ESG
Gaming

Building an esports educational metaverse experience.

Literature Review | Theory of Change | Visualisation

Bournemouth University

Forward

In a unique collaboration between ESG Gaming, Bournemouth University and stakeholders from across esports including Guild, XL, Lionscreed, Esports Insider, Esports Youth Club, IN4 Group, Fnatic and Dundee and Angus college we are working together to explore the topics of digital and tech inequality, player protection and inclusivity within gaming and esports. We are looking at these topics through the lenses of not only web2, but also web3 (i.e. metaverse), given the gaming sectors curiosity and eventual adoption of new immersive technologies.

The UK consumer games market is a true success story for the United Kingdom, with a valuation of £7.16bn in 2021. The sector provides employment to over 21,000 people in the United Kingdom with 61% of employees being under the age of 35 years. There is much to celebrate about our sector and as it pivots to providing gaming experiences in the metaverse, we will work collaboratively to reimagine, create, build and continually evaluate the player protection and inclusivity experience in particular, for consumers. Looking globally for a moment, the Metaverse in Gaming market size is projected to surpass USD 663.8 Billion by 2030 from its current global valuation of USD 36.93 Billion in 2022. Rising adoption of AR & VR, coupled with interactive gaming will boost significant industry growth.

Our vision at ESG Gaming is to ensure that consumers worldwide possess the skills, knowledge, resilience and tools to engage with digital entertainment in a safe, responsible, positive and inclusive manner. With our partners we are building an immersive, virtual reality community, where game players, fans, parents and educational professionals can all come together to experience learning like never before. With a working title of Esports Community, consumers will be able to take part in a range of immersive experiences from fitness and exercise classes; mindfulness meditation; travel the world to emerging gaming cities; network in the esports café; learn of careers in the gaming sector; get support around mental health and player protection; trade, sell and buy gaming hardware & software and participate in immersive educational seminars and tournaments.

Our metaverse will be co-created within a robust academic evaluation framework. As Web3 technology is emerging and hardware to access improving, we will use the next twelve months to build, test and evaluate immersive learning experiences. This document sets out our plans and the research which underpins these plans, together with our theory of change, to enable us to build the metaverse in an evidence led, sustainable manner. We know there is a lot of hype surrounding this technology with mixed views about its wider adoption. We also know that there is a dedicated community who are building right now. They are the early adopters; working hard to understand this technology, making mistakes, learning and having success. There is no doubt this will be the next evolution of the internet which will bring about significant opportunities for consumers, but also unknown risks. It is these risks that ESG Gaming will focus upon as we reimagine education, player protection and inclusivity.

