WHY STEAM USERS PREFER NVIDIA GRAPHICS CARDS

Introduction

Steam is one of the largest online gaming distribution platforms in the world, with approximately **132 million users** worldwide.

The digital storefront was developed by the **Valve Corporation** and released in 2003. Ever since its release, it has cultivated a strong reputation for being the **'go-to'** storefront for many Personal Computer (PC) gamers all over the globe, and as such, analyzing the **geographic distribution** of its userbase offers a key look into the general geographic distribution of PC gamers **across the world**.

Indeed, it can be seen that there exists a high concentration of PC gamers in **high-income, developed nations** like **the United States** and **Australia**. However, the same can also be said for a handful of developing countries such as **Malaysia** and **Brazil**.

This sort of data is crucial for companies that manufacture **PC Gaming Hardware** as it helps them to pinpoint which markets they should focus and to **identify new and emerging markets** for selling their wares.

In fact, one such company is **NVIDIA**, which manufactures Graphics Cards or Graphics Processing Units (GPU) that are crucial components in running PC games. By exploring the distribution of GPUs amongst Steam's user base, we can find some insights that will be useful for **NVIDIA** as a company.

Steam Users per 10,000 population by Country in 2021

Steam Users per 10,000 population

50 100 200 400

Zoom: 120

Map Centre: Africa

Source 1: https://worldpopulationreview.com/country-rankings/steam-users-by-country
Author: World Population Review
Date Published: March 24, 2021

Source 2: https://data.worldbank.org/indicator/SP.POP.TOTL
Author: World Bank
Date Published: September 19, 2024

Source 3: https://developers.google.com/public-data/docs/canonical/countries_csv
Author: Google for Developers
Date Published: June 26, 2024

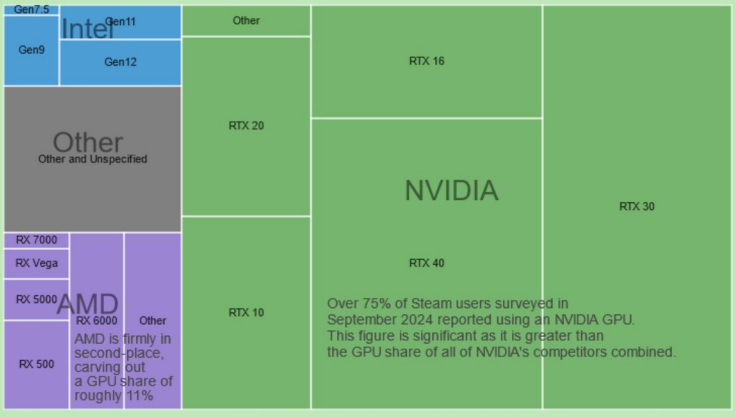
What Graphics Cards do Steam users use?

Steam runs a monthly survey in order to collect data on the PC specifications of its users, compiling and releasing them in the **Steam Hardware & Software Survey** of that particular month. The September 2024 issue of said survey has identified 3 major manufacturers of GPUs: **NVIDIA**, AMD, and Intel. There are of course other GPU manufacturers besides these 3, but these are the major players in the GPU market.

Of the 3 major GPU manufacturers in the market, **NVIDIA** has emerged as the clear market dominator, with **over 75% of Steam users** polled by the September 2024 issue of the Steam Hardware & Software Survey having chosen an **NVIDIA**-manufactured GPU for their PC, compared to roughly 11% for AMD and 5% for Intel. This indicates that **a vast majority of Steam users prefer NVIDIA GPUs** over GPUs manufactured by their competitors.

All of this begs the question: why do Steam users overwhelmingly prefer **NVIDIA's** GPUs over those produced by their competitors?

Steam Users GPU Distribution in September 2024



Company
NVIDIA AMD Intel Other

Source: https://store.steampowered.com/hwsurvey/Steam-Hardware-Software-Survey-Welcome-to-Steam
Author: Valve Corporation
Date Published: October 2, 2024

