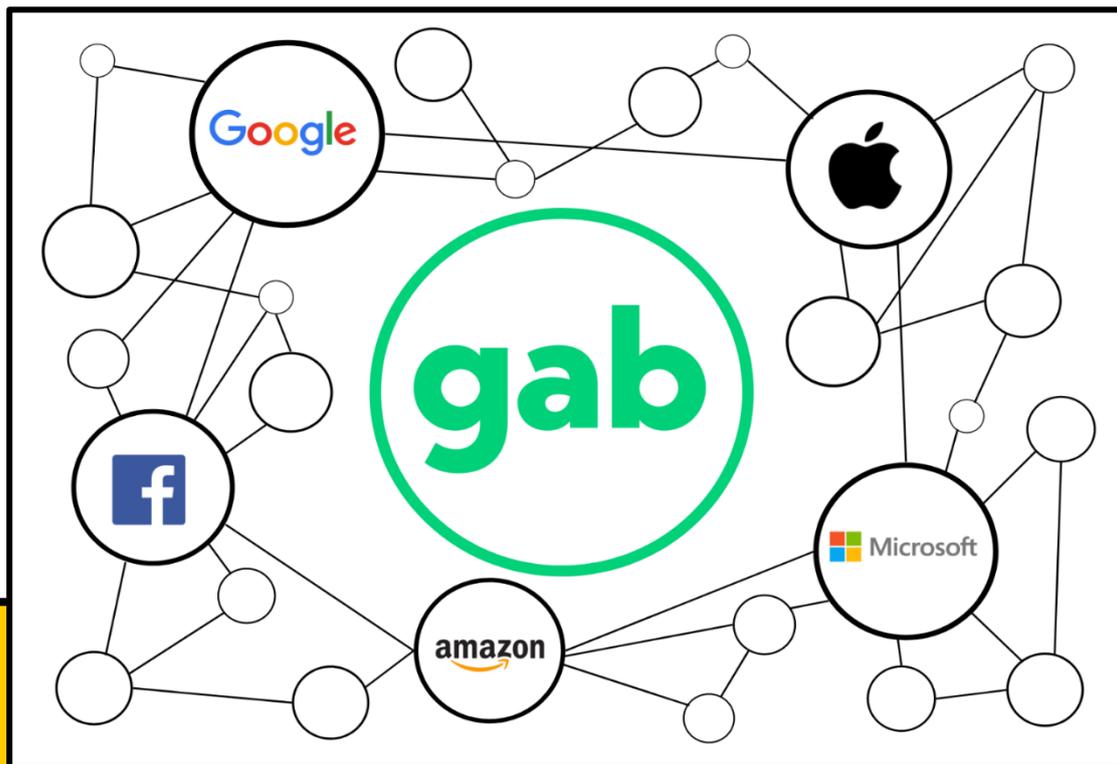


An infrastructure separate from the Big Five tech companies?

An analysis of how fringe platform Gab.com relates to the process of platformization



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Abstract

This study analyzes how we can understand the development of fringe platforms in relation to the process of platformization. Platformization refers to the dynamic between platforms rather than a platform as an object. This dynamic happens in a platform ecosystem, representing a corporate space in the Western hemisphere dominated most notably by the Big Five tech companies. Fringe platform Gab.com opposes this dynamic and strives for independence. Multiple authors have investigated the concept of platformization in recent years. Since these authors have focused on mainstream or regular platforms, it is currently unknown how fringe platforms such as Gab relate to the process of platformization. This study bridges this gap by conducting a Platform Infrastructure Analysis. Based on the institutional and technological analysis, this study reveals the theoretical implications of the concept of platformization, as it appears that fringe platforms do not belong within the characterization of the theoretical understanding of the concept. Despite these theoretical implications, this study identifies that despite the desire of Gab to be separated from the Big five tech companies, the mainstream and fringe platforms will still be part of the same online dynamic in the platform ecosystem. Furthermore, following the technological development of Gab, I claim that Gab is slowly but surely penetrating the roots of digital infrastructures. Further research is needed to update and broaden the theoretical understanding of platformization because the theory is not comprehensive at this point.

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1. Introduction

"Any platform that depends on Big Tech hosting and Big Tech app stores is doomed to failure. You must unapologetically stand firm in your principles and build your own infrastructure separate from Big Tech systems completely in order to have a free speech platform" (Torba, January 2022).

The above statement was made by Andrew Torba, founder of Gab, on Gab News last January, after describing how Trump was banned, or "deplatformed", from Facebook and Twitter, besides other curious events over the past years. Gab.com was introduced as a social network that uses Twitter-like micro-blogging and is one of the most notable instances of the Alt-Tech platforms (Jasser, 2021, 4). The statement of Torba refers to platforms and their dependence on the Big Five tech companies, known by the acronym of GAFAM (Google, Apple, Facebook, Amazon, Microsoft) (Van Dijck et al., 2021, 4). These companies are trying to thwart Gab because the platform has attracted extremists since its existence in 2016 by allowing free speech and defending a free flow of information. As such, the platform has become the home to everything from alt-right, far-right, and neo-Nazis to QAnon and conspiracy theorists (ibid, 6). Because of this, the platform has been put to the test through various strategies. For example, Gab has been blocked from accessing network distribution and is not available in any App store. Furthermore, multiple services were taken away from Gab, such as the payment service PayPal. Besides, Gab has been disconnected from infrastructural services further down the stack, including domain registers, cloud analytics, and storage services (ibid, 7-8). These developments reflect the current friction between the fringe and the mainstream. In the present study, fringe platforms are defined as: "alternative' platform services that were established as an explicit critique to the ideological premises and practices of mainstream platform services, who, by offering an ideologically different technology, attempt to cause a shift in the norms of the platform ecology they contest" (De Winkel, forthcoming, 4). On the opposite side, mainstream platforms are those that are most commonly used by the majority of platform-users, such as the GAFAM.

Torba's statement also refers implicitly to platformization. Van Dijck et al. argue that platformization refers to how the entire societal sector is transforming due to the mutual shaping of online connectors and complementors. Besides, the distinction between infrastructural and sectoral platforms is not fixed or set; a constant dynamic drives them toward integration (2018, 18-20). Platformization, thus, describes a dynamic rather than a platform as an object (Van Dijck et al., 2021, 4). This dynamic of platformization happens in a platform ecosystem, representing a

corporate space in the Western hemisphere dominated most notably by the Big Five tech companies (ibid). Torba opposes this dynamic as he strives for Gab's independence. This aim has caught the attention of researchers, as they warn us about the danger of alt-right and the far-right platforms building a media ecosystem outside the mainstream (Benkler et al., 2018; Freelon et al., 2020, 3).

