

Infrastructures and Platforms in Media and Cultural Industries

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Abstract: This article offers an overview of the topics explored during a conference track, titled Platforms and Infrastructures in Media and Cultural Industries, organised by the authors within the VIII STS Italia Conference held virtually in June 2021. The text starts outlining how infrastructural research, which emerged in science and technology studies (STS) and has been then adopted in different branches of media studies, evolved. To this end, it reviews some of the major works that embraced the so-called ‘infrastructural turn’ in media studies. The emergence of platform studies is then outlined, a field that stemmed from game studies and, largely owing to the social relevance of social network platforms, subsequently became a major intersectional space between STS and media studies.

Keywords: Infrastructures; platforms; digital media; cultural industries; STS.

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I. Introduction

On the occasion of the VIII STS Italia conference, we decided to organise a track devoted to exploring the current research on platforms and infrastructures in media and cultural industries. In recent years, it is quite evident that the major changes in cultural industries and content distribution have been shaped according to the affordances and constraints offered by media platforms and digital infrastructures. Media and cultural industry studies, by borrowing a sensitivity from STS, addressed platforms and infrastructures by highlighting that they are not only neutral carriers or facilitators but also distinctive sociotechnical entities able to, among other

things, create new relationships, produce inequalities, modify professional jobs and consumer practices and even reshape the aesthetics of cultural content.

The reasons for organising such a track were therefore quite clear: on the one hand, in the last couple of years, an STS-rooted perspective on infrastructures has filtered in media studies to address the growing relevance of the technical dimension in shaping media practices and ecologies (i.e. Parks and Starosielski 2015; Peters 2015); on the other hand, the rising relevance of those entities defined as platforms in different societal realms, including the distribution of media content, witnessed a renewed interaction between STS and media and cultural industry studies (van Dick et al. 2018; Gillespie 2018). We thus arrived at the idea of using the conference track to map the emerging research focused on this intersection.

In this emerging literature at the crossroad between STS and media studies, a specific emphasis has been placed on the mutual interactions between platforms and their infrastructural qualities, especially by considering the convergence between internet-based infrastructural services and the emerging role of different platforms in media and communication. The ongoing process of ‘platformisation’ is thus outlined as a crucial structural shift in how value, meanings and practices are created in cultural industries today (Plantin et al. 2018; Nieborg and Poell 2018; Plantin and Punathambekar, 2019).

The next two sections summarise how “infrastructures” and “platforms” have recently emerged as the two ground-breaking keywords in both STS and media and communication studies.

2. Infrastructures from STS to Media and Cultural Industries

Since the middle of the last decade, media studies have been developing a new perspective centred on media’s infrastructural dimension, an approach rooted mostly, even if not exclusively, in the research on information infrastructures that emerged in the ‘90s in STS. Since several scholars have highlighted media’s infrastructural dimension, this conceptual shift that occurred at large in media and internet studies has been described as an ‘infrastructural turn’ (see Balbi et al. 2016; Musiani et al. 2016; Hesmondhalgh 2021).

Adopting the notion of infrastructure has been important in media studies to bring to the foreground several relevant characteristics of digital communication: from the growing relevance of networks in content distribution (Lobato 2019) to the shift from the focus on individual devices such as television to interconnected technologies such as digital standards (Sterne 2012) and smartphones (Magaudda and Piccioni 2019); from the relevance of invisible and taken-for-granted structures that make communication possible such as undersea cables (Starosielski 2015) to the growing

relevance of being constantly connected to our increasingly mediated social organisation (Couldry and Hepp 2017).

The roots of the notion of infrastructure, as is well-known among STS scholars, lies solidly in STS and, more specifically, in the work of Susan Leigh Star and Geoffrey Bowker (Star and Ruhleder 1996; Bowker and Star 1999). According to a seminal article by Susan Leigh Star and Karen Ruhleder (1996), infrastructures are important because they emerge at the intersection between technical elements and social phenomena. Their social relevance derives from the fact that they need to be adopted and made their own by users so that their role can be easily taken for granted in social routines. In short, from an STS perspective, focusing on infrastructures does not mean only considering the technical dimension – it also means considering how the technical details of technologies intersect with and are mutually influenced by individuals' technological uses and practices.

