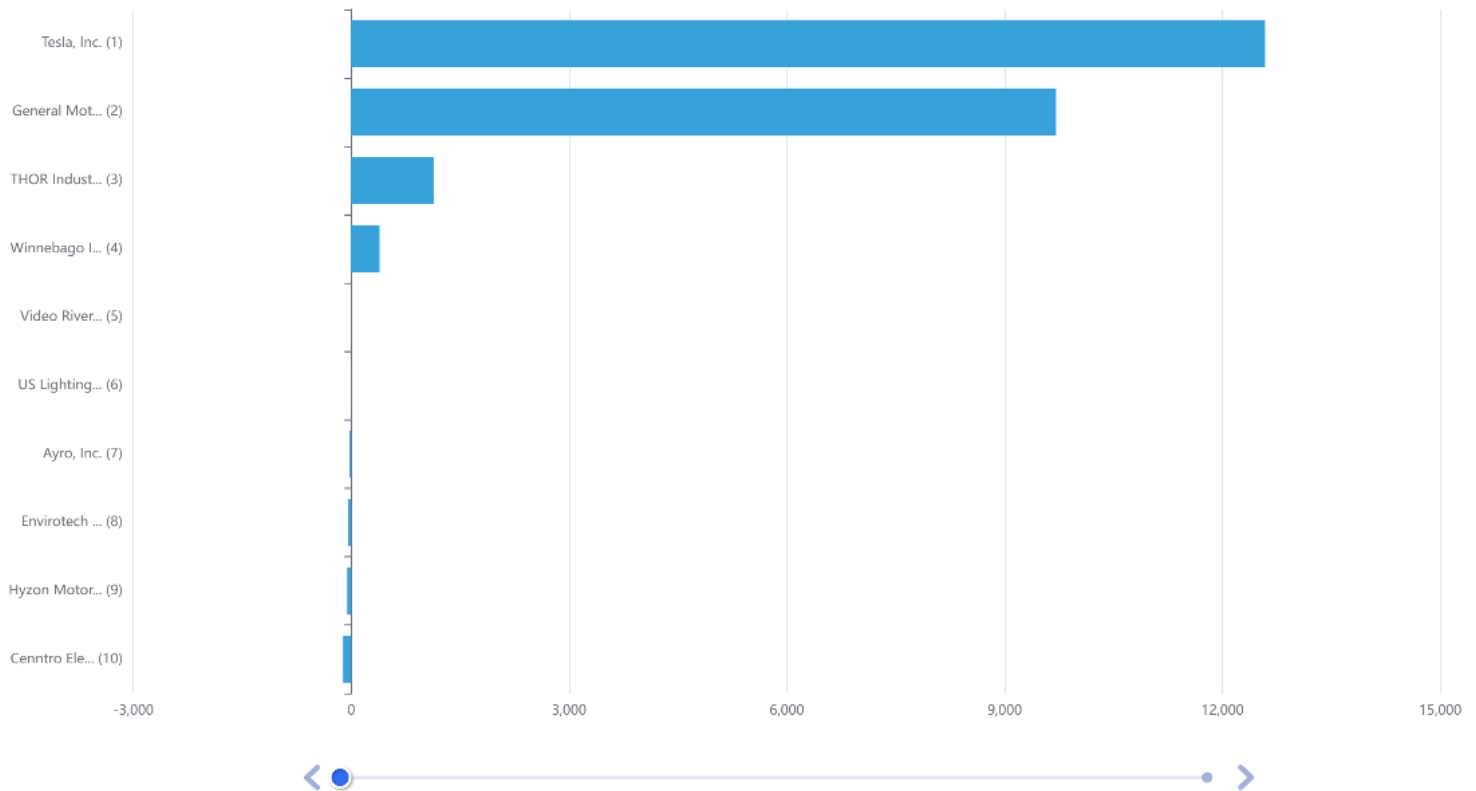
Enterprise Ranking - Net Income (Million USD)



The graph ranks companies by their net income in million US dollars. Tesla, Inc. has the highest net income, significantly outpacing the other companies, with a net income more than 12,000 million USD (12 billion USD). General Motors follows with a net income of around 9,000 million USD (9 billion USD). THOR Industries, Winnebago Industries, Video River Networks, US Lighting Group, all show low incomes, substantially less than those of Tesla and General Motors. The other companies Ayro Inc. Envirotech Vehicles, Hyzon Motors, and Cenntro Electric Group appear to have negative net incomes, with Cenntro having the most significant negative value.

Enterprise Ranking - Net Income

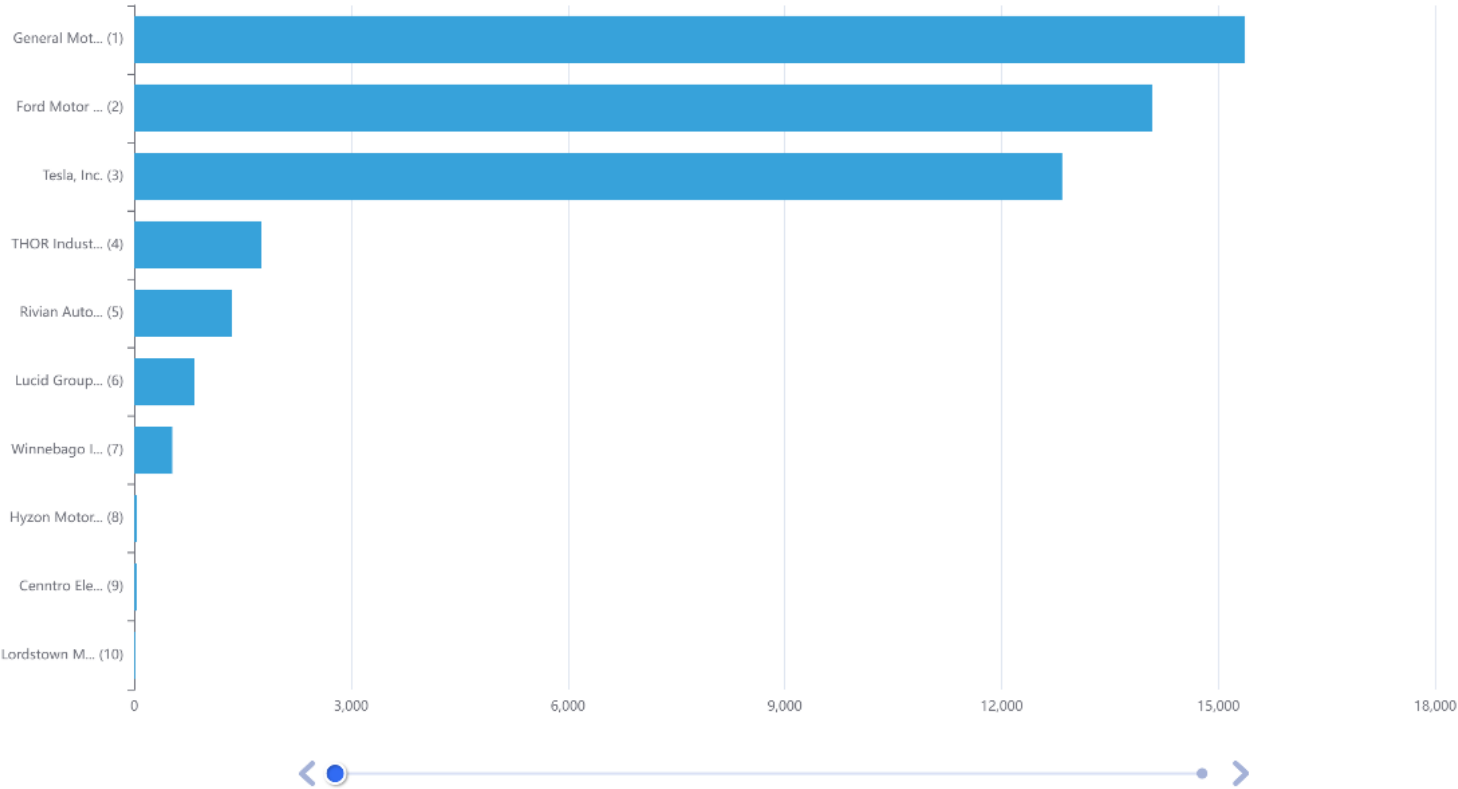
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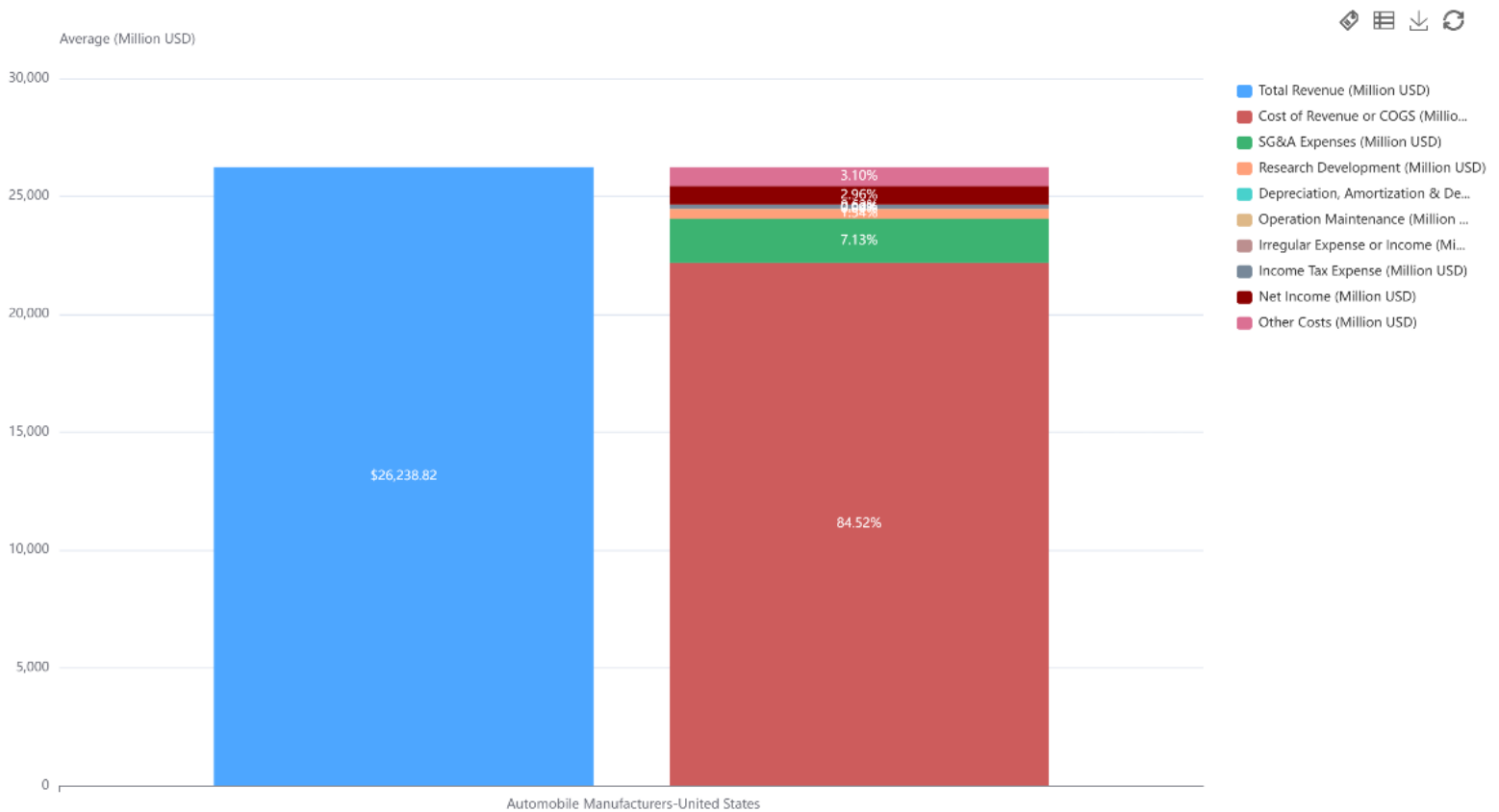
Enterprise Ranking - Inventory

Enterprise Ranking - Inventory (Million USD)



The graph ranks different enterprises based on their inventory values in million US dollars. General Motors is ranked first with an inventory value that's just over 15,000 million USD (18 billion USD). Ford Motor Company is a close second, with inventory valued slightly less than General Motors. Tesla, Inc. has the third-largest inventory, more than 12,000 million USD. Each of the companies listed from fourth to tenth has an inventory value less than 3,000 million USD.