Van Dijck et al. argue that the friction between the mainstream and the fringe has always been a contest for hegemony and ruling power (2021, 3), and it turns out to be a topic in demand for academics. In recent years, Gab gained much academic attention that documented the origins, uses, and levels of toxicity and hate speech that characterized the platform (e.g., Donovan et al., 2019; De Winkel, forthcoming; Zannettou et al., 2018; Jasser, 2021). For example, Donovan et al. argue that Gab stood out as a platform that adopted a public stance on the issues of free speech, technological design, and white nationalism (2019, 55). In relation to Donovan et al., Zannettou et al. argue that Gab is predominantly used for disseminating and discussing news and world events and attracts alt-right users, conspiracy theorists, and other trolls (2018, 1007). Moreover, they also measured the prevalence of hate speech on Gab in their research and found it to be much higher than on Twitter (ibid). In addition to academic work, Torba describes a typical Gab user as: "a Conservative Christian with a family and interests in hunting, fishing, cars, camping, news, politics, rural living, homeschooling, privacy, free speech, cryptocurrency, guns, and cooking" (Silverman, 2021). Furthermore, as users of Gab were involved in far-right attacks and riots in recent years (De Winkel, forthcoming, 1), the media have highlighted the extreme nature of Gab and described the platform as "Twitter for racists" (Benson, 2016) or "the hate-filled echo chamber of racism and conspiracy theories" (Anthony, 2016). This extreme nature of Gab has also been the main focus of academic research (e.g., Donovan et al., 2019; Zannettou et al., 2018; Jasser, 2021), yet little is known about how fringe platforms such as Gab relate to platformization, and whether Gab is building or making use of an infrastructure separate from Big Five tech companies.

This study aims to bridge this gap by approaching media according to the metaphor of Meyrowitz: medium-as-environment (1999, 48). In addition to this metaphor's most famous advocate McLuhan, Meyrowitz argues that media research should focus less on the messages and more on communication technologies as types of social environments (ibid, 51). As such, contemporary media theory has paid increased attention to platforms' environmental and infrastructural aspects and emphasizes that media are not just message-bearing institutions (Kittler, 1997; Meyrowitz, 1999; Peters, 2015). Understanding media as an environment creates the opportunity to acknowledge the significance of technology and ties in with Kittler's theory that technology determines what, in fact, can become a discourse network (1997). For this purpose, this

study does not approach Gab as a freestanding object but as part of an ecosystem in which dynamics take place between platforms.

Accordingly, this study employs a mixed methodology based on infrastructure- and platform studies. This mix consists of the methodological approach of Helmond and Van der Vlist (2021), combined with the concept of *Platform Mechanisms* by Van Dijck et al. (2016). Helmond and Van der Vlist consider the significance of API-based partnerships in the social media ecosystem. In doing so, they aim to better understand how industry platforms and the infrastructures they build, mediate and shape platform-power and governance. In addition, they describe how these API-based partnerships contribute to platformization (2021, 1). This current study combines this notion of Helmond and Van der Vlist with the platform analysis of Van Dijck et al. (2016). Van Dijck et al. describe this platform analysis as one that provides insights into the understanding of the platform society. Besides, they argue that this approach requires a thorough analysis of the ecosystem's mechanisms and the constantly evolving techno-commercial and sociocultural practices through which these mechanisms take shape (ibid).

Both Helmond and Van der Vlist, and Van Dijck et al. their approaches explore the process of platformization. However, these scholars focus on mainstream social media (MsSM) (De Winkel, forthcoming, 3), platforms like Facebook, Twitter, and YouTube, or more regular platforms like Airbnb. In contrast to these mainstream or regular platforms, this study examines fringe platform Gab. With that, this study provides new insights into the theoretical understanding of the concept of platformization, by applying the theory of Helmond and Van der Vlist and Van Dijck et al. to a fringe platform. This combination of approaches leads me to conducting a *Platform Infrastructure Analysis*, which helps to explore how we can understand the development of fringe platforms in relation to the process of platformization. Using this methodological approach, I state that the theory of platformization is currently limited and that it does not connect to fringe platforms. Moreover, this study sheds new light on our theoretical understanding of the concept of platformization, by offering insight on how Gab is building or using an infrastructure separate from Big Five tech companies. This is done by exploring the question: how can we understand the development of fringe platforms in relation to the process of platformization? To adequately answer the research question, the following sub-questions are formulated:

1. What is platformization?
2. How can we understand Gab on an institutional level in the context of the process of platformization?

3. How does Gab relate to external infrastructural services in the context of the process of platformization?

Following this introduction, chapter 2 begins by laying out the concept of 'platformization' according to José Van Dijck's theory (2018), highlighting the significance of platformization and its effects on the platform ecosystem and the interconnected dynamic and dependence on the Big Five tech companies. Moreover, this chapter discusses the concept of fringe platforms, defined by Tim de Winkel (forthcoming). Furthermore, the definition of API-based business partners by Helmond and Van der Vlist will be described (2021). Finally, chapter 2 touches upon the theoretical dimension of this study by laying out several concepts on media as an environment (Kittler, 1997; Meyrowitz, 1999; Peters, 2015). Then, chapter 3 offers an outline of the methodology used for this study and the content of the corpus. After this, Gab is analyzed on an institutional level in chapter 4, using various techniques (e.g., financial transactions, company blogs, annual reports, news articles) (Helmond and Van der Vlist, 2021, 5). Chapter 5 then explores Gab on a technological level. As such, this chapter traces and maps the technical infrastructure services of Gab using various techniques (e.g., Google's Developer Tool, ProgrammableWeb's API directory, financial transactions, company blogs, annual reports, and news articles) (ibid). The last chapter, chapter 6, states the conclusion of this study, and critically reflects on the results while stressing the urgency of the need for more research into the concept of platformization.

2. [Theoretical Framework] From the platform ecosystem to the fringes

2.1 The dynamic of platformization

This section touches upon the main concept of this study: platformization. Several authors have investigated the concept of platformization in recent years (Helmond, 2015; Nieborg, Poell, Deuze, 2019; Van Dijck et al., 2016). Similar to the methodological approach of this study, the description of key author José Van Dijck is described in this section, besides the American Platform Tree model (Van Dijck, 2021).

Van Dijck et al. argue that the term platformization is a process akin to industrialization or electrification, referring to a multifaceted transformation of globalized societies (Van Dijck et al., 2019). Moreover, Van Dijck et al. argue that in earlier work platformization is defined as "the penetration of the infrastructures, economic processes and governmental frameworks of platforms in different societal sectors and spheres of life" (Van Dijck et al., 2021, 4). As such, it is important to stress that platformization refers to the dynamic rather than a platform as an object

(ibid). Furthermore, platformization describes the status that platforms are subject to continuous change. In addition, platformization refers to how the entire societal sector is transforming due to the mutual shaping of online connectors and complementors (Van Dijck et al., 2018, 20). Van Dijck et al. explain that the distinction between infrastructural and sectoral platforms is not fixed or set; a constant dynamic drives them toward integration (ibid, 18). Van Dijck et al. (2016) already highlighted this dynamic in their previous work. They stated that platforms are not just instruments to create or find online content, publish or share information, and offer or sell goods. It is not just about the traffic between individuals but also about the complex dynamics between users, usage, technologies, and economic models (2016, 18). For instance, the interaction through the mutual articulation of platform technologies, economic models, and user practices of a platform help understand the platform society (2016, 18-19; 2018, 32). More specifically, the platformization dynamic illustrates how the platform ecosystem functions almost as a stellar system (see figure 1), which indicates a cosmos that revolves around a handful of major planetary stars (ibid).

Moreover, the platformization dynamic happens in a platform ecosystem, which describes a corporate space that in the Western hemisphere is dominated most notably by the Big Five tech companies known by the acronym of GAFAM (Google, Apple, Facebook, Amazon, Microsoft) (Van Dijck et al., 2021, 4). Van Dijck et al. argue that these tech companies have succeeded in building a sociotechnical infrastructure on which they rely for their own financial health and global reach. As such, the entire public sector and public communication spheres have become dependent on this infrastructure (ibid).

