GAMING WITHOUT FRONTIERS: COPYRIGHT AND COMPETITION IN THE CHANGING VIDEO GAME SECTOR

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AYSE GIZEM YASAR
AMY THOMAS
KENNY BARR
MAGALI EBEN

CREATe

Gaming without Frontiers: Copyright and Competition in the Changing Video Game Sector

Ayşe Gizem Yaşar*, Amy Thomas**, Kenny Barr*** & Magali Eben****

Abstract

This working paper examines aspects of the contemporary video games sector at a time when incumbent and new-entrant market participants vie for primacy in the games industry. In this setting, ownership configurations and business models of key actors are in a state of flux. As consumers increasingly access culture 'on-demand' by way of cloud technologies, myriad opportunities and challenges emerge, not only for the video games sector, but for the wider cultural industries and society as a whole. It is in this very dynamic industrial landscape that the working paper is located.

This paper marks a starting point for collaborative research on the games industry, drawing on the range of expertise within CREATe to provide a more holistic view of innovation, creativity, and power dynamics in games. The authors draw on different research specialisms and interests including: digitalisation of the cultural industries; copyright and notions of user creativity; digital services and product market definition; and competition law, innovation and the role of technology. The paper draws on each of these specialisms in turn. It starts by providing the industrial context of the discussion and analysis. This feeds into three analytical sections examining: user creativity and intellectual property in video games; the implications of industry concentration for different articulations of creativity; and finally, an exploration of the potential ramifications of developments in the games sector for innovation at the dawn of the metaverse era.

In doing so, this work sets the scene for future research, which brings together competition law, IP law, and cultural policy perspectives. With questions formulated throughout the paper, the authors embark on a project to review the changing landscape of gaming and its implications for creativity, innovation, access and integration.

* CREATe Fellow (University of Glasgow) and Assistant Professor (Education) at the London School of Economics.
** Lecturer in Intellectual Property and Information Law, CREATe, University of Glasgow.
*** Research Associate, Centre for Cultural Policy Research, University of Glasgow.
**** Senior Lecturer in Competition Law, CREATe, University of Glasgow.

I. Introduction

This CREATe working paper examines copyright and competition law dimensions of the contemporary video games sector, setting the scene for future research by the CREATe games project.[1] At a time when incumbent and new-entrant market participants vie for primacy in the very dynamic games industry, ownership configurations and business models of key actors are in a state of constant flux. The relationship between gaming hardware and gaming software has arguably never been more nebulous, as technology evolves and becomes less hardware dependent. As consumers increasingly access culture 'on-demand' by way of cloud technologies and on a subscription basis, myriad opportunities and challenges emerge: not only for the video games sector, but for wider cultural industries and society as a whole. There can be little doubt that games and gaming is serious business.

As a copyright-intensive sector that, in many respects, displays classic oligopoly characteristics, it is of little surprise that this realm is of interest to both IP and competition law scholars. Exploitation of various types of IP has been a central pillar of the games industry from its inception to the current day. However, traditional delineations between primary creators and corporate rightsholders as authors and owners of IP in games, and players as relatively passive consumers, are challenged in the contemporary gaming milieu. Increasingly, users play an active creative role in the development of video games that has been likened to a form of authorship. This potentially adds a new dimension to the already complex rights ownership profile of video games titles and franchises. This poses many serious questions around the role of IP in the video game sector, and the efficacy of business models underpinning the activities of key actors. This change from a passive role (as a 'user' of games in copyright or a 'consumer' in competition law) to an active role as a 'creator', not only raises questions about authorship and IP, but also about the traditional notions of consumption which underpin economics and competition law literature.

Moreover, recent merger and acquisition activity and suggestions of increased concentration, coupled with associated investigations and interventions by competition authorities, further piques the interest of the authors of this paper. This type of consolidation is a characteristic of many, if not most, cultural sectors. In games, this raises questions around the potential effects of industry concentration on innovation and creativity in the sector. The veracity of such claims

[1] The authors would like to thank all the participants in the Roundtable on Copyright, Competition and Business Models in App Stores and Gaming, which took place in Glasgow on 17 February 2023. Special thanks go to Justin Alae-Carew of Blazing Griffin, Stijn Huijts of Geradin Partners, Dr Friso Bostoen of EUI, KU Leuven and Tilburg University, and Alba Ribera Martinez of University Carlos III of Madrid, who opened the roundtable. Event highlights can be found at: https://www.create.ac.uk/blog/2023/03/14/copyright-competition-and-business-models-in-app-stores-and-gaming-event-highlights/.

is by no means certain, but interrogating the basis of these claims and the potential ramifications is of central significance here. This is particularly pertinent at a crucial juncture in the development of emergent cloud gaming models. Indeed, it is at this juncture that conceptions and understandings of gaming move far beyond the boundaries of any particular industry or sector.

Transformations do not occur merely within the more traditional confines of 'games'. As the gaming industry goes through a cloud transformation, it is also providing the basis for the development of something bigger: the metaverse. While virtual environments known as metaverse are still in their infancy, their connection to the gaming sector is clear. Popular games and gaming platforms like Minecraft, Fortnite and Roblox have been labelled 'proto metaverses'.[2] The immersive experience of metaverse lends itself well to gaming. At least some of the M&A trend in the gaming sector seems motivated by metaverse development.[3] Established players in the gaming industry, like Microsoft and Epic Games, are taking shots at different aspects of metaverse. As such, metaverse development is an integral part of this project.

Despite this close connection however, the metaverse goes beyond gaming, and metaverse projects encompass many aspects of human lives, from socialising to work, fitness, and even psychotherapy.[4] Metaverse players are emerging outside of the gaming sector. It also has the potential to foster user creativity far beyond what video games have allowed so far and open up different business models. The authors of this paper are interested in the historical and contemporary connections between gaming and the metaverse. Some of the concentration trends and user creativity in the metaverse run parallel to the research focus in the gaming sector, setting the scene for an investigation into corresponding regulatory regimes.

This paper is not intended to provide clear answers on what the changes in the games industry mean for IP or competition law. Rather, it aims to bring together a range of perspectives, identifying central research questions which can best be answered through a multi-perspective lens. The authors of this paper draw on different research specialisms and interests including: digitalisation of the cultural industries, copyright and notions of user creativity, digital services

[2] Friso Bostoen, 'The antitrust books you should've read in 2022 [part 1]' 19 January 2023, CoRe Blog, available at: https://www.lexxion.eu/en/coreblogpost/the-antitrust-books-you-shouldve-read-in-2022-part-1/.

[3] For example, Microsoft's attempted acquisition of Activision Blizzard and Take-Two Entertainment's 2022 acquisition of Zynga. We discuss the former acquisition below. See also Needleman, S.A. 'Take-Two Interactive to Buy FarmVille Maker Zynga in $11 Billion Deal' (WSJ, 10 January 2022) available at: https://www.wsj.com/articles/videogame-maker-take-two-interactive-to-buy-zynga-in-12-7-billion-deal-11641818298.

[4] Hayes, S. 'Are counselors ready for the metaverse?' (Counseling Today, 4 November 2022) available at: https://ct.counseling.org/2022/11/are-counselors-ready-for-the-metaverse/.

and product market definition, and competition law, innovation and the role of technology. The paper draws on each of these specialisms in turn. It starts by providing the industrial context of the discussion and analysis. This feeds into the three analytical sections examining: user creativity and intellectual property in video games; the implications of industry concentration for different articulations of creativity; and finally, an exploration of the implications of developments in the games sector for innovation at the dawn of the vaunted metaverse era. The concluding section synthesises each of these component parts in the closing discussion. It identifies the questions which will underpin the future research of the CREATe games project.[5]

II. Market participants and business models in the video game industry

This section of the working paper provides an overview of the video games sector by identifying key market participants operating in the contemporary sphere, including: game developers and publishers, digital distribution services, cloud gaming platforms and game users. The section then sets out a range of business models operated by key actors in the industry, including: exploitation of IP, sales-based models, subscription models, ad-funded approaches and in-app purchases. In doing so, this part introduces key dimensions of the video games sector that will be interrogated in the subsequent sections, firstly from an IP perspective, before competition law analyses are brought to bear.

a) Key Games Sector Participants

The video games sector is a significant contributor to the overall value of the cultural industries. Video games is currently the largest entertainment sector, both in the UK and globally, in terms of economic value.[6] This far exceeds both music and video-on-demand, sectors that have recently dominated much of the policymaking and academic discourse around the digital entertainment industries.[7] By comparison, the business of video games has received far less attention, but as gaming becomes an increasingly pervasive activity across a wide range of platforms, video games increasingly enter the wider cultural industries discourse.

The games landscape is populated by a vast array of actors producing the software and hardware components necessary to provide gaming experiences to users. Some of these are fully

[5] Thomas et al (2023) 'New Players in the Game? Investigating the Emergence of Cloud Gaming and the Changing Landscape of the Video Game Industry' (Blog post) available at: https://www.create.ac.uk/project/competition-markets/2023/06/18/cloud-gaming-and-the-changing-landscape-of-the-video-game-industry/.

[6] Dealessandri (2023) 'ERA: games remained biggest home entertainment industry in the UK in 2022', Gamesindustry.biz available at: https://www.gamesindustry.biz/era-games-remained-biggest-home-entertainment-industry-in-the-uk-in-2022.

[7] ERA (2023) ERA Yearbook 2023 available at: https://eraltd.org/media/72554/2023-era-yrbk_120323.pdf.

immersed in the games industry, while for others, video games is one part of a wider set of enterprises. Although a very dynamic nexus of operators, for the purposes of this section of the paper, some key constituents of this landscape can be usefully identified.