Finally ESG Gaming is a not-for-profit, regulated, community interest company. Creating social impact and contributing to the grass-route gaming community is at the heart of what we do. The surplus we make annually will not be used to pay shareholders, instead 75% will be reinvested back in our metaverse and 25% will be donated to others to build and create impact for our community. We will work with corporate partners to secure funding so our platform and its content can be provided at no cost to consumers. We will unleash the power of corporate volunteering to maximise our build capabilities and marketing so we can reach consumers globally. Finally we will champion, collaborate and support innovators in this space.
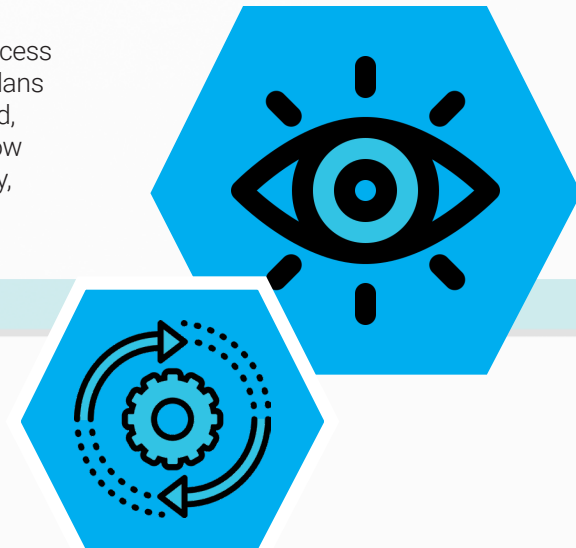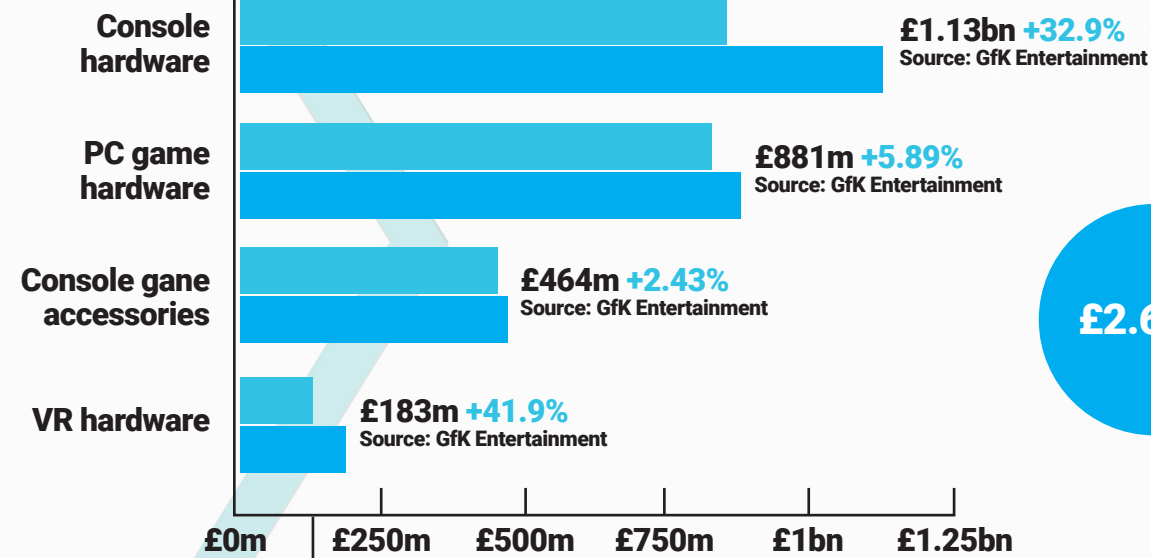
Understanding the gaming market

The UK consumer games market valuation in 2021 was a £7.16bn, an increase of 1.9% from 2020.
This valuation was made up of game hardware, software and culture sales as featued on these next three pages.

2021 UK Game hardware sales

Game Hardware

Console hardware — **£1.13bn +32.9%**
Source: GfK Entertainment

PC game hardware — **£881m +5.89%**
Source: GfK Entertainment

Console gane accessories — **£464m +2.43%**
Source: GfK Entertainment

VR hardware — **£183m +41.9%**
Source: GfK Entertainment

£0m £250m £500m £750m £1bn £1.25bn

● 2020 ● 2021

£2.66bn +17.4%

2021 UK Game software sales

Game Software

£1.65bn +5.59%
Digital Console
Source: Omdia

£33.8m -20.8%
Pre-Owned
Source: Omdia

£511m -20.9%
Boxed Software
Source: Omdia

£1.46bn +0%
Mobile Games
Source: Omdia

£920m -7.02%
Digital PC
Source: Omdia

£4.28bn -6.32%
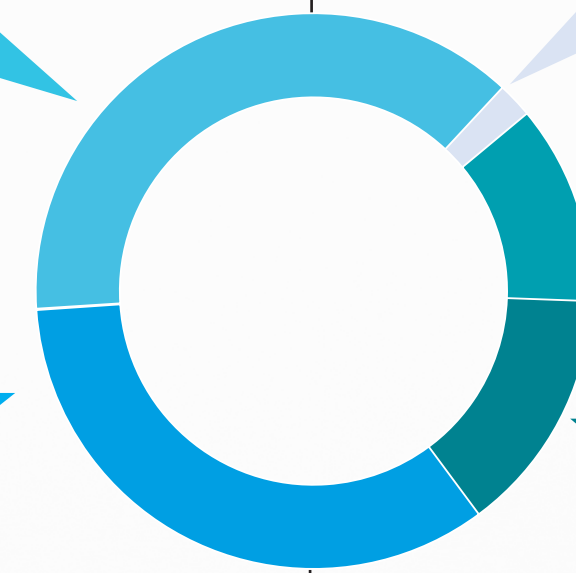
2021 UK Game Culture Sales