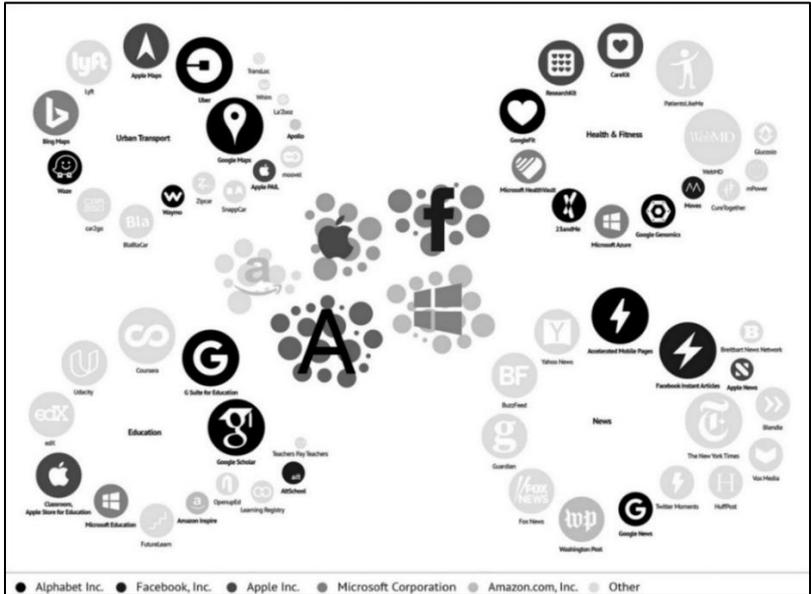


Figure 1: Schematic illustration of the sectoral platforms developed by the Big Five platform corporations. (Van Dijck et al., 2018, 20).

Accordingly, Van Dijck et al. describe three platform mechanisms to understand this dynamic: *Datafication*, *Commodification*, and *Selection*. First, datafication revolves around the process of capturing and circulation of data on networked platforms (2018, 32). Secondly, commodification concerns the process of transforming online and offline objects, activities, emotions, and ideas into tradable commodities. Because of this, it involves the development of multisided markets and new business models (ibid). Lastly, selection is about curating the most relevant topics, terms, actors, objects, offers, services, etc. It takes shape through personalization, trends and reputations, and moderation practices (ibid). Van Dijck et al. demonstrate that platforms are characterized by these three mechanisms that arise due to the interaction between user practices, technologies, and economic models (2016, 56-57). In the current study, I use these platform mechanisms as an analytical approach to analyze how Gab relates to the process of platformization (see chapter 3).

More recently, Van Dijck (2021) created a model to illustrate platformization. This model visualizes the dynamics of platformization and its actors. Van Dijck uses a 'tree' as a constitutive metaphor (see figure 2). This tree consists of three layers that are interconnected. First, *the roots* of digital infrastructures lead to the *trunk* (the second layer) of intermediary platforms that *branch* (the third layer) out into industrial and societal sectors that all grow their own twigs and leaves (2021, 2805). On that account, the tree stands for a metaphor that emphasizes how platforms constitute *living* dynamic systems, constantly morphing and co-shaping their species (ibid). Analyzing platformization through the metaphorical lens of a tree, Van Dijck makes sense of information ecosystems as hierarchical and interdependent structures. Moreover, she argues that the complexities of platforms are increasingly at odds with the narrow legal and economic concepts in which their governance is grounded (ibid, 2801). Thus, using the tree may help to make sense of information systems as complex structures whose operative power is wielded through hierarchical and interdependent layers. Furthermore, the layered yet integrated shape of the tree draws attention to the dynamics of platformization: vertical integration, infrastructuralization, and cross-sectorization. The metaphor also helps to revise the current patchwork of regulatory frameworks, addressing the power asymmetry between citizens and the information systems through which they are governed (ibid, 2802-2803). The illustrated tree envisages the platform ecosystem hierarchy and its interdependent nature. Van Dijck's descriptions of the concept of platformization serve as a framework and methodological approach to understanding and examining how Gab relates to the process of platformization.

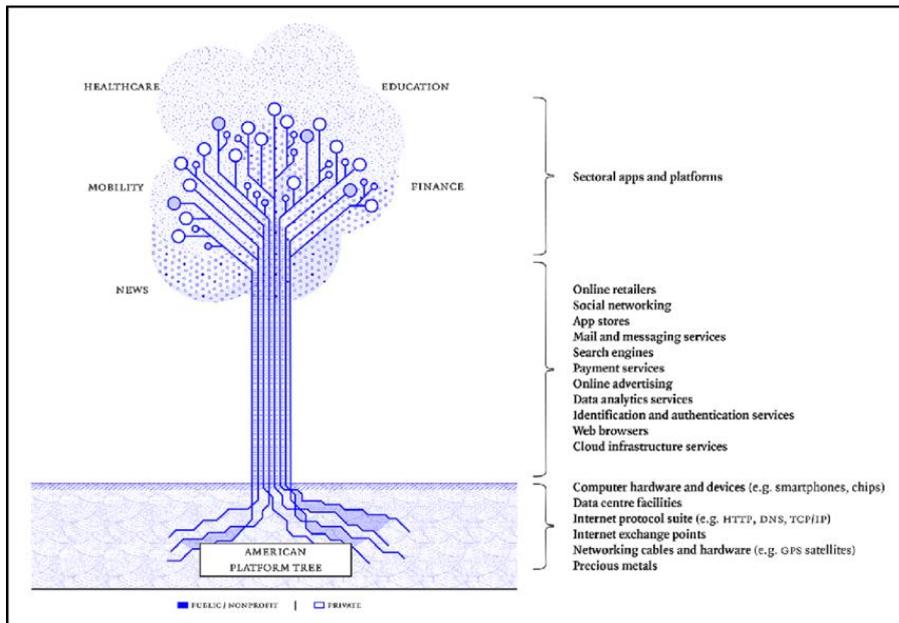


Figure 2: The American Platform Tree (Van Dijck, 2021).

2.2 Fringe platforms

As mentioned in the introduction, the term fringe platforms, described by Tim de Winkel (forthcoming), is used to define the platform Gab in this study. However, widely varying terms of platforms like Gab have emerged in recent years. As such, this section will touch upon these terms to eventually describe the term fringe platform in detail.

Gab is not the only platform in the category of fringe platforms; in fact, Gab is one platform in a series of radical right-wing platforms that are understood in the same context, however, different terms are used to describe these platforms. Many studies (Donovan et al., 2019; Jasser, 2021; Rogers, 2020) describe platforms like Gab as alternative platforms or alternative technology (Alt-Tech). According to Jasser, the terms refer to a right-wing, libertarian tech movement and the conglomerate of social media platforms this tech movement yielded (2021, 1). After being forced off or voluntarily leaving social media platforms like Twitter and Facebook, the far-right actors found a new environment on these Alt-Tech platforms. Most of the time, Alt-Tech quickly evolved from being copies of their larger counterparts to social media spaces (ibid). In relation to Jasser, Donovan et al. argue that this infrastructural turn happens when a movement's survival is threatened (2019, 50). Donovan et al. state that these Alt-Tech platforms also serve as recruitment and organizing sites for the far-right, allowing for direct communication and continued engagement (ibid). As such, alternative platforms' key arguments and ideologies are pushing the bounds of platform accountability by calling out other social media platforms for censorship. Because of this, most alternative platforms refuse to monitor or moderate hateful content despite

the community guidelines, taking a stance of American-centric free speech absolutism. For example, Gab strongly advises international users to adhere to their particular nation's speech laws (ibid).