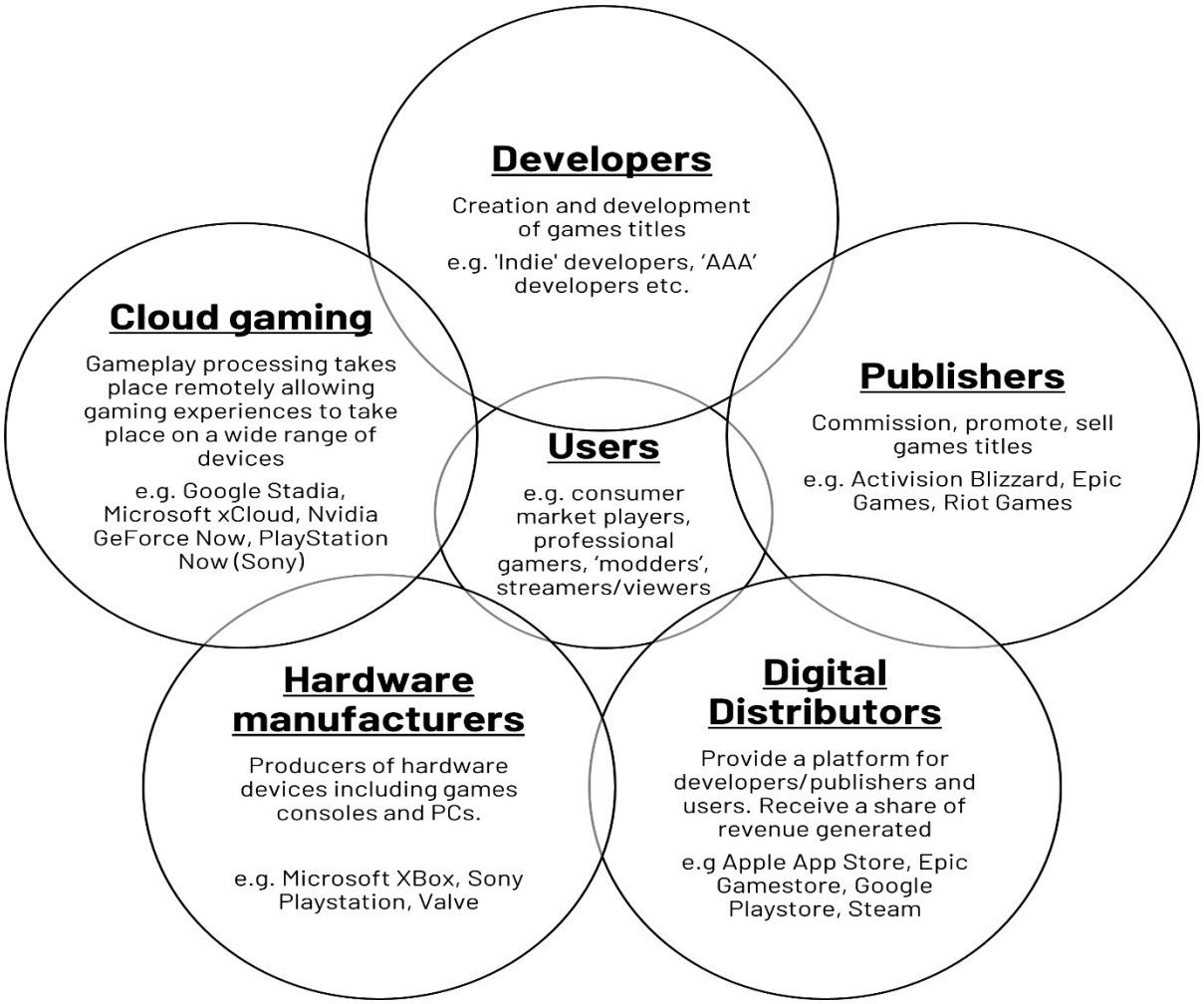

Figure 1: Key Games Sector Actors

Figure 1 illustrates an industrial landscape populated by a diverse range of actors, from small 'Indie' developers, to very large vertically and horizontally integrated industrial behemoths. In this setting, games created and developed by micro producers exist alongside those produced by the so-called 'AAA' developers. The term 'indie' can be used narrowly to connote independence from ownership by some larger entity but can also be understood more broadly to imply aesthetic, creative and even ideological independence from the mainstream. [8] 'AAA' developers, on the

[8] Simon, B. (2013) 'Indie Eh? Some Kind of Game Studies', *Loading...*, 7(11). Grabarczyk, P. (2016) 'Is every indie game independent? Towards the concept of independent game', *Game Studies*, 16(1).

other hand, are generally associated with large, integrated corporate operations where maximising profit and shareholder value are likely to be central commercial imperatives.[9] Of course, such a simplistic binary cannot account for the true complexity of the landscape but does serve to highlight the presence of actors of diverging scale, corporate configuration and creative outlook active in the sector. This poses questions around the extent to which these operators serve shared/discrete markets, an issue that is revisited later in the paper.

It is also clear from Figure 1 there is a high degree of upstream/downstream cross-ownership in the video games industry, a characteristic that is common to many other creative industries sectors. [10] Some companies might publish *and* develop games, whereas some 'indie' developers may self-publish via distribution platforms. Some prominent hardware operations, such as Nintendo and Sony, develop and publish games, and also provide distribution and cloud gaming services.[11] Valve, perhaps most readily associated with development of games, is also involved in games distribution and hardware manufacture through its Steam storefront/platform and the Steam Deck handheld device.[12] Therefore, some actors have an interest in all links of the chain from game creation to game consumption. And as noted, the user is no longer necessarily a passive actor in this setting. As the gaming experience becomes increasingly multifaceted and multi-layered, this complex and constantly evolving nexus of overlapping and, in some instances, conflicting interests raises many questions. Most pertinent to this paper are questions around: the relationship between user creativity and IP; the effects on the games 'ecosystem'; and the formation of the nascent metaverse that are addressed later in this paper.

b) Business Models

In many respects, the games industry shares common traits with other longer-established copyright-intensive media sectors such as music, literary publishing, and TV production. Companies in the industry have adopted business models based on exploiting intangible intellectual property and have developed brands/franchises easily identified by players. In addition, parts of the supply chain arguably have an oligopoly structure dominated by several

[9] Lipkin, N. (2013) 'Examining Indie's Independence: The meaning of "Indie" Games, the politics of production, and mainstream cooptation', *Loading...,* 7(11).
[10] Gil, R & Warzynski F (2015)'Vertical Integration, Exclusivity, and Game Sales Performance in the US Video Game Industry', *Journal of Law, Economics, & Organization*, Vol. 31, Supplement 1: Conference on Law and Economics of Organizations: New Challenges and Directions (2015), pp. i143-i168. Doyle, G. (2018) 'Television production: configuring for sustainability in the digital era', *Media, Culture & Society*, 40(2), 285–295.
[11] For example: PlayStation Studios, Sony https://www.playstation.com/en-us/corporate/playstation-studios/, and Nintendo Switch: https://www.nintendo.co.uk/Nintendo-Switch-Online/Nintendo-Switch-Online-1183143.html.
[12] Martin, C (2022) 'Valve Steam Deck: Everything you need to know', techadvisor.com, Available at: https://www.techadvisor.com/article/744299/valve-steam-deck-everything-you-need-to-know.html.

highly integrated transnational conglomerates. Of particular relevance here is the potential transition from games as an industry primarily concerned with the sale of discrete products i.e. individual titles, towards an industry where providing access to bundles of streamed content becomes an increasingly significant revenue-generating activity. This emergence of the streaming model for games has obvious parallels with developments in music and video streaming, among many other sectors. Similarly, it presents a host of questions about the implications of the turbulence created by these fundamental shifts.

While the shift from *ownership* of products (physical or digital) towards models offering *access* to content has proliferated numerous sectors, the games industry has not followed suit to the same degree. Subscription and ad-funded on-demand models dominate in music and TV e.g. Spotify/Apple Music, Netflix/Prime etc. In some senses it seems counterintuitive that games, a born-digital sector, should retain vestiges of the 'old world' as legacy industries like music and TV embrace the content on-demand age.

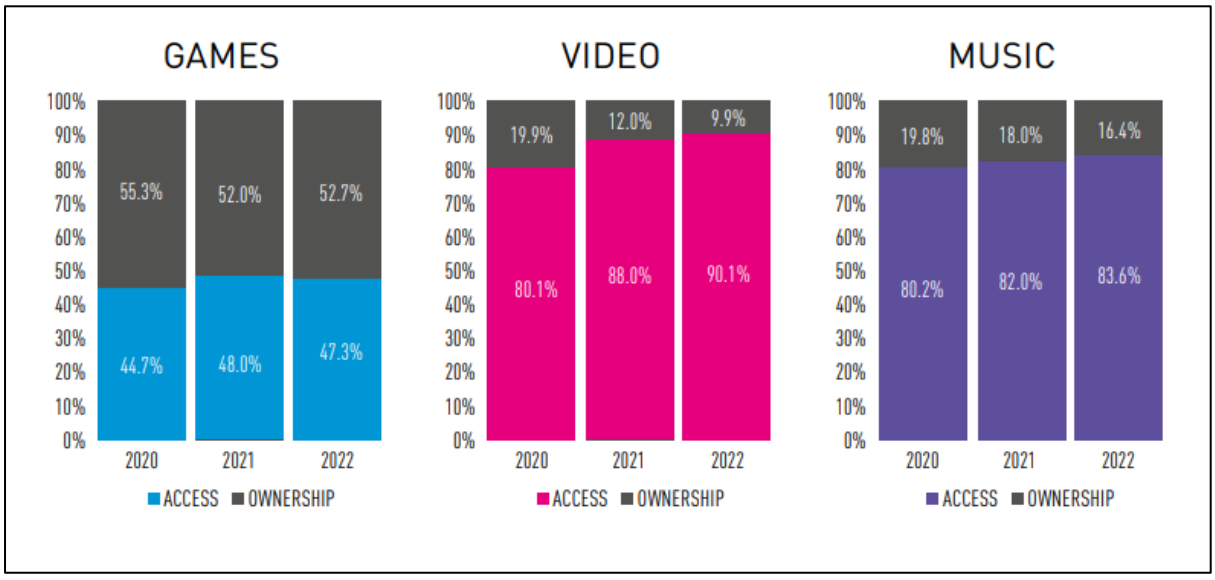

Figure 2: Ownership vs Access Formats 2020-2022 (ERA Yearbook 2023)

The UK Entertainment Retailers Association (ERA) data shown in Figure 2 exemplifies that, while the subscription model is certainly prominent in games, ownership of digital products remains a robust revenue-generating activity, accounting for almost half of the industry.

While the many different actors listed above employ, sometimes subtly and sometimes radically, different business models, Figure 3 identifies some broad strategies for monetising access-

based content: ad-funded, freemium, and premium models. Various iterations of these models are employed across the entertainment industries spectrum, each with different underlying commercial mechanisms.

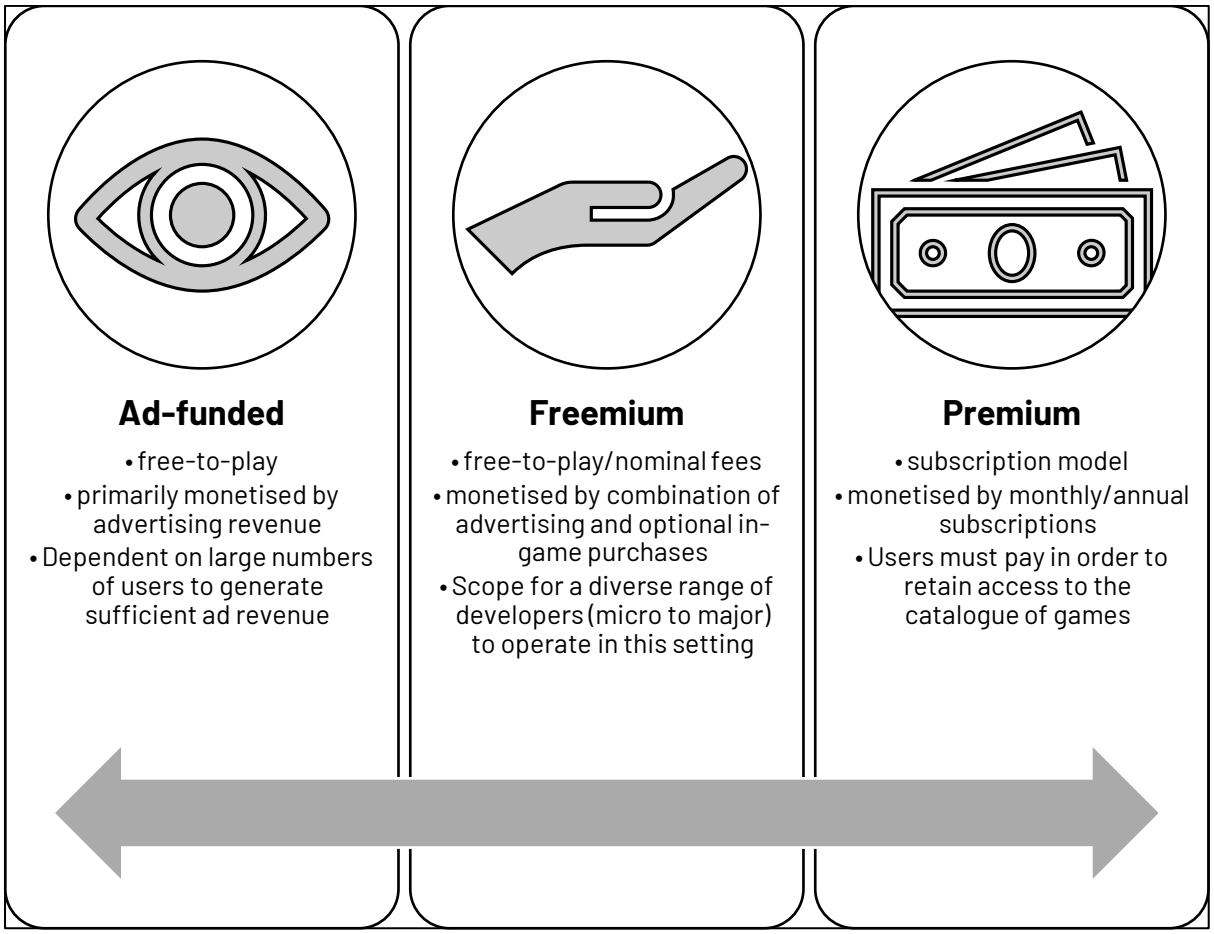

Figure 3: Access-based revenue-generating strategies

In some sectors, such as audio streaming and video-on-demand, there is a clear rationale behind the ad-funded/freemium/premium mix as a strategy to 'upsell' users from free or 'feels like free' offerings onto to potentially more lucrative options. In short, the ad-funded and freemium models serve as a gateway to the premium subscription. Gaming seems to follow a somewhat different path in this regard. The move towards applying the Spotify or Netflix model for games is far from straightforward, nor is it necessarily desirable. Given the popularity and success of many titles in the ad-funded and freemium realm, coupled with the facility to monetise in-game

purchases, there are compelling reasons why premium subscription models may not be attractive to video games developers, publishers, and users alike.[13]