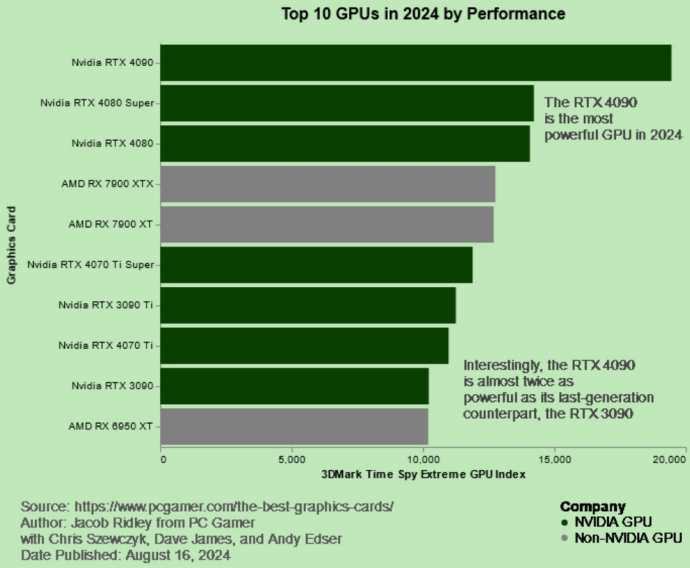
General Graphics Card Performance Comparison

One big reason why Steam users overwhelmingly prefer **NVIDIA** GPUs has to do with their **high performance**.

Performance is an important factor for PC gamers when picking and choosing which graphics cards they want to have in their computers because they can **derive more enjoyment** out of video games when playing them at the **best graphical settings** with the **highest frame rates**, and powerful GPUs are necessary to enable this.

With that in mind, it should be no surprise then why so many Steam users seem to prefer **NVIDIA**'s GPUs over that of their competitors. After all, **NVIDIA**'s GPUs consistently outshine their competition in terms of **graphical fidelity** and **frame rates**, and this can be clearly seen in PC Gamer's hierarchy of the Top 10 GPUs in 2024, where **7 out of the 10** very best GPUs in 2024 were manufactured by **NVIDIA**.

In fact, the **top 3 spots** in the ranking were held by **NVIDIA** GPUs, whereas AMD's strongest-performing graphics card only managed to cinch fourth place. This lends credence to the notion that **NVIDIA**'s GPUs are **generally stronger** compared to those manufactured by their competitors.

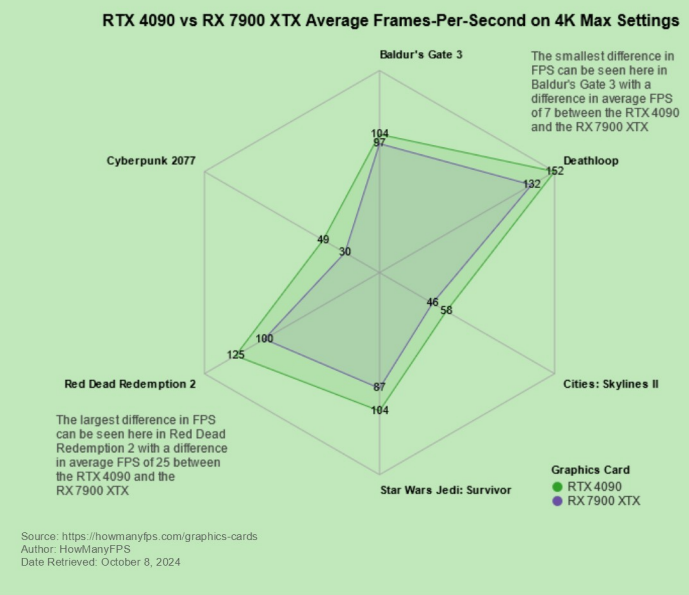


Flagship Graphics Card Performance Comparison

The notion that **NVIDIA**'s GPUs are several times stronger than those which are produced by their competitors is best exemplified via a comparison of **NVIDIA**'s flagship GPU (the RTX 4090) with AMD's flagship GPU (the RX 7900 XTX). These flagship GPUs represent the **highest-end, top-performing GPU of their generation** and this is reflected in not only their steep price but their performance in games.

From the chart, we can see that **NVIDIA**'s RTX 4090 completely blows AMD's RX 7900 XTX out of the water in terms of average **frames-per-second** (FPS) at 4K resolution and the highest graphical settings in the following 6 games: Cyberpunk 2077, Baldur's Gate 3, Red Dead Redemption 2, Deathloop, Star Wars Jedi: Survivor, and Cities: Skylines II. In all 6 games, **NVIDIA**'s **RTX 4090 delivered a higher average FPS** than AMD's RX 7900 XTX did and often did so by a significant margin as well.

Combining all of this data with our knowledge that the vast majority of Steam users reside in **developed, Western nations**, and as such are very likely to have the **disposable income** to afford the strongest-performing GPUs, we can easily see that such individuals will prefer **NVIDIA**'s stronger GPUs over those manufactured by AMD.