Game Culture

Toys & Merchandising

£159m
+33.6%
Source: NPD

Books & Magazines

£11.8m
+12.2%
Source: ABC, Nielson, Ukie
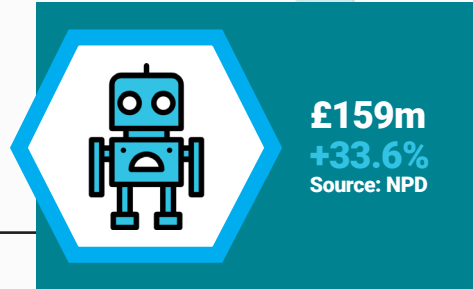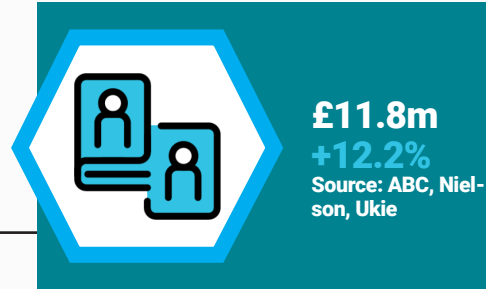
Streaming & Game Video Content

£49.8m
+9.23%
Source: Ukie

Film, TV & Soundtracks

£3.98m
-82.6%
Source: BFI. OCC, Ukie

Events & Venues

£1.04m
Source: Ukie

£226m **+13.8%**

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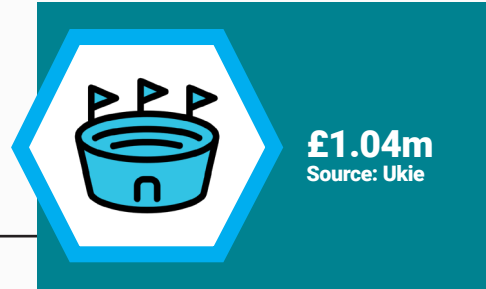
2021 UK Game Workforce and Diversity

67% of the workforce is male, female is **30%** and **3%** is non-binary

people who reported a sexuality other than heterosexual was up to **24%**

The games industry workforce remained **young with 61% listing their age as 35 or under in 2022**

66% of the workforce reporting that they are White British, **24%** as White Other, **5%** as Black, **2%** as Asian, **2%** as Mixed/Multiple ethnicity and a further **2%** as other.

Over four fifths **(82%)** reported having at least an undergraduate qualification.

18% of respondents reported having at least one neurodevelopmental condition. More people in games were autistic or had a condition affecting concentration, such as ADHD, than the working age population.

Looking at mental health, **38% of the people who responded to the census reported that they suffered from anxiety, depression or both.**