Aside from the technological limitations of gaming in the cloud, such as latency, some major participants, most notably Apple, are seen to obstruct the development of truly 'platform agnostic' gameplay. This creates serious obstacles to the proliferation of 'a la carte' video games on-demand subscription services, and cloud gaming more broadly.[14] This reflects the variety of business models employed and business model innovation exhibited in contemporary video games sector. Indeed, there is a high degree of ambiguity in identifying the core business models of the industry powerhouses, and which particular strands of these companies' activities can be viewed as core revenue-generating activities. From the perspective of general users, Apple and Google may provide similar products and services, but the incentives of each company are likely to differ considerably due to fundamental differences in underlying business models. This can have significant implications for games producers, web developers and players alike. For example, Apple's core business is the sale of devices, whereas Google derives the majority of its revenue from advertising. Whereas Google, with its focus on maximising advertising revenue, arguably has motivations to foster a more open system, companies with a focus on manufacturing hardware or licensing software like Apple and Microsoft might be incentivised to keep their ecosystems closed. The games industry is also characterised by high levels of merger and acquisition. The effect of these apparently divergent strategies on the distribution of cloud gaming services is a feature of a recent market study and current market investigation by the UK Competition and Markets Authority.[15]

In summary, the diversity of actors and business models employed in the games industry in the streaming era are as dynamic as they are complex. These shifts raise questions pertaining to; potential risk of increased market power and reduced competition (particularly with the involvement of tech companies); and what the recent high-profile mergers mean for innovation in games. The detail of these competition issues and the effects on the development of the changing games ecosystem will be addressed more fully later in Section IV of the paper. For now,

[13] Singer, D., & D'Angelo, E. (2020) 'The Netflix of gaming? Why subscription video-game services face an uphill battle', McKinsey & Company, 8. Available at: https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/the-netflix-of-gaming-why-subscription-video-game-services-face-an-uphill-battle.
[14] Geradin, D., & Huijts, S. (2023) 'Dark clouds gather – The development of cloud gaming, and competition agencies' efforts to enable it on mobile app stores', *Interactive Entertainment Law Review* (published online ahead of print 2023). Retrieved Jul 12, 2023, from https://doi.org/10.4337/ielr.2023.0001.
[15] CMA, 'Mobile browsers and cloud gaming': Consultation on proposed market investigation reference, 10 June 2022.

the focus turns to the interplay and tensions between user creativity and intellectual property in the video games industry.

III. User creativity and intellectual property

Gaming is an IP intensive sector underlain with a wide variety of creative content. And whilst patents, trade marks and trade secrets will continue to be widely and routinely implemented, the main legal implications of cloud gaming are likely to be felt in copyright. Primarily, this is because there will be many new legal questions around modes of owning and transacting with game (literary and artistic) content and how this will affect relationships between primary creators, cloud gaming providers, and their users.[16] This in turn forms a crucial cornerstone upon which market dynamics are ultimately built; cloud gaming challenges copyright scholars to consider how to define rights-based relationships between those who create games and those who play them.

a) Copyright: state of play

Copyright is implicated both in the development of a video game (e.g., the code that creates the game, or the game engine) and the content within the game (e.g., audio visual content such as game graphics or the soundtrack). They are classified as a complex multimedia subject-matter,[17] with copyright attaching both to the game itself as a distinct copyrightable subject-matter, as well as protecting its constituent, severable parts (e.g., protecting separately the game dialogue, soundtrack, and characters etc.).

Ownership of game copyright is equally complex, often with multiple, networked relationships between primary creators, publishers, and other third parties (e.g., commissioned musicians). Within this, teams of software developers, graphic designers, voice actors and many others make their respective creative contributions, usually across several locations, and over many years of development (on average between 3 to 5 years). Some primary creators may be part of subsidiary teams within a larger corporate entity (e.g., Naughty Dog – Sony) or commissioned independent development companies. In any case, most of these relationships will be mediated through a network of employment contracts, with copyright ownership of a game, if not authorship, usually vesting in the game publisher (with the exception of 'indie' games, which are

[16] Longan, M., Dimita, G., Michels, J.D., and Millard, C. (2021) Cloud Gaming Demystified: An Introduction to the Legal Implications of Cloud-Based Video Games. *Queen Mary Law Research Paper Series,* No. 369/2021.
[17] See Aplin T, *Copyright Law in the Digital Society: The Challenges of Multimedia* (Hart Publishing 2005).

developed beyond the support structures of an established publisher). The publisher thereafter has the exclusive rights to decide how the game is distributed and communicated.

Importantly, games do not exist in a vacuum: after the creation of the game software, game hardware is also required to facilitate play by the end user (hence, the categorisation of games as a two-sided, hardware-software market, illustrated in Figure 4).[18] Game owners must therefore enter into licensing relationships with the owners of game platforms (such as, e.g., Microsoft, Sony, Nintendo, Apple) to enable their game to be played, usually under a royalty-sharing arrangement.

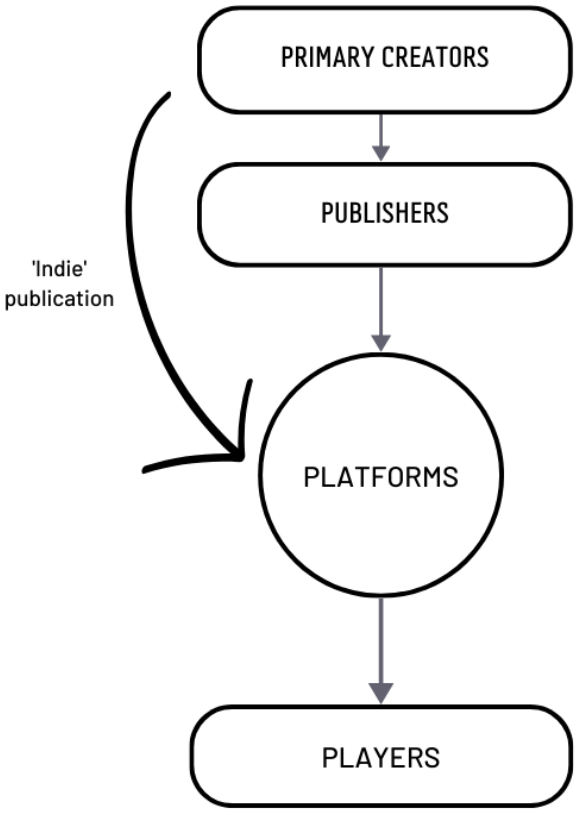

Figure 4: Game platforms as two-sided market process chart

At the time of writing, there is an increasing trend towards vertical integration of gaming, with owners of game platforms also developing and retaining the rights to their own exclusive titles 'in-house' (e.g., *The Last of Us* – Sony - PlayStation). This so-called 'platform exclusivity' pattern

[18] Landsman, V. and Stremersch, S. (2011) Multihoming in Two-Sided Markets: An Empirical Inquiry in the Video Game Console Industry. *Journal of Marketing*, 75(6).

has waxed and waned across many generations of game platforms,[19] and can contribute to platform lock-in and high switching costs for users who have invested in 'libraries' of exclusive games. Particularly with multiplayer titles, if platform exclusivity is enforced to prevent cross-play (e.g., a user on an Xbox being unable to play with a user of a PlayStation) this can concentrate network effects around a singular platform that holds a particularly valuable game title.[20]

b) The missing piece? User creativity

With the rise of cloud gaming, the types of game content (subject-matter) and complex processes of creation (authorship) will for the most part remain stable. But there will be considerable challenges to the means in which copyright *ownership* is mediated between parties, with changes clustering around parties' relationships with novel cloud gaming platforms. In effect, the cloud gaming platform becomes a new mediator that offers alternative modes of play to the *user,* who becomes a central figure in the copyright chain. This may be surprising given their relative absence in the illustration of rights transactions listed above.

Indeed, copyright is often more concerned with the author, and the chain of exploitation that results from their evocation of their rights, rather than the user *per se*. Under this traditional paradigm, it is the game creator who is the primary target of copyright regulation and their creativity that should be protected and incentivised.[21] Whilst use is a primary object of copyright, it is rarely if ever its subject in practice. But games provide an important provocation and limitation to this traditional approach: games are inherently interactive, they must be played to be experienced. This characteristic, according to some theoretical paradigms, makes them distinct to any traditional, passively consumed media, and must be understood on their own terms.[22] Indeed, Apple similarly claimed in their *Response to Statement of Issues* (responding to the Competition and Markets Authority) that different regulatory approaches are justified for game markets precisely because of their interactivity – because the user, in each instance and iteration of play, dynamically alters the input and output of a game.[23] Games are thus both an

[19] ibid.
[20] Hence concerns about the *Microsoft/Activision Blizzard* merger and title exclusivity for titles such as *Call of Duty*, *World of Warcraft* and *Overwatch*.
[21] See e.g., opinion by Ginsburg J. 'Authors and Users in Copyright' [1997] 45 *Journal of the Copyright Society of the USA*.
[22] E.g., narratological vs ludological approaches in game studies – an excellent overview is available in Lastowka, G. (2013). Copyright law and video games: A brief history of an interactive medium. *SSRN Electronic Journal*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2321424.
[23] Apple (2023) Mobile browsers and cloud gaming market investigation: Apple Response to Statement of Issues. https://assets.publishing.service.gov.uk/media/63e22efa8fa8f50e893514f3/Apple_.pdf at para 55.

object of creativity protectable by copyright, but also, by their nature, an invitation to play - which in itself can be creative.

Perhaps one of the most creative forms of playful, and important, forms of reuse is modding, where a user alters game code to change how it looks or behaves. Amid increasingly squeezed development timeframes and demanding budgets, modding communities have acted as a form of post-release quality control, targeting performance issues and bugs. Most recently, communities of users extensively modded CD Projekt's *Cyberpunk 2077* to improve basic accessibility features, and 'quality of play' issues, such as vehicle handling.[24] Modding communities have also changed aspects of older games' presentation to make them more or less palatable to a modern audience, for example, by changing the camera angles surrounding women characters to make them more or less sexualised.[25] More famously, modding has been an important gateway to game development, with substantial mods spawning new games in their entirety (including *Counter-Strike*, *Dota 2* and *PUBG: Battlegrounds*). In sum, there is a symbiotic relationship in the games community between the primary game creator and the secondary derivative markets for re-use.

Cloud gaming can be disruptive to this symbiotic relationship because of the new modes of distributing the game. In traditional gaming business models, game code is mostly reproduced, either in digital downloadable code or via a disk, and thereafter distributed (via e.g., virtual stores or in-person stores) to the user. Thereafter, the user is granted limited permissions to use a *copy* of the game typically for personal, non-commercial purposes, via an end user licensing agreement (EULA) or terms of service (ToS) as appropriate.[26] Many games are also accompanied with custom policies which give certain permissions to re-use game content for e.g., mods.[27]

With cloud gaming, reproduction and distribution become less important at user level: when accessing a game via the cloud, the user is no longer in possession of a reproduction of the game code. Rather, they are only given access to the *communication* of the audio visual content of the final game product via a stream. This significantly increases the degree of control with which a game owner can have over their game, as the copy of the code becomes centralised on a server hosted by the cloud gaming platform, rather than distributed from the game creator to the user.

