



TECHNOLOGY

MINI INDUSTRY REPORT 2024

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Executive Summary

This industry report provides a detailed analysis of some of the key trends shaping the technology sector, with a highlight of industry trends, macroeconomic influences and financial performance throughout the recent period of months. We will be delving into the performances of the technology sector over the past 3 months, focusing on the rapid growth of Generative AI, Cloud computing and cybersecurity. However, these fast-growing sectors also present new regulatory challenges, particularly in the AI and data privacy, motioned by the Biden administration. We will also explore recent M&A activities, such as Cisco's acquisition of Splunk and IBM's purchase of HashiCorp, both of which would strategically enhance the acquiring firms' capabilities in AI and cloud infrastructure.

We further evaluate the EV subsector of technology, going into depth on Tesla's Cybercabs and their delayed launches, the heightened competitive pressure from countries in the Asia region, and how Trump's election win led to increased consumer confidence in the technology sector and US economy. The Future Outlook section will elaborate on significant market shifts within the CPU industry, more specifically the rise of AMD and Intel's operational challenges. Going further we explore the potential disruption of NVIDIA, who considers joining the CPU market, and how rising interest rates along with ongoing U.S-China tensions are likely to have a significant impact on U.S tech companies.

This report will also highlight key trends shaping the tech sector, explain how rising interest rates are impacting growth in companies, and touch on the opportunities in the manufacturing sector arising from current U.S.- China geopolitical tensions. Through extensive research we'll evaluate the fund's investment in SemTech, which has shown significant growth in the past year. Overall, we anticipate continued growth in the Technology market due to more commercial innovation and competition, especially in China, and higher consumer confidence in the EV and AI market, under the future president's planned economic policies.

I would like to give my gratitude to my colleagues Zohair, Korben and Rafal for their collaboration in this report, their dedication to their work has been essential in the completion of the industry analysis.

- Louis French

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Past Industry Performance

Tesla's Unveiling of the Robo Cabs in October:

Due to its applications in customer experience, design/automation AI is adapting into sectors such as healthcare and finance, with spending on AI technologies being predicted to surpass \$200 billion by 2025 and an expected CAGR of 50.22% from 2024-2028. Alongside AI, both Cloud computing and Cybersecurity have remained strong subjects in the industry, with 70% of organizations reporting more than 50% of their infrastructure on cloud computing along with 84% of banks and insurers leveraging cloud services to drive operational efficiency. However, due to the rapid growth of such tools, governmental powers have begun implementing regulations on AI, Data privacy and cybersecurity. One example is the Biden administration releasing the Executive order on AI in October of 2024, highlighting the importance of safer testing and risk assessments on AI before deployment. This could mean slower product launches, as the increased need of pre-market testing and complying with evolving regulations would result in higher costs, potentially damaging a firm's bottom line.

Finalized in early December, Cisco's acquisition of Splunk for \$28 Billion is one of the biggest tech M&A deals of 2024, further strengthening Cisco's position in the AI and cybersecurity market. This move was of no surprise as with both companies growing rapidly, Cisco now can provide its customers with better AI, and provide current relationships such as governmental healthcare contracts (which contain sensitive information) with Splunk's security and observational products. Being in the Oakwood portfolio, IBM and HashiCorp settled a deal for \$6.4 Billion. With IBM's acquisition of HashiCorp, a company in which known for its cloud computing and automation tools, this increased its market share in the cloud and hybrid cloud management market. Furthermore, product synergies between HashiCorp's platform and IBM's Red Hat business will provide a strengthened cloud strategy for IBM.

On October the 11th, Elon Musk struck the technological market by releasing his heavily anticipated "Cybercab". This unveiling played a factor in the year-on-year rise of 6.4% in Tesla's stock price. However, many are concerned over rising competition from China, and the consistent push backs from Tesla's other operations. For instance, Tesla is planning to release Cybercabs only in 2029. Meanwhile, China's Apollo Go Robotaxi has managed to fulfil 7 million rides across China already. Utilizing mass production and economies of scale, they also reduced the cost of their vehicles to \$27,000. This is very concerning for not only Tesla but the US economy's technological sector as it is an indicator that it may have competition in one of its unique selling points.

