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FROM PLATFORMIZATION TO DIGITAL BORDERLANDS: GENERATIVE AI, BOUNDARY OBJECTS, AND THE EXPANSION OF THE DIGITAL LANDSCAPE

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Introduction

Ordering food through an app, watching a movie on a streaming service, or learning a new hobby on YouTube are everyday practices embedded in dynamic digital landscapes (Rogers, 2013). These landscapes are structured yet evolving spaces where digital infrastructures, platform logics, and algorithmic mediation shape interactions, access to content, and socio-technical practices.

Digital platforms and their more accessible interfaces, such as apps, services, and tools like iFood, Netflix, and Gmail, mediate access to content, define interaction models, and embed mechanisms for visibility and monetization. Platformization has often been framed as the organizing force of the digital landscape, shaping conditions for participation, data extraction, and algorithmic governance (Van Dijck, Poell, & De Waal, 2018; Srnicek, 2017).

While this process consolidated platforms as structuring agents, it also generated outputs that warrant further understanding. Technologies developed within platforms, especially generative AI, do not simply reinforce the platform model but expand, fragment, and reconfigure the digital landscape in unpredictable ways, shaping alternative socio-technical formations.

This paper advances a theoretical intervention. Our goal is to examine how generative AI exposes the limits of platform-centered analyses and to propose an alternative conceptual framing. Specifically, we ask: How can generative AI models be understood

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as boundary objects that traverse platform infrastructures? What does this transversal movement reveal about the epistemic frictions generated as these models diffuse across domains? And how can an updated notion of digital borderlands help capture these transformations?

Existing scholarship on platformization has demonstrated how platforms structure data extraction, governance, and economic organization (Van Dijck, Poell & De Waal, 2018; Srnicek, 2017). Yet generative AI introduces properties that exceed these frameworks: interpretive flexibility, epistemic instability, transversal integration across sectors, and recontextualization beyond platform boundaries. These dynamics require conceptual tools capable of addressing not only infrastructural power but also the frictions that arise when AI systems migrate across institutional, legal, and cultural environments.

We argue that generative AI systems expose fissures in platformized digital environments. AI-embedded digital objects dissolve into multiple layers of infrastructure, functioning as boundary objects (Star, 1988, 2010) that traverse, adapt to, and reshape different digital environments. We propose expanding the platform-centred approaches with an updated notion of digital borderlands originally coined by Fornäs et al. (2003), reframing contemporary digital environments not as mere extensions of platform infrastructures but as contested spaces where AI-generated technologies operate across and beyond their original contexts.

Generative AI as Boundary Objects

Given these limitations in platform-centered approaches, Susan Leigh Star's concept of boundary objects (Star, 1988; Star & Griesemer, 1989; Star, 2010) provides a framework for understanding how generative AI functions across divergent socio-technical domains. Boundary objects are plastic enough to be interpreted differently by various communities yet structured enough to maintain coherence within specific contexts. They serve as shared referents that enable coordination across epistemically heterogeneous spaces, allowing different actors, from developers and regulators to users and institutions, to engage with the same artifact while shaping its meaning according to their needs and constraints.

Generative AI exemplifies this dual nature. While materially anchored in centralized infrastructures—corporate-controlled datasets, proprietary APIs, and cloud-based processing—its interpretative flexibility allows it to move across diverse socio-technical landscapes, embedding itself into fields such as research, creative industries, governance, and automation. What distinguishes generative AI from previous forms of computational infrastructure is precisely this fluidity of meaning and use, which enables its diffusion beyond the controlled environments of platform infrastructures.

As Rieder (2024) argues, the supposed universality of foundational models is not intrinsic but constructed through layers of infrastructural framing, regulatory discourse, and economic positioning. AI models do not merely automate tasks or optimize information flows; they disrupt established boundaries of knowledge production, authorship, and epistemic authority, producing tensions over who controls their outputs and how their legitimacy is negotiated.

Unlike earlier forms of platformized AI, such as recommendation engines or content moderation systems, which were tightly embedded within platform infrastructures, generative AI models exhibit a transversal movement. Their presence is no longer restricted to dedicated apps or platform-based interfaces; it is now incorporated into operating systems and smart environments, and embedded in services like Apple Intelligence, Bing, Copilot, Grammarly, and enterprise software suites. This diffusion extends platform logics and reconfigures the socio-technical landscape, producing a more decentralized yet structurally contested mode of AI governance.

This expansion does not represent a detachment from platform infrastructures but rather a transversal diffusion that enables AI to adapt and reconfigure each domain it enters, including music, entertainment, creative industries, authorship, and data analysis. These models move across legal regimes, institutional practices, and disciplinary boundaries, where they are continually reconfigured through local adaptations, sectoral constraints, and emergent governance frameworks. Generative AI models reshape the conditions of socio-technical assemblages, demanding analytical perspectives capable of capturing their movement beyond traditional infrastructural views.

From Platformization to Digital Borderlands

The role of AI-generated technologies as boundary objects expands the digital landscape, producing fissures in existing frameworks that reveal new technological affordances and epistemic tensions. While the idea of platformization emphasizes corporate or institutional control over information flows, generative AI disperses agency across socio-technical domains, creating frictions around law, truth, labor, authorship, corporations, institutions and cultural production. The question is no longer how platformization regulates and co-shapes society, but how the digital landscape transforms when these platforms are continuously negotiated, reinterpreted, and contested. Or, in Latourian terms, what comes to matter when the effects of platformization become embedded in ordinary social practices?

To analyze these transformations, we propose digital borderlands as a framework for understanding how generative AI operates beyond its original platform infrastructures. The term digital borderlands was first introduced by Fornäs et al. (2003) to describe liminal zones where online identities, communities, and cultural practices blur conventional distinctions between the real/virtual and the self/other. This formulation was grounded in the early internet, when questions of identity, presence, and interactivity dominated digital research.

Our argument departs from this cultural-identity framing. We propose an updated conceptualization in which digital borderlands emerge not from hybridity but from infrastructural frictions, understood as the tensions produced when boundary objects like generative AI traverse heterogeneous socio-technical systems. In this reworked formulation, digital borderlands function as epistemic zones shaped by infrastructural frictions arising from the diffusion of boundary objects such as generative AI. Rather than spaces of cultural production, digital borderlands shift the analytical focus from

platform infrastructures and algorithmic power to the appropriation, adaptation, and contestation of these systems by communities, activist networks, companies, and governments, establishing new economic, epistemological, and ethical boundaries.

Our notion of digital borderlands thus highlights an epistemological and methodological turn in how we conceptualize contemporary digital landscapes, shifting attention away from frameworks centered on cultural hybridity and identity negotiation toward a focus on infrastructural frictions, epistemic struggles, and the contested reconfigurations of digital environments.

Conclusion

Digital borderlands are neither residual spaces within platform logics nor external zones detached from digital infrastructures. They emerge from the epistemic and infrastructural negotiations triggered by the circulation of generative AI across heterogeneous technical and institutional domains. Rather than producing stability, AI generates ongoing frictions that become visible through the transversal movement of boundary objects, giving rise to digital borderlands as the zones where these appropriations and frictions are negotiated.

The contribution of this paper is therefore conceptual. By connecting boundary-object theory with an updated formulation of digital borderlands, we offer a framework for analyzing how generative AI reconfigures the digital landscape, staging new epistemic conflicts, governance challenges, and technological realignments beyond platform-centered assumptions. If platformization once told us, “Look at how digital companies are reshaping society,” digital borderlands push back, asking, “Now what? How are we going to engage with and critically examine these reconfigurations?”

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