Tim de Winkel (forthcoming) has adopted a broader perspective on this matter. De Winkel argues that radical closed groups on mainstream social media, and radical threads on forms, can not necessarily be considered as something new. While the building of technological, financial, and social infrastructures to form and support radical platform services most definitely are (ibid, 4). As such, he argues that little academic research has been done on the phenomenon of alternative social media services. Because of this, De Winkel states that the terminology is not yet fixed (ibid). Moreover, he argues that these alternative platform services constitute relevant actors in the renegotiation of the norms of the online public debate. De Winkel proposes to call these alternative services 'fringe platforms' (ibid). The term 'fringe' describes what is not in the center (of attention) and what is not mainstream: "Fringe platforms are 'alternative' platform services that were established as an explicit critique to the ideological premises and practices of mainstream platform services, who, by offering an ideologically different technology, attempt to cause a shift in the norms of the platform ecology they contest" (ibid). De Winkel distinguishes four characteristics to define fringe platforms further:

- 1) They are not a mainstream platform and are not owned by one, meaning that a fringe platform can never be the hegemonic or dominant platform for a specific service, because;
- 2) they are explicitly challenging the ideological norms (and governance) of the mainstream platforms,
- 3) they position themselves as an alternative to a dominant ideology that dominates the online public sphere, and provide a safe haven for users for which the mainstream platforms are -based on their governance -not inclusive, and thereby;
- 4) they attempt through their very presence and explicit criticism to move -or stretch -the ideological premises of the (social media)platform ecology somewhat to their own ideological position, thereby influencing what is considered natural or mainstream (ibid).

This definition of the term fringe platforms, as described by Tim de Winkel, is used in this study to understand and describe Gab.

2.3 API-based Business Partners

In previous studies on platformization different elements have been found to be related to this process (e.g., Van Dijck et al., 2018; Van Dijck, 2021). Recent work by Helmond and Van der Vlist

(2021) describes how API-based business partners contribute to platformization. In line with the methodological approach of this study, this section touches upon their new insights and the description of API-based partnerships.

An application programming interface (API) enables programmatic communication and exchanges of data and functionalities between software systems, such as social media platforms (Van der Vlist et al., 2022, 1-2). Moreover, APIs play a crucial role in capturing and moving personal data (datafication, see 2.1) and the interconnection between software and services (ibid). According to Helmond and Van der Vlist, platform API-based business partners contribute to the ongoing process of platformization (see 2.1) because of their collective development of business-to-business platform infrastructures that extend the social media ecosystem (2021, 2). API-based business partners will form the 'nodes' of power in the platform ecosystem (ibid, 1).

Helmond and Van der Vlist argue that many of these partners are powerful industry players but have remained relatively invisible to consumers (ibid). They state that social media platforms are among the world's most profitable businesses and that their digital advertising revenues depend considerably on partnerships (ibid, 2). Moreover, advertising has become the primary source of income for social media platforms; their earnings rely on the development of both their end-user and business platform 'sides' (ibid). In addition, advertising has developed into a highly complex and interconnected global ecosystem, including a wide range of technologies and practices driven by automated applications and systems of data analytics (ibid). As such, business software tools, including application programming interfaces (APIs) and software development kits (SDKs), are at the heart of the (programmatic) advertising ecosystem and are typically governed through partner programs.

Furthermore, according to Helmond and Van der Vlist many of these business partners are large firms that operate in various markets and industries worldwide and have software tools, products, services, and partner networks of their own (ibid). Helmond and Van der Vlist argue that these partnerships and business software tools support the diversified 'data-based service ecosystems' that have helped social media become profitable (ibid). Moreover, as a privileged complementor type, business partners develop complementary apps and services and integrate their own software systems or platforms with social media. Because of this, Helmond and Van der Vlist argue that this integration gives rise to a global interconnected platform infrastructure between social media and those partners (ibid).

Helmond and Van der Vlist focus in their work on how the organizational arrangement between social media and industry players is based on partnerships and highlight the significance of the API-based software integrations that underlie the partner relations. Most importantly, they

state that these partners provide insight into platformization (ibid, 2, 13). The description of API-based partnerships by Helmond and Van der Vlist describes how platforms interact with each other in the platform ecosystem and the complex technological processes involved. As such, the concept of API-based partnership described by Helmond and Van der Vlist ties in with the key concept (see 2.1) and methodological approach of this study. For this purpose, this description of API-based partnership will serve to understand and examine how Gab relates to the process of platformization in this study, in addition to the concept of platform mechanisms (see 2.1).

2.4 Media as an environment

This section demonstrates the different theories of the concept of media as an environment, which acts as the theoretical lens of this study. A large number of published studies investigated the environmental aspects of media, opposing the idea that media are just message-bearing institutions (Kittler, 1997; Meyrowitz, 1999; Peters, 2015). Drawing on an extensive range of sources, the authors set out the different ways in which they describe media as an environment.

At first, media theorist Friedrich Kittler finds the significance in the fact that new communication networks connected computers rather than human beings (1997). Kittler argues that technology determines what, in fact, can become a discourse network (ibid). The concept of discourse networks, as used by Kittler, is an attempt to map the (inter)connections between "physical, technological, discursive, and social systems" (Winthrop-Young and Wutz xxiii). As such, following Philosopher McLuhan (who sees technology as the extension of our body), Kittler says that the technology modifies and transforms the body that had given rise to it (1997). He describes discourse network as: "It points to the fact that at any given cross-sectional moment in the life of a culture, only certain data (and no other) are selected, stored, processed, transmitted or calculated, all else being noise" (ibid, 9-10). In relation to this, Kittler argues that discourse networks have no center or origin, it serves precisely to link bodies to institutions (ibid). As such, Kittler does not cut off discourse from its material contexts.

In addition to McLuhan and Kittler, professor of communication Joshua Meyrowitz argues to bring attention to the idea that media research should focus less on the messages and more on communication technologies as types of social environments (1999, 51). Because of this, Meyrowitz describes the metaphor: medium-as-environment, in order to understand media (ibid). Moreover, Meyrowitz argues that each medium is a setting, environment, or context with characteristics and effects that transcend variations in content and override manipulations of production variables (ibid, 48). In arguing this, he set out the environmental features of a medium in his work: the type of sensory information; the speed and degree of immediacy; unidirectional vs. bidirectional vs.

multidirectional; simultaneous or sequential interaction; the physical requirements for using the medium; the relative ease or difficulty of learning to use the medium (ibid, 49). In the current study, I use these environmental features as a lens through which I approach Gab.