Creating a Theory of Change

We know there is a lot of hype surrounding the metaverse with mixed views about its wider adoption. Therefore ESG Gaming has focused on undertaking a six-month literature review of the research and evidence and from this we have been able to create a comprehensive theory of change.
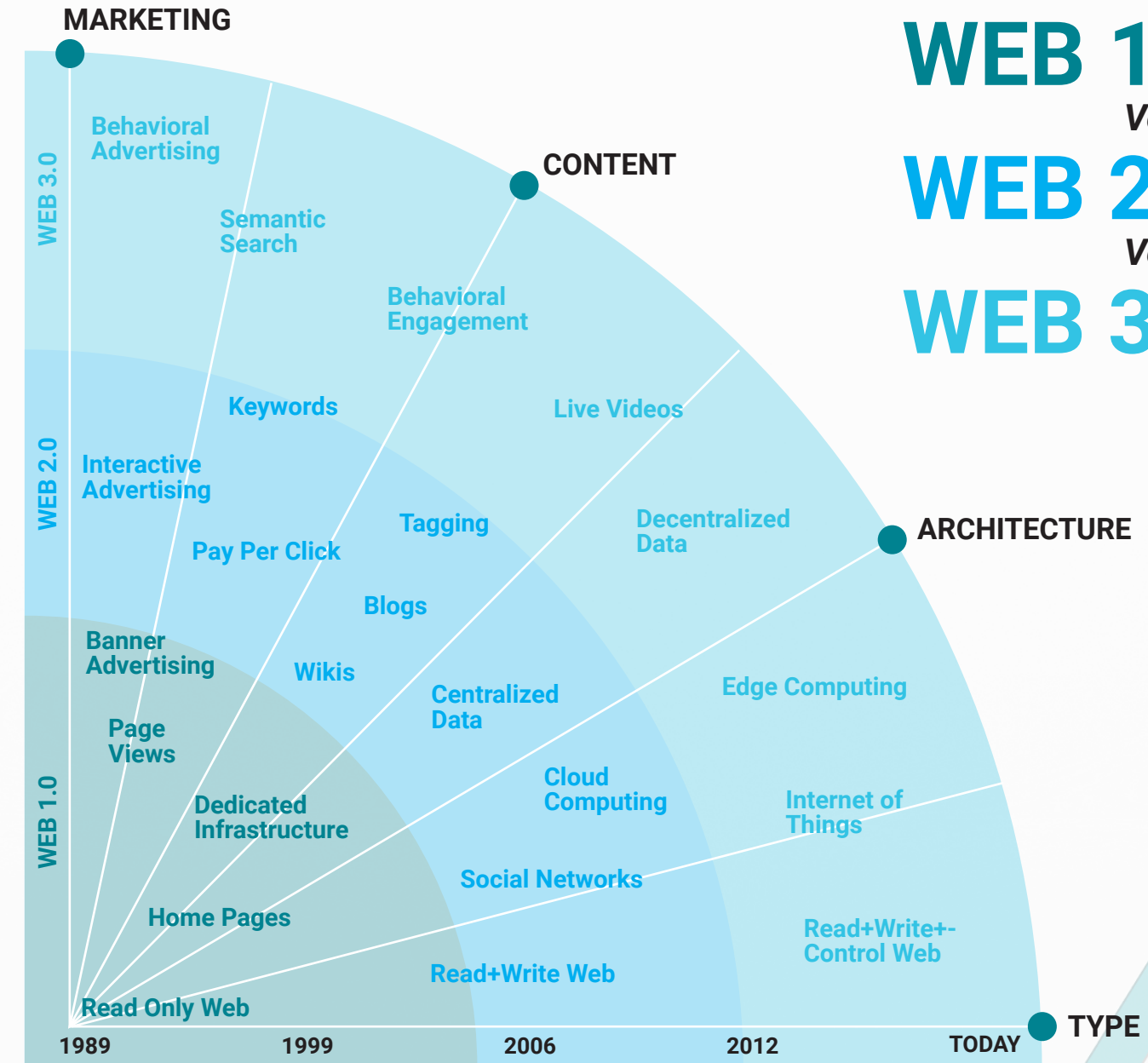
The ESG Gaming, theory of change, has been co-created with academics from Bournemouth University who focus on psychology, game design, computer science and this has been co-created with academics who focus on interdisciplinary topics and research with technology in the areas of psychology, game design, computer science, and Human Computer Interaction. Led by Dr Sarah Hodge, our theory of change will set out an initial 'Problem statement' which will summarise what we need to understand and our intended direction of travel. The theory of change will then show the (i) the evidence of need; (ii) the activities we will deliver; (iii) outcomes from those activities, and (iv) the social impact we will create. Best illustrated, a theory of change describes the change we want to make and the steps involved in making that change happen.

The evolution of the internet

To understand Web3, it makes sense to understand what came before. The first version of the Internet, known as Web1 arrived in 1989 and comprised of a collection of links and homepages. Websites weren't particularly interactive. You couldn't do much apart from read text and publish basic content for others to read. Some call Web1 the 'read phase' of the internet.

Web2 came next in 2004. This version of the Internet allowed consumers to not only consume content but create and publish content on blogs and Internet forums. The emergence of social media platforms; Facebook in 2004; Twitter in 2006 and Instagram in 2010 all took content sharing to new heights and as we know it today. As technology continues to evolve, challenges with Web2 include equal access, information control, intellectual property, copyright, authorship, trust, privacy, security, and cultural considerations. The truth is a few very large organisations own all our data. Some call Web2 the 'read and write' phase of the internet.

Rather than just using tech platforms in exchange for our data, imagine if consumers can participate in the governance and operation of the protocols themselves. This means consumers can become participants and shareholders, not just customers of products. This is Web3 and might be described as the 'read, write and own' phase of the internet

WEB 1.0
Versus
WEB 2.0
Versus
WEB 3.0

Diagram axes: MARKETING, CONTENT, ARCHITECTURE, TYPE

WEB 3.0 / WEB 2.0 / WEB 1.0

- Behavioral Advertising
- Semantic Search
- Behavioral Engagement
- Keywords
- Live Videos
- Interactive Advertising
- Tagging
- Decentralized Data
- Pay Per Click
- Blogs
- Banner Advertising
- Wikis
- Centralized Data
- Edge Computing
- Page Views
- Cloud Computing
- Internet of Things
- Dedicated Infrastructure
- Social Networks
- Home Pages
- Read+Write+Control Web
- Read+Write Web
- Read Only Web

Timeline: 1989 — 1999 — 2006 — 2012 — TODAY

Theory of Change

With the continued evolution of the internet from web2 to web3, we need to understand the potential risks and opportunities for consumers. The gaming sector are early adopters of web3 and this sector will transform consumer engagement with this latest evolution of the internet. Therefore, we would like to understand the opportunities and risks to consumers, which will enable organisations such as ESG Gaming and our partners to develop the awareness, educational and support eco-system within web3

PROBLEM STATEMENT

With the continued evolution of the internet from web2 to web3, the potential risks and opportunities for consumers, particularly vulnerable, those at risk and young people are not fully known.