Industrial Breakdown - Revenue



The stacked bar chart depicting various financial metrics for automobile manufacturers in the United States, all in million USD. The graph is composed of two main bars. The blue bar represents the Total Revenue, which totals \$26,238.82 million (or \$26.24 billion). The red bar represents several costs and expenses, along with net income, which are stacked on top of each other, accounting for the total revenue.

The red bar's components are broken down as follows:

The majority of the bar, 84.52%, represents the Cost of Revenue or COGS (Cost of Goods Sold). SG&A Expenses (Selling, General & Administrative Expenses) make up 7.13%.

A small sliver of 0.99% is for Research Development.

Depreciation, Amortization & Depletion is 2.96%.

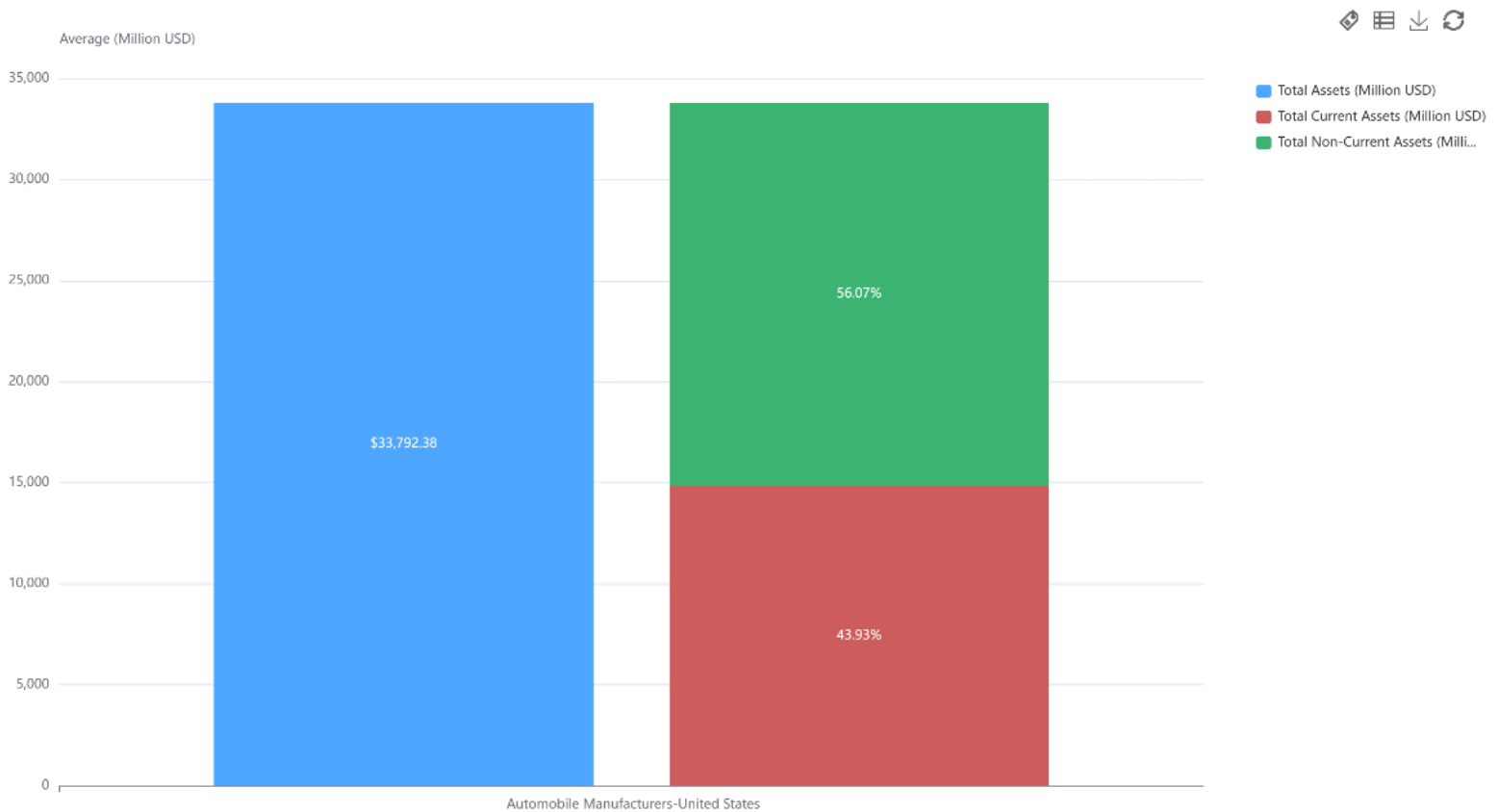
A very thin line, indicating a minimal amount, is for Operation Maintenance.

Irregular Expense or Income is 0.09%

Income Tax Expense constitutes 0.62%.

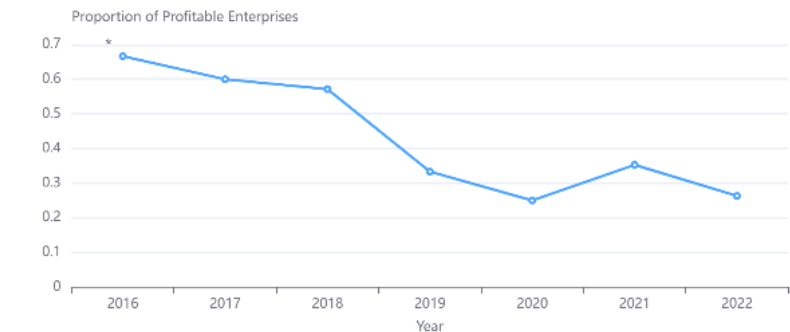
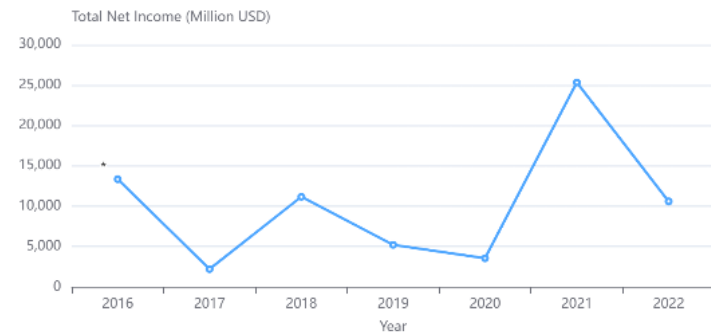
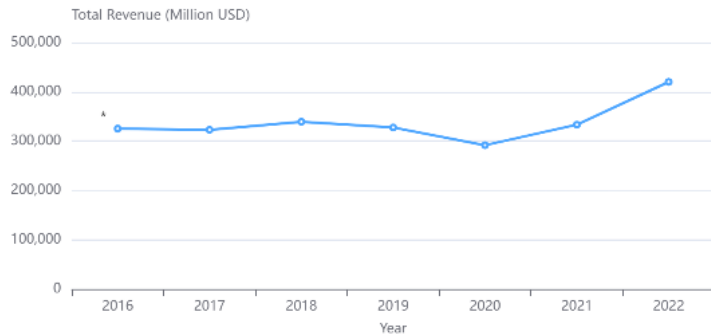
There is a mention of Other Costs which is 3.10%

Industrial Breakdown - Assets



The graph illustrates the composition of assets for automobile manufacturers in the United States, showing two types of assets in million USD: The blue bar represents Total Assets, amounting to \$33,792.38 million (or approximately \$33.79 billion). The green and red stacked bar divides the total assets into Total Current Assets (red portion: 43.93% of the total assets.) and Total Non-Current Assets (green portion: 56.07% of the total assets).

Industrial Trend - Industry Total Size



Automobile Manufacturers

* These KPI and Year combination(s) have a sample size smaller than 5.

The graph displays a set of four line graphs relating to the automobile manufacturing industry over a period from 2016 to 2022:

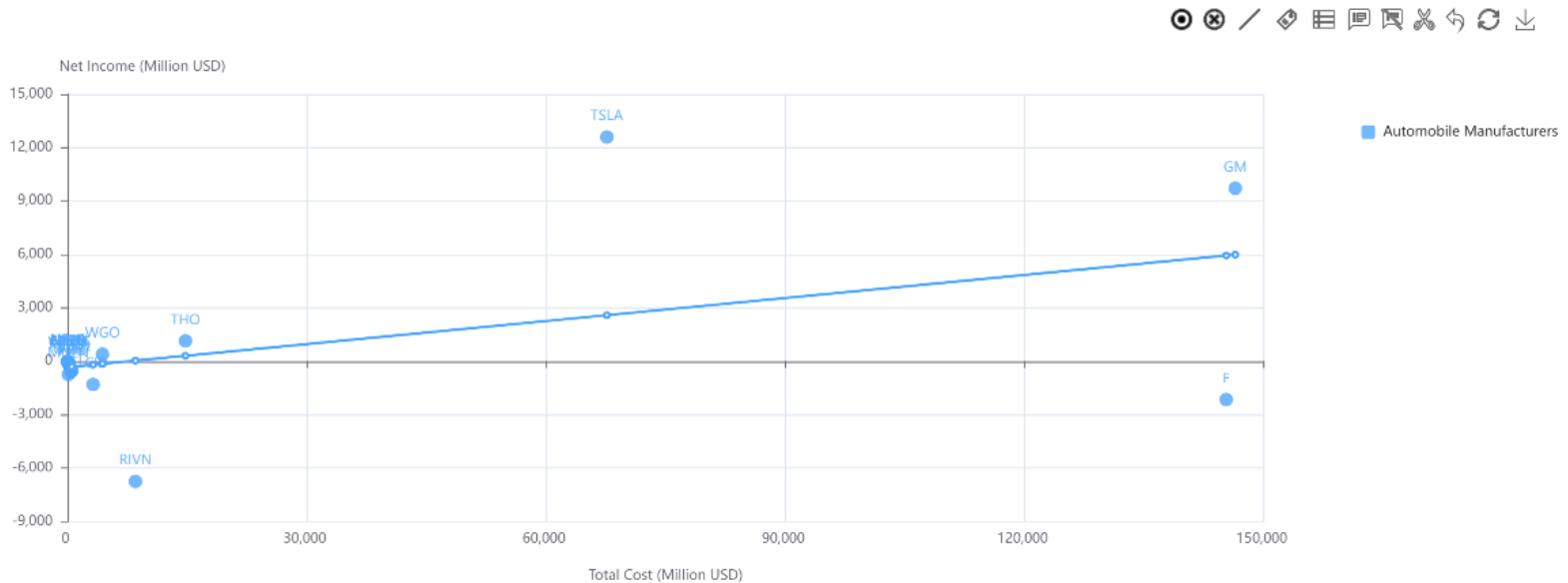
1) Total Revenue (Million USD): This graph shows a generally increasing trend in revenue over the years, with a notable dip around 2020. By 2022, the revenue has increased significantly, surpassing previous years.

2) Total Operating Income or Loss (Million USD): This graph also shows an increasing trend with some fluctuations. There was a sharp fall in operating income or an increase in loss in 2020, but there was a substantial recovery in the following years, reaching the highest point in 2022.

3)Total Net Income (Million USD): The net income graph is more volatile, with a substantial drop in 2017, a peak in 2021, and a decline again in 2022. The trend suggests that while revenue and operating income have increased, net income has not consistently followed the same upward trajectory.

4)Proportion of Profitable Enterprises: This graph shows a decreasing trend from 2016 onwards. The proportion of profitable enterprises started at around 70% and has declined to just above 20% by 2022. This indicates that despite increases in total revenue and operating income, a smaller percentage of companies are actually profitable.

