

Game Over for the West

How Japan dominates gaming innovation

Gaming is often at the forefront of innovation, with companies embracing new technology to satisfy their customers' demand for novelty. The industry was an early proponent of augmented reality, voice control and facial recognition to gain the competitive advantage in captivating their users' attention.

This continual adoption of new technology makes it the perfect industry to examine with CIPHER's [Universal Technology Taxonomy \(UTT\)](#).

Our UTT divides inventions into predefined technology categories, creating a landscape that reveals global trends. This presents a quick and efficient way to understand both long and short term developments in gaming.

For clarification, UTT defines gaming inventions as "Games played on computers and laptops, handheld devices, game consoles, phones and tablets. Also includes gaming controllers, card, board, gambling games and all toys". This is the definition we apply throughout our analysis.

In this article, we focus on two key areas:

1. **Top Invention Owners**
2. **Top Innovators**

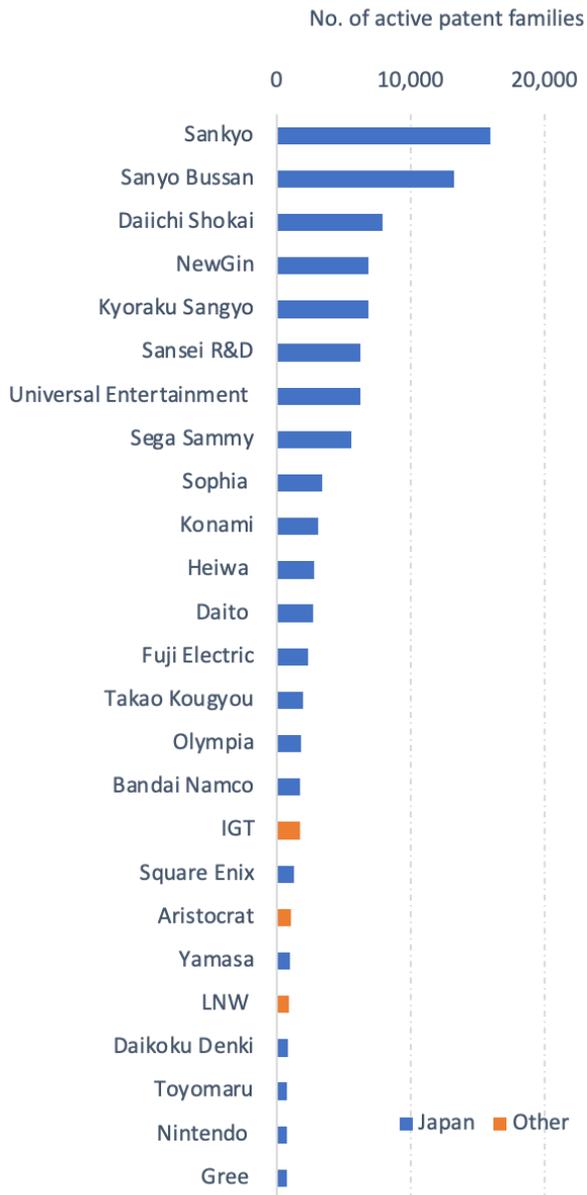
Through examining these key areas, we discovered four unexpected trends:

- **Geographical imbalance:** Japan dominates the list of top inventors and innovators. In both the short and long term, they are responsible for a large percentage of technological development. Western companies trail far behind Japan.
- **Gambling rather than computers drive innovation:** Gambling companies lead the way in number of inventions, particularly slot machine manufacturers. Video game companies are responsible for far less innovation.
- **Pachinko drives the most innovation:** Manufacturers of the Japanese game 'pachinko' are the leading inventors. It is a game mostly unknown outside of Japan, but it dominates the global technology landscape.
- **Long-term and short-term trends are similar:** The trends in short-term and long-term innovators vary little, suggesting that the gaming space is stable and unchanging.

Overall, this article argues that gaming technology is reliant on Japanese companies, with the Western world contributing little. While some may find Japan's prominence in gaming unsurprising, their level of domination is unexpected.

Japan tops the scoreboard

We first examined which companies owned the most inventions overall, gaining insight into long term industry trends.



Patent families classified according to technologies using the CIPHER Universal Technology Taxonomy. Global, excluding China-only patent families.

One trend immediately stands out when examining the top owners - the prominence of Japanese companies. Only three non-Japanese businesses rank in the top 25, with none reaching the top 10. The highest ranking non-Japanese firm is the American slot machine manufacturer IGT, which appears at 17.

This may be unsurprising to some readers, with Japan famous for its contributions to the video game industry. The Japanese company Nintendo drove innovation in motion control with the Wii, and their mobile Pokemon Go made augmented reality mainstream.

Japan is also one of the world's largest video game markets, with a \$20 billion revenue in 2023 and an estimated 77 million players.

Nevertheless, the UTT graph shows that video game companies are not responsible for the majority of gaming inventions, with only 3 video game manufacturers in the top 25.

Place your bets on the gambling industry

Instead, gambling companies own the most inventions, specifically mechanical game manufacturers. This applies to Japan, but also the Western companies in the top 25.

In fact, no Western video game firms make an appearance. The three Western companies in the list (IGT, Aristocrat and LNW) have portfolios consisting largely of slot machines.

The name of the game: Pachinko

However, traditional gambling is illegal in Japan, with slot machines offering cash prizes banned. This law led to the development of a Japanese version of the slot machine, known as pachinko.

Instead of cash, these machines grant the player a token that can be exchanged for money, a loophole that enables a form of gambling to flourish.