OUR ACADEMIC RESEARCH CONSIDERED

- The differences between web2 and web3, including some of the specific risks and challenges for web3 as well opportunities for consumers, in the context of competitive (esports) and non-competitive gaming.
- An analysis of the specific web 3 features, activities and experiences which related to risks, challenges, and opportunities for consumers, in the context of competitive (esports) and non-competitive gaming.
- Considerations of the different types of consumers, the user's awareness, and how this might influence the challenges risks and opportunities, in the context of competitive (esports) and non-competitive gaming.
- Understanding the risks a contrast between the context of gaming with other risky activities to understand if gaming pose specific, similar or different risks and opportunities.

BRINGING FOCUS TO AWARENESS, EDUCATIONAL AND SUPPORT ECO-SYSTEM

To understand the opportunities and risks, ESG Gaming will focus on consumer (i) Gameplay; (ii) Player Protection and (iii) Mental & Physical Health.

OUTPUTS

1. Build an immersive, virtual reality environment, where consumers and educational professionals can access high quality, accredited & evaluated learning materials.
2. Build a virtual reality community, where consumers and educational professionals can socialise, share learning, seek support, increase mental health and reduce isolation.

OUTCOMES

1. Consumers have appropriate information to increase their knowledge and awareness of (i) Gameplay; (ii) Player Protection and (iii) Mental & Physical Health.
2. Educational professionals have high quality, accredited & evaluated learning materials to deliver to students in a web3 environment.
3. Parents have appropriate information to increase their knowledge and understanding of (i) Gameplay; (ii) Player Protection and (iii) Mental & Physical Health.
4. Consumers will be able to collect non-fungible tokens (NFTs) to celebrate their learning achievements.
5. Educational and recreational social activities will take place to build community cohesion, reduce isolation and increase awareness of web3 more generally.
6. Expert discussion and learning seminars will take place to increase knowledge of web3 and ongoing future trends.

THIS WILL MEAN

Consumers, educational professionals, parents and guardians have resources available to support awareness and inform users, of web3 technology. This will increase awareness, knowledge and confidence to embrace the digital future in a safe and inclusive manner.

WE WILL ACHIEVE OUR MISSION

ESG Gaming is a passionate advocate of emerging technology and is committed to working alongside the digital entertainment sectors to ensure the experience is open, inclusive and positive for all consumers and stakeholders.

AND DELIVER OUR VISION

To ensure that consumers worldwide possess the skills, knowledge, resilience, and tools to engage with digital entertainment in a safe, responsible, positive, and inclusive manner.

MINDFULLNESS HUB

PARENT HANGOUT

Appendix: Understanding and mitigating risks

We know there is a lot of hype surrounding web3, with mixed views about its wider adoption. However what we cannot ignore is the sheer volume of work happening in this space, weather that is building virtual environments or the tech to access these environments. It is no wonder Goldman Sachs suggests metaverse alone represents an $8 trillion market opportunity. We know the gaming and entertainment sectors are early opters of this technology, however at ESG Gaming what we want to do is ensure consumers, educational professionals and parents are not only more aware of, but actually informed users, of web3 technology. This will increase awareness, knowledge and confidence to embrace the digital future in a safe and inclusive manner.