Profit vs. Cost - Net Income

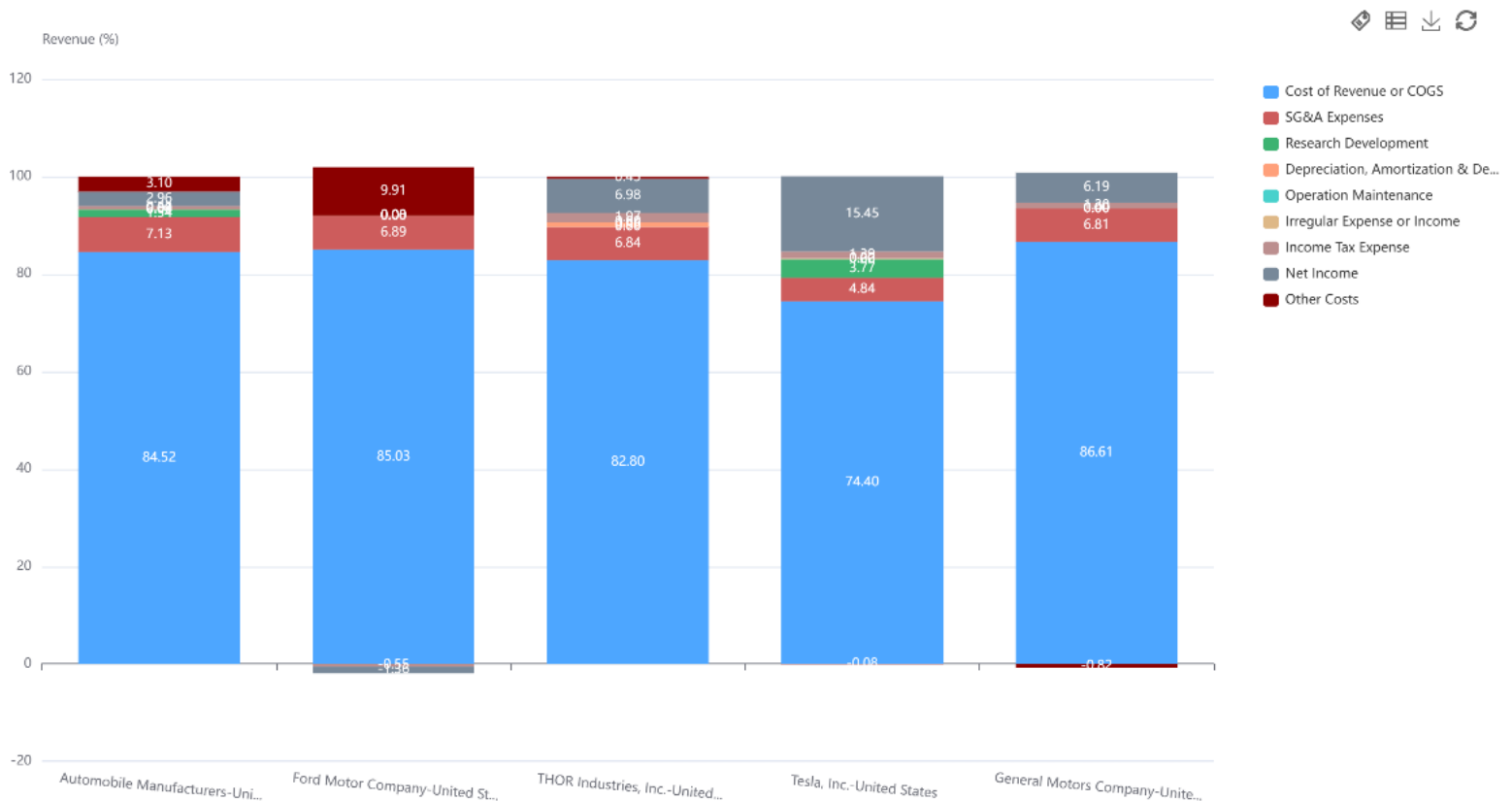


The graph plots the relationship between total cost and net income for various companies, in the automotive sector. The x-axis represents the total cost in million USD, and the y-axis represents the net income in million USD. Each point represents a different company.

Tesla (TSLA) has both high total cost and very high net income, positioned in the top-right corner of the plot. General Motors (GM) also has a high total cost, but its net income is less than that of Tesla. Ford (F) is further to the right, suggesting a high total cost, but its net income is lower than GM's, indicating less efficiency in converting costs to net income or potentially higher costs relative to revenue. Winnebago (WGO) and Thor Industries (THO) are clustered together with lower costs and moderate net income. Rivian (RIVN) is shown below the x-axis, indicating a net loss rather than net income, as its point is in the negative range for the net income axis. The trend line suggests that, generally, as total costs increase, net income also tends to increase. This could reflect economies of scale or effective cost

management translating into higher profits. However, it's important to note that higher costs do not always lead to proportionally higher net incomes, as seen with the variance between companies like Ford and Tesla.

Enterprise Breakdown - Revenue



The graph shows comparative stacked bar chart showing the breakdown of revenue percentages for the automobile manufacturers in the United States, top 3 enterprises in automobile and the Ford Motor Company. Each bar represents different components that contribute to the total revenue, segmented by color.

Automobile Manufacturers-United States: Majority is the cost of revenue or COGS at 84.52%, with SG&A expenses at 7.13%, followed by smaller segments for Depreciation, Research Development, and Other Costs, with a slight negative value in Net Income.

Ford Motor Company: Similar structure with COGS at

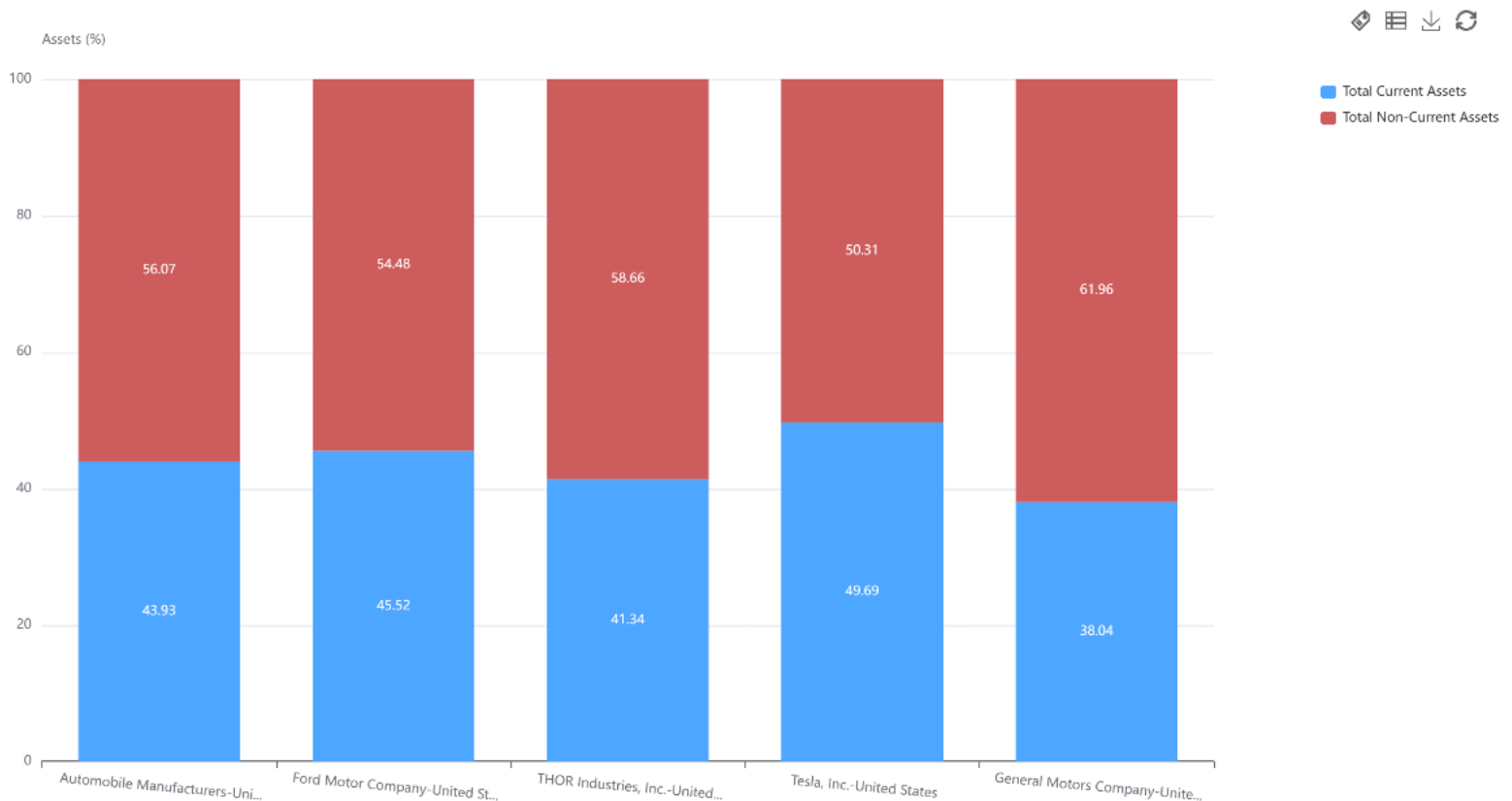
85.03%, SG&A expenses at 6.89%, and a notable segment of Other Costs at 9.91%, which leads to a negative value in Net Income.

THOR Industries: COGS at 82.80%, SG&A at 6.84%, with relatively smaller amounts for Depreciation and Other Costs.

Tesla, Inc.: Shows a lower COGS at 74.40%, SG&A at 4.84%, with significant segments for Depreciation and Other Costs.

General Motors Company: Has the highest COGS at 86.61%, SG&A at 6.81%, a moderate amount for Depreciation, and the smallest segment for Other Costs, leading to a negative Net Income.

Enterprise Breakdown - Assets



The bar chart compares the composition of current and non-current assets as a percentage of total assets for various automobile manufacturers, including an aggregate for United States automobile manufacturers, Ford Motor Company, THOR Industries, Tesla, Inc., and General Motors Company.

Total Current Assets:

The aggregate for US automobile manufacturers has 43.93% of their assets in current assets.

Ford Motor Company has a slightly higher percentage of current assets at 45.52%.

THOR Industries has the lowest percentage of current assets at 41.34%.

Tesla, Inc., has a more balanced approach with 49.69% in current assets.

General Motors Company has the highest proportion of current assets at 38.04%.

Total Non-Current Assets:

US automobile manufacturers' aggregate has 56.07% in non-current assets.

Ford Motor Company shows 54.48% in non-current assets.

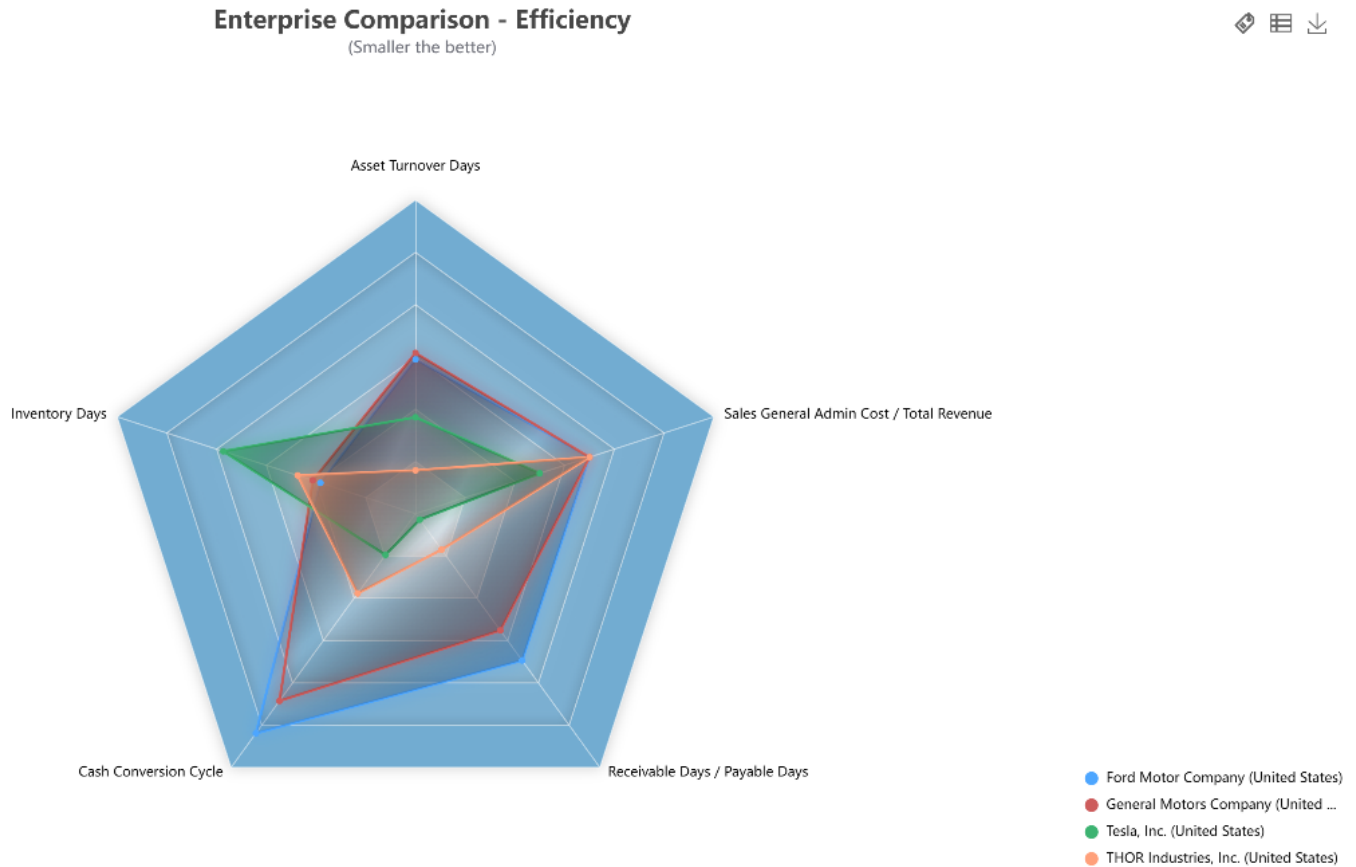
THOR Industries has a higher proportion of non-current assets at 58.66%.