More recently, media philosopher John Durham Peters has argued that media are not only devices of information but also agencies of order (2015). He states that media are not only sending messages about human doings and our relations with our ecological and economic systems; they are also constitutive parts of those systems (ibid, 1). In his work, Peters refutes the more traditional theories of media, the idea that media are messages-bearing institutions. Instead, Peters argues that; if media are vehicles that carry and communicate meaning, the media theory needs to take nature, the background to possible meaning, seriously (ibid). As such, Peters offers a philosophy of elemental media and argues that media are vessels and environments, containers of possibility that anchor our existence and make what we are doing possible (ibid, 1-2). Furthermore, Peters states that digital devices invite us to think of media as environmental, as part of the habitat, and not just as semiotic inputs into people's heads (ibid, 4). Peters understands a medium as an infrastructure of beings and evokes to take technologies not just as tools that chip away at solid materials but as means by which nature is expressed and altered, at least by human beings (ibid, 4, 10).

Taken together, the aforementioned authors support the notion of understanding the environmental aspects of media and thereby acknowledging their material context and significance. Subsequently, to build on the concept of media as an environment, it is essential to touch upon the understanding of infrastructures, especially regarding the aim of this study. Different theories exist in the literature to understand infrastructures. For instance, the work of Geoffrey Bowker and Susan Star provides an empirical source for understanding infrastructures (1999). They state that infrastructures are tricky to analyze because infrastructures are never transparent to everyone (ibid, 33). According to Bowker and Star, the understanding of infrastructures includes at least these points:

- A historical process of development of many tools, arranged for a wide variety of users, and made to work in concert.
- A practical match among routines of work practice, technology, and wider scale organizational and technical resources.
- A rich set of negotiated compromises ranging from epistemology to data entry that are both available and transparent to communities of users.
- A negotiated order in which all of the above, recursively, can function together (ibid, 34).

Plantin et al. argue that (2018, 296) this intellectual stream in infrastructure studies, championed by Bowker and Star, elaborated the phenomenology and sociology of infrastructures (Edwards et al., 2007, 2009; Graham and Marvin, 2001; Ribes and Finholt, 2009; Star and Ruhleder, 1996). In addition, the other intellectual line in infrastructure studies focuses on large technical systems (Plantin et al., 2018, 295). In this perspective, infrastructures often originate as sociotechnical systems that are centrally designed and controlled, typically in new technologies' invention and development phases (Bijker et al., 1987; Hughes, 1983; Mayntz and Hughes, 1988). Concerning the second intellectual stream, Helmond and Van der Vlist characterize platform infrastructure as the technological API-based relationship networks operating between nodes within a platform's ecosystem and beyond (2021, 3) (see 2.3). Taken together, I will proceed with the theoretical understanding of infrastructures in line with infrastructure studies using the description by Helmond and Van der Vlist. Their description ties in with the theoretical understanding of media as an environment set out by Kittler, Meyrowitz, and Peters described in this section. Understanding media as an environment creates the opportunity to acknowledge the significance of technology and its material context. Finally, the description of Helmond and Van der Vlist ties in with this study's methodological approach.

3. [Methods and Corpus] Platform Infrastructure Analysis

This study combines two methodological approaches of both infrastructure studies (emerging from science and technology studies and information science), and platform studies (centered in media studies) (Plantin, 2018), resulting in the methodological approach of *Platform Infrastructure Analysis*. To better understand this methodological approach, the two approaches of which it is made up are first described separately. First, the infrastructure analysis will be described using the work by Anne Helmond and Fernando Van der Vlist (2021). Their methodological approach highlights the significance of the API-based business partners of platforms and how these partners contribute to platformization. After that, the platform analysis by José Van Dijck, Thomas Poell, and Martijn De Waal (2016) will be described. This analysis provides insights into understanding the platform ecosystem's dynamics using the concept of Platform Mechanism. Finally, the implementation of both methods in this study will be described, besides the content of the corpus.

3.1 Infrastructure analysis of the API business partners

According to Helmond and Van der Vlist, ecosystems are complex and interconnected entities that are difficult to study and understand (2021, 5). However, there are several approaches for mapping

platform ecosystems. For example, *ProgrammableWeb's API directory* characterizes technological, API-based ecosystems. The less data-driven approaches are analysis of financial transaction databases, company databases, company blogs, public filings, annual reports, and news articles to find partnerships and map organizational ecosystems (ibid). Helmond and Van der Vlist their study focused on boundary resources by the 20 most-used social media platforms worldwide to locate relevant recourses for business partners and partnerships (ibid). These resources provide additional advertising and marketing resources for business developers (ibid).

The partner directories (ProgrammableWeb's API directory) provide detailed information about those enrolled in the partner programs, including their specialties, pricing models, and the markets or industries they partake in (ibid). Helmond and Van der Vlist state that these directories are publicly accessible to anyone and are available on platforms' business pages and showcase platforms' many types of business partners (e.g., strategic marketing partners; data partners; technology integration partners), use cases, and provide contact details. As such, Helmond and Van der Vlist argue that mapping out the business partners of a platform makes it possible to describe the structure of the partner ecosystem (ibid).

It stands out that the methodological approach in their work is based on an extensive corpus since they examined the 20 most-used social media platforms. In contrast to their research, the corpus in this study is many times smaller since this study examines one platform. Moreover, it is known that Gab has lost or has trouble creating partnerships (e.g., Van Dijck et al., 2021; De Winkel, forthcoming). For that reason, these digital tools are essential to tracing partners, yet, scraping data is unnecessary.

3.2 Platform analysis of Platform Mechanisms

Van Dijck et al. state that platforms are not just instruments to create or find online content, publish or share information, and offer or sell goods. It is not just about the traffic between individuals but also about the complex dynamics between users, usage, technologies, and economic models (2016, 18). To understand this dynamic, José Van Dijck, Thomas Poell, and Martijn De Waal describe an approach using three Platform Mechanisms: *Datafication*, *Commodification*, and *Selection* (see 2.1).

The benefit of this approach is that it analyzes the three mechanisms separate from each other to gain a detailed understanding of the process of platformization. This analytic approach is advantageous in studying platformization on a qualitative level, especially in combination with the more quantitative methodological approach mentioned in the previous section. The concept of

platform mechanisms is used to analyze and examine the process of platformization on Gab and to reflect critically on the results subsequently.

3.3 Platform Infrastructure Analysis

Both methodological approaches described in the previous section discuss 'mainstream' and more regular platforms. Accordingly, the methodological approach in this study deviates since this study examines fringe platform Gab. Gab either has lost or has trouble creating partnerships (e.g., Van Dijck et al., 2021; De Winkel, forthcoming), thus it is plausible that Gab's digital advertising revenues deviate from 'mainstream' and more regular platforms (Helmond and Van der Vlist, 2021; Van Dijck et al., 2016). Gab is, therefore, first analyzed on an institutional level to understand how the platform is organized, to subsequently analyze Gab on a technical level. As a result, the methodological approach of this study consists of two parts: the *institutional analysis* and the *technological analysis*. Table 1 shows a detailed overview of the steps conducting a platform infrastructure analysis.

The institutional analysis reveals how Gab is organized on an institutional level. It requires critical analysis of their platform, financial transaction databases, company databases, company blogs, public filings, annual reports, and news articles (see table 1). Resulting in: (1) *The enterprise: Gab AI Inc*; this section describes Gab as an organization, its user activity, services, and goods. (2) *Gab's primary sources of income*; this section describes Gab's revenue streams, mainly consisting of investors and sponsors. These findings were essential to carrying out the next part of the analysis.