Building a web3 platform does come with risks, not least because what we are proposing hasn't really been done before. Our project and academic team have spent considerable time thinking through the potential risks and 'known unknows' and this work is summarised as follows
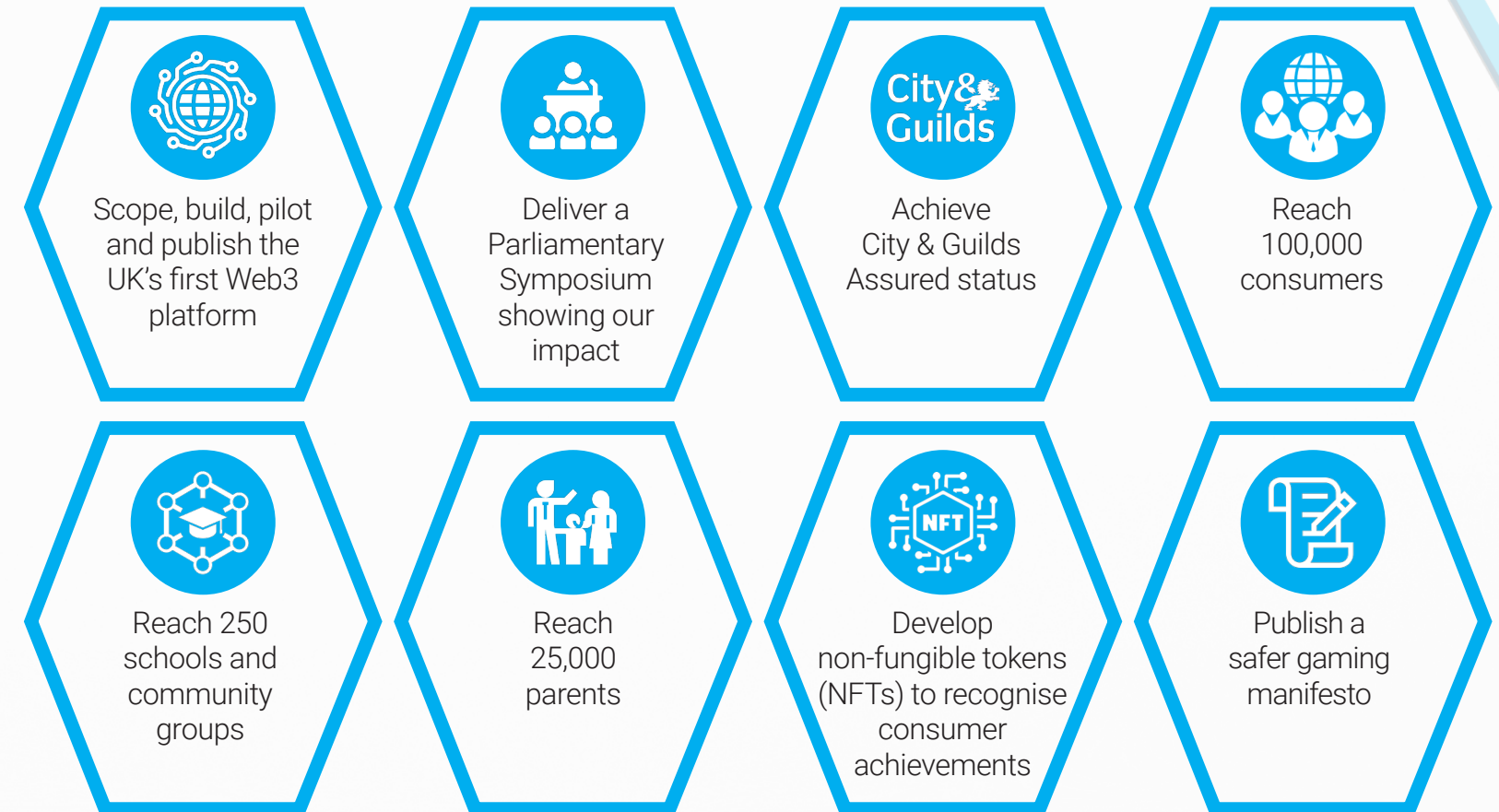