[24] Irwin, D. (2023) The best Cyberpunk 2077 mods. https://www.pcgamesn.com/cyberpunk-2077/mods-best.
[25] Diaz, A. (2021) Mass Effect Legendary Edition mod puts the butt shots back into the game. https://www.polygon.com/22565805/mass-effect-legendary-edition-mod-miranda-butt-bioware-ea.
[26] It is beyond the scope of this article to assess the exhaustion principle for the sale of digital games.
[27] See Thomas, A. (2023) Merit and monetisation: A study of video game user-generated content policies. *Internet Policy Review*, 12(1).

From the game creator's perspective, the retention of the copy of a game code may have certain strategic benefits. In particular, this may be effective in reducing copyright infringement.[28] In theory, if no game code is available anywhere but a secure cloud server, it cannot be copied and distributed without the authentication and access granted by the owner of that server. Operationally, this works similarly to a version of 'always on' digital rights management (DRM) technology, which seeks constant server verification to authenticate the user and their behaviour in a centralised space.[29]

In brief, cloud gaming offers a means of communicating game content to the user under more limited rights which make them 'tamper proof'. However, this tampering is, as highlighted here, also a form of creativity which is precisely the type that copyright seeks to incentivise. Where the user has access to a copy of the game code they can in theory, given the right technical capabilities, retrieve and modify it – ultimately to improve it. With cloud gaming, unless a copy of the game code is provided at the game creators discretion, activities like modding will become technically impossible, even if in theory permissions continue to be given to the user via a licence.[30]

Importantly, this technological restriction should not be seen as a negative in and of itself – but rather, the changes in methods of distribution offered by cloud gaming raise questions about whether the wholesale replacement of existing business models is appropriate and balanced, given the value that users add to the games industry as co-creators. The unexpected and creative re-uses in this industry, with modding as just one example, are essential to maintaining the availability, quality, and diversity of cultural goods. Whilst copyright gives rightsholders the discretion to determine how they want their works to be distributed, whether via a cloud gaming service or otherwise, we also need to look to the object of incentivising creativity beyond the author.

IV. Competitive markets, concentration, and creativity

The previous section reflected on the impetus for creativity which comes from both developers of a game and from the users of a game. Indeed, the move to cloud gaming has repercussions for the way individual companies and individual consumers interact with the products. But this move also has an effect at the industry level. Changes in business models and the increased

[28] See recent assessment by Dimita, G., Harn Lee, Y. and Macdonald, M. (2022) Copyright Infringement in the Video Game Industry. WIPO/ACE/15/4.

[29] This technology is already widely employed for multiplayer, accounts-based titles - particularly competitive games where the detection of 'cheat' software is important for ensuring fair play – see Thomas, A. (2023).

[30] Likewise for video game preservation.

engagement by 'Big Tech' companies have implications for the structure of the industry, and for its competitive dynamics: changing ownership structures and vertical integration change power relationships, as do new distribution channels and platform exclusivity.

This naturally piques the interest of competition authorities and regulators because of the effect this may have on consumption (on the way games are offered as a product, and on the quality or price of the product). Beyond consumption narrowly defined, they are also rightfully concerned about the impact on contemporary and future innovation. The authors share this interest in the evolution of innovation in the gaming industry. When we talk about innovation, however, we believe there are further dimensions to consider than may be traditionally within the remit of competition analysis, including the creative process. Innovation's dimensions include: its output (resulting new products), infrastructure (who owns the assets and means of distribution), and its process (the process of creativity[31] and who can contribute to creation in the industry).[32] For simplicity, we define creativity here as 'the generation of original ideas' and innovation as 'the successful commercial implementation of these ideas'.[33] Not all creativity will inevitably lead to innovation, as some ideas do not make it to the end stage of commercialisation. The process of creativity – and those who are able to participate in creation – is a dimension of innovation which links the concerns of IP and competition law scholars, and is therefore of particular interest to the authors of this paper. The creativity we consider in this section is the creativity of companies – game developers and game publishers in particular - with some references to the user (as a consumer) where relevant.

In this section, we briefly reflect on the impact changing business models may have on market definition, an important step in competition law cases. We then reflect on concentration in the games industry, before explaining the current concern with ecosystems and walled gardens.

a) Market definition

The structure of a market, the levels of concentration in an industry, and the identification of companies who compete with each other in the games sector, are difficult to gauge without

[31] For an overview of early definitions of creativity focused on the creative process, see Amabile, T. *Creativity in Context: Update to the Social Psychology of Creativity* (1996 Routledge, 2018 edition) 20.
[32] Woodman, R.W., Sawyer, J. E. and Griffin, R. distinguish between product and process in a broader sense in Woodman, R.W., Sawyer, J. E. and Griffin, R., 'Toward a Theory of Organizational Creativity' (1993) 18(2) The Academy of Management Review 294.
[33] Inspired but not identical to the definition in Amabile, T. and Pratt, M. 'The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning' (2016) 36 Research in Organizational Behavior 157. Note that the authors are aware of the seemingly contradictory language in 'original ideas', particularly to copyright audiences. Our aim is to create a common language between the disciplines involved in this research project. We are happy to hear your thoughts and suggestions on the wording.

proper delineation of the products and levels of the supply chain. This question is closely related to that of market definition, a thorny issue in any competition law investigation. There is increasing uncertainty about the boundaries of relevant markets – which has an impact on the identification of who competes with whom, the level of market power gaming companies may have, and the conduct they might adopt and harm they may cause. There are several challenges in market definition for the gaming industry, related to distribution and technology, as well as consumption of games.

As we discuss above, distribution of games is in flux, with changing business models, platforms and technologies. This prompts the first question related to market definition: whether we should distinguish relevant markets based on the device/platform through which they are purchased or played. In her review of decisional practice before the *Microsoft/Activision Blizzard* acquisition, Ribera Martinez notes that the industry has traditionally been divided along a creation/distribution distinction: on the one hand, markets for development and publishing, on the other hand, markets for game distribution.[34] A common thread has been the division of games based on the hardware (platform) for which they are produced, identifying three distinct markets: console games, PC games, and (more recently) mobile games. In recent years, competition authorities have started questioning whether a division based on distribution platform/hardware will still be upheld in the future, as the advent of cloud streaming enables cross-platform play.[35] Prompted by the UK's *Microsoft/Activision Blizzard* investigation, Rietveld had referred to the implications two approaches to market definition for cloud gaming may have on the concerns competition authorities raise, namely cloud gaming as a distinct market versus cloud gaming as a feature or transient technology within another market (e.g. video game console market). More broadly, streaming (subscription models) may form such a significant change that they are considered distinct from the purchase of selling games, or, alternatively, may be considered just another option within an existing market. If you consider that cloud gaming is but a feature of a particular product or a particular way of distributing games, then this

[34] Ribera Martínez, A. 'A Fortnite and Odd Days: The Console Wars' (2022) 6(2) Market and Competition Law Review 58. See also Ziermann, F. for his review of the European Commission's decisional practice (Ziermann, F. 'Microsoft/Activision - market definition and theories of harm under EU competition law' (2022) SSRN working paper, available at: https://ssrn.com/abstract=4142356).

[35] Rietveld reflects on the various approaches to market definition for cloud gaming (Rietveld, J. 'Cloud Gaming Is Not A Distinct Market A Typology of Cloud Gaming Services and What It Means for Microsoft's Proposed Acquisition of Activision Blizzard' Submission prepared for the UK's Competition and Markets Authority concerning its Microsoft/Activision Blizzard merger inquiry (31 March 2023), available at: https://assets.publishing.service.gov.uk/media/642e9e29fbe620000c17dde1/Cloud_gaming_Opinion_.pdf).

eases concerns about market power or (lack of) competition or may change or the problems competition authorities identify.

Distribution platforms and technologies are not the only relevant factor to market definition. A perhaps more interesting question for this paper is the effect of changes in consumption on market definition. Games may be distinguished based on whether they are primarily played online or offline, although his may become blurred if online functionalities and cloud functionality becomes a key feature of most games. Particularly interesting is whether games are chosen primarily for the engagement and skills level they require (e.g. Ziermann refers to Commission's distinction between casual games, midcore games, and hardcore games), or for their quality, performance or branded marketing (e.g. AAA games), or because they are a specific genre (so far left open in practice).[36] A distribution-based approach as a starting point overlooks the idiosyncrasies of game users themselves: as noted in the literature and sometimes evoked in decisional practice, what distinguishes a mobile game from a PC or console game is not always the platform itself, but the content and price of the game and the time investment by the user. In some cases, it may be that markets ought to be defined based on the type of game (and user) rather than the specific hardware used.[37]

Market definition questions are intrinsically linked to the specific concerns of a particular investigation by a competition authority or a regulator. Our immediate interest – creativity in game development and innovation in distribution – prompts us to ask whether there may be a relevant market based on particular types of users (and the games they play) who engage creatively with the game. One could, for example, raise the question: Is there a market for games based on skills/engagement, for AAA games,[38] or for specific genres, access to which is essential to enable follow-on creativity?

Another question about consumption relates to the offer of bundles of games. As is mentioned in section II of this paper, cloud gaming goes hand in hand with a change in the way games are distributed: from discrete titles to bundles. Arguably, consumers may consider that the offer of a catalogue of games is different from the purchase of a single title. This is a form of innovation which may change consumers' expectations of how they experience games. It remains to be

[36] Ziermann, F. 'Microsoft/Activision - market definition and theories of harm under EU competition law' (2022) SSRN working paper 7, available at: https://ssrn.com/abstract=4142356.
[37] Ribera Martínez, A. 'A Fortnite and Odd Days: The Console Wars' (2022) 6(2) Market and Competition Law Review 62; Pales, E. 'Microsoft and Activision-Blizzard: Examining the Largest Tech Acquisition of All Time' (2023) 12(1) Berkeley Journal of Entertainment & Sports Law 17; Ziermann, F. 'Microsoft/Activision - market definition and theories of harm under EU competition law' (2022) SSRN working paper, available at: https://ssrn.com/abstract=4142356.
[38] See pages 5-6 of this paper.

seen whether the advent of 'the Netflix of gaming' has implications for the way users look at the product itself, and how they interact with it.

There is a third set of questions which bridges the two, in that it builds on querying what a 'game' really is to those playing the game. Other services and goods are increasingly becoming 'gamified', though apps, virtual assistants and reward incentives throughout the consumption of the product. If points are being awarded for going for a run, or watering your plants, or learning a language, are we actually playing a game? The idea of a 'game' may be broadening, which may open up new avenues of consumption, but also entrench the idea that there is such a thing as a 'real' game. This raises questions about the nature of games but also of those who play the game (and whether we should call these players 'gamers', 'users', or 'consumers'). These questions about particularly experiences in consumption may relate closely to distribution questions: since most of these interactions happen through mobile devices, one could ask whether 'mobile' is a distinct category with a more diverse consumer and 'games'/apps population.

b) Concentration

These questions are intrinsically linked to ownership in the industry: not only intellectual property, mentioned above, but also corporate ownership. According to Euromonitor, the gaming industry was marked, in 2021, by an 'unprecedent number' of acquisitions and mergers: over 1,000 financial deals totalling USD85 billion.[39] This rise in takeovers has prompted an increased awareness of power dynamics in the industry, unsurprisingly. Where there is a large spate of takeovers, particularly if some of them are from notable firms (think *Microsoft/Activision Blizzard*)[40] competition authorities are likely to take stock and assess the situation in the market with caution.

[39] Euromonitor 'Video Games in the US country report August 2022.