Even with the release date set to 2029 for the Cybercabs, there has been no official release date set for the Model 2. Therefore, it is going to be even longer before the US can compete with China's privately owned self-driving cars. Simultaneously, there are great concerns over the safety of Tesla's camera and AI technology, which is to be used for the car's steering. China's Baidu, however, uses Lidar, which is a laser-based sensor and high-definition mapping system thought to be more accurate while causing less concerns. Overall, in terms of technology the US seems to be falling behind China and this is gravely concerning when looking to the future. Could Trump's election have changed this course?

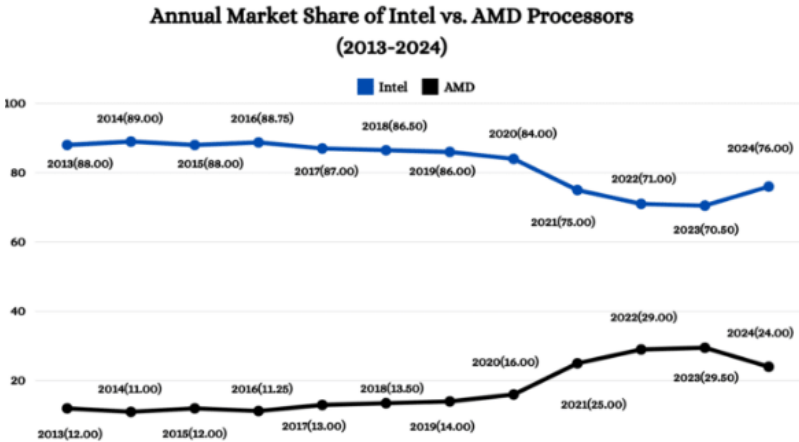
With Trump coming into power on November the 5th, Silicon Valley finally saw hope, and the S&P 500 rose 4%, and Tesla surged 9% to over \$1.1 trillion. The US economy is hoping to boom with Trump in power, and so far, this has had very positive impacts for the tech market.

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Future Industry Outlook

CPU Industry (Data Centre & Consumer)

Intel and AMD have dominated the CPU market for decades. Historically, Intel held a commanding lead over AMD, with an overall market share of 85% in 2019. This dominance was even greater in the data center market, where Intel controlled 96% of the market. However, this began to change when AMD introduced a significant leap in its architecture formally known as ‘Zen’, developed in collaboration with TSMC. This innovation resulted in AMD’s chips offering superior performance, better thermals and improve price-per-watt efficiency compared to Intel, all at a lower cost.



Intel and AMD have dominated the CPU market for decades. Historically, Intel held a commanding lead over AMD, with an overall market share of 85% in 2019. This dominance was even greater in the data center market, where Intel controlled 96% of the market. However, this began to change when AMD introduced a significant leap in its architecture known as ‘Zen’, developed with TSMC. This resulted in AMD’s chips offering better performance, thermals and improved price-per-watt efficiency compared to Intel, all at a lower cost.

This shift is evident today, as Intel’s market cap has fallen by 50% year to date, dropping from \$250 billion in 2019 to \$104 billion today. This decline suggests investors are rapidly losing confidence in Intel and their ability to make a satisfactory product. In contrast, AMD has experienced impressive growth of 245% over the past 5 years, now boasting a market cap of \$225 billion – more than double that of Intel. This growth can be attributed to AMD’s increasing share of the server market, now at 24%, which is expected to expand further in the future. Meanwhile, Intel operates at current loss of \$16.6 billion, whereas AMD is reporting a net income of \$771 million.

However, both companies should be concerned about NVIDIA’s potential entry into the CPU market. NVIDIA’s recent success during the AI "gold rush" has resulted in a staggering net income of \$19.3 billion as of Q3 2024 and a market capitalization of \$3.5 trillion, dwarfing the figures of Intel and AMD. This makes NVIDIA the most valuable company in the world, and quite impressively so, as the CPU market is notoriously difficult to expand into. With upfront costs running into billions of dollars for equipment and R&D, if any company has the resources and expertise to succeed, it is a giant like NVIDIA.

If NVIDIA produces a competitive CPU, they could leverage their existing market power, holding 96% of the data center GPU market and 88% of the desktop GPU market, to offer performance or cost-saving advantages when pairing a NVIDIA CPU with their GPUs. While it remains to be seen whether NVIDIA will enter the CPU market, their involvement could mark the beginning of the end for Intel, leaving AMD and NVIDIA to battle for supremacy.

