The Future of Computer Games

Author Details: Janfada, Amirhossein

Mobin Technical and Vocational High school, Kish Iran

Amirhoseinjanfada85@gmail.com

Abstract

Computer games are one of the fascinating and important phenomena in the information age that affect people's lives, culture and economy. This article examines the factors affecting the growth and development of this industry in the future and considers the role of artificial intelligence in creating new developments in this field. The purpose of this article is to provide a general and comprehensive view of the future of computer games and its importance in the near future.

Keywords: Computer Games, PC games

Introduction

Computer games are very popular and important as one of the forms of communication and entertainment in the modern world. According to published statistics, the number of computer game users will reach more than 3.2 billion people in 2023, which shows the significant growth of this industry in recent years. These users have access to computer games through various devices such as mobile phones, computers, consoles, tablets and even electric cars and enjoy diverse and high quality games. Computer games are used not only as a recreational and entertaining activity, but also as an educational, therapeutic, social and even economic tool. For example, computer games can help increase human cognitive abilities, creativity, problem solving, cooperation and communication. Also, computer games can help treat some mental and behavioral disorders such as depression, anxiety, addiction and autism. In addition, computer games can help create a social and communication space between people with common interests and tastes. Finally, computer games can help create job opportunities and generate income for various people.

Considering the importance and impact of computer games on human societies, predicting the future of this industry is one of the important goals of researchers and investors. This forecast helps us to better use the opportunities and challenges of this industry and plan to prepare for future changes. In this article, we intend to provide a general and comprehensive view of the future of computer games by examining the factors affecting the growth and development of this industry in the future. These factors include: global poverty, electric cars, artificial intelligence and human population. Also, we focus on the role of artificial intelligence as one of the key and effective factors in creating new developments in this field and show how artificial intelligence can help make more attractive, creative and intelligent games.

Global Poverty

Global poverty is one of the main barriers to access to computer games. Global poverty means not having the minimum necessities of life such as food, water, health, education, security and freedom. According to the World Bank, the number of people living below the poverty line, that is on less than 1.9 dollars a day, reached 736 million people in 2015. These people mostly live in Africa, Asia and the Pacific who are deprived of access

to facilities and opportunities in the modern world. Unfortunately these people cannot use computer games as a fun and educational activity.

Global poverty is on the decline, and that's good news for video games. According to the forecasts of the World Bank, the number of people living below the poverty line will reach less than 3% of the world's population by 2030. This means that most people in the world will achieve a better standard of living and have access to electronic devices such as mobile phones, computers, consoles, tablets and electric cars. These people can use computer games as a source of entertainment, education, social and economic. This will increase the demand and production of computer games and expand the market of this industry.

One of the factors that influence the growth of the video game market is the level of global poverty. According to the World Bank, the global poverty rate declined from 10.1% in 2015 to 8.4% in 2020. This means that more people have access to basic needs such as food, water, health, and education, as well as disposable income to spend on entertainment and leisure activities. As a result, more people can afford to buy video games, consoles, and other gaming devices, or use online platforms and services to play games.

The video game market is expected to reach $321 billion by 2026, with a compound annual growth rate of 9.2% from 2021 to 2026[1]. The market is driven by various segments, such as mobile games, console games, PC games, and cloud gaming. Mobile games are the largest and fastest-growing segment, accounting for 76.7% of the total market revenue in 2021. Mobile games are popular because they are accessible, affordable, and convenient, especially for people in developing countries where smartphones are more common than PCs or consoles. Console games are the second-largest segment, with a market share of 14.9% in 2021. Console games are preferred by gamers who want high-quality graphics, immersive sound, and exclusive titles. PC games are the third-largest segment, with a market share of 8.4% in 2021. PC games are favored by gamers who want more customization, and multiplayer options. Cloud gaming is the smallest but emerging segment, with a market share of 0.1% in 2021. Cloud gaming is a service that allows gamers to stream games from remote servers without downloading or installing them on their devices. Cloud gaming is expected to grow rapidly in the future, as it offers benefits such as lower cost, wider availability, and cross-platform compatibility.