Tesla, Inc., has a slightly higher proportion of non-current assets at 50.31%.

General Motors Company has the largest portion of non-current assets at 61.96%.

The chart suggests that General Motors Company has a significantly higher investment in long-term assets compared to other entities, which could imply a focus on long-term operational capacity or investments. In contrast, Tesla, Inc., maintains a more balanced distribution between current and non-current assets, indicating a flexible asset structure. THOR Industries, with a higher proportion in non-current assets, might be more invested in long-term assets relative to its size, possibly reflecting a strategy focused on future growth or stability.

Enterprise Comparison - Efficiency



The radar chart shows a comparison of efficiency metrics of Top 3 enterprise General Motors Company, Tesla, Inc., and THOR Industries, Inc. along with Ford Motor Company,

Each axis on the radar chart represents a different efficiency metric:

Asset Turnover Days

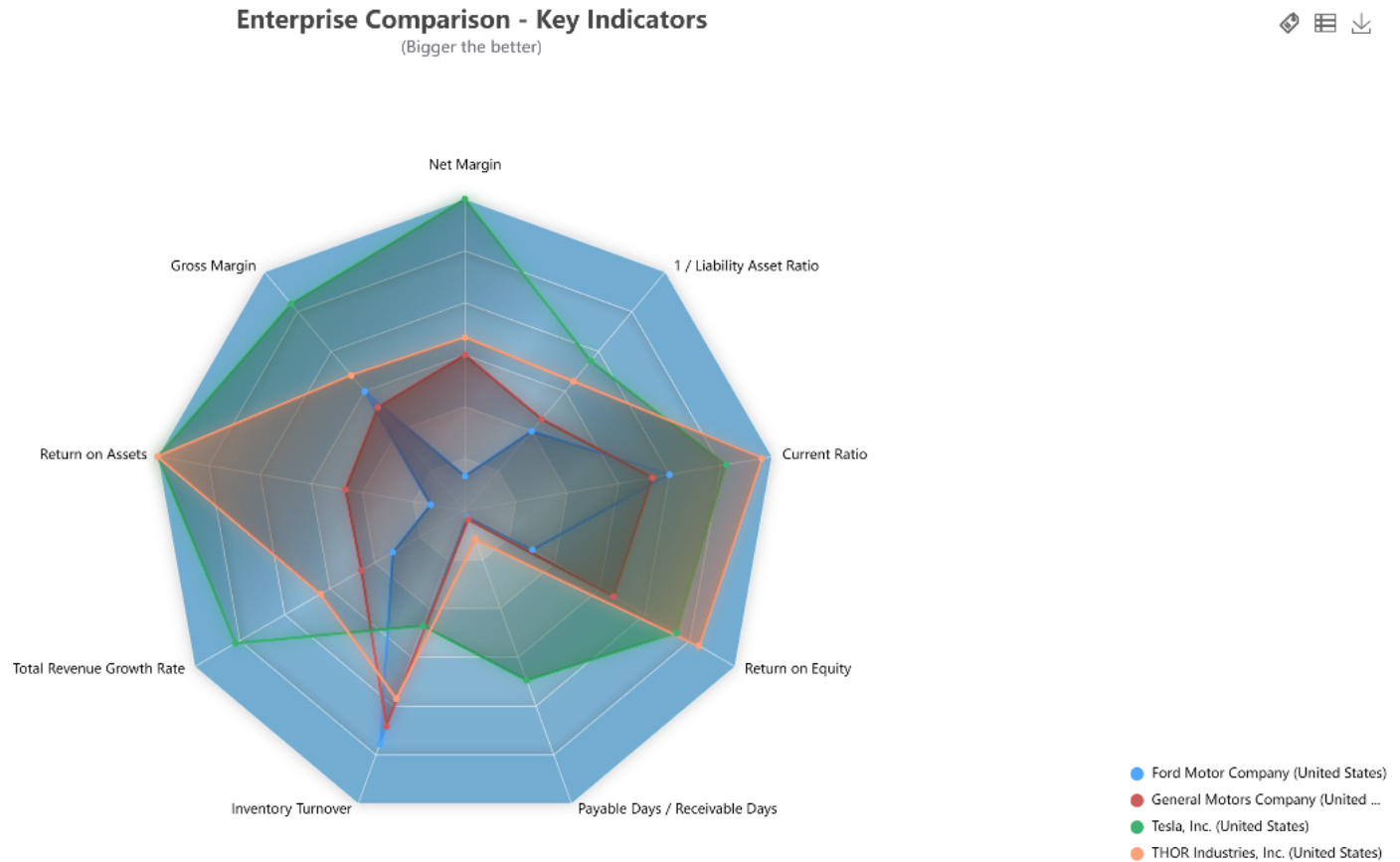
Inventory Days

Cash Conversion Cycle

Sales General Admin Cost / Total Revenue

Receivable Days / Payable Days

Enterprise Comparison - Key Indicators



The radar chart shows a comparison of key indicators of Top 3 enterprise General Motors Company, Tesla, Inc., and THOR Industries, Inc. along with Ford Motor Company,

Each axis on the radar chart represents a different key indicator:

Gross Margin
Net Margin
Return on Equity
Return on Assets
Total Revenue Growth Rate
Inventory Turnover
Payable Days / Receivable Days

Current Ratio
1 / Liability Asset Ratio

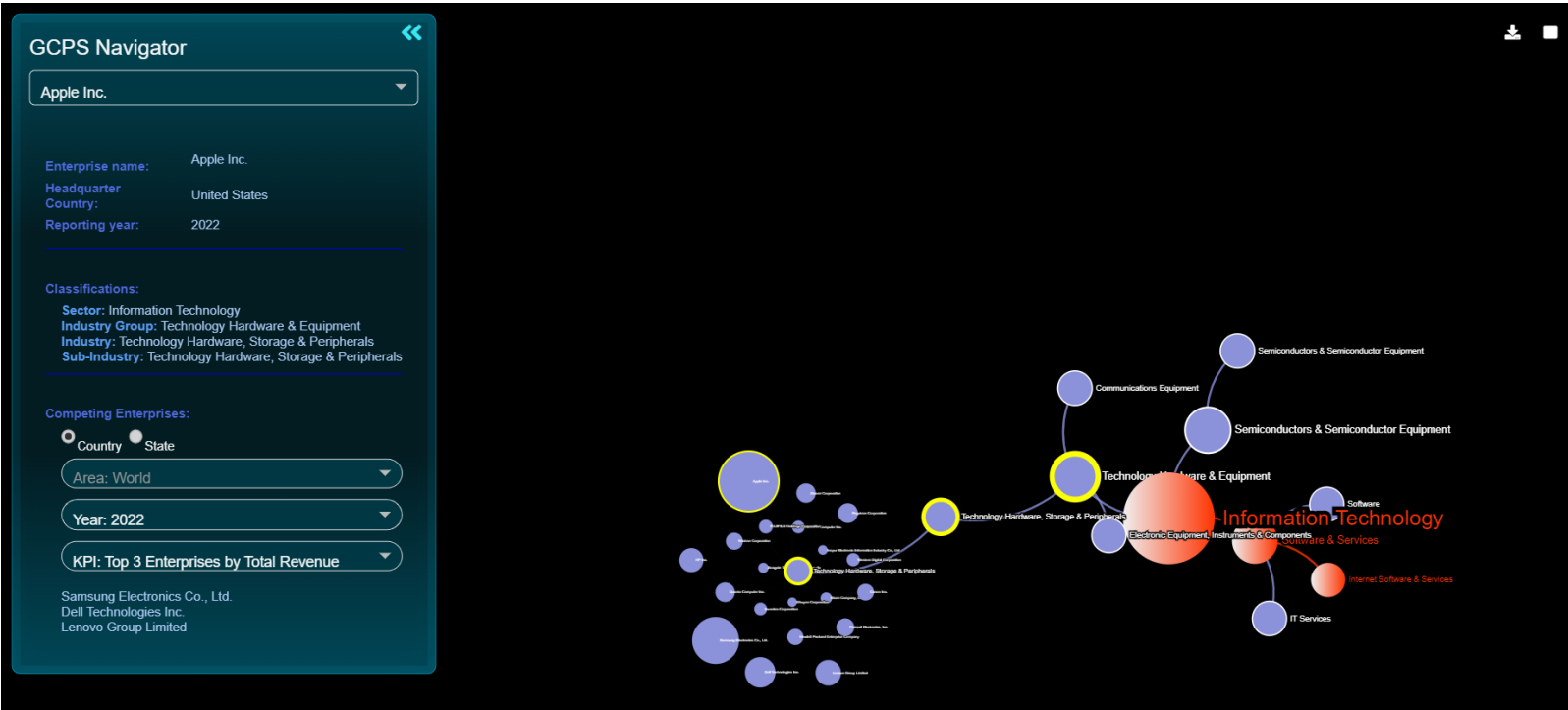
KPI Examination - Ford Motor Company

Class	The Value of Ford Motor Company	The Percentile Rank of Ford Motor Company	90th Percentile	3rd Quartile (75th Percentile)	Median	1st Quartile (25th Percentile)	10th Percentile	Status	Unit
Profitability									
Gross Margin	0.149	0.11	0.69	0.51	0.37	0.23	0.13	Low	
Net Margin	-0.014	0.4	0.14	0.09	0.02	-0.21	-1.53	Normal	
Growth									
Total Revenue Growth Rate	0.159	0.52	0.79	0.37	0.15	0.03	-0.11	Normal	
Financial Health									
Current Ratio	1.202	0.36	4.44	2.47	1.53	0.88	0.37	Normal	
Liability Asset Ratio	0.831	0.7	1.35	0.89	0.67	0.46	0.27	Normal	
Efficiency									
Inventory Days	38.238	0.31	244.31	149.68	87.55	27.24	4.61	Normal	Day
Inventory Turnover	9.545	0.7	78.64	13.19	4.16	2.4	1.44	Normal	
Payable Days	69.538	0.72	155.76	75.36	42.72	22.88	12.03	Normal	Day
Payable Days / Receivable Days	0.288	0.06	21.13	7.06	2.04	0.83	0.41	Low	
Receivable Days	240.979	0.98	86.1	54.38	23.7	6.91	2.71	High	Day
Return on Assets	-0.009	0.44	0.15	0.08	0.02	-0.16	-0.73	Normal	
Return on Equity	-0.05	0.36	0.42	0.24	0.07	-0.24	-1.08	Normal	
Cash Conversion Cycle	209.679	0.91	196.2	108.44	41.04	-5.35	-76.04	High	Day

- $1/\text{Liability Asset Ratio} = 1/0.831 = 1.203$

- Overall, while Ford exhibits moderate revenue growth and efficient inventory management, the company is currently unprofitable with low margins, high debt levels, an extended cash conversion cycle, and negative returns on invested capital. Improving profitability, managing debt, and optimizing working capital should be priorities to strengthen financial performance.

