

NVIDIA

A Five-Year Odyssey of Innovation and Competition in the Tech Arena

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Programme: MBA- Masters of Business Administration

Subjects : finance management (LCMB7002)

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1. NVIDIA

2. A Brief History of NVIDIA: 1993–2023

3. Industry:

Semiconductor, Artificial Intelligence (AI), Graphics Processing Units (GPUs)

4. Business Model:

Fabless semiconductor design company, generating revenue through the sale of GPUs, system-on-chip (SoC) units, and software licences for AI and high-performance computing.

5. Marketplace:

Primarily serves global markets for:

Gaming: high-performance graphics cards for personal computers.

Data Science and High-Performance Computing: GPUs are used for accelerating various scientific and computational tasks.

Automotive: SoCs for autonomous vehicles and driver-assistance systems.

Professional visualisation: GPUs used in design, engineering, and creative industries.

6. Major Competitors:

- a. **Advanced Micro Devices (AMD):** Offers competing graphics cards and SoCs.
- b. **Intel** primarily competes in the CPU and server markets but also offers integrated GPUs.
- c. **Apple** Powerful M-series chips compete with Nvidia in laptops and desktops.

7. Major Events (2018-2023):

a. 2018: Acquisition of "Mellanox Technologies":

- i. This \$6.9 billion acquisition expanded NVIDIA's presence in the high-performance networking and data centre markets.
- ii. Traditional CPUs are no longer sufficient to meet the ever-increasing requirements of HPC applications.
- iii. The combined strengths of NVIDIA's GPUs and Mellanox's interconnects will enable the development of more efficient HPC solutions.
- iv. (Source: <https://nvidianews.nvidia.com/news/nvidia-to-acquire-mellanox-for-6-9-billion>)

b. 2019: Launch of the GeForce RTX Super Series:

- i. This article introduces the new GeForce RTX SUPER graphics cards. These cards offer significant performance improvements over their predecessors and support real-time ray tracing, an innovative technology that allows for more realistic lighting effects in games.
- ii. (Source: <https://www.nvidia.com/en-us/geforce/news/gfecnt/geforce-rtx-20-series-super-gpus-out-now/>)

c. 2020: Jensen Huang becomes sole CEO.

- i. Jensen Huang, co-founder and CEO of Nvidia, in the company's growth. Nvidia's stock price has seen remarkable growth (409% in a year) under his leadership, reflecting his strategic vision and commitment to

innovation. However, recent challenges have appeared due to Chinese export restrictions. Huang's wealth has also seen a substantial increase, placing him 21st globally with a net worth estimated at \$68.1 billion.

ii. (Source: https://en.wikipedia.org/wiki/Chris_Malachowsky)

d. 2021: Global chip shortage:

i. Nvidia's Q4 2021 earnings exceeded expectations, with revenue of \$5 billion, a 61% year-over-year increase. This suggests strong demand for Nvidia's products despite the ongoing GPU shortage.

ii. (Source: <https://www.globenewswire.com/news-release/2021/02/24/2181882/0/en/NVIDIA-Announces-Financial-Results-for-Fourth-Quarter-and-Fiscal-2021.html>)

e. 2022: Arm acquisition attempt blocked:

i. NVIDIA, a leading American technology company, had tried to acquire Arm, a prominent British chip designer, for a whopping \$40 billion. However, the proposed acquisition has faced regulatory hurdles and has been blocked due to concerns raised by the relevant authorities.

ii. (Source: <https://www.nytimes.com/2020/09/13/technology/nvidia-arm-softbank.html>)

f. 2023: Announcement of the GeForce RTX 40 series:

i. The latest graphics cards introduced in the market assure noteworthy advancements in terms of performance, with the goal of keeping NVIDIA's dominance in the gaming industry.

ii. (Source: <https://www.nvidia.com/en-us/geforce/graphics-cards/40-series/>)

Nvidia's financial performance has flourished in recent years, capitalising on the burgeoning demand for artificial intelligence (AI) and high-performance computing. Despite facing criticism regarding chip availability and pricing, the company maintains significant investment in R&D, particularly in AI, autonomous vehicles, and the metaverse. Notably, Nvidia's year-on-year revenue growth has consistently exceeded 50%, culminating in a staggering 125% increase for fiscal year 2024. This focus on innovative technologies positions Nvidia for continued growth within the rapidly evolving technological landscape.