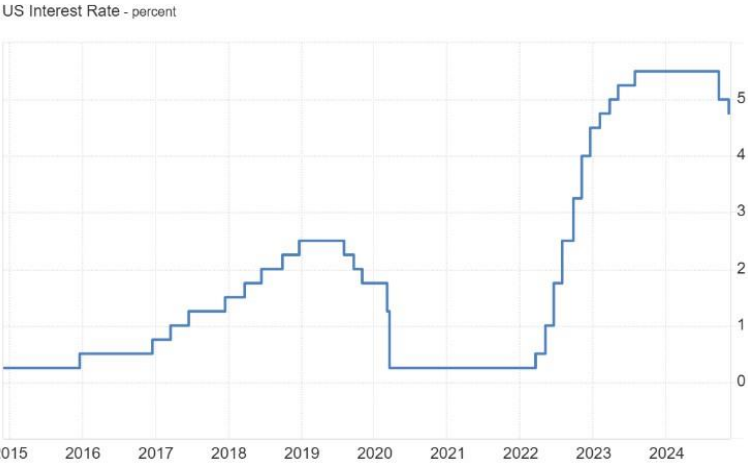
That said, NVIDIA may face significant regulatory hurdles, as they have in the past. In 2024, the U.S. Department of Justice initiated an antitrust investigation into NVIDIA’s dominance in the AI chip market, citing potential anti-competitive practices. In 2022, NVIDIA attempted to acquire ARM Holdings for \$40 billion, a move that would have placed them in a strong position to enter the CPU market. However, the UK’s Competition and Markets Authority (CMA), the U.S. Federal Trade Commission (FTC), and the European Commission all raised concerns about the deal’s potential to harm competition. Regulators feared it could lead to massive price increases or restrict access to ARM’s products for other buyers.

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Macroeconomic Impacts

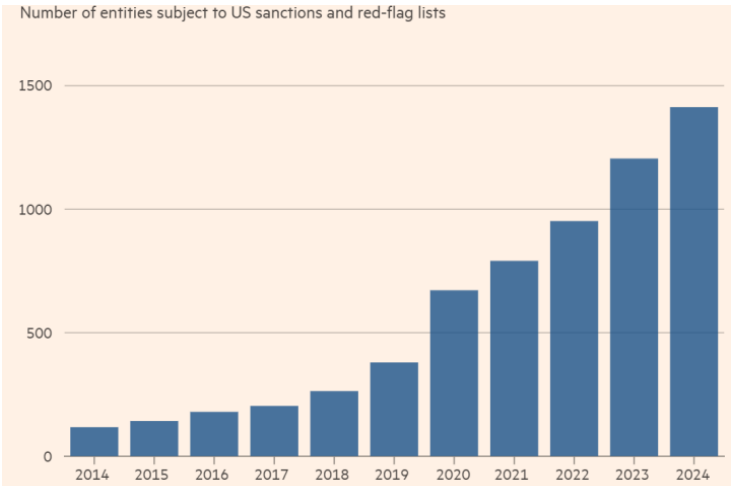
1. Interest rates

Trajectory of interest rates remains a huge concern. With U.S. Federal Reserve maintaining higher rates to combat inflation, capital costs for tech companies may rise. This may dampen investment in innovation and slow the expansion of companies dependent on future growth as borrowing costs will become more expensive. However, if FED signal a pivot towards rate cuts, this creates a favorable environment for tech stocks, particularly in growth sectors like cloud computing and AI. Rising interest rates generally make capital more expensive, which could hurt the tech industry. Particularly startups and growth companies that rely on venture capital and debt financing. In the short-to-medium term, the tech sector could see a reduction in valuations, especially for unprofitable firms, as investors are more cautious. This could lead to consolidation in the market, where only the most financially sound and well-capitalized tech companies continue to thrive. Startups may struggle to secure funding, which could reduce the overall rate of innovation.



2. US-China tensions

The US expressed concern over China gaining too Much influence over global technology, especially in next generation 5G networks, something which could be leveraged for obtaining private information about government affairs. To prevent this threat, the US banned Chinese companies like Huawei, Lenovo and ZTE from accessing American technology, to slow down China's technological advancements in telecommunications and AI. Other companies which relied heavily on China for manufacturing or materials now face disruptions, leading to increased operational cost and decreased profit margins. With Governmental bodies implementing more target emission and renewable energy goals, companies that develop and integrate into greener technologies, such as solar, wind, and battery storage solutions may benefit from better consumer image and more investments, e.g. Tesla gaining more favorable traction as regulator bodies are openly pushing for green transportation. Tesla specifically is expanding its energy storage business, taking advantage of both clean energy mandates and growth in renewable energy markets. Therefore, companies that focus more on clean energy technology or carbon neutral solutions, such as NextEra Energy, are bound to benefit from being in a similar situation.