In recent years, the focus on infrastructures opened in STS has directly influenced various scholars in media and communication studies, where an infrastructural perspective has been adopted as a useful point of departure to make sense of the complex interaction between media's material nature, dematerialised digital contents and collective media practices. For example, media theorist John Durham Peters proposed an infrastructuralist approach as a way of understanding the work of media as fundamentally logistical in the sense that “the job of logistical media is to organise and orient, to arrange people and property, often into grids” (Peters 2015, 37). Indeed, as Lisa Parks also noted, “since infrastructures cannot be captured in a single frame, we must read media with an infrastructural disposition — that is, when viewing/consuming media we must think not only about what they represent and how they relate to a history of style, genre, or meanings, but also think more elementally about what they are made of and how they arrived” (Parks 2015, 357).

Joshua Braun outlined the intersection between distribution processes and media infrastructures in relation to the television sector. In his research on the MSNBC TV channel, he argued that an infrastructural approach to media research involves “a sort of archaeological interest in the various kinks, epicycles, and roundabouts found in a distribution route” that can expose the “sociotechnical systems at work and lay bare the influence of infrastructure” (Braun 2015, 9). Similarly, in his research on Netflix, one of the most relevant contemporary audio-visual platforms, Ramon Lobato foregrounded the relevance of the infrastructural turn in media studies by outlining that “what is exciting about this turn to infrastructure in critical humanities and social science is that it invites engagement with topics that were previously out of bounds, or at least inaccessible, for many humanists — issues related to electrical engineering or information systems design” (Lobato 2019, 78).

A different level of analysis is represented by the material implications of media technologies and the way digital media are used concretely in situated contexts is considered, especially in relation with space and the city.

An early example of this perspective is offered by the pioneering work of anthropologist Brian Larkin (2008) in his ethnographic study on the mutual interactions between communication infrastructures and the culture of North Nigerian urban contexts. Looking more closely to the relationship between media infrastructures and the city, media anthropologist Shannon Mattern (2017, XXV) outlined that the notion of infrastructure “enables us to appreciate media as potentially embodied on an urban or even global scale, as a force whose modes, ideologies, and aesthetics of operation can be spatialized, and materialized, in the landscape”. Maren Hartmann (2017) adopted the notion of infrastructure by considering the role of electricity in relation to smartphone use: electricity, undoubtedly, is a fundamental infrastructural dimension that shapes smartphone practices, even though the infrastructural qualities of these devices go well beyond this dimension and include a wider set of stratified infrastructural levels overlapping each other. Along the same line of enquiry, Magaudda and Piccioni (2019) outlined the multiple infrastructural levels that characterise smartphone-based situated practices in everyday life and empirically showed how intimate relationships with smartphones are nested into a stratified arrangement of overlapping and intersecting infrastructures.

The study of media infrastructures thus did bring several productive inputs to media studies; however, the quick and rapid embracing of an infrastructural turn has also produced several critical issues. Media scholar David Hesmondhalgh (2021) summarised these issues, noting that the notion of infrastructure has rapidly become a fashionable buzzword, often losing its analytical power, especially in interpretations characterised by an ambiguous understanding of the role of materiality in studying infrastructures and by a tendency towards banality and vagueness. Moreover, Hesmondhalgh added, emphasising STS’s roots in studying infrastructures is also the basis for a lack of recognition of an original intellectual trajectory already present in media history and media’s political economy, a trajectory related to the long-term developments and political implication of communication infrastructures, a space of research pioneered, among others, by Armand Mattelart (2000).

3. Platform Studies at the Intersection between STS and Media Studies

In the last fifteen years, STS and media studies scholars have also met each other on another emerging field of research with a new research object: digital platforms. The field, according to Bogost and Montfort (2007), is called *platform studies*, where we find not only STS and media studies scholars but also anthropologists, cultural studies scholars, critical political economists of media and communication, and software scholars. Media studies primarily borrowed the concept of ‘platform’ from game design

(Bogost and Montfort 2009) and extended it to content-sharing websites (Gillespie 2010; Helmond 2015) and social media applications (Langlois and Elmer 2013). The key features platform studies discuss include programmability, affordances, networks of heterogeneous actors, platforms as socio-technical assemblages, platform power and user agency.