The technological analysis describes how Gab is organized on a technical level. For this purpose, I strive to make sense of the technological infrastructure of Gab, and how this infrastructure relates to platformization. In order to trace the infrastructural services, I make use of the company databases, company blogs, public filings, annual reports, and news articles. Moreover, I subject Gab by analyzing the platform using Google's Developer Tool, the function *Fetch/XHR*, in the section *Network*, to trace potential API-based partnerships and make sense of the process of datafication (see table 1). Moreover, it is important to mention that in order to enter Gab you must be registered and logged into the platform. The results are divided into two parts: (1) *Infrastructural services*; this section demonstrates an overview of the current infrastructural services used by Gab. The search resulted in nine infrastructural services, either external services or services created by Gab. The services are processed in an overview (see table 2). (2) *The absence of API-based partnerships*; presenting the absence of API-based partnerships. This study did not find APIs to external services on the platform using Google's Developer Tool and ProgrammableWeb's API directory. The partners were searched from January 2022 until April 2022.

It is important to stress that this study is explorative in nature, partly due to the recent developments in infrastructural studies, especially in combination with fringe platforms. In addition, ecosystems are complex, challenging to understand and study, and therefore difficult to trace (Helmond and Van der Vlist, 2021, 5). Finally, it is important to note that usernames or other privacy-sensitive information of non-public users on Gab are not visible or mentioned due to ethical concerns.

Part	Stage	Source focus and techniques
Institutional analysis	The enterprise: Gab AI Inc.	Company databases, company blogs, public filings, annual reports, and news articles
	Gab's primary sources of income	Company databases, company blogs, public filings, annual reports, and news articles
Technological analysis	Infrastructural services	Company databases, company blogs, public filings, annual reports, and news articles Google's Developer Tool (the function Fetch/XHR, in the section Network)
	The absence of API-based partnerships	Company databases and company blogs Google's Developer Tool (the function Fetch/XHR, in the section Network) ProgrammableWeb's API directory

Table 1: Overview of the steps conducting a platform infrastructure analysis.

4. [Analysis] Institutional Analysis

4.1 The enterprise: Gab AI Inc.

This section presents general information and insights about Gab on an institutional level. The social network Gab.com belongs to the enterprise Gab AI Inc. and is located in Pennsylvania in the United States (Jasser, 2021, 2; GAB AI Inc., 2020). The platform was launched in August 2016 by Andrew Torba, who still holds the CEO position (De Winkel, forthcoming, 17). Gab advocates for free speech and a free flow of information online, presenting itself as an alternative to Twitter, while adopting features from several social media, such as Reddit (ibid). As mentioned in the introduction, the platform received much media and academic attention due to its controversial nature. Nevertheless, the enterprise Gab AI Inc. still appears to be developing.

Similar to other enterprises, Gab offers goods and services. Although Gab started off as a social network in 2016, the platform has expanded its services in the recent years to a news hub (Gab trends), a blog (Gab News), a YouTube-like video platform (Gab TV), a web browser (Dissenter), an online shop (Dissenter Shop), an online marketplace, its own pay service (GabPay), and a paid

premium account (Gab Pro). The possible explanation for this new focus of the platform will be discussed later in the analysis.

Several findings in the analysis show that Gab is not upfront about its functioning as an enterprise. For example, according to the annual report, Gab claims to have 3.7 million monthly visitors in 2019 on Gab.com (GAB AI Inc., 2020). These numbers are being questioned in the media and by academics. In 2018 Gab claims to have 800.000 visitors in a month, which has cast doubts on the 2019 numbers (Jasser, 2021, 4; Dougherty and Adison, 2019). The mandatory annual reports for 2020 and 2021 are absent; the reason is unclear. Because of this, and since contradictory statements have been made, it is unclear what the current user activity is on Gab. For instance, in August 2021, Gab's audience size was described on Gab News, claiming that the platform has "15 million+ unique visitors a month; 100 million+ page views a month; 80% of traffic is based in the United States; Estimated core demographic age range: 20-60" (Gab, 2021).

Moreover, it is important to mention that Gab.com is not accessible without an account. In February 2021, Gab was hacked which provided insight into the data and demonstrated 4 million registered users on the platform (Goodin, 2021). Micah Lee argues that "the vast majority of these over 4 million accounts are not actually active. Only 1.5 million of them have posted any content to the site at all, and only 400,000 of those have posted more than 10 times. Just over 100,000 accounts have posted more than 10 times since December 1, 2020" (Lee, 2021). Taking this insight into account, besides the fact that Gab is only accessible with an account, makes Gab's earlier claim to have 15 million unique visitors a month impossible. Correspondingly, earlier research by Van Schie et al. demonstrated the concept of 'one-day flies' on platforms (Van Schie et al., 2017, 192-193), which provides a possible explanation for the insights into the user activity on Gab. This research measured the timespan of membership activity on a discussion board of patients afflicted with the same illness and found that the majority of users had only been active for one day. These so-called 'one-day flies' had either only made an account and never logged in, or had logged in the next day and never returned (ibid). Considering this concept of 'one-day flies,' the results of the hack that brought new insights into the user activity on Gab seem reasonable.

The non-transparent character of Gab appears to be a key characteristic of the platform. As such, in addition to the doubtful user activity numbers, the role of Gab as an employer seems to be unclear as well. For instance, although Torba as the CEO is unmistakably present in the media and on the platform itself, no official employees besides Robert Colbert, and Fosco Marotto have been found. Yet, Gab claims on its LinkedIn Company page to employ 11 to 50 employees (LinkedIn, 2022). According to the annual report of 2019, Robert Colbert holds the position of Chief Technology Officer (GAB AI Inc., 2020). Colbert helped create Gab TV, Gab Trends, and

Dissenter.com (Colbert, 2021). He is still active on Gab as a user; nevertheless, according to Gab's LinkedIn Company page, Fosco Marotto has held the position of CTO since 2020 (LinkedIn, 2022). Correspondingly, the annual report of 2019 stated that due to the controversial nature of Gab, the platform may experience difficulties in attracting and retaining additional employees. They noted that such personnel might become subject to personal harassment from activists and the mainstream media (GAB AI Inc., 2020). As such, due to the non-transparent character of Gab, which is evidenced by the lack of public records or other additional sources that could reveal other employees, this study cannot confirm that there are in fact no additional employees.

4.2 Gab's primary sources of income

The previous section presents general information and insights about the enterprise Gab AI Inc.; this section will therefore address the financial aspects of the platform on an institutional level. Similar to the previous section: Gab is not transparent about its financial administration.

Several findings of this study demonstrate that some information (e.g., annual reports, blogs, interviews) cannot be clarified or seems not plausible. For instance, according to the annual reports, Gab raised more than \$2 million in stock offerings in its startup phase (GAB AI Inc., 2020). This amount seems to be raised through crowdfunding via StartEngine.com (Graham, 2018). Yet, these incomes seem insufficient to continue as a company; the annual report of 2019 states, "We may not be able to obtain adequate financing to continue our operations. We may need to raise additional funds through the issuance of equity, equity-related, or debt securities in order to (...) grow our business" (GAB AI Inc., 2020). The annual reports of 2017, 2018, and 2019 imply that Gab did not raise such enormous amounts of income since the crowdfunding campaign (ibid). However, these findings need to be interpreted with caution because there is a lack of additional up-to-date sources that could explain Gab's current financial administration in detail. As such, these findings reaffirm the non-transparent character of Gab.

