Executive Summary

The goal of this project was to assist our client, a gaming company, uncover the social, environmental, regulatory, and ethical impacts of developing Metaverse and Web 3.0 assets as well as determine other issues concerning stakeholders that the client should be aware of [1] [2]. The Metaverse is a combination of many technologies including augmented and virtual realities and Web 3.0 is the next, decentralized iteration of the internet. The approach for this project was to first investigate the potential issues and challenges brought by Web 3.0 and the Metaverse as well as the intersection of these two technologies. This was followed up with a proposed framework to navigate the potential negative impacts of Web 3.0 and the Metaverse. Web 3.0 and Metaverse are very related and dependent on each other simply because Web 3.0 serves as the fundamental infrastructure and basis. Web 3.0 is required to cryptographically connect data from individuals, companies, and machines, enabling the development of the Metaverse world. It was determined that the risks of new regulations imposed on the Metaverse, and Web 3.0 are low. However, it is recommended that a clear policy prohibiting gambling that uses digital assets as a reward or a currency. Social impacts mainly focus on three negative aspects including depression and harassment in the Metaverse and over-customization issues caused by Web 3.0 overreads users' personal information. Since those two advanced technologies are still at the early stage of their development, issues that would give rise to negative impacts on society should be mitigated as much as possible. It is suggested to develop a supervision system in the Metaverse world to avoid underaged people getting addicted to it. In addition, parents are encouraged to use the supervision system to set up an entertaining time for their children. Regarding Web 3.0, it is recommended that the company builds a system to limit the access gained by AI and machine learning technology so that they won't overread users' privacy. For ethical impacts, it is important to pay attention to privacy protection for the users and fairness to everyone. To build a more secure and fair platform, a few methods such as hardware level encryption, self-sovereign identify framework. To make sure a fair, equal and unbiased platform, it is encouraged to invite people from different backgrounds to participate in. For the environmental impacts, it was found that while there is potential to reduce emissions through the virtualization of physical events and vanity products, there is an anticipated surge in cloud service (storage and gaming) and blockchain-related energy consumption and carbon emission. To overcome this, it is recommended that the client consider less energy-intensive consensus methods to verify blockchain states/transactions, consider utilizing renewable energy in physical facilities, establish client goals that are consistent with affiliate organizations and partners, evaluate both facility and product lifecycles in the context of energy consumption, carbon emission, and electronic waste (disposal), and seek to create a circular economy where it is viable for consumers to dispose of unwanted products in an ecofriendly fashion.