Among the earliest media and communication scholars who addressed the material aspects of digital platforms from a social constructivist perspective is Tarleton Gillespie: after deconstructing the ‘discursive positioning’ of platforms as neutral intermediaries, Gillespie showed in his foundational article on the politics of platforms that it is, in fact, the activity of content moderation that defines digital platforms (Gillespie 2010). Gillespie et al. (2014) are also among the first to identify the cross-pollination process between media scholars and STS scholars in platform studies. Gillespie’s research on platforms stands precisely at the intersection of STS and media studies and has opened the dialogue to scholars from these two disciplines. In the meantime, the increasing prevalence of digital platforms in all spheres of society (van Dijck et al. 2018) has also drawn the attention of other disciplines, such as the critical political economy of communication. These strands of research are important because they help foreground the social and political consequences of the rapid ‘platformisation’ of social life (Van Dijck et al. 2018). Langlois and Elmer (2013), for example, critically assessed “some of the new forms of power produced by corporate social media platforms” such as Facebook (p. 14). Economic interests, they argued, influence the design of social media interfaces.

In addition to political economy, cultural studies also intervened in the conversation, bringing attention back to the agency of the users of these platforms. But it was with the work of Jean Christophe Plantin that these debates converged towards a single centre: Plantin et al. (2018) are among the first to connect the growing strands of research on infrastructures and platforms, arguing that digital technologies have made possible a *platformisation of infrastructures* and an *infrastructuralization of platforms*, highlighting the tensions that arise when the infrastructures most essential to our daily lives are dominated by the private technological entities represented by platforms.

The conceptualisation of these two processes – *platformisation* of infrastructures and *infrastructuralisation* of platforms – represents the ripe fruit of several years of mutual breeding between STS, media studies, anthropology, cultural studies and critical political economy of media. It is important to clarify what Plantin et al. (2018) mean by these two processes. The platformisation of infrastructures refers to a process whereby the traditional infrastructures tend to be privatised and fragmented: a typical example being the World Wide Web, which started as an open infrastructure, conceived as a public good created by public investment, which then gradually became more and more fragmented into closed ecosystems where the users are ‘locked-in’: a few global apps such as Twitter, Instagram, Tik Tok, Spotify or Netflix capture the majority of internet consumption. Users

of these platforms no longer surf the web, but jump from one private platform to another, while their online actions are subject to the dynamics typical of web platformisation (datafication, commodification and selection, according to van Dijck et al. 2018). On the contrary, the infrastructuralisation of platforms indicates the endemic growth of the power of some platforms that start functioning as infrastructures. Other authors, such as van Dijck et al. (2018), have also highlighted this process, noting that Facebook and Google have acquired the scale of real infrastructures (“platform-infrastructures”) and become semi-monopolistic actors, like what happened with the infrastructures of the past, such as railway networks, electricity grids and so on.

Like the global and transnational companies that monopolize the oil and pipeline markets, big tech is monopolizing the process of extracting data from users (see Zuboff 2019; Couldry and Mejjias 2019). Although there are many similarities with the past, we must also emphasize the differences in terms of “range” between media platforms and transportation and electric networks of the past: the former monopolies act today at global level, the latter are often limited to national contexts.

Facebook, according to Plantin and Punathambekar (2019), is a striking example. Though it began its evolution as a platform (Helmond 2015), the now massive scale of Facebook usage and its semi-monopolistic position in social networking services have led the company to enter more deeply into a variety of infrastructural domains. In 2016, as highlighted by critical political economy scholar Dwayne Winseck (2017), Facebook built a massive undersea cable in partnership with Microsoft, connecting the United States to Spain, in line with the current trend of internet companies entering the cable industry.

4. Conclusion

As we have seen along this article, the infrastructural dimension of web platforms has become a crucial focus for today’s social sciences, which have been increasingly borrowing the concepts and perspectives formed at the intersection between STS and media studies. What we hope is that this overview on the converging trajectories that have characterised, on the one hand, the STS-rooted study of infrastructure and, on the other hand, the analysis of digital platforms, represents a common ground on which developing new research on multiple domains and topics: from the evolution of online communication to economic processes, from cultural production and consumption to raising political concerns related to the increasing role of platforms in our contemporary society.

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