**Section 1 – ICT Essay completion**

**Game Development with Communications Technology**

**ICT Essay – Scott Fowler**

**Introduction:**

Within the game development industry there are many ways to communicate with stakeholders but in this essay, I will focus on employees and the customers. Along with this I will also cover the affects in our lives by the mass adoption of technology and what is specifically is being developed for the game development sector. At the end, I will outline the Safety, Health and Welfare at Work Act 2005 and the potential risks to those in this industry while also outlining the rights under the Freedom of Information Act for citizens in Ireland.

**Communications Technologies**

“Developed by Epic Games, Unreal Engine is a powerful and versatile game engine that offers a wide range of tools, features, and capabilities” Strive Mindz (2024) which is vital as it is the staging ground of game development, where collaboration is key to bring projects to completion. It is where each collaborator merges their work to form a game. Unreal Engine includes tools for all fields of game development, from animation, film, programming, modelling and art, allowing every team member to be able to work efficiently on the project. There are however a few drawbacks, such as the rapid advancement of its technology rendering projects with a lengthy development time obsolete as they complete without any of the latest features and the requirements to run the engine on a computer itself lend to employees requiring a high-end PC with the latest equipment to work on it.

To ensure that ideas are communicated correctly, a common platform for organising the projects & setting teams on the right path is Discord. Using Discord as an Organisation platform for a team allows the setup of several channels of chats, team calls, meetings that keep all collaborators on the same page. While making use of it for collaboration, it can also be used for marketing, as Thorne (2022) discusses “On Discord, users can communicate via text, images, videos, calls and even screen shares – either privately or in public ‘servers’”. This allows a constant flow of marketing, with news deployed on a personal level to users who can also interact with the team in the public channels whilst retaining the private channels for the team to work together within.

To garner an audience, game “developers use TikTok to boost their games” GamesIndustry.biz (2021). According to Statista (2024) we can determine the reason for this widely adopted use of the TikTok Social Platform in recent times to be caused by it being the 5th largest social media platform, only behind WhatsApp, Instagram, YouTube and Facebook. It is a platform of which success is determined by virality, and with that teams will deploy footage, clips and content that is designed to go viral. However, if a game is not designed with virality in mind, it will struggle to find a footing on the platform.

**How It affects our private lives:**

Communication technology comes with both benefits and negatives for individuals using it. According to Sherlock (2019) “The use of tablets and iPads within schools has become the norm and as a result, students have greater access to information and a different way of learning than they would previously have had”, which benefits families as children are raised with more knowledge than ever before, giving them more opportunities for future careers.

With this there has also been an overreliance on technology, as every question is a google away, people often take the first link given to them. Sherlock (2019) finds themselves “guilty of an over-reliance on Googling the answer to a question”. This is a common problem as sources of information may not be accurate when the first link on google can be a sponsored link instead. Society has access to all information in the world although it has become complacent to accessing only the first link, without cross referencing to ensure their information is correct.

**How it affects our public lives:**

Within our public lives, technology has had a positive impact in the fact that we are now capable of contacting people across the globe within an instant. There is “No waiting for the postman, messenger pigeon, or message in a bottle—technology has broken down the communication barriers that distance once presented” Burgess (2023).

While barriers have been broken down to allow long form communication, it has also raised barriers in protecting those who use false identities to manipulate, stalk or abuse victims. It has become very common that the person you see in images is not necessarily the same in-person, as a Sugar Cookie “survey found that one in three readers have been catfished and that a huge number of victims are duped into sending money or sexually explicit photos – with 20% of people sending money to catfishers” Eloise (2018).

**Current Developments:**

Artificial Intelligence has become a key resource in game development, since it has the capability to create, speed up and possibly replace people’s jobs. AI makes use of machine learning algorithms and neural networks to learn from data, predict and perform tasks. ChatGPT is often used to create code for users however “studies find AI mostly useless at solving problems for coders” Kitson (2024). Although it is beneficial when used in small patches. When given small pieces of code, it tends to be successful in solving the issues at hand, but when given an entire programme and asked to solve issues contained within, the failure rate increases as it cannot filter what is important and what is not. “According to the researchers, the models got harder when longer code was entered. AI is not capable enough to notice what is relevant and what is not and got confused when it encountered pieces of code it did not need to solve the problem” Kitson (2024). Overall, AI is beneficial when applied in a small scale versus large scale. It is also unlikely that it will completely remove people from their jobs in the game development sector.

Quantum technology is aiming to bring communications to a quantum level, bringing advancements to secure communications.  IIT Delhi and DRDO’s “tests established a new standard for reliable and impenetrable communication, which is crucial for the defense and strategic industries”. The study concentrated on Quantum Key Distribution (QKD), a state-of-the-art technique for encrypting data that is impossible to crack covertly” Team (2024). This will benefit users as communications will become more secure and harder to be infiltrated by third parties in the future. This will further protect ideas from possibly being stolen by others in the game development sector.

**Safety, Health and Welfare at Work Act 2005:**

This is an act that according to Health and Safety Authority (2005) which sets out:

* The requirements for the control of safety and health at work.
* The management, organisation and the systems of work necessary to achieve those goals.
* The responsibilities and roles of employers, the self-employed, employees and others.
* The enforcement procedures needed to ensure that the goals are met.