Nevertheless, recent information seems to shed new light on Gab's financial performance. Torba is honest about the fact that Gab depended on crowdfunding when they started: "[Gab] it is a family business. We did a regulation crowdfunding. A nice chunk of our users are actually stakeholders in Gab, they have a piece of the pie, and they are our biggest advocates" (Timcast IRL, 2022). While Torba speaks about their startup phase, it appears that Gab still depends on these types of sources of income (i.e., donors, investors, sponsors). This dependence is apparent from Torba's demand for (additional) investment in the platform. For instance, in April 2022, Torba asks billionaire investor Elon Musk (after Musk requested to buy Twitter for \$43 billion) to invest \$2 billion into Gab (Torba, 2022). According to Torba, Gab needs Musk to invest in their 'free speech

internet infrastructure company,' especially in the Internet Service Provider (ISP) (ibid). At the time of writing, Musk has not yet responded to Torba's request. However, Torba's offer seems contrary to his earlier statements about billionaire investments. In January 2022, a couple of months before Torba's request to Musk, Torba writes on Gab News: "Our movement is not some astroturfed grift by billionaires who do the same things Big Tech does (...) Gab does not have a billionaire behind us pulling all the strings. We do not have Wall Street. We do not have multi-national corporations. We do not need them, because what we have is you" (Gab, 2022). As a result, the ambivalent statements of Torba, in which he first opposes billionaire investment and then changes his mind a couple of months later and asks Musk to invest in Gab, illustrate the struggle to generate revenue. In fact, these findings are likely to be related to Gab's current financial hardship.

Overall, these results indicate Gab's financial dependence on investment in the platform, however, Torba does not reveal much about who invests in Gab. Besides, there is no information about investors in the annual reports. It appears that Gab has lost more than three dozen small investors in the four days after the attack on the Pittsburgh synagogue in 2018 (the perpetrator announced his attack on Gab) (Graham, 2018). These investments were made via the crowdfunding website StartEngine.com without disclosing the details of the investors. Still, it is vague who does invest, donate, or is paying for marketing on Gab; in short, the ones responsible for the revenue stream of the platform. Nevertheless, some investors have been exposed publicly. First, it is known that Republican Marjorie Taylor Greene paid \$36.741 to Gab in total for marketing purposes in September and October 2021 (Federal Election Commission, 2021). The payments include the descriptions of "digital marketing" and "digital marketing for fundraising" (ibid). During these months, sponsored content of Greene was visible on Gab (see figure 3) (Hananoki, 2021). Besides, Greene, Arizona state Senator Wendy Rogers is listed on Gab as a "donor" (Gab, 2022; Hananoki, 2021). Donors and investors are challenging to trace and verify. Labels of possible donors or investors can be seen on several profiles (this also concerns non-public individuals; therefore, I will not make them public). It is unclear how many profiles contain one of these labels, or what and how they donate or invest. Yet, it appears that the sponsors or investors of Gab, as far as known, are either Republican politicians or seem to fall within the characteristics of the radical right.

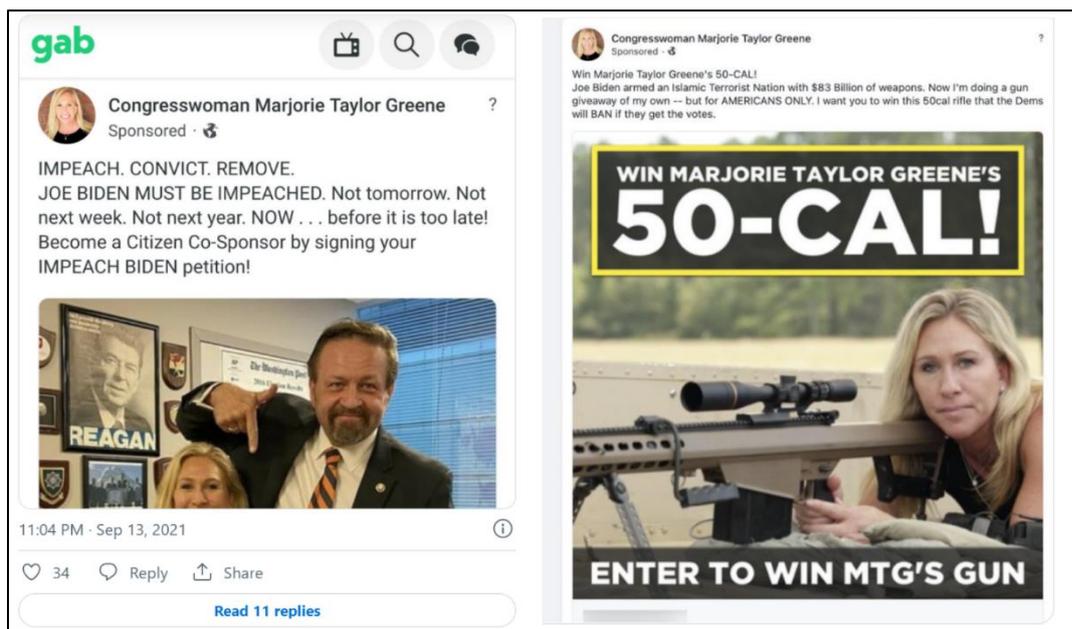


Figure 3: Sponsored marketing of Republican Marjorie Taylor Greene on Gab (Hananoki, 2021).

5. [Analysis] Technological Analysis

5.1 Infrastructural services

As mentioned, the platformization dynamic happens in a platform ecosystem dominated most notably by the Big Five tech companies (Van Dijck et al., 2021, 4). Torba opposes this dynamic as he strives for Gab's independence and states that any platform that depends on the infrastructural services of the Big Five tech companies is doomed to failure (Gab, 2022). This part of the analysis tests whether Gab depends on the Big Five tech companies by presenting the current technical infrastructure services used by Gab.

Table 2 provides an overview of the current infrastructural services used by Gab next to the lost ones. It stands out that Gab has lost a lot of infrastructural partners over the past years, resulting in a small collection. Moreover, table 2 distinguishes the infrastructural services into five categories: (1) hosting services, (2) web browsers, (3) cloud services, (4) payment services, and (5) other infrastructural services. I will touch upon each category separately.

First of all, Gab has an extensive history regarding its (1) hosting services and is currently partnered with Epik. This alternative domain registrar became famous as a refuge for extreme voices (Van Dijck et al., 2021, 8). Like Gab, other well-known fringe platforms also use this service (i.e., Parler, 8chan, BitChute) (ibid). Epik indirectly relies on Amazon Web Services, which it uses to host many of its domain name system (DNS) services. Van Dijck et al. stated in 2021 that it is unclear whether Amazon facilitates Epik in its cloud services (ibid); at this time of writing, it is still unclear.

Besides Epik, Gab put up a sustained effort to forge itself onto Mastodon in 2019, a free and open-source social networking service (similar to Twitter) (ibid, 10). Mastodon offers its own code of conduct, terms of services, privacy options, and moderation policies. Mastodon is part of the Fediverse: a network of independent social media sites that wants people to connect across different decentralized, nonprofit, self-governed platforms freely (ibid). These platforms rely on standardized shared protocols that no one owns, so governments, corporations, nor their own user groups can top these platforms by developing their own peer-to-peer networks (ibid). As such, Van Dijck et al. argue that these Fediverse partnerships have so far been the most concerted effort to build an online counter-space that stands apart technically, economically, and ideologically from the GAFAM-nucleus (ibid).