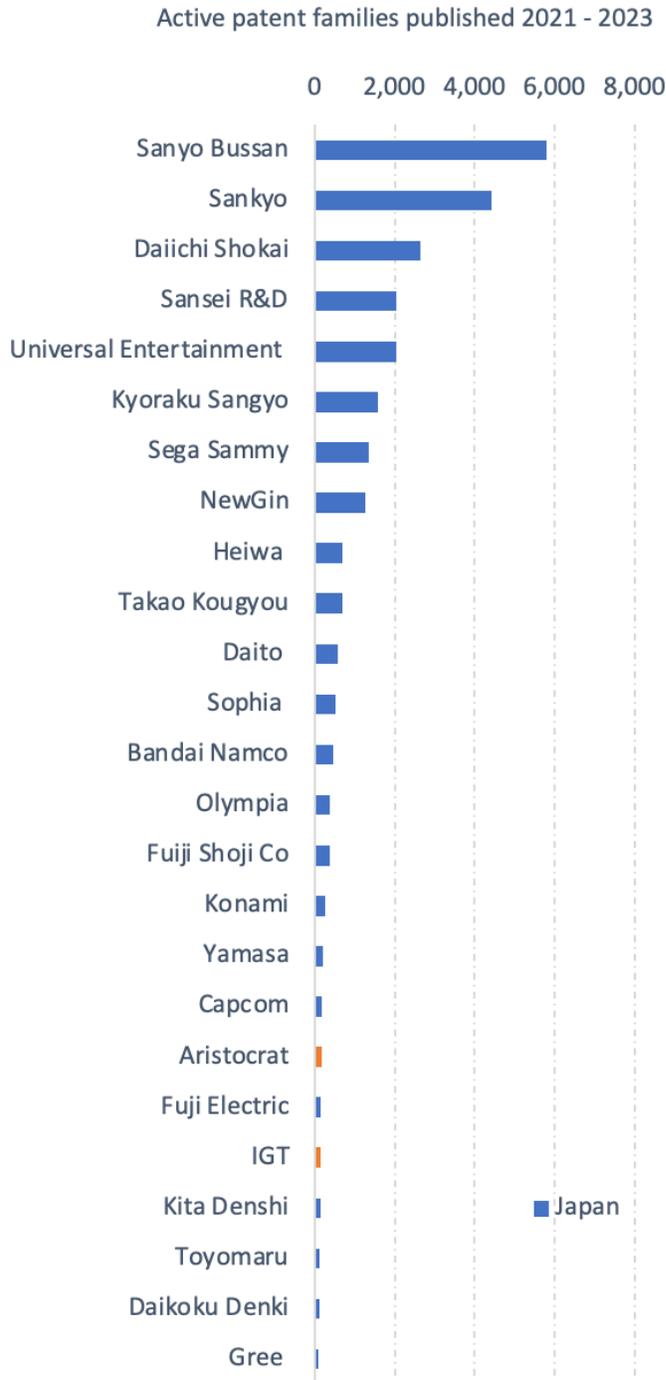
Pachinko's popularity in Japan cannot be overstated, producing 30 times as much revenue as Las Vegas casinos. 100,000 parlours are dedicated to it across the country and it accounts for almost half of Japan's leisure industry. However, this game is relatively unknown outside of Japan, particularly in Western countries.

Remarkably, it is manufacturers of this uniquely Japanese game that dominate the top inventors. Looking at the top five inventors, the companies all focus primarily on pachinko machines and with over half the world's pachinko machines located in Japan, it makes sense that the country dominates.

Japan keeps its eyes on the prize

Next, we examined which companies were the most innovative, defined as the companies who have produced the most inventions since 2021. Overall, the top 25 innovators do not differentiate significantly from overall inventors.

Japan's domination is secure, with no new non-Japanese companies appearing among the innovators. Some rankings have changed, with Sanyo Bussan overtaking Sankyo for top spot, but both are pachinko manufacturers, suggesting wider trends remain stable.



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In fact, the pachinko industry is increasingly innovative. The top 10 innovators list consists entirely of pachinko manufacturers, while one video game company ranks in the top 10 overall owners (Konami).

This contrasts with the pachinko's fall in popularity, with revenue, number of players and parlours decreasing in recent years.

The West's losing hand

While pachinko's popularity decreases, the worldwide gambling market continues to grow. Between 2022 and 2023, gambling revenue increased from \$449.04 billion to \$702.45 billion.

However, in terms of innovation, Western companies fell even further behind. LGW has disappeared from the list, and Aristocrat and IGT fell in ranking. No new Western or non-Japanese companies entered the list, suggesting that gaming innovation is neglected in most countries.

Have video games levelled up?

The video game industry is growing at an impressive rate, with a predicted \$221.4 billion in 2023. Projections show an increasing revenue in the next decade, with experts estimating \$583.69 billion by 2023.

Yet their rate of innovation is not increasing alongside their revenue. While Capcom is a new entrant to the innovation list, Nintendo has disappeared from the top 25, meaning the number of video game companies is the same. Overall, the imbalance between video games and gambling remains intact.

Conclusion

Analysis of recent innovation trends uncover three key findings:

Firstly, Japan continues to dominate gaming technology, while Western companies neglect it. Other Asian countries are also far less innovative than Japan. In fact, Western countries are inventing at a lower rate than Japan in recent years.

Secondly, despite continual growth in revenue, video games lag behind gambling companies. Overall, industry success does not appear to correlate with an increase in innovation.

Lastly, the gaming industry seems extremely stable in terms of innovation, with short-term and long-term trends being almost identical.

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May 2023