One potential safety issue within game development is the workings with visual display screens. As game developers are required to work lengthy times on a screen, the risk should be assessed and ensure that control measures are in place to avoid risks. The employer should ensure that sufficient breaks are available to the employees to prevent damage by excessive screen usage.

**Freedom Of Information:**

“You have the right to get copies of records held by public bodies under the Freedom of Information Acts.” Citizensinformation.ie (2023). This includes records relating to you personally or any other records created since 21 April 1998. This only applies to bodies that are publicly funded such as government departments. Some records are exempt such as National security and international relations and Meetings of the government. You can meet with an FOI officer to retrieve information but in many cases the detailed information is released publicly on bodies websites.

**Conclusion:**

Overall, between Unreal Engine’s wide uses for the industry, the adoption of Discord for collaboration and marketing plus the virality of TikTok, the game development industry has all the tools available to ensure that games are successful, and their audience is plentiful when used correctly. Communications technologies have their wide range of benefits and positives, in which I discussed that the overreliance is detrimental to the accessibility of information, creating complacency in convenience. With current developments and fears of an AI takeover, there is enough research to back up that game developers should remain unaffected whilst secure connections and protections of ideas are being improved by future quantum technologies. When it comes to the protections of employees, the Safety, Health and Welfare at Work Act 2005 ensures that those in the game development industry are also protected in such cases as excessive screen usage. Any developers in Ireland also have the right to Freedom of Information, which ensures that they can gather any records relating to themselves or others under public bodies at any time.

**Bibliography**

Burgess, J. (2023). *How Has Technology Affected Social Interaction?* [online] Sogolytics Blog. Available at: https://www.sogolytics.com/blog/how-has-technology-affected-social-interaction/.

Citizensinformation.ie (2023). *Freedom of information (FOI)*. [online] www.citizensinformation.ie. Available at: https://www.citizensinformation.ie/en/government-in-ireland/how-government-works/standards-and-accountability/freedom-of-information/.

Electronic Irish Statute Book (eISB) (2005). *Safety, Health and Welfare at Work Act 2005*. [online] www.irishstatutebook.ie. Available at: https://www.irishstatutebook.ie/eli/2005/act/10/enacted/en/print.

Eloise, M. (2018). *New survey reveals the massive toll of catfishing on victims*. [online] Metro. Available at: https://metro.co.uk/2018/08/06/new-survey-reveals-the-massive-toll-of-catfishing-on-victims-7764000/.

GamesIndustry.biz. (2021). *How developers use TikTok to boost their games*. [online] Available at: https://www.gamesindustry.biz/how-developers-use-tiktok-to-boost-their-games.

Health and Safety Authority (2005). *A Short Guide to The Safety, Health and Welfare at Work Act, 2005 €3*. [online] Available at: https://www.hsa.ie/eng/Publications\_and\_Forms/Publications/Safety\_and\_Health\_Management/Short\_Guide\_to\_SHWWA\_2005.pdf.

Kitson, N. (2024). *Study finds AI mostly useless at solving problems for coders*. [online] TechCentral.ie. Available at: https://www.techcentral.ie/study-finds-ai-mostly-useless-at-solving-problems-for-coders/.

Lanz, J.A. (2024). *Google’s AI Breakthrough Brings Quantum Computing Closer to Real-World Applications*. [online] Decrypt. Available at: https://decrypt.co/292918/ai-breakthrough-brings-quantum-computing-closer-to-real-world-applications.

Lebar, R. and Božidar Veljković (2023). Impacts of Information and Communication Technology on Professional and Personal Life and Employee Satisfaction. *Ekonomske teme (Online)*, 61(4), pp.567–584. doi:https://doi.org/10.2478/ethemes-2023-0029.

Sherlock, J. (2019). *Left to their own devices: is technology harming family life?* [online] The Irish Times. Available at: https://www.irishtimes.com/life-and-style/health-family/parenting/left-to-their-own-devices-is-technology-harming-family-life-1.3883854.

Statista (2024). *Most popular social networks worldwide as of January 2024, ranked by number of monthly active users*. [online] Statista. Available at: https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/.

Strive Mindz. (2024). *How Unreal Engine is Transforming Game Development Industry*. [online] Available at: https://www.strivemindz.com/blog/how-unreal-engine-is-transforming-game-development-industry/.

Team, E. (2024). *DRDO and IIT Delhi use quantum technology to reinvent secure communication - CIO News*. [online] CIO News. Available at: https://cionews.co.in/drdo-and-iit-delhi-use-quantum-technology/ [Accessed 28 Nov. 2024].

Thorne, S. (2022). *How Discord became the center of the universe for gamers*. [online] The Drum. Available at: https://www.thedrum.com/opinion/2022/05/17/how-discord-became-the-center-the-universe-gamers.

Zwiezen, Z. (2022). *That Viral Killer Train Game Is An Admirable, Original Mess*. [online] Kotaku. Available at: https://kotaku.com/choo-choo-charles-evil-train-game-pc-review-steam-1849866413 [Accessed 28 Nov. 2024].

Levis, M. (2024). *Understanding The Limitations Of AI (Artificial Intelligence)*. [online] Medium. Available at: https://medium.com/@marklevisebook/understanding-the-limitations-of-ai-artificial-intelligence-a264c1e0b8ab.