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Current Portfolio Analysis

Company name	Ticker	Buy in Price	Current Price	% change	Rating	Senior Guidance
Microsoft	MSFT	376.76	444.5	18.2	2 (Underweight)	Hold
SemTech	SMTC	16.15	63.98	296.2	5 (Strong Overweight)	Overweight
Apple	AAPL	190.33	246.95	29.7	3 (Neutral)	Hold
IBM	IBM	158.41	228.40	44.2	3 (Neutral)	Hold
NASDAQ-100 % change				35.2		

(Current technology sector companies relative to the NASDAQ-100 growth over 1 year)

1. Microsoft Corporation



Over the past five years, Microsoft has developed a \$147 billion cloud business, including its Azure cloud infrastructure services and Dynamics 365 cloud-delivered apps. According to the Street, Microsoft's fourth quarter fiscal year 2024 saw a 16% increase in total revenue, with revenue streams seeing a 22% increase in Microsoft Cloud, 30% increase in Azure, 43% operating income margins, and 36% free cash flow margin, highlighting a strong financial growth. Current stock price has increased by 18.2% since Oakwood’s initial investment, however compared to benchmarks such as the NASDAQ-100, it falls short of standards. Personally valued as “underweight”, we believe a “Hold” consensus is fitting, as Microsoft continues to benefit from its cloud businesses such as Azure, backed by strong prospects in AI solutions. However, I believe that while holding the stock, it is best to specifically monitor the AI and Cloud sectors due to underperforming metrics compared to high-growth investments such as Semtech.

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2. SemTech Corporation

Semtech's earnings are predicted to rise by 98% in the next year, suggesting a very bright future especially with the rapid growth of the semiconductor market, leading to a stronger cash flow. This investment seems to provide shareholders returns year by year and consistently proves to be a strong investment. Semtech's growth is very promising, driven primarily by the surge in semiconductor demand and high earning projections. With its continuing expansion in the semiconductor market and emerging technologies such as IoT, I believe increasing our position in Semtech would allow us to further capitalize on said trends and improve our return on capital, hence why we agreed on a "Buy" decision.



3. Apple Inc

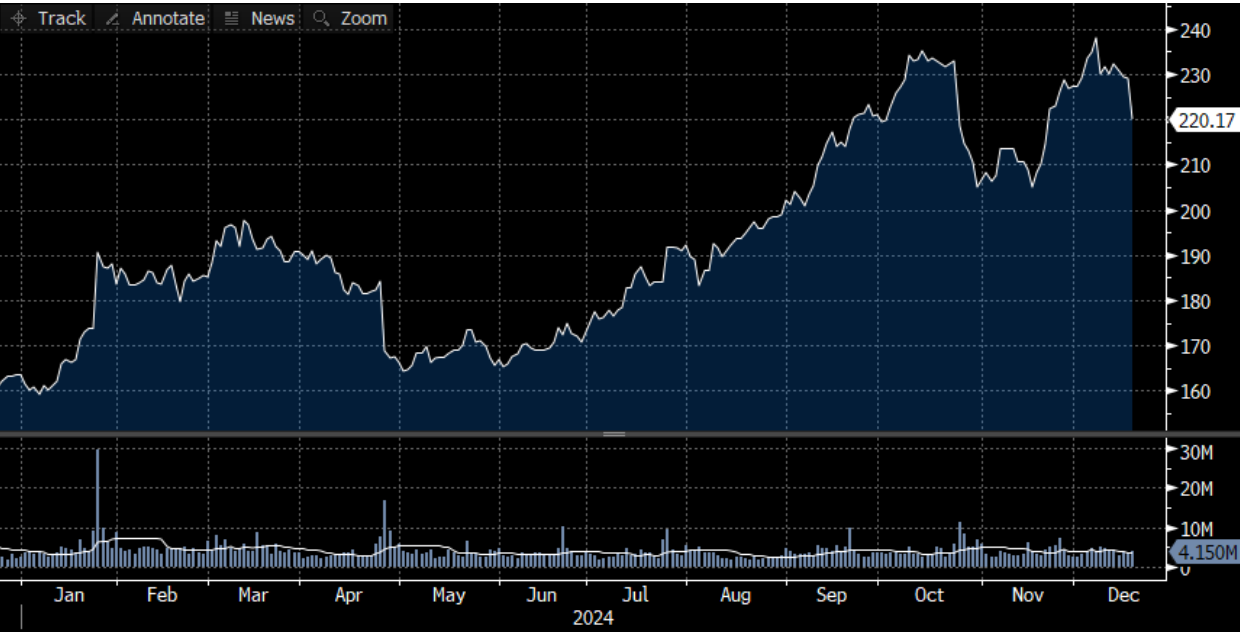
With steady sales and good cash flow, the company is in a strong financial position and can support shareholder returns through future stock buybacks and dividends. Apple is well-positioned for long-term growth in a world that is becoming more digital thanks to a growing ecosystem and strategic ambitions in fields like wearables, augmented reality, and services. Generally, Apple is a stable investment, however it currently faces competition in the smartphones and AI markets. But I believe holding on to Apple will allow for strong consistent returns with low risk, but not offer explosive growth in a short period of time unlike others, leading to our second "Hold" decision.



