**Unit 14 Computer Games Development**

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**Different genres of games and how they have expanded from simple platform games and text-based adventures to modern fully immersive triple A titles.**

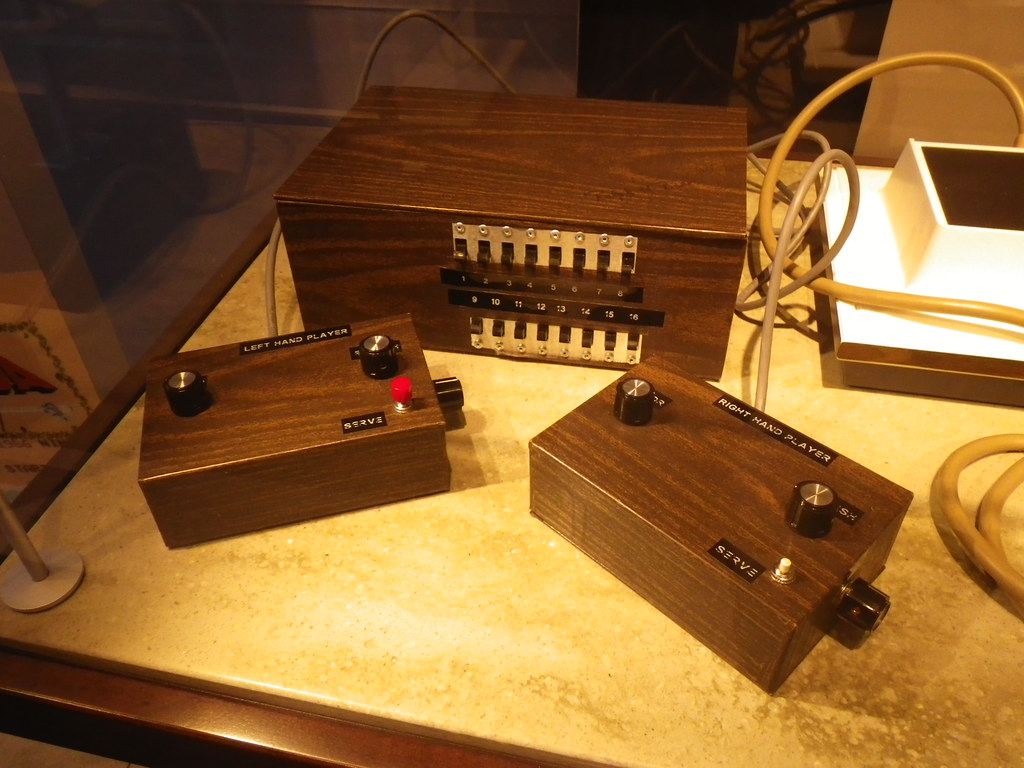
It has been recorded that there are over 30 different genres when it comes to video games. Research claims that shooter and action games are the most popular genres for gaming. Toward this day, the greatest selling game genre is sandbox due to the 2011 video game Minecraft, one reason I think this game has had many sales over the year is because it is compatible on all devices. The game also lets you socialise with your friends which makes it more fun for the users.

The top 10 gaming genres to date are:

* Sandbox
* (RTS) real time strategy
* (FPS & MOBA) multiplayer online battle arena
* (RRP) roleplay
* Sports & simulation
* Puzzle games
* Action
* Survival & horror
* Platformer

**Video games advancement:**

1. In the early 1950’s, oxo (noughts & crosses / tic tac toe) was produced by the British professor: A.S Douglas. This game was part of his doctoral dissertation.
2. A few years later, a game of tennis for 2 was manufactured onto an analogue computer. This was made by William Higinbotham. The game was presented for New York, Brookhaven national laboratory annual visit day.
3. In the year 1967, an invention of a prototype multiplayer system was developed. This machine was named ‘the brown box.’



1. During the 1970’s, the first ever arcade machine game pong was released. This was a considerable success for the developers and creator. I think the reason for this is because it was the first and only arcade game machine.



1. A few years later, Atari released their Atari 2600 which is classed as a home console which features a joystick.
2. The early 1980’s had the following releases: space invaders (arcade game), launch of activation, Pac-Man, Donkey Kong, and Microsoft's first flight simulator game.
3. After the 80’s we began to see some improvements in games, due to devices, memory, space, and graphics.