[40] The acquisition by Microsoft of Activision Blizzard has made waves across both sides of the Atlantic. Although the deal was approved in many countries, it had to clear the hurdles of merger control in the EU, US, and UK. The European Union's review was relatively straightforward: The acquisition was cleared by the European Commission, subject to conditions including a commitment by Microsoft to provide a free 10 year license to consumers in the European Economic Area to stream all current and future Activision Blizzard PC and console games for which they have a license, on any cloud game streaming services of their choice; as well as a corresponding free license to cloud game streaming service providers to allow EEA-based gamers to stream any Activision Blizzard PC and console games. (Case M.10646 Microsoft / Activision Blizzard, decision of 15 May 2023). The US process was more complex. In the US, the acquisition was the subject of an administrative complaint by the Federal Trade Commission to block the acquisition. The agency also filed a request for a restraining order and a preliminary injunction. While a temporary restraining order was granted until 14 July, a judge denied the FTC's request for a preliminary injunction to temporarily block it claiming that 'The FTC has not shown it is likely to succeed on its assertion the combined firm will probably pull Call of Duty from Sony PlayStation, or that its ownership of Activision content will substantially lessen competition in the video game library subscription and cloud gaming markets.' (FTC Matter/File Number 2210077; United States District Court Northern District of California, *FTC v Microsoft*, Case No. 23-cv-02880-JSC, Opinion of 10 July 2023 by Judge Jacqueline Scott Corley

Increased concentration in an industry often prompts concerns that 'big players' are emerging with significant power, who may have incentives to leverage this power to the detriment of competitors or consumers, and particularly to slow down innovation. This link between concentration, (abuse of) power and reduced innovation may be disputed,[41] but is nonetheless a good reason for initial caution. It is not unequivocally established, however, that there is indeed a concentration problem in games. While some have claimed that concentration in the gaming industry is increasing,[42] others have cast doubt on this assumption. According to Van Dreunen, 'the size of the largest individual game companies based on revenue has increased over time', but so has the industry at large, growing 'almost fourteen-fold … in total annual consumer spending over the past two decades'. With the entry of new firms into the industry, the growth of the industry has meant that even when the largest companies grow bigger, their overall share

available at https://storage.courtlistener.com/recap/gov.uscourts.cand.413969/gov.uscourts.cand.413969.305.0_33.pdf). Although the FTC appealed to the United States Court of Appeals for the Ninth Circuit, the appeal was not successful. The case was also withdrawn from adjudication before the administrative law judge in July 2023. However, it is really the United Kingdom's review that has kept everyone on their toes, until the CMA finally gave its provisional greenlight on 22 September 2023. In the UK the acquisition was initially prohibited by the Competition and Markets Authority in the UK, whose decision went to appeal before the Competition Appeals Tribunal but seemed to have prompted Microsoft and Activision to make changes to the acquisition (Case 1590/4/12/23 before the Competition Appeal Tribunal). The case before the Competition Appeals Tribunal was adjourned in July 2023, pending discussions between the CMA and Microsoft. Following this, the CMA received a notice by Microsoft of a possible material change of circumstances/special reasons, in which they submitted that several reasons would support a decision by the CMA not to block the acquisition: first, the conditional clearance by the European Commission of acquisition; second, Microsoft's agreement with Sony to provide access to Call of Duty; third, evidence brought forward in the US litigation; and fourth, evidence brought forward in the UK proceedings before the Competition Appeal Tribunal. However, the CMA did not consider these reasons convincing (see Final Decision on possible material change, 22 August 2023, available at: https://www.gov.uk/cma-cases/microsoft-slash-activision-blizzard-merger-inquiry#full-publication-update-history). The CMA adopted a final order prohibiting the merger *in its current form*: it prohibited Microsoft from acquiring an interest in Activision (and vice versa), unless it gives prior consent. This prohibition would last 10 years (until August 2033). At the same time, however, a new merger inquiry was launched: under this proposed acquisition, if approved by the CMA, Microsoft would acquire Activision *without* Activision's global cloud streaming rights (excluding the EEA). These rights for all current and future Activision PC and console games released during the next 15 years would be divested to Ubisoft. Because Ubisoft would then be able to provide distribution rights to Microsoft, Microsoft could still comply with the European Commission's commitments. The CMA finally accepted Microsoft's terms but has opened a public consultation on Microsoft's commitments before reaching its final decision, expected in October. (https://www.gov.uk/cma-cases/microsoft-slash-activision-blizzard-ex-cloud-streaming-rights-merger-inquiry, Microsoft's post about the restructured acquisition: https://blogs.microsoft.com/on-the-issues/2023/08/21/microsoft-activision-restructure-acquisition/).

[41] Blair, R. and Kaserman, D. *Antitrust Economics* (2009 Oxford University Press, 2nd ed.) 262; Belleflamme, P. and Peitz, M. *Industrial Organization: Markets and Strategies* (2015 Cambridge University Press, 2nd ed.) 35. For a reflection on empirical studies on the relationship between concentration, competition, and innovation see Baker, J., 'Beyond Schumpeter vs. Arrow: How Antitrust Fosters Innovation' (2007) 74 Antitrust Law Journal 584-587; and Martin, S. *Industrial Organization in Context* (2010 Oxford University Press) 451-477.

[42] Ziermann, F. 'Microsoft/Activision - market definition and theories of harm under EU competition law' (2022) SSRN working paper 3, available at: https://ssrn.com/abstract=4142356.

of the industry reduces.[43] It seems that the pie may be growing, and more people may be getting a slice.

It is not easy to draw a conclusion on the level of concentration in the industry, for the simple reason that the 'gaming industry' is not a single homogenous sector. There are many gaming goods and services, not all of which compete with each other. Moreover, these products – even those in direct competition with each other – are the result of the activities of a high variety of actors at different levels of the supply chain (as set out in section II). To be able to claim with accuracy that concentration is increasing, we need to know which products and companies to consider.

Concerns over concentration seem to exist mainly for hardware (such as console, PC, or mobile gaming) rather than the content itself. When it comes to content creation – games developers or studios – it seems that the industry is highly fragmented, with hundreds of thousands of games studios worldwide.[44] According to Marketline, a market research firm, publishing has seen increasing consolidation as larger to mid-sized firms are better able to carry the costs.[45] Cabral et al provide a mixed picture of the publishing level of the supply chain, noting that Euromonitor (2014) indicated that seven large companies represent 64% globally with many smaller companies making up the fragmented remaining percentage.[46] The opportunities for vertical integration in the industry mean that smaller companies may actually become part of larger conglomerates which also operate at other levels of the supply chain. According to Marketline, a market research firm, 'developers are predominantly part of the large publishers, although opportunities exist for independent developers looking to bypass traditional funding methods' and 'Developers are generally prone to backwards integration due to financial support from publishers, although new channels help support independents'.[47] When it comes to hardware, Van Dreunen asserts that the only notable concentration has occurred in the console sector, while both PC and mobile gaming remain unconcentrated.[48] The CMA (UK's Competition

[43] Van Dreunen, J. 'Bigger means different' (8 December 2022, SuperJoost blog) available at: https://superjoost.net/articles/bigger-means-different.
[44] Van Dreunen, J. *One Up: Creativity, Competition and the Global Business of Video Games* (2020 Columbia University Press 38 (for US); European Games Developer Association, 2020 European Games Industry Insights Report 7, available at: https://www.egdf.eu/2020-european-video-games-industry-insights-report/.
[45] Marketline Advantage, 'Global Games Software Market: Value Chain Analysis' (2022) 8.
[46] Cabras, I., Goumagias, N., Fernandes, K., Cowling, P., Li, F., Kudenko, D., Devlin, S. and Nucciarelli, A., 'Exploring survival rates of companies in the UK video-games industry: An empirical study' (2017) 117 Technological Forecasting and Social Change 117.
[47] Marketline Advantage, 'Global Games Software Market: Value Chain Analysis' (2022) 5-6.
[48] Van Dreunen, J., 'Three decades of games industry consolidation: Will Microsoft suffer the wrath of Khan?' (2 February 2022) Superjoost Substack, https://superjoost.substack.com/p/three-decades-of-games-industry-consolidation; In a 2017 study Cabras et al claimed that Sony, Microsoft and Nintendo

and Markets Authority) seems to agree, at least with the assessment of console gaming, noting thatthe same three companies (Microsoft, Sony, Nintendo) have been the only major suppliers of console gaming for the last 20 years.[49] Marketline, a market research firm, goes so far as to describe these three companies as effectively forming an oligopoly.[50]

However, although console gaming will remain an important part of the industry, business models are changing, and with it the ways in which consumers/users engage with games and the ways in which games are created (see above in sections II-III). To truly understand concentration in the industry, we need to consider the companies offering the sale or play of games *online*. When it comes to sales of games online, the picture of the industry does not immediately appear to be one of concentration: across the globe different players have entered the scene, such as Amazon, GameStop, Steam, PlayStation, Google Play, Xbox, Tencent, Blizzard.[51] The percentages of purchases / user shares put forward by Statista, a market research company, are quite close, making it difficult to claim that there is currently any company leading across the board. The picture looks a little different when looking at game streaming. According to Statista, in the US in 2021 Microsoft 'dominated' what they call 'Gaming Networks': [52] subscription-based access to online premium services (such as Xbox Live Gold, PlayStation Plus, or Nintendo Switch Online) and Game passes (e.g., Xbox Game Pass, EA Access, or Origin Access).[53] Although half of revenue seems to be made up by Microsoft in the US, it is followed by Sony and Nintendo, and Sony is successful in many countries, going head-to-head in some.[54] The Competition and Markets Authority seemed concerned about potential concentration in multi-game subscriptions and cloud gaming, at least in the UK. However, although it considered that only three companies account for 90% of cloud gaming, it noted that cloud gaming is in development with recent entry and expansion by other companies.[55]

Even if we were able to say with certainty that the industry (or markets within it) is concentrated or increasingly concentrated, this does not tell us why we should be concerned. With concentration of corporate ownership may come a concentration of assets, including valuable IP. Indeed, a concern brought up at several stages of the *Microsoft/Activision Blizzard*

controlled about 88% globally: 'Exploring survival rates of companies in the UK video-games industry: An empirical study' (2017) 117 Technological Forecasting and Social Change 308.

[49] CMA, Microsoft/Activision Blizzard, Decision on relevant merger situation and substantial lessening of competition, ME/6983/22 (1 September 2022) as well as Final Report (26 April 2023) 6.

[50] Marketline Advantage, 'Global Games Software Market: Value Chain Analysis' (2022) 11 and 'Global Games Consoles Market: Value Chain Analysis' (2020) 14.

[51] Statista, 'Video Games – Market Data Analysis & Forecast' (June 2022) 19.

[52] ibid 14.

[53] ibid3.

[54] ibid 14-17, 26-28.

[55] Microsoft/Activision final report 8.399.

acquisition was the fear that Microsoft would own important games titles and exclude rival platforms and games subscriptions from offering these titles.[56] These are relatively clear concerns, which can be remedied by imposing sharing obligations on companies intending to merge. Another, more nebulous, potential cause for concern would be the reduction of innovation which might result from increased concentration (on the assumption that innovation is a societal good to be encouraged).[57] However, the relationship between concentration and innovation is contested.[58] Moreover, the impact of concentration on innovation is measured, this is usually done by focusing on tangible outputs, such as number of new products or intellectual property registrations. In essence, the focus is on the successful conversion of creative ideas and processes into commercial products. This may overlook the *process* of creativity, including the diversity of creators and creative products within an industry. As we note above, creativity as a process is an interesting, if difficult, dimension of innovation. The authors of this paper query whether there may be an additional concern if concentration reduces creativity. This may be the case if concentration leads to less diversity of creators and ideas in the process.

The drivers of creativity may vary for individuals, smaller companies, and larger organisations,[59] which, in turn, may have an impact on the types of products which result from this process (innovation). Assessing this is complex, as is determining how concentration influences these different drivers of creativity. It seems, to the authors of this paper, nonetheless an interesting dimension to explore.

A 2017 study by Rietveld and Ishihara found that, while product quality may increase as a result of acquisitions in the gaming industry, innovation suffers. Rietveld and Ishihara's study is particularly interesting because they try to link their measure of innovation more closely to the exploitation of novel ideas. Instead of using inventor turnover, R&D intensity or patent related measures, they measure innovation at a product level in video games: they determine whether the game is based on novel IP rather than existing video game IP, or on tie-ins with non game

[56] See Ribera Martinez, A. 'The Microsoft/Activision Blizzard merger: the $69 billion deal in the light of Call of Duty foreclosure' (5 September 2022) Kluwer Competition Law blog, available at: https://competitionlawblog.kluwercompetitionlaw.com/2022/09/05/the-microsoft-activision-blizzard-merger-the-69-billion-deal-in-the-light-of-call-of-duty-foreclosure/.