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ESPORTS HANGOUT

SOCIAL HUB

MINDFULLNESS HUB

Appendix: Primary Risks

REF	RISK	DATE ADDED	CURRENT CONTROLS / MITIGATIONS	SLT/BOARD OWNER	Current Rating		Overall Rating
					L	I	
Project Governance and leadership							
G1	The Board does not provide an effective level of leadership and governance.	Jan-23	Skills matrix will be developed and used to identify skills gaps when recruiting for ESG Gaming Directors.	Board Chair	1	3	3
			Board to meet every eight weeks. Sub-committee structure also be established with initial Finance, Audit and Risk sub-committee (FARC) who will meet six times a year in year one (alternative to board meeting dates) reporting back to main board. Minutes to be published on ESG Gaming website				
			Register of Conflcts in place for board members, reviewed at every board meeting. Published on ESG Gaming website				
			Quality Management System to be developed in 2023 as part of ISO: 9001 and Investors in People assessment				
			Board to achieve ISO: 9001; Investors in People; B-Corp and Fundraising Regulator approval				
G2	Loss of confidential or personal data due to security breach or inadequate controls.	Jan-23	QMS to be developed in 2023 to include data processes. ESG Gaming registered with Information Commissioners Office (ICO)	Board / FARC Chair	1	1	1
			Contracts with external delivery partners will be put in place and contain clauses around data protection and confidentiality.				
			Data protection policy in place and training is mandatory part of new board / employee induction.				
			Microsoft Sharepoint used for ESG Gaming file storage, with back-up arrangements in place.				
			As a general rule, ESG Gaming will not collect personal information from comsumers				
G3	ESG Gaming fails to protect its intellectual property	Jan-23	Trade Mark registeration completed with intellectual Property Office (IPO)	Board Chair	2	4	8
			Pro-bono legal support to be sought wrt product protection				
Platform build							
S1	Failure to build Web3 platform within three months	Jan-23	Work with trusted supplier who has a track record of major project delivery	Chair Advisory Group	1	4	4
			Ensure bi-weekly build meetings to iron out any issues in a timely manner				
			Establish reporting to Advisory Board and ESG Gaming board bi-weekly during build phase				
Platform Awarding Body approval							
P1	Project not awarded assured status by awarding body	Jan-23	Longstanding relationship with Awarding Body which aids communication and knowledge of timelines	Chair Advisory Group	3	3	9
			Deliver training to Advisory Group on Awarding Body Standard				
			Having early conversations with awarding body, so project can be factored in to their planning timeline				
Platform reach is low							
L1	Platform reach results in low transcition of consumer interest	Jan-23	ESG Gaming Directors and partners are well connected and leaders in the sector. Very well known and high respected	Board / Chair Advisory Group	2	2	4
			Robust marketing strategy to be developed with clear measureable outcomes, which are reviewed at every board. Use of paid media is an option if required.				
			Relatinship with Trade Press, regulators, Gaming publishers, Govt departments is strong and will be used to used raise awareness.				

Appendix: Specific Deliverables

Scope, build, pilot and publish the UK's first Web3 platform

Deliver a Parliamentary Symposium showing our impact

Achieve City & Guilds Assured status

Reach 100,000 consumers

Reach 250 schools and community groups

Reach 25,000 parents

Develop non-fungible tokens (NFTs) to recognise consumer achievements

Publish a safer gaming manifesto

			Overall Risk Rating				
Almost Certain	>90%	5	5	10	15	20	25
Likely	50-90%	4	4	8	12	16	20
Possible	30-50%	3	3	6	9	12	15
Unlikely	10-30%	2	2	4	6	8	10
Rare	<10%	1	1	2	3	4	5

Appendix: Literature Reference

Problem statement
With the continued evolution of the internet from web2 to web3, we need to understand the potential risks and opportunities for consumers. The gaming sector are early adopters of web3 and this sector will transform consumer engagement with this latest evolution of the internet. Therefore, we would like to understand the opportunities and risks to consumers, which will enable organisations such as ESG Gaming and our partners to develop the awareness, educational and support eco-system within web3. To help structure this theory of change, we will focus on consumer (i) gameplay; (ii) player protection & inclusivity and (iii) physical and mental health. We have studied the following academic papers: • Nath, K., Dhar, S., & Basishtha, S. (2014, February). Web 1.0 to Web 3.0-Evolution of the Web and its various challenges. In 2014 International Conference on Reliability Optimization and Information Technology (ICROIT) • Cao, L. (2022). Decentralized ai: Edge intelligence and smart blockchain, metaverse, web3, and desci. IEEE Intelligent Systems • Nabben, K. (2022). Entering the Field of Web3:'Infrastructuring'and How to Do It. Available at SSRN: https://ssrn.com/abstract=4290516 or http://dx.doi.org/10.2139/ssrn.4290516