The video game market is also influenced by the demographic and geographic factors of the gamers. The number of gamers worldwide is estimated to be 3.24 billion in 2021, up from 2.69 billion in 2015. The majority of gamers are in the Asia-Pacific region, which accounts for 55.7% of the global gaming revenue in 2021[1]. China and the US are the two largest gaming markets, with revenues of $65.2 billion and $49.9 billion respectively in 2021[1]. The average age of gamers is 34.5 years, and the gender distribution is 51.9% male and 48.1% female. The generation Z population, which is defined as people born between 1997 and 2012, is a key target group for the gaming industry, as they are more tech-savvy, socially connected, and diverse than previous generations. The generation Z population is expected to reach 2.56 billion by 2030, up from 2.03 billion in 2020.

In conclusion, the video game market is a dynamic and lucrative industry that is influenced by various factors, such as the level of global poverty, the type and preference of gaming platforms, and the demographic and geographic characteristics of gamers. The video game market is expected to grow steadily in the future, as more people have access to gaming devices and services, and as new technologies and innovations enhance the gaming experience. The video game market is not only a source of entertainment and social interaction, but also a potential driver of economic development and social change.

Electric cars

Electric cars are one of the new and important phenomena in the modern world that affect people's lives, environment and economy. Electric cars are growing and developing as a clean and cheap alternative to fossil fuel cars. According to published statistics, the number of electric cars in the world will reach more than 140 million units in 2023, which shows the significant growth of this industry in the last few years. These cars have

access to the energy they need through electric chargers and prevent the production of greenhouse gases and air pollution. These cars are used not only as a vehicle, but also as a means of entertainment and communication.

Electric cars are a huge opportunity for computer games. These cars have touch screens, internet, bluetooth, speakers and cameras that allow playing computer games on them. These cars also have intelligent and self-driving systems that allow playing computer games while driving or parking the car. These cars can be used as a new platform for making and presenting computer games. For example, computer games can use the vehicle's environmental and behavioral data to create game experiences tailored to the conditions and tastes of the driver and passengers. Also, computer games can use car communication facilities to create multiplayer and social games between different cars. This will increase the attractiveness and creativity of computer games and expand the market of this industry.

One of the most innovative features of Tesla cars is the ability to play video games on the dashboard touchscreen or using the steering wheel and pedals. Tesla has integrated a powerful gaming computer that can run thousands of games from Steam, an online video game store and distribution platform. Some of the games that are available or coming soon to Tesla cars are:

- Beach Buggy Racing 2: A kart racing game that supports multiple players on a split-screen and lets you drive through 22 racing tracks using the car's steering wheel and brakes.

- Cat Quest: A hack-and-slash game where you control a cat searching for its kidnapped sister in a fantasy world[2].

- Cuphead: A run-and-gun game inspired by the golden age of American animation, featuring sibling protagonists Cuphead and Mugman who have to fight their way through various levels and bosses to repay their debt to the Devil.

- The Witcher: A critically acclaimed open-world role-playing game that follows the adventures of Geralt of Rivia, a monster hunter who is searching for his missing adopted daughter in a war-torn continent.

- Sonic the Hedgehog: A classic platform game that stars Sonic, a blue hedgehog who can run at super speed and collect rings while avoiding obstacles and enemies[3].

- Battle of Polytopia: A turn-based strategy game that lets you build and lead a civilization, explore new lands, and fight against other tribes[3].

Tesla's gaming system is not only fun and entertaining, but also showcases the potential of artificial intelligence and machine learning in the future of games. Tesla's cars are equipped with advanced sensors and cameras that can collect and process huge amounts of data, which can be used to create realistic and immersive virtual environments, as well as to improve the gameplay and performance of the games. Tesla's games can also learn from the players' preferences and behaviors, and adapt to their skill levels and styles. Tesla's games can also interact with the car's features, such as the sound system, the climate control, and the navigation, to create a seamless and integrated gaming experience. Tesla's games are not only games, but also a glimpse into the future of gaming.

Artificial Intelligence

Artificial intelligence is one of the prominent and effective phenomena in the information age that affects the life, work and learning of humans. Artificial intelligence means the ability of machines and software to perform tasks that require human intelligence. Artificial intelligence is developing and expanding and is applied to many different fields such as medicine, business, education, security and art. Artificial intelligence not only helps humans to do difficult and complex tasks more easily and quickly, but also helps humans to create new and creative tasks. Artificial intelligence is one of the key and effective factors in creating new developments in computer games.