[57] That 'innovation is always good', which is a common preconception in competition law circles, is actually contested by many innovation scholars. See for example Soete, L. 'Is Innovation Always Good?', in Fagerberg, J., Martin, B.R. and Sloth Andersen, E. (eds), Innovation Studies: Evolution and Future Challenges (2013 Oxford University Press).

[58] E.g. Aghion, P., Bloom, N., Blundell, R., Griffith, R. and Howitt, P., 'Competition and Innovation: an Inverted-U Relationship' (2005) 120(2) The Quarterly Journal of Economics 701.

[59] Woodman, R.W., Sawyer, J. E. and Griffin, R., 'Toward a Theory of Organizational Creativity' (1993) 18(2) The Academy of Management Review 293; Amabile, T. and Pratt, M. 'The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning' (2016) 36 Research in Organizational Behavior 157.

media (such as based on books or movie adaptations).[60] It is a first step in the discussion on creativity, which could be broadened to a more holistic analysis of game developer and user creativity.

c) Ecosystems and Walled Gardens

Competition authorities have been interested in gaming for a while now, with merger cases as well as cases on collusion against Nintendo, Activision, Valve and Capcom.[61] However, the discussions about gaming are by no means limited to concerns about concentration in 'traditional' industry segments. In fact, recent activity indicates a significant change in priority. The ongoing *Microsoft/Activision Blizzard* saga, with its focus on *cloud* gaming, is emblematic of the changing concerns of competition authorities when it comes to the gaming industry. Without a doubt, big mergers in the gaming industry are likely to spark interest in their own right, considering the large revenue implications of the gaming industry. Yet, what has really piqued the interest of regulators is the increased involvement by Big Tech (the so-called GAFAM – Google, Apple, Facebook, Microsoft) and the changes these companies bring to business models and products in the games industry. In addition to competition authorities' investigation of Microsoft's acquisition of Activision Blizzard (which has implications for both console gaming and cloud gaming), the biggest antitrust investigations have involved the likes of Apple, Google, and Meta (formerly Facebook). These cases do not concern acquisitions and changing corporate ownership in traditional gaming. Rather, they revolve around the power of 'ecosystems' (multi-product and/or multi-actor networks of products and technology),[62] in which an individual company has control over a particular bottleneck product or platform at the heart of the ecosystem, such as app stores, game stores and operating systems. These ecosystems are also called 'walled gardens', where they are closed and controlled by a company, so that app/games developers cannot interact freely with consumers but need to pass through the controlling company.

There are concerns that this 'ecosystem power' will be used in ways which make the distribution of games more costly or hamper innovation and product development in games. Scholars and enforcers, as well as companies in the industry, have raised a variety of concerns. Some have

[60] Ishihara, M. and Rietveld, J. 'The Effect of Acquisitions on Product Innovativeness, Quality, and Sales Performance: Evidence from the Console Video Game Industry (2002-2010)' (2017) 1 Academy of Management Proceedings, available at https://ssrn.com/abstract=2897264.

[61] E.g. European Commission decision of 30 October 2002, Cases COMP/35.587 PO Video Games, COMP/35.706 PO Nintendo Distribution and COMP/36.321 Omega — Nintendo; European Commission decisions of 20 January 2021, Cases AT.40424 – Capcom, AT-40413- Focus Home, AT.40414 Koch Media, AT.40420 Zenimax, AT.40422 Bandai Namco , decisions 20 January 2021.

[62] Jacobides, M. G. and Lianos, I., 'Ecosystems and competition law in theory and practice' (2021) 30(5) Industrial and Corporate Change 1200.

argued that store policies restrict access to or demote certain games, making it difficult for particular (competing) game developers and publishers to offer their games to customers using the stores; that store policies make it difficult for companies to use their own payment systems; that platform exclusivity for particular games (especially popular franchises) harms competition and innovation; or that the fees charged in app stores or games stores are excessive.[63] There has been a particular line of argument that the GAFAM's use of 30% fees has set an industry standard which is now followed by other companies offering distribution systems, such as app stores or games stores (such as Valve 's Steam storefront), but which game developers and publishers may not be able to afford.[64] These concerns were also mentioned by scholars at CREATe's roundtable on gaming in February 2023, although industry participants seemed to have mixed experiences.[65]

Cases – and regulatory responses – are ongoing on both sides of the Atlantic.

In the US, a judge ruled on the claims by Epic games (maker of Fortnite) against Apple in 2021.[66] Apple's app store was considered a walled garden. Apple's app store rules forced app developers and publishers, including of games apps such as those made by Epic, to use Apple's own in-app payment solution, as well as pay Apple a commission of 30%. The judge ruled mostly in Apple's favour – particularly disagreeing that it had clearly been established that Apple had a monopoly position in the relevant market (a requirement in competition law cases such as these). The judge did take a negative view of Apple's anti-steering policies (preventing Epic from directing gamers to alternative methods of paying for the game), finding that these could be considered a violation

[63] Bostoen, F. 'Epic v Apple: Antitrust's Latest Big Tech Battle Royale' (2021) 5 European Competition & Regulatory Law Review 79; Bostoen, F. 'Epic v Apple (3): two perspectives on app stores' 30% commission fee' (CoRe blog, 3 November 2020), available at: https://www.lexxion.eu/en/coreblogpost/epic-v-apple-3/; Ribera Martínez, A. 'The Microsoft/Activision Blizzard merger: the $69 billion deal in the light of Call of Duty foreclosure' (Kluwer Competition Law blog, 5 September 2022), available at https://competitionlawblog.kluwercompetitionlaw.com/2022/09/05/the-microsoft-activision-blizzard-merger-the-69-billion-deal-in-the-light-of-call-of-duty-foreclosure/; Huijts, S. 'Antitrust is turning its eye to gaming' (Platform Law Blog, 1 September 2022), available at: https://theplatformlaw.blog/2022/09/01/antitrust-is-turning-its-eye-to-gaming/; Geradin, D. and Huijts, S., 'Dark clouds gather – An analysis of Apple and Google's restrictions on cloud gaming' (2022) available at: ssrn: https://ssrn.com/abstract=4219715.

[64] Chalk, A. 'The antitrust lawsuit against Valve is back on' (PC Gamer, 11 May 2022) available at https://www.pcgamer.com/the-antitrust-lawsuit-against-valve-is-back-on/; David Rosen from Wolfire's statement on the Wolfire v Valve action in the US: http://blog.wolfire.com/2021/05/Regarding-the-Valve-class-action.

[65] See event highlights at Yasar, A.G. 'Copyright, Competition and Business Models in App Stores and Gaming: Event Highlights' (CREATe blog, 14 March 2023) available at: https://www.create.ac.uk/blog/2023/03/14/copyright-competition-and-business-models-in-app-stores-and-gaming-event-highlights/.

[66] *Epic Games, Inc. v. Apple Inc.*, 559 F. Supp. 3d 898 (N.D. Cal. 2021) Mostly confirmed on appeal: Epic Games, Inc. v. Apple Inc., case 21-16506, United States Courts of Appeal for the Ninth Circuit (24 April 2023), available at: https://s3.documentcloud.org/documents/21060631/apple-epic-judgement.pdf.

of California's Unfair Competition Law (which is not competition law as such). As a result, Apple would no longer be allowed to stop app developers from informing users of other payment systems.

In the EU, similar concerns have not only led to an investigation by the European Commission,[67] but arguably also inspired the obligations in the new Digital Markets Act.[68] In particular, the DMA forces mobile operating systems (OS) to allow third party app stores on their OS. It also prohibits anti-steering, which will in effect allow app developers to contract with end users outside the app and therefore avoid app store fees. The DMA started to apply on 2 May 2023, therefore its concrete effects are yet to be seen, although the first designations have now been adopted including unsurprisingly Alphabet, Amazon, Apple, Meta and Microsoft and their search engines, operating systems, app stores and market places ('intermediation services' under the DMA).[69] A sixth company – Bytedance – has also been designated as gatekeeper for its social networking service TikTok.

Furthermore, pursuant to its market study on Mobile Ecosystems, the UK Competition and Markets Authority launched a market investigation (which could, ultimately, allow it take remedial action), raising its concern that Apple's app store policies may have restricted the development of cloud gaming, by only allowing individual games to be offered through the App Store rather than a catalogue of games.[70] Unfortunately, the CMA's decision to launch a market investigation – after it had initially decided not to do so given the supposed imminent arrival of a digital markets bill – was subject to an appeal before the Competition Appeal Tribunal, and was struck down.[71]

In general, competition authorities do not wish to be seen as price regulators and therefore shy away from setting specific fee levels. There are however examples where competition authorities have taken issue with app store policies, such as the Netherlands Competition

[67] Ongoing investigation in AT.40716 Apple - App Store Practices. See also ongoing investigation AT.40452 Apple - Mobile payments.
[68] Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act). See statement by the European Games Developer Federation about the applicability of the DMA to games: https://www.egdf.eu/documentation/5-fair-digital-markets/8-how-to-regulate-platforms/digital-markets-act/.
[69] See the European Commission's press release, 'Digital Markets Act: Commission designates six gatekeepers' (6 September 2023) available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_23_4328.
[70] Competition and Markets Authority, 'Mobile browsers and cloud gaming: Decision to make a market investigation reference' (22 November 2022) para 1.5.
[71] Competition Appeal Tribunal, Apple Inc. & Others v Competition and Markets Authority [2023] CAT 21.

Authority's (ACM) case against Apple on dating apps.[72] As a result of this case, Apple lowered its fees to 27%.[73]

The fees and policies of games stores and app stores have implications for innovation and creativity, as do the conditions under which developers and publishers can have their games included in games catalogues on powerful platforms. It could be argued that the drive to be included in a powerful store or on a popular streaming catalogue may induce uniformity in the development of games or the business models which gaming companies can adopt. However, although ecosystem power and so-called 'walled gardens' are attracting scrutiny by competition authorities and regulators, not just for their impact on games, there have been positive effects for developers in the gaming industry as well, as it seems some of these companies are important funders of content. This was particularly picked up by some industry participants in the CREATe roundtable of February 2023, with, for example, no unanimous agreement that 30% store fees would be detrimental to competition, or that platform exclusivity would restrict the access smaller game developers may have to consumers. Similarly, the discussion on the impact of fees on the diversity of games developers and publishers and their output is mixed. There are quite a few different fee models relevant to the gaming industry. Apple App Store and Google Play Store have mainly charged a 30% fee on all in-app purchases. Where games can be hosted within games, for example on Roblox, the creators face higher fees overall (see above). Roblox charges a near 70% fee for creators, which includes the app store fees. While there haven't been any major conflicts on this front, platforms like Roblox are expected to proliferate as the internet becomes more interactive, which might give rise to regulatory issues on fees for interactive platforms. Meanwhile, in the gaming industry, whether app store fees raise concerns seem to depend on the types of games in question and the specific business models of developers (for example, whether the developer relies on in-app purchases). The actual impact of these policies, if adjusted for the diversity of businesses and business models, is not clear.

An important question is how the power and conduct of companies within the changing gaming industry influences innovation. Crucially, the innovation question we are concerned with is not limited to the development of new products and business models in games – such as streaming, cloud gaming, mobile distribution and in-game revenue models – but includes its process. With the emergence of cloud gaming, walled gardens and ecosystem power, there may not only be a

[72] ACM, 'ACM: Apple changes unfair conditions, allows alternative payments methods in dating apps' (11 June 2022), available at: https://www.acm.nl/en/publications/acm-apple-changes-unfair-conditions-allows-alternative-payments-methods-dating-apps.
[73] Apple, 'Further updates on StoreKit External Entitlement for dating apps in the Netherlands storefront' (10 June 2022) available at: https://developer.apple.com/news/?id=3bttqj0z&1654894572.

risk that the user's contribution to game improvement and follow-on development disappears, but there is risk that games developers and publishers need to follow the standards set by the platform companies, potentially limiting their creativity.