Factor	Gameplay	Player Protection	Health
Outline	Current game features and experiences – users in the metaverse Participation rates of 1) general gaming and 2) competitive gaming 3) metaverse Player protection – how it is communicated	Starting with age to highlight similar structure to rating systems and to acknowledge differences between certain age groups and this includes providing a rationale for those over 18.	Considerations to physical and mental health, highlighting the implications for mental health.
Research and links	Data on the metaverse is unclear. Much of the academic data is focused on interest rather than adoption and usage. This reinforces the emerging nature of web3, which is to be excepted at this stage of its evolution. Gaming data: https://newzoo.com/insights/articles/the-games-market-in-2022-the-year-in-numbers Highlighting the future opportunities with AR VR mixed	Player protection academic research has a strong focus on gambling as appose to gaming. Suggestions from the gambling industry have been applied to the gaming industry for example see references below Griffiths, M. D., & Pontes, H. M. (2020). The future of gaming disorder research and player protection: what role should the video gaming industry and researchers play?. International Journal of Mental Health and Addiction, 18(3), 784-790. https://link.springer.com/article/10.1007/s11469-019-00110-4 Shi, J., Potenza, M. N., & Turner, N. E. (2020). Commentary on: "The future of gaming disorder research and player protection: What role should the video gaming industry and researchers play?". International Journal of Mental Health and Addiction, 18(3), 791-799: https://link.springer.com/article/10.1007/s11469-019-00153-7 Derevensky, J. L., & Richard, J. (2020). Response to commentary: the future of gaming disorder research and player protection: What role should the video gaming industry and researchers play. International Journal of Mental Health and Addiction, 18(3), 800: https://link.springer.com/article/10.1007/s11469-019-00111-3 Derevensky, J. L., & Griffiths, M. D. (2019). Convergence between gambling and gaming: does the gambling and gaming industry have a responsibility in protecting the consumer?. Gaming Law Review, 23(9), 633: https://www.liebertpub.com/doi/abs/10.1089/glr2.2019.2397?journalCode=glr2 Esports and governance: Kelly, S. J., Derrington, S., & Star, S. (2022). Governance challenges in esports: a best practice framework for addressing integrity and wellbeing issues. International Journal of Sport Policy and Politics, 14(1), 151-168. https://www.drsarahkelly.com.au/wp-content/uploads/2021/09/Governance-challenges-in-esports-a-best-practice-framework-for-addressing-integrity-and-wellbeing-issues.pdf Setyawati, R., Mareza, L., & Hamka, M. (2022). Digital Resilience: Opportunities And Threats For Adolescents In A Virtual World. Acta Informatica Malaysia (AIM), 6(2), 67-71. https://actainformaticamalaysia.com/archives/AIM/2aim2022/2aim2022-67-71.pdf	YP Mental Health Censers: https://feweek.co.uk/mental-health-worries-dominate-2022-youth-voice-census/ Vuorre, M., Johannes, N., Magnusson, K., & Przybylski, A. K. (2022). Time spent playing video games is unlikely to impact well-being. Royal Society Open Science, 9(7), 220411: https://royalsocietypublishing.org/doi/10.1098/rsos.220411 Example of difficulties from previous self-identified user: https://gamequitters.com/team/ Digital resilience E.g., Hodge, S. and Johnson, L., (2020). The digitally resilient student. The Psychologist: https://www.childnet.com/resources/digital-resilience/ https://www.parents.parentzone.org.uk/morearticles/digital-resilience-a-parents-guide https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/831217/UKCIS_Digital_Resilience_Framework.pdf Esports and addiction: https://link.springer.com/article/10.1007/s11469-021-00488-0 Ramella-Zampa, B., Carbone, G. A., Panno, A., Santos, M., Imperatori, C., Budde, H., ... & Machado, S. (2022). Understanding and conceptualizing eSports among behavioural addictions: a brief overview of the literature. Emerging Trends in Drugs, Addictions, and Health, 100048: https://www.sciencedirect.com/science/article/pii/S2667118222000150 Király, O., Billieux, J., King, D. L., Urbán, R., Koncz, P., Polgár, E., & Demetrovics, Z. (2022). A comprehensive model to understand and assess the motivational background of video game use: The Gaming Motivation Inventory (GMI). Journal of Behavioral Addictions, 11(3), 796-819: https://akjournals.com/view/journals/2006/aop/article-10.1556-2006.2022.00048/article-10.1556-2006.2022.00048.xml Public health and esports: Wattanapisit, A., Wattanapisit, S., & Wongsiri, S. (2020). Public health perspectives on eSports. Public Health Reports, 135(3), 295-298: https://journals.sagepub.com/doi/full/10.1177/0033354920912718 Sharma, M. K., Anand, N., Roopesh, B. N., & Sunil, S. (2022). Digital resilience mediates healthy use of technology. Medico-Legal Journal, 90(4), 195-1999: https://journals.sagepub.com/doi/abs/10.1177/00258172211018337?journalCode=mljc

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