What this means for NVIDIA

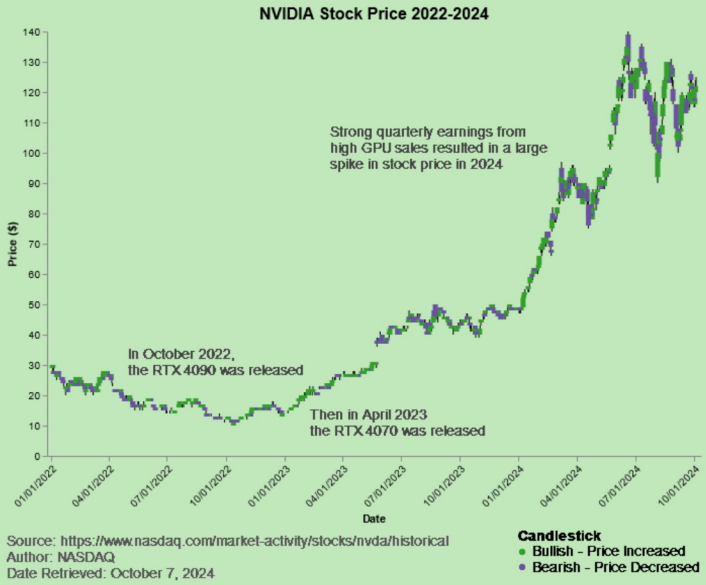
It should be no surprise that the popularity of **NVIDIA's** GPUs amongst Steam's user base and PC gamers at large has generated **significant financial returns** for **NVIDIA**.

Whilst there were some dips here and there, all in all, its stock price has been **steadily trending upwards** throughout the years **2022 to 2024**. Furthermore, it can be seen that its current stock price in 2024 is **4-times** what it was during the start of 2022.

This could be explained by the fact that in **October 2022**, **NVIDIA** released the first model of their RTX 40 series of graphics cards onto the market, starting with their flagship **RTX 4090**. The rest of the RTX 40 series soon followed suit, with the **RTX 4080** entering the market in **November 2022** and the **RTX 4070** arriving in **April 2023**.

As we have seen earlier, the RTX 4090 was an **absolute powerhouse** of a graphics card, and the other graphics cards in the RTX 40 series have all been **ranked very highly** in terms of performance.

Naturally, this has all resulted in **very strong sales** and **sky-high revenues** for **NVIDIA**, culminating in the meteoric rise of its share prices past **October 2022**.

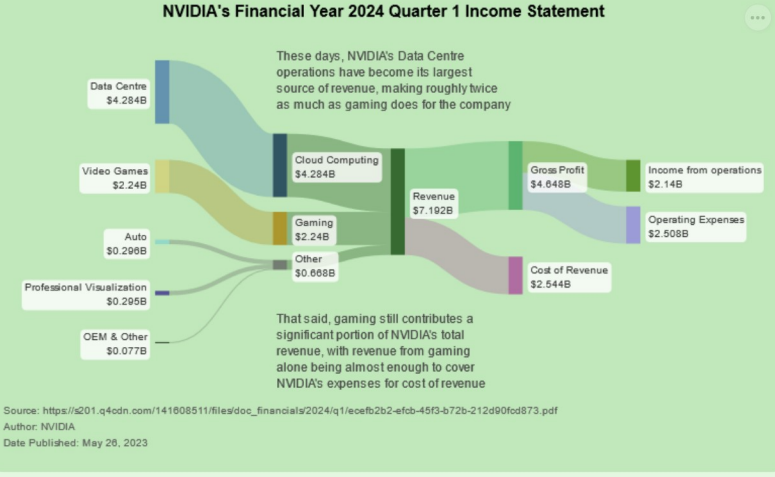


NVIDIA's Future

These days, **NVIDIA** makes a majority of their revenue from their **data centre operations**, capitalizing on the rising demand for **artificial intelligence-powered services** by offering a range of GPUs specially-designed for data centre environments where they would be put to use in **powering machine learning models** and performing **data analytics** amongst other things.

That said, gaming continues to be the **second-largest source of revenue** for the company, generating over **2 billion dollars** in revenue as revealed in their **Financial Year 2024 Quarter 1** financial statements.

For that reason, it is very important for **NVIDIA** to continue to invest in their **gaming** department, not just by investing in **research & development** to develop more powerful graphics cards, but in identifying **previously-untapped** and **emerging** GPU markets so that they may gain a foothold there before their competitors like AMD and Intel can.



Visualization by Kerk Han Chin and completed on October 15 2024