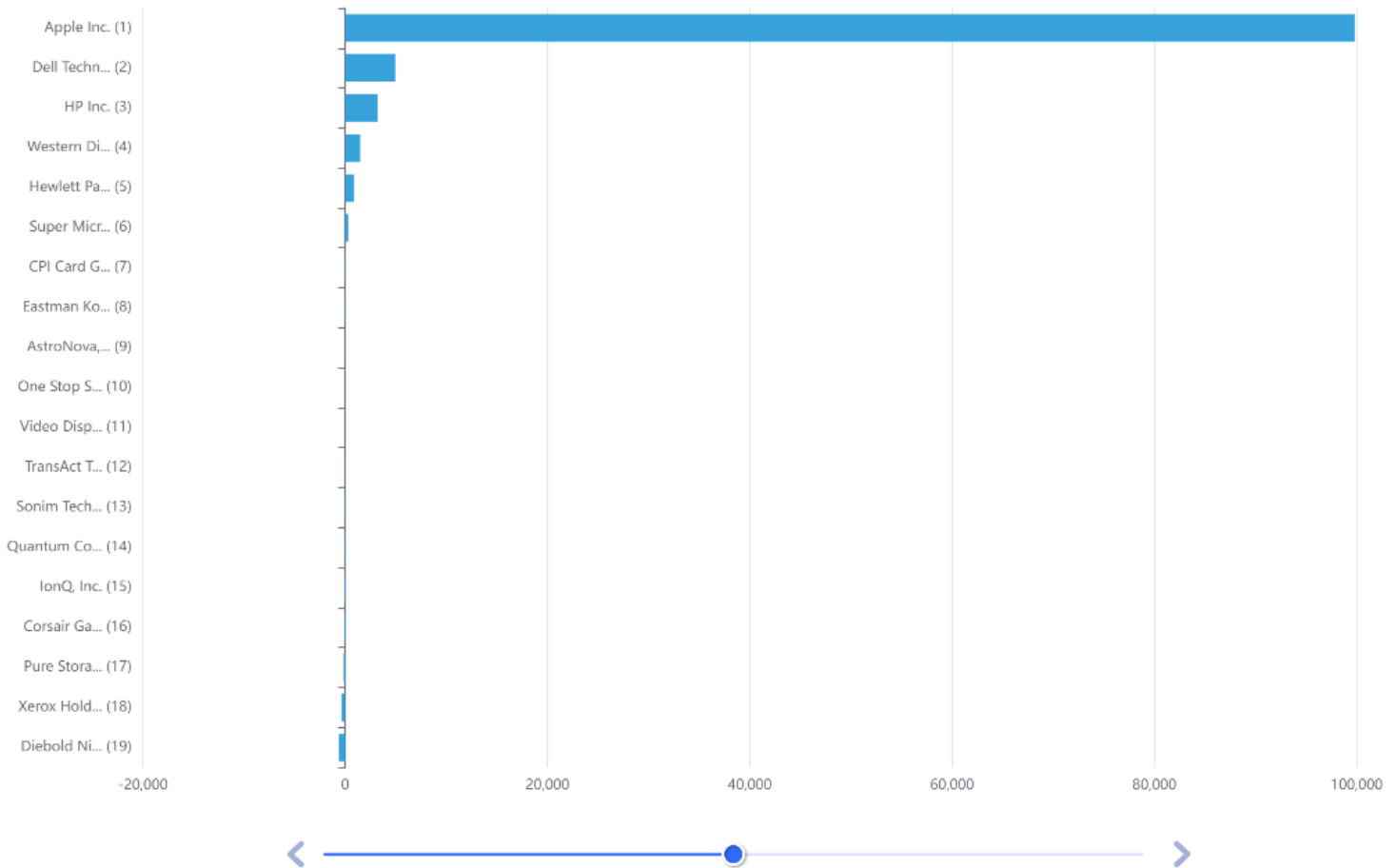
APPLE INC. - TECHNOLOGY HARDWARE, STORAGE & PERIPHERALS



- In the Technology Hardware, Storage & Peripherals industry, Apple Inc. stands out as the foremost company in terms of total net income within the United States.
- Additionally, it secures a position among the top three enterprises globally by total revenue in the year 2022.

Enterprise Ranking - Net Income - Apple Inc. & Technology Hardware, Storage & Peripherals

Enterprise Ranking - Net Income (Million USD)

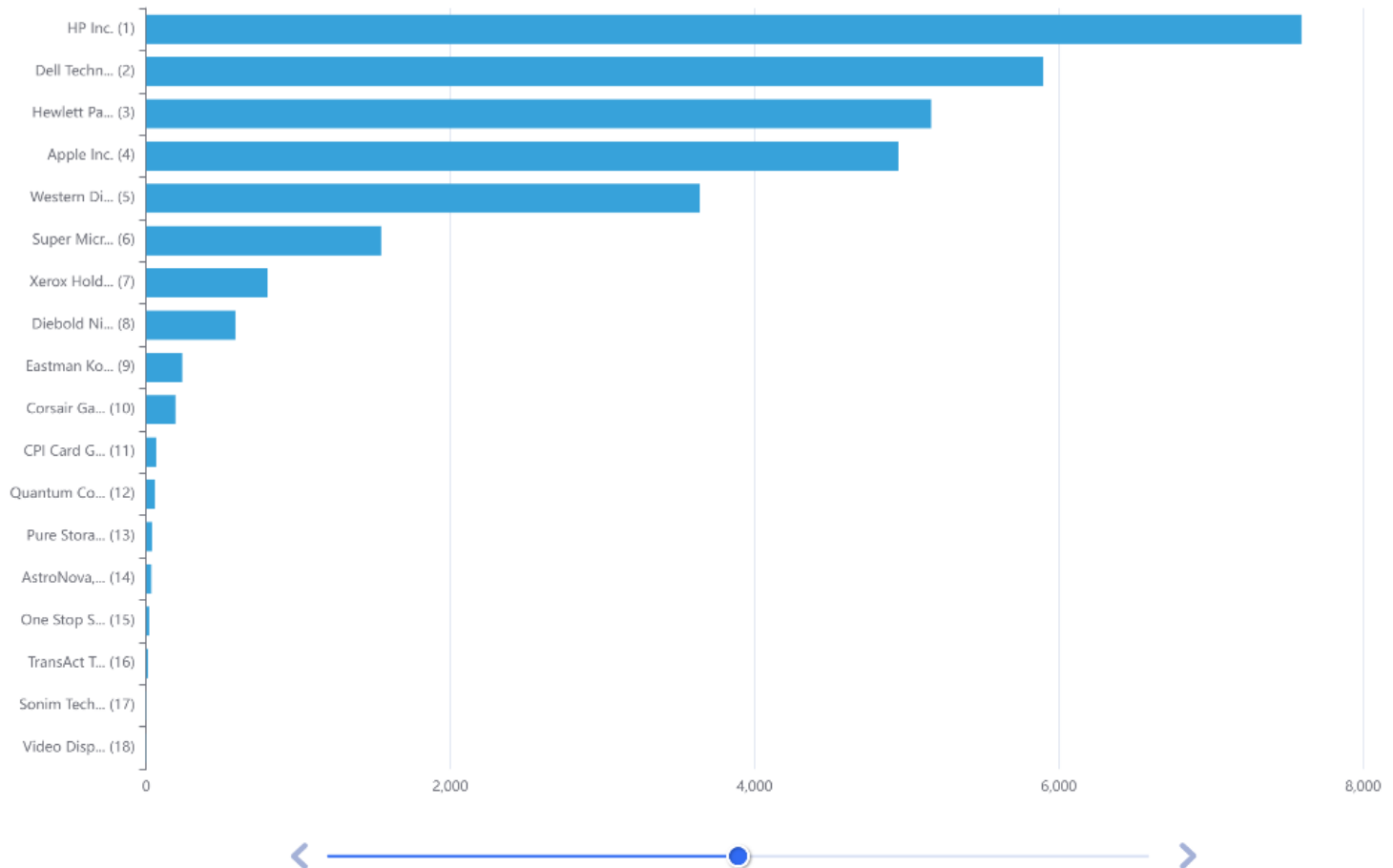


In the realm of Enterprise ranking within the Technology Hardware, Storage & Peripherals industry, Apple Inc. emerges as the undisputed leader in net income, boasting a staggering figure approaching nearly 100 billion USD in 2022. This remarkable achievement firmly secures Apple's position at the forefront of the industry. Contrarily, Dell Technologies Inc. holds the runner-up position, with a substantially lower net income of 4,942 billion USD. Following closely behind is HP Inc., securing the third spot with a net income of 3,203 billion USD. This notable discrepancy underscores Apple's dominance and financial prowess within the competitive landscape of the technology hardware sector. Other notable

contenders in the Technology Hardware, Storage & Peripherals industry, such as Western Digital Corporation and Hewlett Packard Enterprise Company, trail behind with net incomes falling below the 2 billion USD mark. This notable difference underscores the significant gap between Apple Inc. and its closest competitors in terms of financial performance within the sector.

Enterprise Ranking - Inventory - Apple Inc & Technology Hardware, Storage & Peripherals

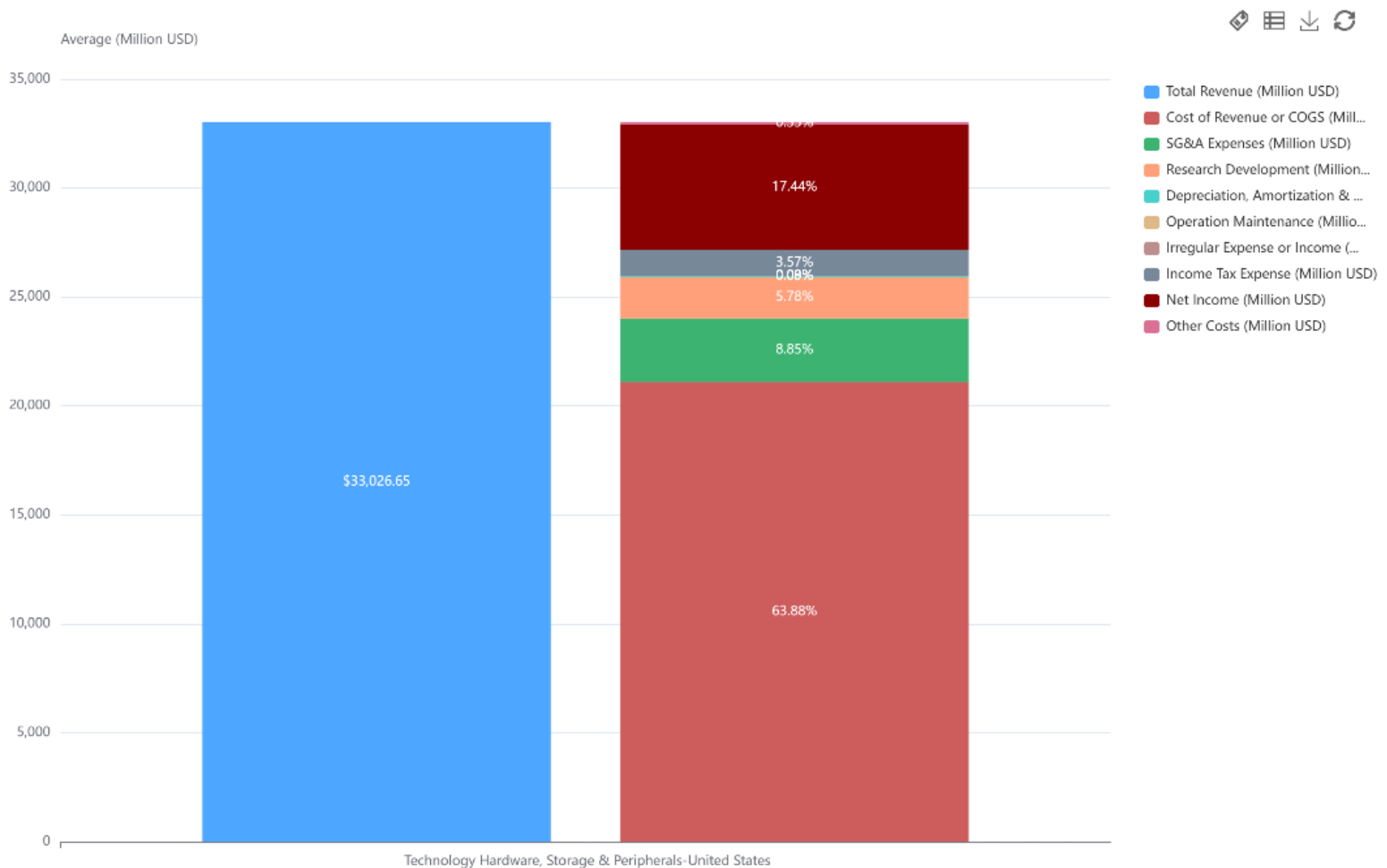
Enterprise Ranking - Inventory (Million USD)



In the realm of enterprise ranking based on inventory levels, Apple Inc. holds the fourth position with inventory valued at 4,946 billion USD in 2022. Topping the charts is HP Inc., boasting the highest inventory level among the top ten companies at 7,595 billion USD. Dell Technologies Inc. secures the second position with an inventory worth 5,898 billion USD, closely followed by Hewlett Packard Enterprise Company in third place with 5,161 billion USD. Western Digital Corporation clinches the fifth spot with inventory valued at 3,638 billion USD, while other contenders fall below the 2 billion USD mark in inventory value. This delineation underscores the diverse landscape of inventory management

across key players in the Technology Hardware, Storage & Peripherals industry.

