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## PLATFORM POWER, XR, AND THE METAVERSE: NEW CHALLENGES OR OLD STRUCTURES?

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While social media platforms continue to dominate the ways in which people connect using computational devices and digital media, a transition towards more immersive platforms and experiences is underway (Egliston & Carter, 2022a). Extended reality (XR) is the umbrella term for media that enable experiences in augmented, mixed, and virtual reality. Through XR technologies, new digital spaces are being developed that combine features of existing digital platforms with elements of the immersiveness of gaming, sometimes referred to informally as ‘the metaverse’. Notably, many of the corporations behind the dominant social media platforms are active in the XR economy (Egliston & Carter, 2022b). Meta has garnered much attention in this regard, but Google, Apple, Microsoft, Amazon and Sony have all either entered the market or have been reported as having XR/metaverse ambitions. Through a multiple-case study (Eisenhardt, 1989) of three companies, this paper maps out key dimensions of the emerging metaverse economy and shows how the platform characteristics of XR providers, similar to the current social media economy, can enable the concentration of social and economic power around a few actors.

The study provides a detailed analysis of the XR activities of Meta, Epic Games/Unreal Engine and ROBLOX between 2018-2023. These companies were chosen because they are representative of what we identify as the three overarching layers of the XR economy: device manufacturers, tools and infrastructure providers, and corporate content providers. Each company is also dominant within the current XR economy to varying extents. Meta is the producer of the most widely sold VR headset, the Quest 2, while ROBLOX is currently the biggest platform for social VR, reaching 65 million daily users globally as of January 2023 (Perez, 2023). Epic Games/Unreal Engine maintains a duopoly-like position in the gaming industry (along with its competitor Unity) and is the producer of Fortnite, one of the biggest immersive gaming communities currently in existence. The game has more than 400 million users worldwide (FTC, 2022). Epic

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Games has also begun to move Unreal Engine into other areas of immersive media, such as volumetric video production, and appears likely to be a dominant provider when it comes to rendering virtual and mixed realities as part of XR/metaverse infrastructure (Jungherr and Schlarb, 2022).

In this paper, we approach the multiple case study analysis through the lens of platform studies, specifically the platformization framework articulated by scholars such as José van Dijck, Anne Helmond, Thomas Poell, David Nieborg, Martijn de Waal and others (2019; 2021; 2018, 2019). These scholars explain how the currently dominant digital platforms have used processes of datafication, commodification and selection to build highly successful data-driven capital accumulation models (van Dijck et al, 2018). The large digital platform companies now own and manage global infrastructure (Helmond et al, 2019); they produce and regulate multi-sided marketplaces (Nieborg et al, 2020); and they influence cultural and political conditions by moderating the flow of information in society (Gray, 2020). This results in concentrated platform power that can damage democratic social systems, produce unfair economic conditions for those seeking to compete or work with the dominant platforms and harm the well-being of individuals (van Dijck et al, 2019).

Our analysis of the business models and market actions, hardware design, affordances, infrastructure and limitations of Meta, ROBLOX and Epic Games/Unreal Engine suggests the XR economy will be underpinned by the same processes of datafication, commodification and selection that underpin the current digital platform economy, and this may lead to new and extended concentrations of platform power. For instance, Meta is aiming to convert billions of social media platform users to its XR offerings and recently proposed a policy for lowering the age limit of its Horizon Worlds social VR platform to correspond with the age limits on Facebook and Instagram, i.e. from 18 to 13 (Rodriguez, 2023). Meta has also reportedly entered into negotiations with the leading Chinese digital platform company, Tencent, to sell the Quest 2 headset in China (Huang and Purell, 2023). At the same time, ROBLOX is reportedly adding the market leading Meta Quest 2 headset to its range of compatible VR headsets in 2023, which will likely boost both companies' market shares almost instantaneously (Forristal, 2022). As our study shows, in these and other examples, we see evidence that a handful of companies are acting to leverage existing data and other resources to gain first-mover advantages in the XR economy of the kind that historically have led to tech monopolies and duopolies.

In our case studies, which include an analysis of recent statements, decisions and actions by Meta, ROBLOX and Epic Games/Unreal Engine, we also identify the market consolidation strategies that each company appears to be pursuing and evaluate their potential impact on the future competitiveness of the XR economy. Our findings align with previous critical XR studies, such as those by Egliston and Carter (2021, 2022b), but add additional insights based on recent industry developments and deepen knowledge of the processes of consolidation currently underway.

By examining the three XR case studies through the lens of platformization, our study shows how and why transitioning, to any extent, digital socialization to XR/metaverse media carries the risk of repeating the same asymmetric power consolidations that have

occurred in the global digital economy over the past two decades. This consolidation is particularly concerning given that the XR market has not yet fully opened up to all participants. In the paper, we propose that in the transition to a more immersive digital era, to enable a competitive, vibrant and fair XR economy, policymaking and governance must proactively address the issue of concentrated platform power. The paper concludes with a discussion of potential policy and regulatory pathways for taking up this challenge.

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