**Devices over the years**

Gaming and game genres have become more popular over time due to the new releases of devices. Most video games now a days use controllers but this was not always the case. Over the past few years, the designs and intelligence have improved.

|  |  |  |
| --- | --- | --- |
| Year | Description | Image |
| 1980 | Game & watch: a handheld device for electronic games |  |
| 1981 | Release of an arcade gaming machine. Compatible for donkey Kong game. |  |
| 1985 | First release of a Nintendo console. Compatible games were also sold separately. |  |
| 1989 | Handheld device: Gameboy was released |  |
| 1994 | PlayStation first console was released. |  |
| 1995 | First virtual game was set for release. Due to low sales, the production stopped. |  |
| 2001 | The first manufaction of Xbox was released for sales. |  |
| 2004 | A remarkable success to the market was a release by Nintendo: Nintendo DS |  |
| 2006 | Release of Wii, this gaming peripheral sold high due to its multiplayer and motion. |  |

**Explain how the types of games we play have changed over time, look at the modern scope of gaming and how wide and diverse it is.**

There has been a huge change in games over the years. In the beginning, we played amazingly simple puzzle games. The animations, graphics, and colours we could use were limited. Our gaming machines or devices were only capable of playing single-player games.

Multiplayer games are now available across multiple platforms. As a result of advanced technology, game performance can also be increased. Memory, storage, and gaming speed were all considered. Games have also become harder to complete now due to the training of the ai bots, making it more challenging and engaging for users.

**Discuss gender such as the shift from gaming being all male, to a more balanced view. Are there differences in the types of games played between Males and females? What types of devices are used? Why might this be?**

According to studies, there were 5% more male gamers than female gamers in 2012. Yet, the change in this number happened quickly. The ratio of male gamers surged to 11% the next year, while the percentage of female gamers similarly increased to 9%. A shift occurred in 2014, with women gamers outpacing men by 15% to 14%. Throughout the following three years, there was a slight gender disparity, but it was only about 10-15%. In 2018, 11% of viewers were gamers of both sexes. Both decreased to 10% a year later. In 2021 and 2022, female gamers outnumbered male gamers by a margin of 3–4%. Below are some closer figures.

Characteristic 
Male 
Female 
16-24 
25-34 
35-44 
45-54 
55-64 
65-74 
55+ 
65+ 
75+ 
2013 
46% 
2014 " 
470,6 
41 % 
2015 • 
2016" 
2017 " 
41 % 
49 % 
2018 • 
2019 
46% 
41 % 
2020/21 
43 % 
2021 
470,6 

Tablet gaming penetration in the United Kingdom (UK) 
25% 
20% 
5% 
2012 
2013 
2014 
2015 
22% 
2020/21 
2016 
Male 
201 7 
Female 
2018 
2019 
2021 

**Discuss age demographics. How is the landscape of who gamers are changing as generations of gamers grow up and get older. What sort of differences are there in games played across age ranges?**

35% 
30% 
25% 
21.3% 
20% 
5% 
18-24 years 
32.9% 
25-34 years 
26.4% 
35-44 years 
14.9% 
45-54 years 
4.5% 
55-64 years 

Another online study displays a graph with the percentage of gamers in the UK. According to the bar graph, there are 21.3% of gamers who are between the ages of 18 and 24. The percentage of people who play video games among those aged 25 to 34 is 32.9%. British nationals aged 35 to 44 make up more gamers (26.4%) than gamers aged 18 to 24. Ages 45 to 54 in the UK have the highest percentage of gamers (14.9%), while 55 to 64 have the lowest rate (4.5%).

**How has technology changed how we game? Discuss the rise of game consoles, and then the development of tablet and smart phone gaming. Look at the concept of 'elite gaming' requiring a PC and why this might be?**

Many people believe that the evolution of technology is the reason gaming has changed over the years. More people can play from home thanks to the accessibility of console gaming. Going to the arcade to play games was extremely popular during the early days of gaming. A greater number of people can now enjoy gaming on many platforms and from the comfort of their homes, such as packman and street fighting games on arcade machines, thanks to advancements in technology. If you have a gaming device, you can now play games anywhere if it is available offline. If the game is online, you will need some kind of internet connection, which you can get through mobile data and hotspots as well as public or private Wi-Fi. We could only make calls, send texts, and play some remarkably simple games like snake and sudoku in the early iterations of mobile phones and smartphones. We can now download a vast selection of games onto our mobile devices thanks to the advancement of mobile technology. The fact that most games are free to play is a significant benefit.

**Social gaming – how are we playing together? How has that changed?**

We now play video games in a quite unusual way. The number of players has changed significantly. At first, there were just single-player and single-character games available. We can now use additional controllers to play split-screen games on devices. In a variety of games, we can also invite and join (party up) with other players. Most of the action and shooter games have this. Voice chat and text messages are two more entertaining ways to play with one another. The play style is thus improved and made more enjoyable. Early video games did not have this functionality. Through gaming, you were unable to interact with others.

**Topic 4 – Who are the makers of video games, from small independents to big companies. What pay models do they use?**

There are three main groups when it comes to game developers. Mainstream, independent, and payment models are these three.