Industrial Breakdown - Revenue - Technology Hardware, Storage & Peripherals



Breaking down the industrial breakdown in 2022, if considering the total revenue to be 33,026.65 million USD represents as 100%, the following distribution is observed in details.

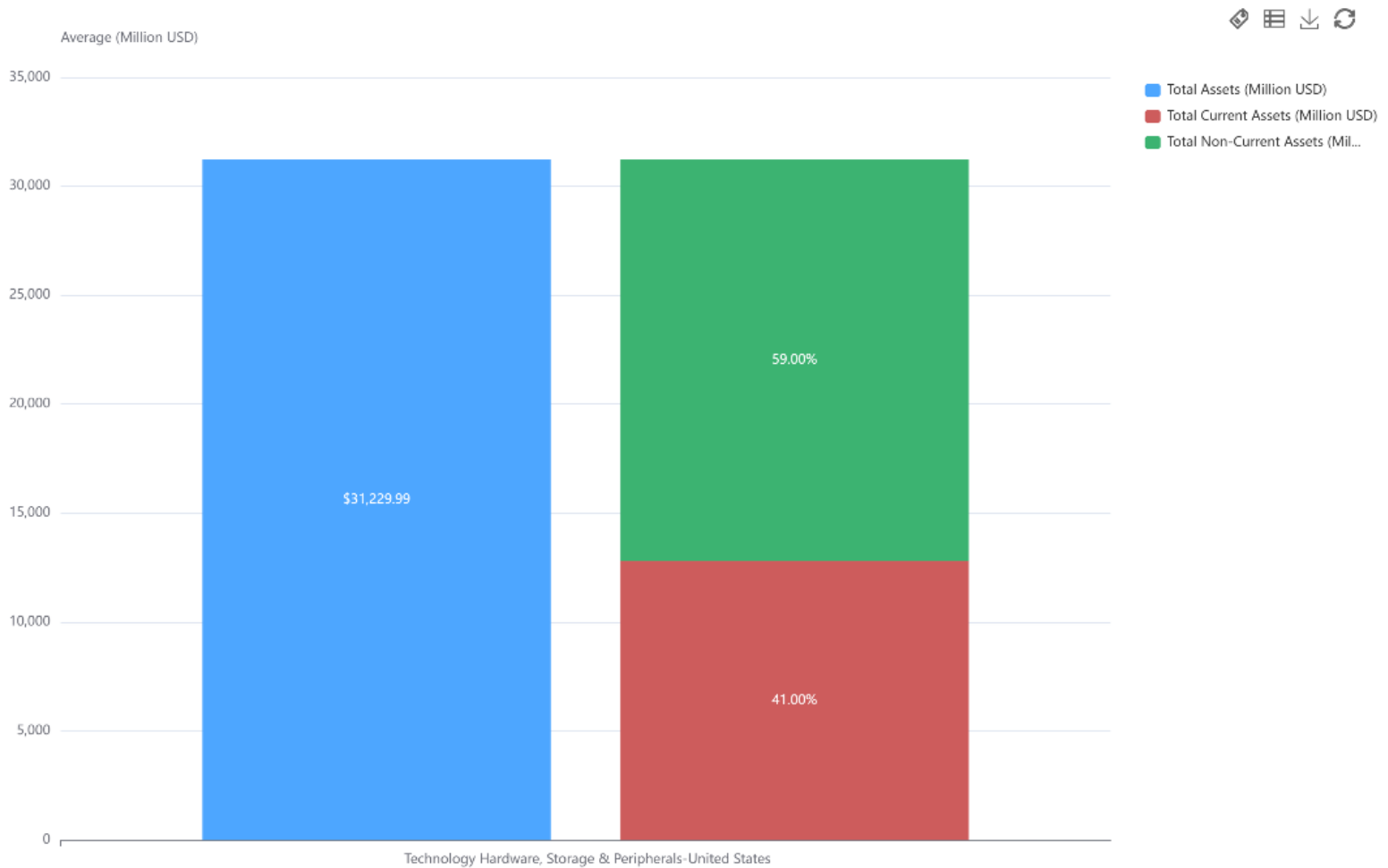
- The cost of revenue, also known as the cost of goods, constitutes 63.88% of the total revenue, amounting to 21,098.58 million USD.
- Net income accounts for 5,761.04 million USD, which corresponds to 17.44% of the total revenue.
- Selling, general, and administrative (SG&A) expenses make up 8.85% of the total revenue, totaling 2,922.53 million USD.
- Research and development expenses are recorded at

1,910.12 million USD, representing 5.78% of the total revenue.

- Income tax expense stands at 1,177.7 million USD, making up 3.57% of the total revenue.

- The remaining portion represents miscellaneous costs within the industrial breakdown.

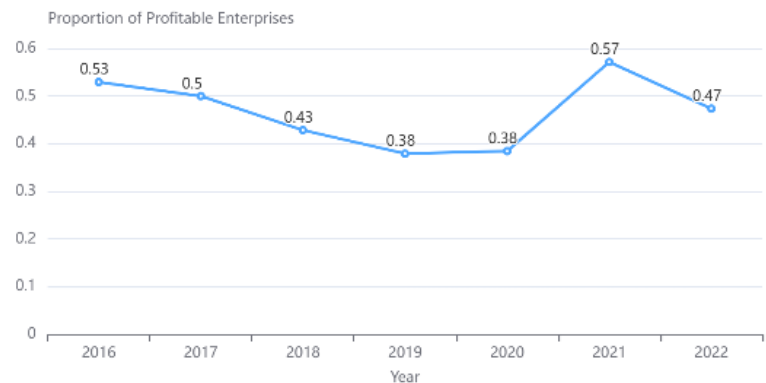
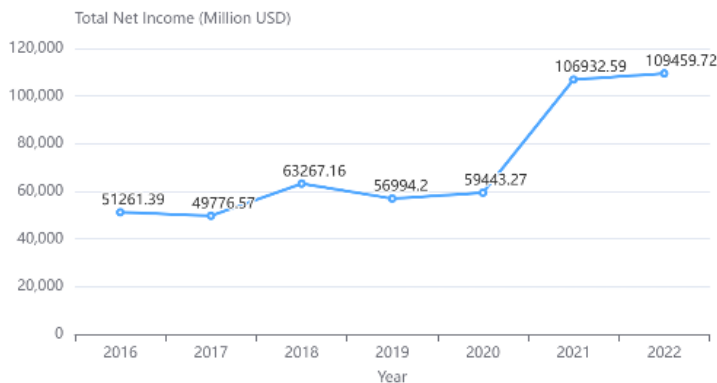
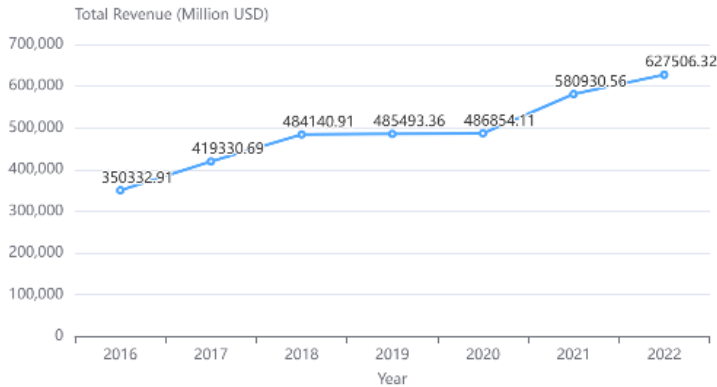
Industrial Breakdown - Assets - Technology Hardware, Storage & Peripherals



When examining the industrial breakdown concerning assets, with a total assets value of 31,229.99 million USD representing 100%, it is realized that:

- Non-current assets account for 59% of the total assets value, totaling 18,426.97 million USD.
- Current assets, on the other hand, amount to 12,803.02 million USD, constituting 41% of the total assets value.

Industrial Trend - Industry Total Size - Technology Hardware, Storage & Peripherals



Technology Hardware, Storage & Peripherals

The graph displays a set of four line graphs relating to the Technology Hardware, Storage & Peripherals industry over a period from 2016 to 2022:

- Total revenue has exhibited steady growth over the years, increasing from \$350,332.91 million in 2016 to \$627,506.32 million in 2022. This consistent upward trajectory indicates a healthy expansion within the industry.

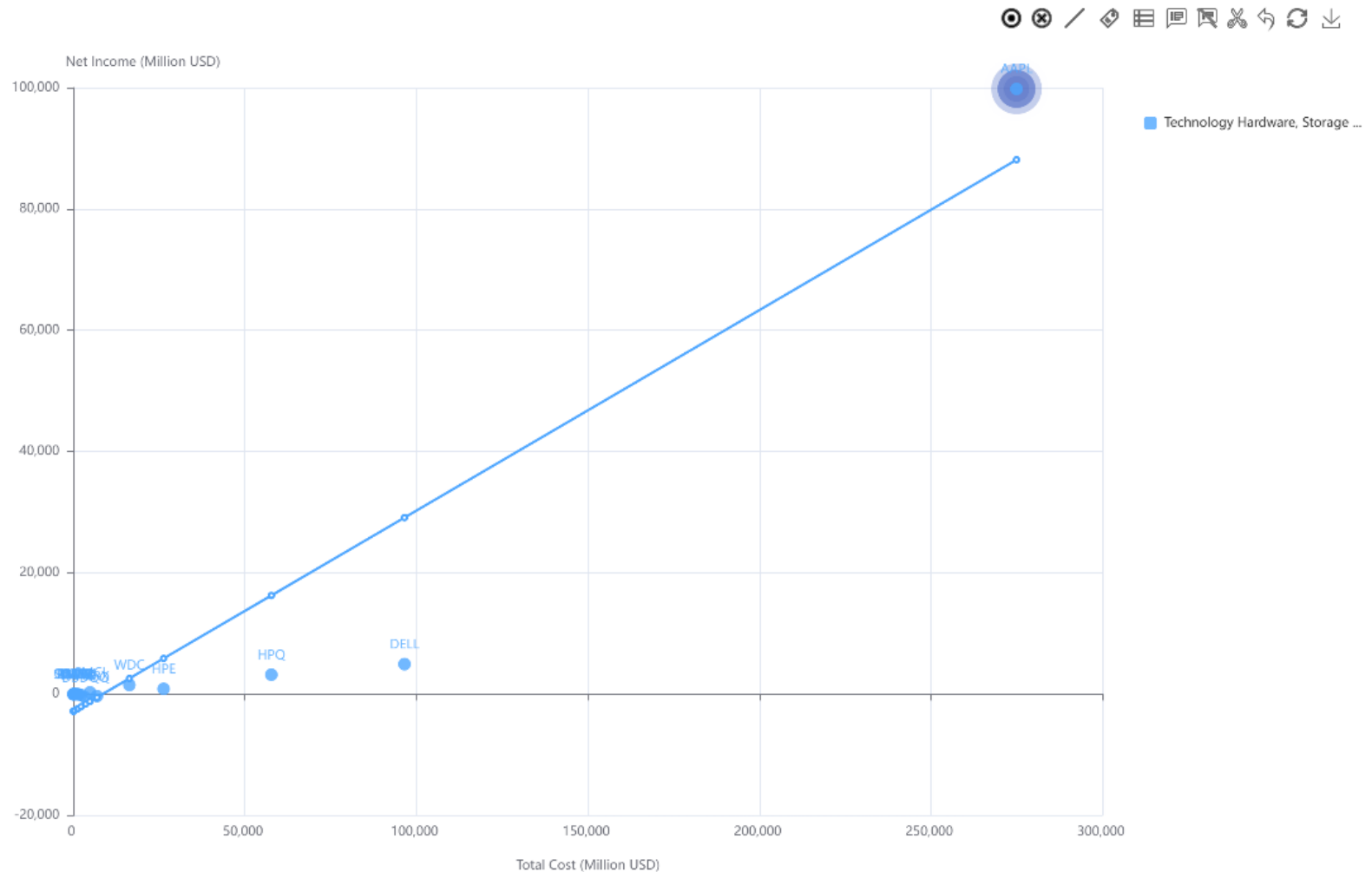
- Despite fluctuations, the total operating income or loss has generally followed a positive trend, with peaks and valleys reflecting shifts in market conditions and operational efficiency. However, there was a notable surge in 2021 and 2022, where the operating income reached its highest levels,

indicating improved profitability and operational performance within the industry.