V. Beyond Games: Creating the Metaverse

Another technological development that motivates this study is the metaverse.[74] As noted in the introduction, metaverse development is intrinsically linked to the gaming industry and early functional versions of metaverse have been around for decades. There is currently an undeniable hype around metaverse, and many familiar names are jumping on this bandwagon. The first that comes to mind is Facebook, now known as Meta: this rebranding itself is illustrative. Many brands, from athletic gear staples like Nike and Adidas to luxury brands like Gucci and Louis Vuitton have rushed to open their own universes on metaverse platforms. Metaverse has also been described as the next iteration of the internet.[75] Setting aside the hype, we are interested in understanding the current metaverse development efforts, M&A trends, the possibility of walled metaverses, the central role of user creativity in the metaverse, and emerging regulatory projects.

a) Proto-metaverse(s) in the gaming sector and metaverse development efforts

Scholarship on metaverse predates the current hype, just as the term itself.[76] 'Metaverse' is widely attributed to Neil Stephenson, whose 1992 novel *Snow Crash* introduced the distinction between Reality, the physical world, and the Metaverse, the digital world that people enter with googles and where they interact via their avatars. We will not attempt to define metaverse in this paper, but rather provide the bright lines that guide our project.

De Filippi proposed five characteristics that underlie 'metaverse': meta, persistent, immersive, interactive, and interconnected.[77] Meta refers to the fact that the metaverse 'exists beyond our

[74] While we use the term 'the metaverse' in this paper, this is an emerging domain of interconnected technologies, and it is by no means certain what kind of terminology will prevail in future. One vision is 'the metaverse' as an interconnected and interoperable web of virtual universes. In another vision, multiple 'metaverses' exist, with or without interoperability.

[75] Jackson, J. 'Is the Metaverse really turning out like "Snow Crash"?' (Magazine by Cointelegraph, 2 February 2023) available at: https://cointelegraph.com/magazine/metaverse-really-turning-out-snow-crash/. This point was also raised at CREATe's February roundtable on gaming in February 2023, see Yasar above.

[76] See for example Cagnina, M.R. and Poian, M. 'How to Compete in the Metaverse: The Business Models in Second Life' (2007) U of Udine Economics Working Paper No. 01-2007, available at https://ssrn.com/abstract=1088779. See also Bell, G. 'The metaverse is a new word for an old idea' (8 February 2022, MIT Technology Review) available at: https://www.technologyreview.com/2022/02/08/1044732/metaverse-history-snow-crash/.

[77] de Filippi, P. ' Who owns the Metaverse?' - Primavera De Filippi at USI' (5 January 2023) available at: https://youtu.be/btL6PXtWLH0.

reality'.[78] Persistency is the constant availability of the metaverse and its continuity even when users are disconnected. Immersive refers to the envelopment of the user by the shared virtual reality. Interaction with and among users, and user creation are key to the development of the metaverse. Finally, metaverse(s) will be interconnected with other virtual and physical realities. De Filippi adds a dimension to these five characteristics to fully distinguish metaverse from our mainstream interactions with the internet today: spatiality. While cyberspace has so far lacked spatiality, the metaverse will allow the creation of true digital spaces, complete with distances and movement, even though these digital spaces need not necessarily mirror our physical spaces.

As gamers will have recognised, most of these characteristics, even spatiality, already exist in the gaming world, albeit in different forms and to varying degrees. While *Snow Crash* inspired many, a digital meta universe proved hard to achieve in the 90s.[79] Instead, the 90s saw the rise of massively multiplayer online role-playing games (MMORPGs), like Blizzard's *World of Warcraft* – 'the most popular MMORPG of all time.'[80] What differentiated MMORPGs from traditional games was the lack of set goals, tasks or quests that end the game when completed. In MMORPGs, goals evolve over time and the game doesn't end even when tasks are completed. Furthermore, real-time communication via text and voice chat allows players to co-operate and create social relationships. These games 'can be viewed as a type of virtual world, in that they are multi-user virtual environments in which users are represented by 3D avatars. However, user action within [MMORPGs] is more directed, existing within the context of a role-playing game.'[81]

The Sims came out in 2000 and marked the advent of sandbox games. Sandbox games prioritise users' creation of virtual environments and lack specific goals that end the game. That said, there are often tasks to complete to advance in the game, and universe building is limited to the specs of the game. Other sandbox games like Farmville and Minecraft blossomed in the 2010s. A parallel development was the launch of Roblox (2006), a 'microverse',[82] another platform that

[78] ibid.
[79] Ondrejka, C. 'Escaping the Gilded Cage: User Created Content and Building the Metaverse' (2004) 49 NY Law School LR 81, 82. A version of this paper is available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=538362.
[80] *World of Warcraft*, available at: https://en.wikipedia.org/wiki/World_of_Warcraft (last edited 10 June 2023).
[81] O'Connor, E.L. et al, 'Sense of Community, Social Identity and Social Support Among Players of Massively Multiplayer Online Games (MMOGs): A Qualitative Analysis' (2015) 25 J. Community Appl. Soc. Psychol., 459, 460.
[82] Thompson, B. 'The Roblox Microverse' (Stratechery, 9 March 2021) available at: https://stratechery.com/2021/the-roblox-microverse/. The reason why Thompson has called Roblox a 'microverse' as opposed to 'metaverse' is its gaming focus, as opposed to truly 'rivaling' the real world.

brought the gaming world closer to the metaverse vision. It is a platform where games can be developed within the dedicated Roblox Studio, be played, and where users can communicate.

Second Life, aka the first metaverse, inspired at least in part by Snow Crash,[83] was launched in 2003. While it was (and still sometimes is) called a 'game', Second Life was not a game by any standard measure.[84] There were no goals or quests or tasks in Second Life.[85] It was characterised by the freedom it gave its users to develop digital environments, albeit pixelated, where people could just hang out and socialise. Developers of Second Life deliberately put user creativity at the core of the platform.[86] For example, 'residents', as Second Life users are known, could not only select from ready-to-wear avatar fashion, but they could also design clothes for their personas. It also had its own currency from the beginning, the Linden Dollar, which can be bought and sold against USD, that led to its own economy developing on the platform. Over the years, people have created communities and even got married and raised virtual children on Second Life. 20 years on, Second Life still has a loyal user base and the graphics have become much better.[87]

Facebook's rebranding to Meta in 2021, despite the bashing Meta has consistently received since,[88] is emblematic of a shift in metaverse development: it is no longer primarily contained within the gaming industry. Many other large technology companies have followed with their own metaverse development plans.[89] This shift was exacerbated by the Covid-19 pandemic that prompted even the sceptics to explore virtual worlds and activities.[90]

Furthermore, despite its close connection to the gaming sector, a metaverse has the potential to foster user creativity far beyond what video games have allowed so far. In essence, metaverse(s) will, or at least should be built by the users. In theory at least, metaverse(s) will give

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[83] Cox, H. 'Virtual reality pioneer Philip Rosedale (and his avatar)' (22 February 2017, Financial Times) available at: https://www.ft.com/content/97d62cae-f39e-11e6-95ee-f14e55513608.
[84] Virgilio, D. 'What Comparisons Between Second Life and the Metaverse Miss' (9 February 2022, Slate) available at: https://tinyurl.com/3ay85m2r.
[85] Chow, A.R. ' 6 Lessons on the Future of the Metaverse From the Creator of Second Life' (26 November 2021, Time) available at: https://time.com/6123333/metaverse-second-life-lessons/.
[86] Ondrejka, 87. Ondrejka was chief technology officer at Linden Labs, the creator of Second Life, at the time the cited article was published.
[87] Parkin, S. 'Who needs the Metaverse? Meet the people still living on Second Life' (10 June 2023, The Guardian) available at: https://www.theguardian.com/technology/2023/jun/10/who-needs-the-metaverse-meet-the-people-still-living-on-second-life.
[88] See for example Tassi, P. 'Report: Even Meta's Own Employees Don't Want To Go To Own Metaverse' (7 October 2022, Forbes) available at: https://www.forbes.com/sites/paultassi/2022/10/07/report-even-metas-employees-dont-want-to-go-its-own-metaverse/.
[89] See Bell cited above.
[90] Hollensen et al, 'Metaverse - The New Marketing Universe' (2022) 44 J Business Strategy 119, 122. See also Subramanian, S. 'As Covid-19 destroyed real economies, Second Life's economy boomed' (25 February 2021, Quartz) available at: https://tinyurl.com/2p94c7yv.

users the tools to create all kinds of virtual worlds and VR activities without the limitations of the physical world. People will be represented by their avatars, which they will wish to hyper-personalise and bring across different virtual environments. Virtual product sales, from game skins to decorative items, have long existed in games. Avatar fashion stores are now emerging, with hopes that users will be able to wear these purchases across different virtual worlds.[91] NFT-verified artwork will adorn virtual homes in metaverse. Entirely novel business models are also expected in metaverse. Think sales of immersive experiences and guided tours in faraway planets. Finally, while games also have a strong social backdrop, metaverse has the potential to bring together unlimited number of users in common spaces and activities like concerts.[92] But the actual delivery of these promises depends on a few factors, including technical aspects like hardware development, interoperability and computing power.[93] In the following sub-section, we connect these factors to two core interests of this project, ecosystems and user creativity, alongside the regulatory developments that we identify as relevant to these factors.

b) Ecosystems, user creativity and regulatory scrutiny

Parallel to the gaming sector (see Sections III and IV above), metaverse development is witnessing the rise of companies active in more than one layer/pillar of metaverse. There is also a flurry of merger activity across all pillars of metaverse development. Some of these players are clearly crafting their own metaverse ecosystems, covering among other things hardware, software and content distribution.

Hardware includes physical technologies and devices for private users, enterprise users and developers of metaverse. Desktop computers, AR/VR headsets, mobile devices, haptic wearables, 3D cameras fall into this category. One point of interest to this project is the development of headsets. Theoretically, headsets are not required to enter metaverse environments, since it is 'through the software that the actual experience or "magic" is delivered'.[94] But since they render the metaverse environment immersive, much more so than computer or mobile device screens, metaverse development goes hand in hand with headsets.

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[91] Takahashi, D. 'Will interoperable avatars be essential for the open metaverse?' (2 April 2023, Venture Beat) available at: https://venturebeat.com/games/will-interoperable-avatars-be-essential-for-the-open-metaverse-timmu-toke/; Jana, R. ' The Metaverse Could Radically Reshape Fashion' (11 April 2022, Wired) available at: https://www.wired.co.uk/article/extreme-fashion-metaverse.

[92] Concerts have already taken place on Fortnite, Roblox, and other 'proto-metaverses', albeit with a limited number of users. Pierce, D. ' The concert of the future is already happening in the metaverse' (3 October 2022, The Verge) available at: https://www.theverge.com/2022/10/3/23384883/concerts-metaverse-travis-scott-charlie-puth-iheartland.

[93] Ball, M. 'Framework for the Metaverse' (29 June 2023, The Metaverse Primer) available at: https://www.matthewball.vc/all/forwardtothemetaverseprimer. See also Hollensen et al, 121-122.

[94] Hollensen et al, 121.

Currently, quite a few of the companies at the forefront of headset development are familiar names, such as Meta, Microsoft, Apple, and Sony. These players embody software and content distribution expertise that will likely come in handy in metaverse development, especially in social media applications (Meta), games (Microsoft and Sony), and app distribution (Apple).