Triple A game creators are also the mainstream producers. These are large corporations that have produced or made contributions to games that have had a considerable influence on the gaming industry.

Independent producers can be found online and range in age. These are game developers who can assist you with your game in any form. It does not have to be a business or a large organisation; it might simply be just one person. A maker is somebody who can contribute in some way to game scripting or animation.

The payment model, who might be an individual, a small group, or a large group, is the last group of makers. These individuals will market the video games or the in-game assets they have produced for you. For instance, I can ask a group of animators if they have something I can use or if they can create an animation for a game I am making. I will then be able to pay a charge to buy their material and utilise it in my own game.

**Topic 5 – Are games getting smarter?**

Games are becoming more intelligent, and this is evident in the manner that they have gotten harder over time. with options for easy, medium, and hard difficulty added to games.

Online research abound that demonstrate how playing games can increase intelligence in people.

**Resources used:**

[Trends in video games: How have they changed over the years and which genres have been affected by this?](https://pvplive.net/trends-in-video-games-how-have-they-changed-over-the-years-and-which-genres-have-been-affected-by-this/) (pvplive.net)

[50 Video Game Statistics: 2020/2021 Industry Overview, Demographics & Data Analysis | CompareCamp.com](https://comparecamp.com/video-game-statistics/#TOC1)

[Video Game History - Timeline & Facts - HISTORY](https://www.history.com/topics/inventions/history-of-video-games)

https://www.statista.com/topics/8281/video-gamer-demographics-in-the-united-kingdom-uk/#topicOverview

D1 – evaluate the impact of current and emerging technologies on the design and development of computer games to meet the requirements of the user and the computer games industry.

Computer game design and development have been significantly impacted by current and emerging technology, allowing the industry to adapt to changing consumer and market demands. Aspects of game production such as design, gameplay, user interface, and social possibilities have all been improved by these technologies. Here are some significant sectors where the influence of technological advances can be seen:

Realistic visuals and graphics

Advancements in hardware and software have improved the visual fidelity of computer games. High-definition displays, powerful graphics processing units (GPUs), and sophisticated rendering techniques like ray tracing have enabled developers to create stunning, realistic visuals. This enhances the overall immersion and engagement of players, making the gaming experience more captivating.

Virtual Reality (VR) and Augmented Reality (AR):

New creative opportunities for games are now available thanks to VR and AR technologies. Players may engage with virtual settings in a more organic and engaging way thanks to VR headsets and motion-tracking technology, which gives them an immersive, 360-degree experience. On the other hand, AR combines virtual and real-world aspects to produce distinct gameplay experiences. Through their innovative user engagement strategies, these technologies have the potential to completely transform the gaming sector.

Artificial Intelligence (AI) and Machine Learning (ML):

The creation of video games has been profoundly impacted by AI and ML approaches. Realistic NPCs with complex behaviour patterns and decision-making abilities are created using AI-powered algorithms. ML algorithms are used to enhance gameplay, customise it for each player, and create procedurally generated content. These innovations improve the general intelligence and adaptability of computer-controlled characters in video games.

Cloud Gaming and Streaming:

The use of high-end gear is no longer necessary thanks to the rise of cloud gaming services, which let users stream games directly to their smartphones. While consumers can play games on a variety of devices with a wide range of hardware requirements thanks to this technology, processing and rendering are handled by powerful cloud servers. Broader access to games is made possible via cloud gaming, which also provides new revenue models including subscription-based services.

Cross-Platform Compatibility

Cross-platform gaming has become increasingly popular. The development of games that run fluidly across several platforms, such as PCs, consoles, and mobile devices, has become simpler thanks to technologies like game engines, frameworks, and middleware. This accessibility encourages inclusivity and increases the pool of potential gamers.

Real-Time Multiplayer and Networking

The cooperative enjoyment of games has enhanced thanks to developments in networking technology. Peer-to-peer networking, dedicated servers, and low latency connections allow for flawless real-time communication between players in various places. As a result, competitive esports and multiplayer games have become increasingly popular, sustaining a thriving gaming scene.

User-Generated Content

User-generated content are supported by contemporary game development tools and platforms. With the use of these technologies, players can design their own game levels, tweaks, and adaptations and share them with others. This increases a game's durability and replay ability while also fostering a vibrant sense of community and fostering creativity.

To sum up, modern and emerging technologies have completely changed how computer games are designed and created, enabling better graphics, immersive experiences with VR and AR, intelligent gameplay elements powered by AI and ML, cross-platform compatibility, cloud gaming, real-time multiplayer, and user-generated content. These developments keep reshaping the computer game market, adapting to consumers' changing needs and delivering a more immersive and captivating gaming experience. Due to all the reasons listed above, more user requirements are being fulfilled much easier and games are becoming more fun and competitive.