- Similarly, total net income has experienced fluctuations but has generally trended upwards, reaching \$109,459.72 million in 2022. This upward trend suggests that despite challenges, the industry has remained profitable and resilient over the years.

- The proportion of profitable enterprises, while exhibiting variability, has shown an overall positive trend, with the majority of enterprises being profitable. However, there was a dip in profitability in 2019 and 2020, indicating potential challenges or market shifts during those years.

Profit vs. Cost - Net Income - Technology Hardware, Storage & Peripherals

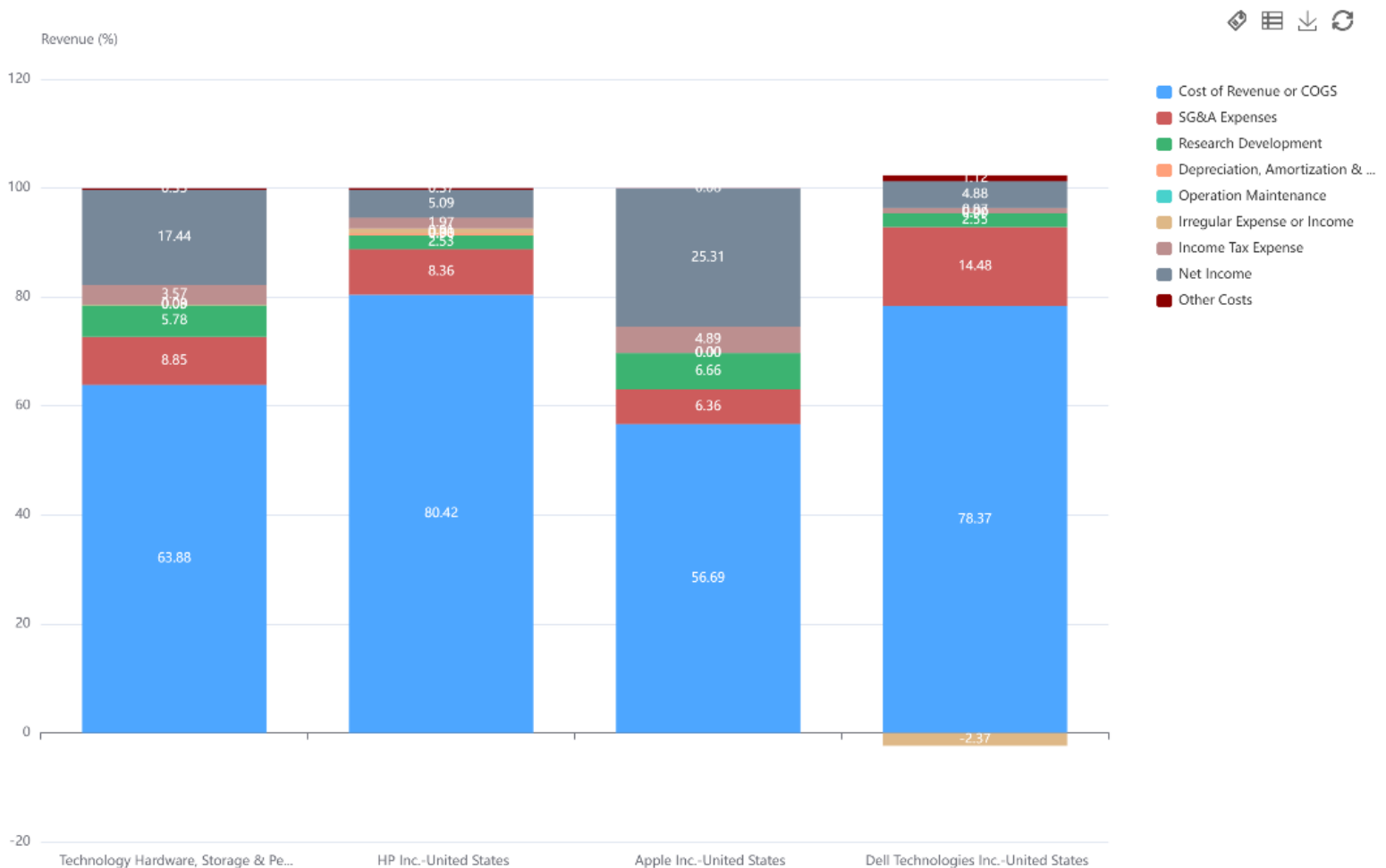


The chart illustrates the correlation between total costs and net income across multiple companies within the automotive sector. Total costs, measured in million USD, are depicted on the x-axis, while net income, also in million USD, is represented on the y-axis. Each data point corresponds to a distinct company.

Apple Inc. stands out in the plot with both a high total cost and exceptionally high net income, positioning it in the top-right corner. Its total cost amounts to 274,891 million USD, while its net income reaches 99,803 million USD. In contrast, many other companies exhibit lower net incomes despite significant investments in total costs. Some companies, such

as IonQ Inc., incur total costs of 96.88 million USD but experience a net loss of -48.51 million USD. Similarly, Corsair Gaming Inc. invests a total cost of 1,429.89 million USD but still reports a negative net income of -53.95 million USD. The trend line indicates a general tendency where an increase in total costs is accompanied by a rise in net income. This observation may imply the presence of economies of scale or proficient cost management practices resulting in enhanced profitability. Nonetheless, it is noteworthy that higher costs do not consistently result in proportionally higher net incomes, as evidenced by the disparities observed among companies such as Dell or HPQ.

Enterprise Breakdown - Revenue - Apple Inc. & Top 3 of Industry



The graph depicts a comparative stacked bar chart illustrating the revenue breakdown percentages for the top three net-income companies within the Technology Hardware, Storage & Peripherals manufacturing sector in the United States, with a specific emphasis on Apple Inc. and the overall industry. Each bar signifies distinct components contributing to the total revenue, distinguished by varying colors.

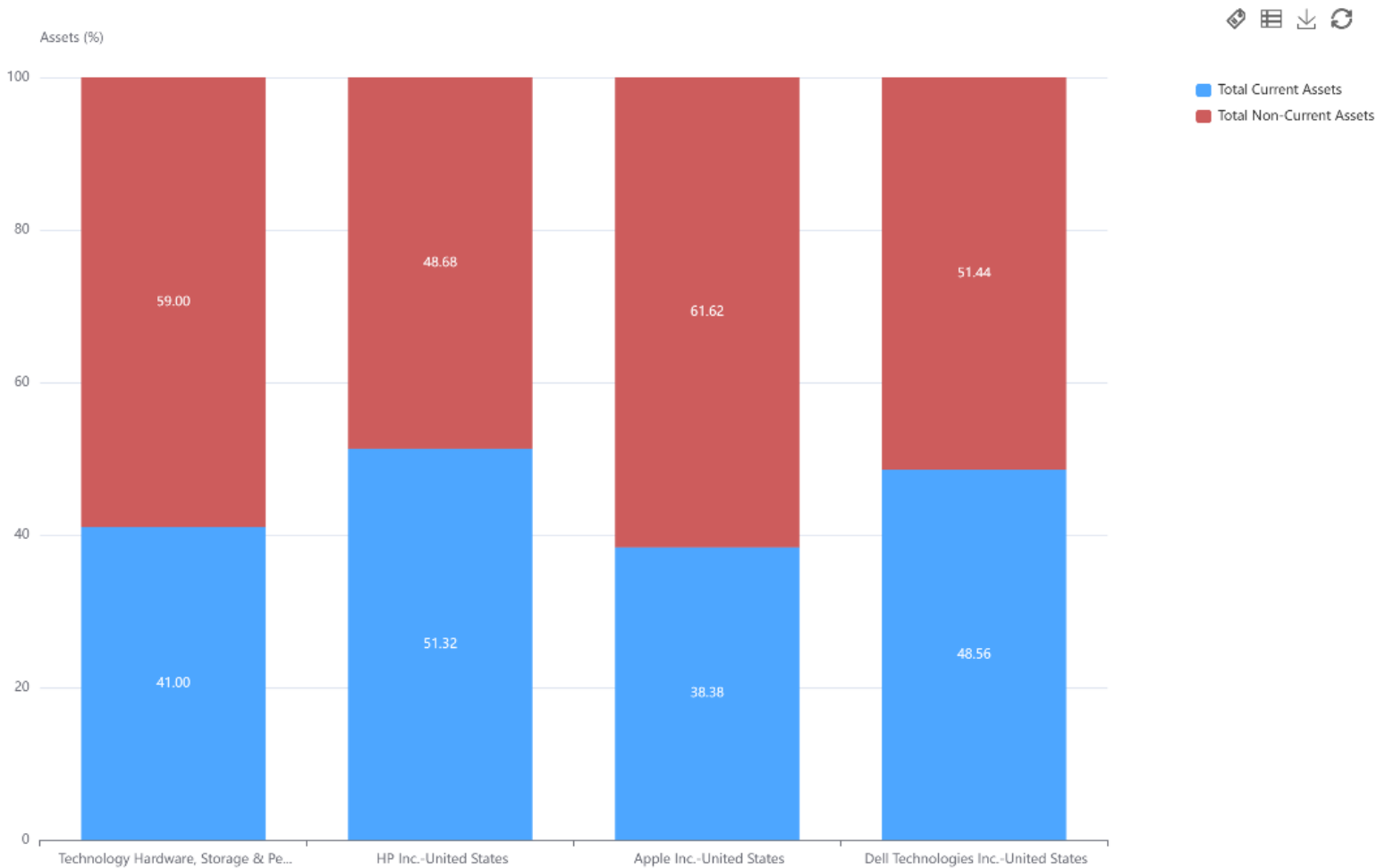
Apple Inc. maintains its leading position within the industry, with its Cost of Revenue (COGs) percentage at 56.69%, notably lower than the industry average of 63.88%. In contrast, Dell Technologies Inc. (ranking second) exhibits the

highest COGs percentage at 80.42%, followed closely by HP Inc. (ranking third) at 78.37%. Conversely, Apple Inc. boasts the highest net income proportion among these top companies, standing at 25.31%, surpassing the industry average of 17.44%.

Regarding Selling, General, and Administrative (SG&A) expenses, Apple Inc. demonstrates efficient cost management, allocating only 6.36% compared to the industry average of 8.85%. This figure notably contrasts with Dell's 14.48% and HP's 8.36%. Additionally, Apple Inc. allocates a significant portion of its resources to research and development activities, surpassing industry standards and outperforming HP (2.53%) and Dell (2.55%).

These strategic investments appear to underpin Apple Inc.'s success within the industry, contributing to its competitive edge and sustained growth.

