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FROM PLATFORMS TO PROTOCOLS, FORGES, STACKS AND DAOS: ON THE PLATFORMISATION AND DEPLATFORMISATION OF SOFTWARE DEVELOPMENT

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This paper contributes to the critical study of platformisation and deplatformisation of software development and how networked infrastructures commodify, configure and challenge relations between code, coders, communities, technologies, investors and industries. It explores the political economic and cultural dimensions of the platformisation of software development in the news industry with a case study on GitHub. It then turns to how platformisation is being resisted and the development of socio-technical arrangements for socialising software development differently.

Acquired by Microsoft in 2018, GitHub is now part of a group of tech companies on which digital cultural production in the Global North is dependent, known as GAFAM: Google, Apple, Facebook, Amazon and Microsoft (Nieborg and Poell, 2018). This position, alongside GitHub's dominance in the online software development and F/OSS (free and/or open-source software) space, call for more sustained critical engagement with the platform's re-centralisation of software development across a variety of industries, and ongoing expansion into other societal spaces and cultural practices. At the same time, GitHub's controversial purchase by industry giant Microsoft has led to resistance, critical responses, counter-mobilisations and movements to alternative code hosting spaces – and other ways of organising, networking and socialising the development of the software that we live with. These are equally important to study.

The paper contributes to a growing body of work on platforms, platformisation and cultural production (Dolata & Schrape, 2023; Duffy et al., 2019; Helmond, 2015; Mackenzie, 2018; Nieborg et al., 2020; Plantin et al., 2016) by combining political economy and cultural studies approaches to examine the platformisation and

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deplatformisation of software development. It examines the platformisation processes that underpin GitHub and how the interplays between technical infrastructure and economic imperatives shape platform vernaculars (Gibbs et al., 2015). Next it studies how GitHub's platformising processes are resisted through alternative arrangements for software development that may be understood as a form of deplatformisation. While media scholars have studied deplatformisation and deplatforming as corporate-led processes to detoxify platforms (Van Dijck, de Winkel, & Schäfer, 2023; Rogers, 2020), we examine deplatformisation as a user-led process to support arrangements which do not follow economic or cultural logics of platformisation. To examine this we turn to how networks of developers, hackers, artists and activists are mobilising to contest and resist the platformisation of free/open source software development, and organising self-hosted, non-profit and community-based software development spaces to decommodify these practices, including in contexts such as F/OSS, feminist infrastructure, experimental media arts and marginalised community spaces.

To study the platformisation of software development this article combines "technographic inquiry" (Bucher, 2018) to understand GitHub's material-economic configuration and how it structures software and project development, and digital methods approaches for social and media research (Marres & Gerlitz, 2015; Rogers, 2013, 2019; Rieder, 2012; Venturini et al., 2018). Bucher (2018) defines technography as scrutinizing the mechanisms and operational logics of platforms and algorithms and how they configure social action similarly to how an ethnographer would examine culture by means of the way people ascribe meanings to worlds. Digital methods are used to examine high-visibility platform practices and vernaculars on GitHub by means of an analysis of top starred repositories and associated organisations. We examine a collection of 3,665 public repositories created by 87 media initiatives and organisations with public GitHub accounts. To study forms of resistance to platformisation, we combine technography and the analysis of online documents and materials to study the values, practices and communities associated with collaborative software development initiatives such as Gogs, Gitea, Radicle and Forgejo.

Drawing on Van Dijck et al. (2018), the paper proposes the concept of "connective coding" to characterise GitHub's dominant modes of configuration and capitalisation of public repositories and profiles and the power relations that underpin it. In this arrangement public software development work becomes assets in the platform economy that have the potential to be variously capitalised by the platform and its associated third-party ecosystem. In the context of GitHub, the commodification of software development refers to potential economic capital accumulation by converting public coding activities, developer profiles and behaviours into assets that may attract future revenue and investment to the platform (Mackenzie, 2018). This is made possible by a technical infrastructure that sets conditions for participation in alignment with the platform's economic aims. This includes a front-end which seeks to solicit, intensify and accelerate user engagement and a back-end comprised of servers and data storage, mining and archival capabilities (Gehl, 2011). These features, just as in the case of other social media platforms, are organised around nurturing a platform ecosystem that multiplies valorisation of connectivity around several registers (Gerlitz, 2016; Marres, 2017). By making projects and people commensurable through the introduction of common metrics, the platform materialises an auditorial culture (Gane, 2014; Power,

1999; Strathern, 2000) based on quantitative measures, that intensifies evaluation and competition between projects (Rieder, 2017).

In the case study on newsroom industry practices and how they are mediated by the platform, this auditorial culture materialises in a high-visibility platform vernacular dominated by a mix of large and established media actors, as well as smaller and more recent actors and initiatives. F/OSS features prominently in this high-visibility space, from the appropriation of F/OSS for media commodity production by large companies such as in the case of Bloomberg and the *New York Times*, to the extension of an organisational strategy of journalistic transparency in non-profit media production to the software development space such as in the case of the *Guardian* and ProPublica, as well as cross-organisational collaborations to create an independent open-source product. By contrast, low-visibility public repositories in this space may be seen as indicative of GitHub's role in facilitating what Fuller et al. (2017) have described as a post-F/OSS culture in contemporary software development.

By contrast, projects such as Gogs, Gitea, Radicle and Forgejo, which have received limited scholarly attention focusing on studying F/OSS software development outside of GitHub (e.g. Trujillo, Hébert-Dufresne, & Bagrow, 2022), can be understood as contested sites of infrastructural experimentation, articulating alternative forms of networked sociality and valuation. Tracing the making, forking and fate of these initiatives provide insights into the dynamics and politics of deplatformisation in the current moment. They can be considered post-platform in that they echo familiar platform user features and functionalities, but with technical, economic and organisational setups which aspire to depart from platform logics.

In all, the paper contributes to conference themes pertaining to the political economy of digital industries, labour in platform contexts, and resistance in digital industry contexts.

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