The need for computing power to support the various functions in the metaverse, including AI applications, is increasingly giving rise to new ventures and development efforts. For example, Nvidia, a strong chip player in video games among other domains, has been developing its own range of metaverse-oriented offerings in both computing and software, including its Omniverse set of enterprise facing developer applications.[95] In 2021 it also attempted to acquire ARM, a chip developer, but the deal never saw the light of day due to antitrust challenges from UK, US and EU. Metaverse development was not mentioned in the CMA's issues statement,[96] nor the FTC's complaint.[97] Yet ARM would have given a clear boost to Nvidia's metaverse tools with its IP in systems-on-a-chip for gaming consoles and mobile AR applications. Apple has also recently boosted its hardware operations with its own Apple silicon, powering Macs since 2020. The Vision Pro, Apple's newly announced headset, is powered by the company's own processors, including its new R1 chip 'specifically designed for real-time processing of the real world.'[98]

Another recent merger relevant for metaverse development was *Meta/Within.* It was challenged by the FTC in 2022,[99] but the agency failed to secure a preliminary injunction, and the acquisition has now taken place. The complaint centred on the 'VR fitness app market' and the narrower 'VR dedicated fitness app market'. The former includes the latter but also 'incidental' fitness apps, such as Meta's popular Beat Saber.[100] The agency argued that in the absence of the merger, it was 'reasonably probable' that Meta would have entered the VR dedicated fitness app market' judging by its prolific product development in VR applications.[101] It also framed the parties as direct competitors in the latter market. The FTC referred to the acquisition's potential to

[95] Available at : https://www.nvidia.com/en-us/omniverse/. See also Shah, A. Nvidia CEO Jensen Huang talks chips, GPUs, metaverse (22 March 2022, The Register) available at: https://tinyurl.com/42et5jrn.
[96] CMA, 'Anticipated Acquisition by Nvidia Corporation of Arm Limited - Issues Statement' (20 December 2021) available at: https://assets.publishing.service.gov.uk/media/61c0708f8fa8f5037cc5e2a9/NVIDIA_ARM_P2_Issues_Statement_-.pdf.
[97] Complaint, Nvidia Corporation, Softbank Group Corporation, Arm Ltd., FTC Docket No. 9404 (2 December 2021) available at: https://www.ftc.gov/system/files/documents/cases/d09404_part_3_complaint_public_version.pdf.
[98] Dillet, R. 'The Apple Vision Pro features an M2 chip, a ton of sensors and a new R1 chip' (5 June 2023, TechCrunch) available at: https://techcrunch.com/2023/06/05/the-apple-vision-pro-features-an-m2-chip-a-ton-of-sensors-and-a-new-r1-chip/.
[99] Complaint, Meta Platforms, Inc., Mark Zuckerberg, Within Unlimited, Inc., FTC Docket No. 9411 (11 August 2022) available at: https://www.ftc.gov/system/files/ftc_gov/pdf/D09411MetaWithinComplaintPublic.pdf.
[100] ibid 4.
[101] ibid 3-4.

strengthen Meta's metaverse plans only in one dramatic sentence: 'And Meta would be one step closer to its ultimate goal of owning the entire "Metaverse."'[102] However, the order denying the FTC's motion for preliminary injunction bears no mention of metaverse.[103]

The hottest merger in games and metaverse at the moment is without a doubt Microsoft's ongoing acquisition of Activision Blizzard.[104] According to Microsoft's announcement of the deal, the acquisition was motivated by not just growth in Microsoft's gaming business, but also metaverse development.[105] However, it does not look like the competitive advantage Microsoft would gain in metaverse development played a role in the CMA's initial prohibition decision and the FTC's challenge of the deal.[106] The CMA focussed its inquiry on cloud gaming.[107] While initially there were also concerns around Microsoft's established position in consoles with its Xbox, in a market with only three major global suppliers overall, the CMA did not find it likely that Microsoft would make Activision content, and especially its star title Call of Duty, exclusive to Xbox. On the contrary, the agency found it likely that the merger would result in a significant lessening of competition in the burgeoning cloud gaming market, as Microsoft would be incentivised to limit its cloud gaming competitors' access to Activision's titles. Underlying the agency's analysis was Microsoft's strength in the gaming ecosystem derived not just from gaming-specific hardware, software, and titles, but also its Azure cloud offering and the Windows operating system. Against this background, Microsoft's foray into the metaverse and the competitive advantage the merger would bestow could certainly have found a place in the agency's analysis. This absence was criticised by Ziermann in the wake of the agency's announcement of the outcome of its Phase I investigation.[108] Game developers are increasingly upping their game in the metaverse space, and without the merger Microsoft and Activision might well develop two separate metaverses.[109] In particular, Activision boasts *World of Warcraft* in its catalogue and Microsoft had acquired Mojang, the developer behind Minecraft, in 2014, giving the merged entity a strong footing in

[102] ibid 4.
[103] The district court decision was not published but is available at: https://s3.documentcloud.org/documents/23598337/ftc-vs-meta-within-ruling.pdf.
[104] See footnote 40.
[105] 'This acquisition will accelerate the growth in Microsoft's gaming business across mobile, PC, console and cloud and will provide building blocks for the metaverse.' See 'Microsoft to acquire Activision Blizzard to bring the joy and community of gaming to everyone, across every device' (18 January 2022, Microsoft News Center) available at: https://news.microsoft.com/2022/01/18/microsoft-to-acquire-activision-blizzard-to-bring-the-joy-and-community-of-gaming-to-everyone-across-every-device/.
[106] See footnote 40 for the latest developments on the CMA and FTC's challenges to the merger.
[107] For the CMA's report on its decision to block the deal, see Microsoft/Activision final report cited above.
[108] See Ziermann, F. LinkedIn profile (2023) available at: https://www.linkedin.com/posts/fabian-ziermann-552710140_microsoftactivision-market-definition-activity-6971071416012001280-6irK/?utm_source=share&utm_medium=member_desktop in reference to Ziermann cited above.
[109] Ibid.

metaverse-like virtual worlds. While the fate of the deal remains uncertain at this stage, the EU's clearance decision increased its chances of survival.[110]

These developments point to a possible emergence of ecosystem power, not unlike the gaming sector. The potential adverse impact of closed ecosystems/walled gardens on user creativity is perhaps clearer in metaverse development than it is in the gaming sector (see Section III above). If there are only a limited number of closed ecosystems to build metaverse(s), this would not only limit the creative tools available to users, but it might also hamper users' ability to freely move among metaverse(s) with the same avatars.

A technical solution that could counter the adverse effects of closed proprietary systems is interoperability. Interchange tools and standards are needed to ensure interoperability among devices that users connect to metaverse(s) from, as well as interoperability across different virtual universes. Both dimensions are of interest to this project. Openness and interoperability were key concerns in the European Commission's 2023 call for evidence for 'An EU initiative on virtual worlds: a head start towards the next technological transition'.[111] Large corporations' metaverse development efforts were noted in the call for evidence, as well as the 'risk of having a small number of big players becoming future gatekeepers of virtual worlds, creating market entry barriers and shutting out EU start-ups and SMEs from this emerging market.'[112] While this initiative is not linked to a regulatory project, EU Competition Commissioner Vestager has signalled the start of regulatory scrutiny into metaverse.[113] The call for evidence also stressed the need for standards for interoperability among virtual worlds that would allow users to transfer and use their avatars and information seamlessly.

VI. Conclusion

This paper brings together different components of the new CREATe project on the gaming industry. This industry is currently going through a major transformation with the advent of cloud gaming that captured the interest of regulators around the world. Games are also providing the

[110] See footnote 40 for details on the CMA's new merger inquiry.
[111] To access the call for evidence, see European Commission, 'Virtual worlds (metaverses) – a vision for openness, safety and respect' (published initiative) available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13757-Virtual-worlds-metaverses-a-vision-for-openness-safety-and-respect_en.
[112] ibid 2.
[113] Chee, F.Y. ' EU's Vestager says scrutiny of competition in metaverse already needed' (3 March 2023, Reuters) available at: https://www.reuters.com/world/europe/eus-vestager-says-scrutiny-competition-metaverse-already-needed-2023-03-02/.

building blocks of metaverse – a sector that shares many characteristics with gaming, albeit with a more central role for user creativity.

The paper first provided an overview of the key types of players and business models in the gaming sector. We then zoomed in on the state of copyright protection in the gaming sector, particularly reflecting on its implications for user creativity in cloud gaming. Competition law followed IP with questions on market definition, concentration and closed ecosystems that have marked the recent antitrust and merger control cases in the UK, EU and the US. We conclude with metaverse development efforts within and outside the boundaries of the gaming sector and provide an initial overview of emerging ecosystem power, its implications for user creativity, and recent policy initiatives that deal with metaverse development.

There are two threads that run through the different components of this project: creativity and integration.

On the creativity side, IP and competition law regimes interact with both user and developer creativity. Video games stand in contrast to passively consumed media: first, because they are interactive and must be played; second, because the sector has been historically shaped by active contributions of players – some mods like *Counter-Strike* have even taken lives of their own. This idiosyncrasy of the gaming sector, further accented in the metaverse, warrants special research interest in the sector as lessons from other creative industries are rarely applicable to games.

Cloud gaming can be disruptive to this symbiotic relationship because of the shift in distribution from ownership to access. When accessing a game via the cloud, the user is no longer in possession of a reproduction of the game code. While cloud gaming opens up new vistas of play, the implications of this disruption which might be exacerbated by copyright protection granted to developers need further interrogation. The key role of players also raises the question whether market definition needs a rethink in competition law, with markets defined not based on specific hardware or mode of distribution like cloud gaming, but based on the type of players.

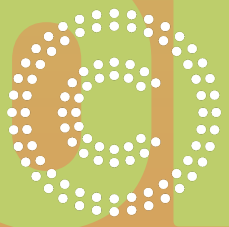
Moreover, competition law enforcers and regulators' recent concern with innovation, though indeed interesting, may be too limited to fully recognise the impact concentration and changing power dynamics may have on the games industry. In addition to considering how these changes influence the commercialisation of new products and new technologies, it is worth reflecting on their impact on creativity as a process: which creators can contribute to games development, and which creative ideas remain viable in this changed landscape. The link between creativity (as a process) and innovation is one which will be explored in future research in CREATe. This can

set the scene for its application to the games industry: does cloud gaming, including subscription models, and the rise of ecosystems reduce or promote creativity?

On the integration side, while it is hard to call the gaming nor the metaverse landscape 'concentrated', except in hardware, there is a clear trend of ecosystem integration in both sectors. The gaming sector is going through a period of vertical integration where owners of game platforms are also developing their in-house titles. The distribution experience of the developers differs considerably depending on which channels they have access to. The perspectives of different games developers are crucial to achieving a holistic picture of the industry, its competitive dynamics and the effects of powerful companies' conduct on developers as a whole. Furthermore, despite competition law concerns around app store fees, it seems that the established fee models can help fund game development in smaller studios, boosting the diversity of games. Therefore, such concerns need to be analysed further to understand the concrete effects of app store fees on the gaming sector.

When it comes to metaverse development, issues of integration and creativity go hand in hand. The lines between developers and end users are further blurred, since users are an integral part of metaverse development. This role puts a different colour on ecosystem integration, which is on the rise through both in-house development efforts (like Apple's AR/VR headset and dedicated silicon) and acquisitions (like Microsoft's ongoing efforts to acquire Activision Blizzard, or Meta's acquisition of Within). If walled gardens emerge in metaverse development, both user and developer creativity might be hampered due to the lack of diversity in virtual environments and interoperability across metaverse(s). These concerns have already prompted the European Commission to open a call for evidence on virtual worlds. Since the metaverse is still a nascent technological domain, regulators might find it desirable to provide some ground rules for metaverse development so as to keep the technology open and interoperable. This project therefore also asks the questions whether there are indeed serious concerns of emerging ecosystem power in metaverse development, whether it hampers creativity, and finally whether early regulatory intervention is desirable to keep metaverse(s) open.

This paper, therefore, sets the scene for future research, which brings together competition law, IP law, and cultural policy perspectives. With the questions formulated in this conclusion and throughout the paper, the CREATe team embarks on its project to review the changing landscape of gaming and its implications for creativity, innovation, access and integration.



CREATe

UK Copyright and Creative Economy Centre
School of Law / University of Glasgow
10 The Square
Glasgow G12 8QQ
www.create.ac.uk

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