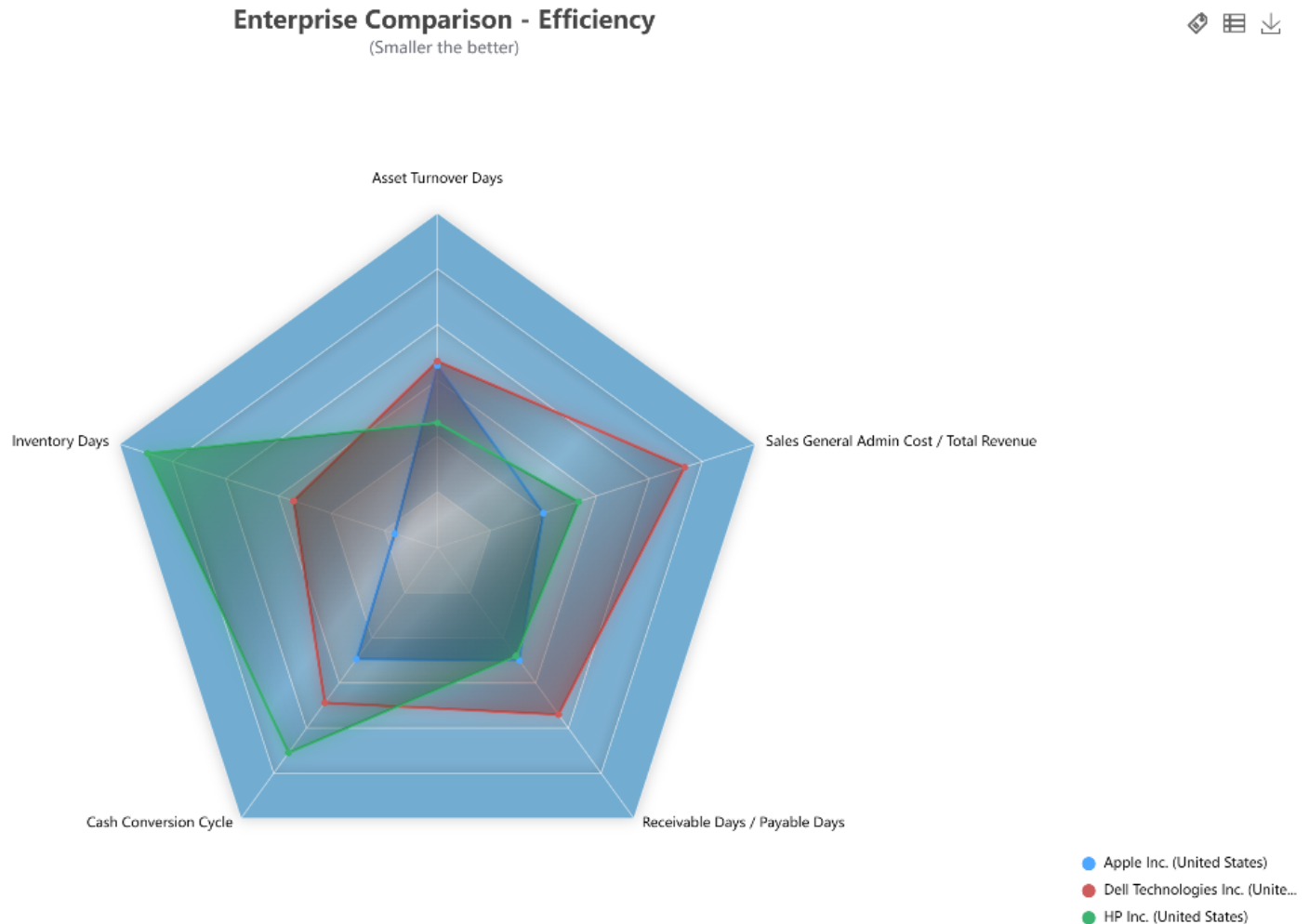
Enterprise Breakdown - Assets - Apple Inc. & Top 3 of Industry



The graph illustrates a comparison of asset composition between the aggregate of Technology Hardware, Storage & Peripherals manufacturers in the US and the top three net-income companies, with a particular focus on Apple Inc. It presents a stacked bar chart where each bar is divided into two sections representing the percentage of total current assets (blue) and total non-current assets (red).

While both HP and Dell exhibit a higher percentage of current assets compared to the industry average of 41%, with figures of 51.32% and 48.56% respectively, Apple Inc. only holds 38.38% of total current assets. This aligns with the asset structure commonly observed in IT companies.

Enterprise Comparison - Efficiency - Apple Inc. & Top 3 of Industry



The radar chart provides a comparison of efficiency metrics among the top three enterprises in the Technology Hardware, Storage & Peripherals sector: Apple Inc., Dell Technologies Inc., and HP Inc. The specific indicators analyzed include Asset Turnover Days, Sales General Admin Cost/Total Revenue, Receivable Days/Payable Days, Cash Conversion Cycle, and Inventory Days. The principle guiding interpretation is "smaller the better."

Apple Inc. stands out with the lowest values across most indicators, except for the Asset Turnover Days ratio. This suggests that Apple maintains superior efficiency compared to its counterparts in the industry. Conversely, HP Inc. exhibits

the highest values in Inventory Days and Cash Conversion Cycle ratios, indicating higher risk in efficiency. Similarly, Dell Technologies Inc. records the highest levels for Asset Turnover Days, Sales General Admin Cost/Total Revenue, and Receivable Days/Payable Days ratios. These findings may point towards inefficiencies in inventory management, slow sales turnover, underutilization of assets, and challenges in cost management or managing accounts receivable effectively within these companies.

Enterprise Comparison - Key Indicators - Apple Inc. & Top 3 of Industry

Enterprise Comparison - Key Indicators

Measure Name	Apple Inc. (United States)	Dell Technologies Inc. (United States)	HP Inc. (United States)
Net Margin	0.25	0.05	0.05
Gross Margin	0.43	0.22	0.20
Return on Assets	0.28	0.05	0.08
Total Revenue Growth Rate	0.08	0.17	-0.01
Inventory Turnover	45.20	13.45	6.67
Payable Days / Receivable Days	4.01	2.68	4.18
Return on Equity	1.97		
Current Ratio	0.88	0.80	0.76
1 / Liability Asset Ratio	1.17	0.98	0.93

The chart provides a comparison of key indicators among the top three enterprises in the Technology Hardware, Storage & Peripherals sector: Apple Inc., Dell Technologies Inc., and HP Inc:

- Net Margin: Apple Inc. leads with a net margin of 25%, followed by Dell Technologies Inc. and HP Inc. with 5% each.
- Gross Margin: Apple Inc. maintains the highest gross margin at 43%, surpassing Dell Technologies Inc. (22%) and HP Inc. (20%).
- Return on Assets: Apple Inc. again outperforms its counterparts with a return on assets of 28%, compared to Dell Technologies Inc. (5%) and HP Inc. (8%).
- Total Revenue Growth Rate: Dell Technologies Inc. demonstrates the highest revenue growth rate at 17%, followed by Apple Inc. (8%) and HP Inc. (-1%).
- Inventory Turnover: Apple Inc. leads in inventory turnover with a ratio of 45.20, followed by Dell Technologies Inc. (13.45) and HP Inc. (6.67).
- Payable Days / Receivable Days: Apple Inc. has a higher

ratio of payable days to receivable days at 4.01, compared to Dell Technologies Inc. (2.68) and HP Inc. (4.18).

- Return on Equity: Information for Return on Equity is missing for Dell Technologies Inc. and HP Inc.

- Current Ratio: Apple Inc. has a current ratio of 0.88, slightly higher than Dell Technologies Inc. (0.80) and HP Inc. (0.76).

- 1 / Liability Asset Ratio: Apple Inc. has the highest 1/liability asset ratio at 1.17, followed by Dell Technologies Inc. (0.98) and HP Inc. (0.93).

Overall, Apple Inc. demonstrates superior financial performance across multiple metrics, including net margin, gross margin, return on assets, revenue growth rate, and inventory turnover. Dell Technologies Inc. also shows strong performance in revenue growth rate and inventory turnover, while HP Inc. lags behind in terms of revenue growth rate and inventory turnover.

After all, in conclusion, Apple Inc. should leverage its rapid growth and well-balanced asset structure to capitalize on future opportunities.

To optimize its financial performance, Apple Inc. should focus on managing the ratio between revenue and total costs to effectively reduce expenses while maintaining current revenue levels. Additionally, streamlining its Asset Turnover Days can enhance efficiency by minimizing the time required to convert assets into sales revenue.

KPI Examination - Apple Inc.

Class	The Value of Apple Inc.	The Percentile Rank of Apple Inc.	90th Percentile	3rd Quartile (75th Percentile)	Median	1st Quartile (25th Percentile)	10th Percentile	Status	Unit
Profitability									
Gross Margin	0.433	0.41	0.82	0.71	0.51	0.31	0.15	Normal	
Net Margin	0.253	0.93	0.2	0.08	-0.07	-0.5	-4.35	High	
Growth									
Total Revenue Growth Rate	0.077	0.35	0.66	0.32	0.14	0.03	-0.15	Normal	
Efficiency									
Return on Assets	0.282	0.98	0.14	0.05	-0.04	-0.31	-1.53	High	
Return on Equity	1.969	0.99	0.25	0.12	-0.04	-0.38	-1.58	High	
Inventory Turnover	45.197	0.92	23.82	7.15	3.67	2.32	1.52	High	
Payable Days / Receivable Days	4.012	0.87	7.05	1.88	0.93	0.52	0.26	High	
Payable Days	104.685	0.77	295.57	99.99	51.82	30.72	17.36	High	Day
Receivable Days	26.087	0.15	115.57	84.61	58.38	38.85	17.78	Low	Day
Inventory Days	8.075	0.09	237.16	157.31	99.45	50.98	14.89	Low	Day
Cash Conversion Cycle	-70.522	0.14	181.97	104.74	42.22	-6.82	-126	Low	Day
Fixed Assets Turnover	9.362	0.56	35.17	15.84	8.55	4.11	1.19	Normal	
Financial Health									
Current Ratio	0.879	0.19	6.46	3.32	1.83	1.04	0.35	Low	
Liability Asset Ratio	0.856	0.76	1.41	0.82	0.53	0.3	0.16	High	

- Overall, Apple exhibits exceptional profitability, efficient operations with very high asset turnover, and strong cash management capabilities. Areas for potential improvement include moderating debt levels, increasing liquidity, and optimizing the receivables/payables cycle. Revenue growth, while steady, could be accelerated further.

Competitive Advantages and Sub sectors

1. Technology Industry (Apple Inc.):

* **Competitive Advantage:** Apple Inc. maintains a strong competitive advantage through its iconic brand presence and continuous innovation in consumer electronics, software, and services.

* **Subsectors:**

- *Consumer Electronics:* Apple is a leader in this subsector with its flagship products like the iPhone, iPad, and Mac.
- *Software and Services:* The company's App Store, iCloud, and subscription services contribute significantly to its revenue and ecosystem.
- *Hardware:* Apple's hardware products include MacBooks, iMacs, wearables like the Apple Watch, and accessories.

2. Pharmaceutical Industry (Pfizer Inc.):

* **Competitive Advantage:** Pfizer Inc. competes based on its extensive portfolio of pharmaceutical products, strong research and development capabilities, and global presence.

* **Subsectors:**

- *Biotechnology:* Pfizer is involved in biotech research and development, focusing on innovative drug discovery and development.
- *Generic Pharmaceuticals:* Pfizer also operates in the generic drug market, producing affordable alternatives to brand-name drugs.
- *Vaccines:* Pfizer is a major player in vaccine development and distribution, with a focus on preventing and treating various diseases.

3. Automotive Industry (Ford Motor Company):

* **Competitive Position:** Ford Motor Company faces competitive pressures in the automotive industry due to factors such as manufacturing costs, shifting consumer preferences, and technological advancements.

* **Subsectors:**

- *Passenger Vehicles:* Ford competes in the passenger vehicle market against companies like General Motors, Toyota, and Volkswagen with models such as the Ford Mustang, Explorer, and F-150.
- *Commercial Vehicles:* Ford is a significant player in the commercial vehicle segment, producing trucks, vans, and fleet vehicles.
- *Electric Vehicles (EVs):* Ford is transitioning towards electric vehicle production to compete with companies like Tesla, Volkswagen, and General Motors in the

Conclusion:

- **Apple Inc.:** Apple Inc. exhibits strong profitability and financial health driven by high net and gross margins, alongside a solid reputation for innovation and operational efficiency in the technology sector. Despite a lower current ratio, its high liability asset ratio indicates a robust financial position. However, there's a need to diversify beyond its core product lines to mitigate risks associated with market saturation and changing consumer preferences.

- **Pfizer Inc.:** Pfizer Inc. maintains solid profitability and operational efficiency in the pharmaceutical industry, leveraging its diversified product portfolio and strong research capabilities. However, concerns arise regarding liquidity due to a low current ratio, even though its high liability asset ratio suggests financial strength. Balancing investment in research and development with maintaining financial stability is crucial for sustained growth and innovation.

- **Ford Motor Company:** Ford Motor Company faces challenges in profitability within the automotive industry, but maintains a reasonable financial position and diversified product range spanning passenger cars, commercial vehicles, and electric vehicles. Strategies aimed at cost management and innovation are necessary to address profitability challenges, alongside efforts to enhance efficiency in managing payables, receivables, and the cash conversion cycle to remain competitive in the evolving automotive market.