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4. International Business Machines Corporation (IBM)

Exposure to a technology powerhouse with a strong emphasis on enterprise solutions, such as cloud computing, AI and blockchain is provided by investing in IBM, which positions the business for expansion in industries with high demand. IBM has improved its competitive edge and long-term growth prospects by becoming a leader in hybrid cloud and AI, particularly with the acquisition of Red Hat. Furthermore, IBM maintains a strong financial basis for future investments while appealing to income-focused investors due to its steady payout of dividends and robust cash flow. However, it still faces competition in the cloud market and needs to demonstrate consistent growth that matches competitors such as Microsoft and AWS. Once again holding IBM will return consistent value over a long period of time at a lower risk level with a focus more on enterprise solutions. However, you should not expect any short-term rapid returns, which is why we again applied a neutral rating and advised for the fund to “Hold” this position into the medium term.



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Conclusions

Zohair

A key takeaway from this report is how growth companies and startups may not prosper as much as already well-established companies like Apple, due to rising interest rates increasing the cost of borrowing. Additionally, following the election of Trump, increased tensions between the US and China has opened a door of new possibilities such as potential manufacturing disruptions and more space on the market for US companies. My recommendations would be to re-evaluate the portfolio weighing of SemTech due to its high growth over the past year.

Korben

One of the main conclusions we can agree on is that the technology sector is undergoing transformative growth, fueled by that such as AI, Cybersecurity, and the development of Cloud Computing. However, the extent of this growth is difficult to accurately predict due to the mounting regulatory scrutiny and geopolitical tensions rising between the US and China. Within the US Trump's election has sparked market optimism, but the lingering concerns over interest rates and supply chain resilience has caused some uncertainty. On the other hand, companies such as NVIDIA are still attempting to shake up the CPU market, and AMD growing ever stronger, it'd suggest that market optimism trumps most uncertainties.

Furthermore, growing pressure from the east, in particular growing competition from China, is pushing companies such as Tesla to remain competitive and innovate their technology. This would indicate that the technology sector is going to continue to grow through innovation, simply to remain competitive. Alongside the backing of newly elected President Trump's campaign for a self-depending US economy, I would predict that we can see great things in the coming years from the technological sector.

Rafal

A main take away from this report is that the CPU industry is shifting rapidly with Intel's stock plummeting over the last year and AMD secured their spot as the market leader with their X3D chips. NVIDIA's potential entry could redefine competition however, investors should monitor developments closely, focusing on AMD for mid-term growth while preparing for NVIDIA's disruption which may present new opportunities for portfolio diversification. Intel, meanwhile, faces an uncertain future and investors should be cautious, however they've slowly rolled out their line of GPUs and they managed to secure ASMLs new EUV machines so for a long-term investment, Intel may be a strong bet.

Louis

Throughout creating this report my two main takeaways became clear. The U.S is facing more and more competition from China in emerging technologies such as EV and AI, due to China's cost effectiveness and mass-produced robotaxis compared to Tesla's over-valued and consistently delayed Cybercabs, therefore through changes such as Trumps election, U.S tech companies have a greater chance of benefitting due to tariffs between China & the U.S along with the insight on how strong technology companies have been in the recent year, especially with companies such as SemTech (SMTC) with exceptional growth and consistent strong earnings projections. Due to these takeaways, I would advise re-looking into the portfolio weighing, especially SemTech (SMTC) as it still presents massive opportunity for growth investors, possible reducing from Microsoft Corporation (MSFT) that has presented a weaker grow.

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