- *Coding:* Artificial intelligence can help write programming codes for computer games and identify and fix errors and bugs. Artificial intelligence can generate optimal and efficient codes using machine learning and reinforcement learning techniques. Artificial intelligence can produce developable and repairable code using software engineering techniques. Artificial intelligence can produce understandable and transferable codes using modeling and design techniques.

- *Story writing:* Artificial intelligence can help to write interesting and unique stories for computer games. Using text generation and natural language analysis techniques, artificial intelligence can produce stories that have different characters, events, environments, and goals. Artificial intelligence can generate stories that have different branches, options, and consequences using techniques of automatic content generation and interactive generation.

Artificial intelligence can produce stories that have different styles, genres and media by using creative production and artistic production techniques.

- *Creating animations:* Artificial intelligence can help create beautiful and realistic animations for computer games. Using image processing and video processing techniques, artificial intelligence can produce animations that have different colors, lights, shadows, and textures. Using simulation and modeling techniques, artificial intelligence can produce animations that have different movements, sounds, special effects, and physics. Artificial intelligence can produce animations that have different shapes, forms, designs and styles using techniques of automatic content generation and art production.

- *Making 3D Figures:*

3D shapes are one of the important and beautiful details in computer games that affect the realism and attractiveness of the games. 3D shapes mean shapes that have dimensions of length, width and height and can be seen from different angles. 3D shapes in computer games can be inspired by real objects and creatures or made from the imagination and creativity of game creators. 3D figures in computer games can be generated from 2D images or from scans of real objects and creatures. 3D shapes in computer games can have different colors, lights, shadows, textures, movements, sounds and special effects.

3D shapes in computer games are created using artificial intelligence. Artificial intelligence means the ability of machines and software to perform tasks that require human intelligence. Artificial intelligence is developing and expanding and is applied to many different fields such as medicine, business, education, security and art. Artificial intelligence is one of the key and effective factors in creating new developments in computer games. Artificial intelligence can produce high-quality and realistic 3D shapes by using various techniques such as image processing, 3D processing, simulation, modeling, automatic content generation, and art production. Artificial intelligence can help increase speed, accuracy, efficiency and creativity in making 3D shapes. Artificial intelligence can help create 3D figures with diverse and unique shapes, forms, designs and styles.

Conclusion

Computer games are one of the most important and prosperous industries in the modern world that affect people's lives, culture and economy. This industry is growing and developing and has various opportunities and challenges. In this article, we examined the factors affecting the future of computer games and considered the role of artificial intelligence in creating new developments in this field. We showed how global poverty, electric cars, artificial intelligence, and human population affect the demand and production of video games, and how artificial intelligence can help make games more engaging, creative, and intelligent. The purpose of this article was to provide a general and comprehensive view of the future of computer games and its importance in the near future.

References

AI and the Future of Work: Preparing the Workforce for an AI ... - AEI. https://www.aei.org/op-eds/ai-and-the-future-of-work-preparing-the-workforce-for-an-ai-driven-economy/.

AI and the Economy - Department of Economics. https://economics.harvard.edu/files/economics/files/furman-jason_2-25-19_ai-and-economy_nberwp24689.pdf.

Artificial Intelligence and the Future of Work: Humans in Control. https://www.frontiersin.org/research-topics/20487/artificial-intelligence-and-the-future-of-work-humans-in-control.

Artificial Intelligence and Economic Growth - Stanford University. https://www.web.stanford.edu/~chadj/AJJ-AIandGrowth.pdf.

Artificial Intelligence and Economic Development https://link.springer.com/article/10.1007/s13132-023-01183-2.

Ethical concerns mount as AI takes bigger decision-making role. https://news.harvard.edu/gazette/story/2020/10/ethical-concerns-mount-as-ai-takes-bigger-decision-making-role/.

Ethics of AI: The Philosophical Challenges - Springer. https://link.springer.com/content/pdf/10.1007/s11948-021-00323-8.pdf.

Economic potential of generative AI | McKinsey. https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier.

Positive AI visions for the future of work - The World Economic Forum. https://www.weforum.org/agenda/2021/11/positive-artificial-intelligence-visions-for-the-future-of-work/.

The Ethics of AI Ethics. A Constructive Critique | Philosophy & Technology. https://link.springer.com/article/10.1007/s13347-022-00557-9.