Next, in February 2019, Gab released Dissenter.com, a (2) web browser extension that "creates a free speech comment section for any URL on the web" (@getongab, 2019). Dissenter is described as a "free, open-source utility that allows people to dissent from orthodoxy and express what they are really thinking, without fear of reprisal" (ibid). The web browser extension service allows Gab users to make comments on any webpage, like news updates, and on social media platforms like Facebook or YouTube; this happens outside the control of these platforms. These comments are also visible to anyone who uses the Dissenter extension (Mann, 2020) (see figure 4). Soon after the release, Google and Mozilla removed the extension from their stores because it violated their terms of service (Nolan, 2019). At that same time, Gab released the Dissenter Browser, a fork of the Brave open-source browser (see figure 5). The Dissenter Browser blocks ads and trackers; besides, it uses the Dissenter extension by default and is available for Windows, macOS, and Linux desktops. Users need to install the browser directly from the Dissenter website since the browser is removed from most stores (ibid). As such, Van Dijck et al. argue that the development of Dissenter is part of a strategic change. It fits the motivation to create an alternative ecosystem from free speech toward a new narrative that champions the rhetoric of decentralization, openness of software, and user privacy and agency (2021, 10).

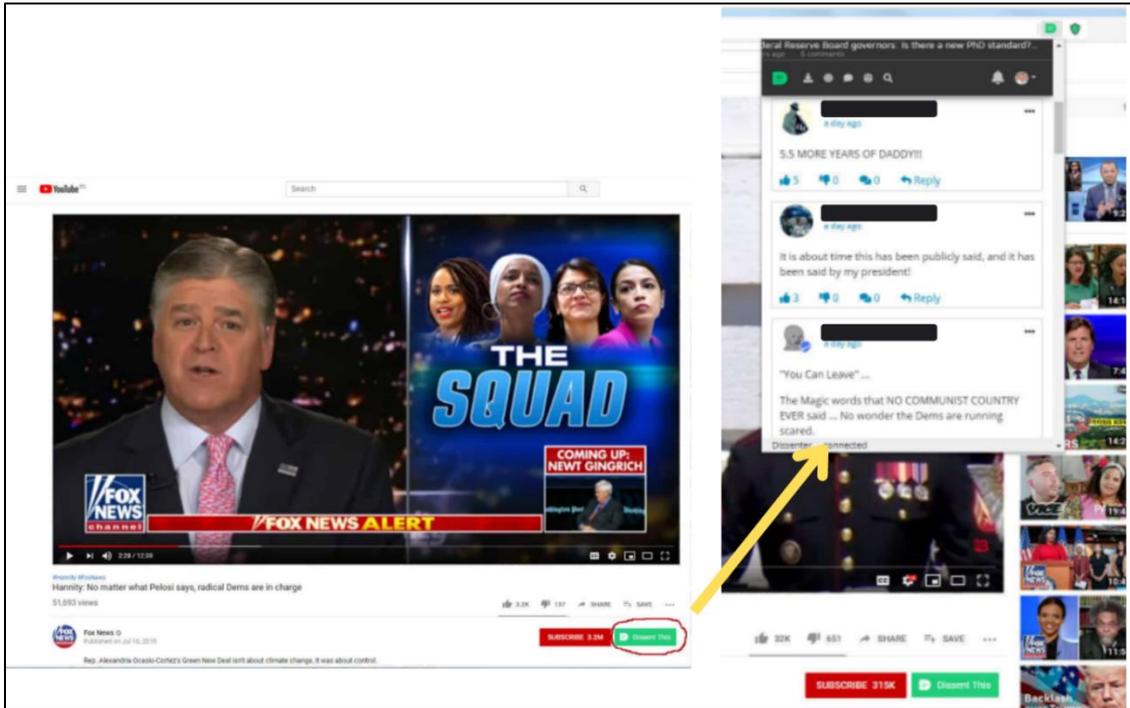


Figure 4: Using Dissenter extension on YouTube (Mann, 2020).

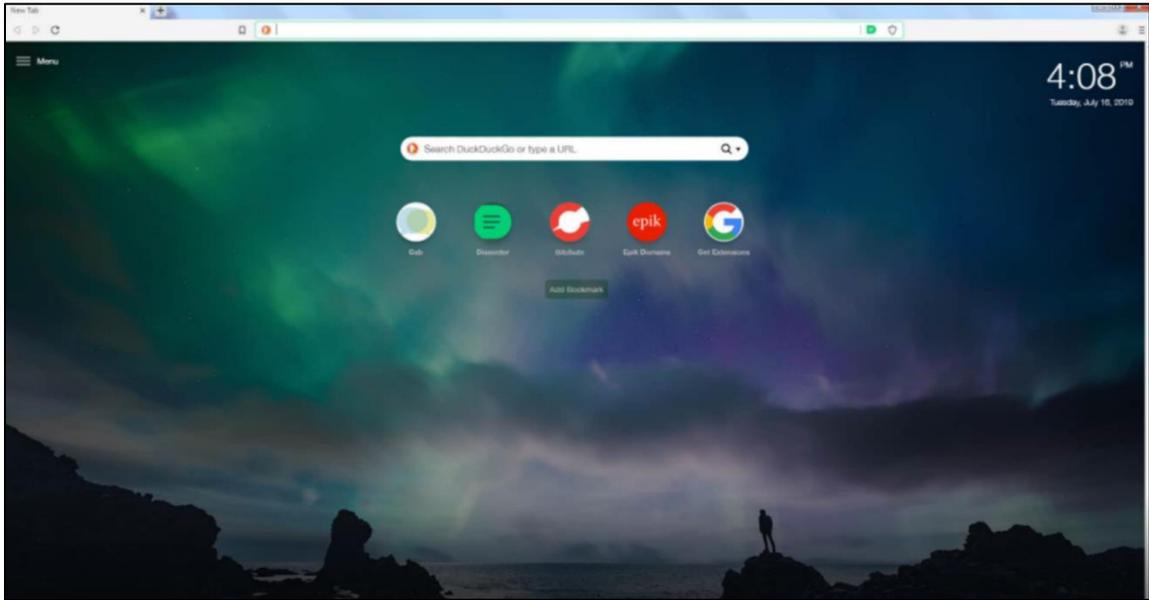


Figure 5: Dissenter browser (Mann, 2020).

As for the third category (3) cloud provider, including data storage and analytics, Gab has been ousted by all mainstream web hosting services: in 2018 by Microsoft Azure and in 2019 by Amazon Web Services (ibid). Ever since, Gab is no longer hosting its services in the cloud, but has moved to rent hardware in an undisclosed data center (McMillan & Tilley, 2021; Van Dijck et al., 2021, 8). Last January 2022, Torba speaks out about their server, which seems to indicate that Gab still rents hardware in an undisclosed data center: "We have our own physical server hardware racks, and

we have to physically maintain those and upgrade those and swap out new hard drives and all that type of stuff, and that is just a massive amount of work" (Timcast IRL, 2022). Furthermore, Gab makes use of the services of Cloudflare (see figure 6). Cloudflare is a content delivery network and distributed denial-of-service (DDoS) mitigation. It is most likely that Gab is using Cloudflare's services for DDoS attacks.

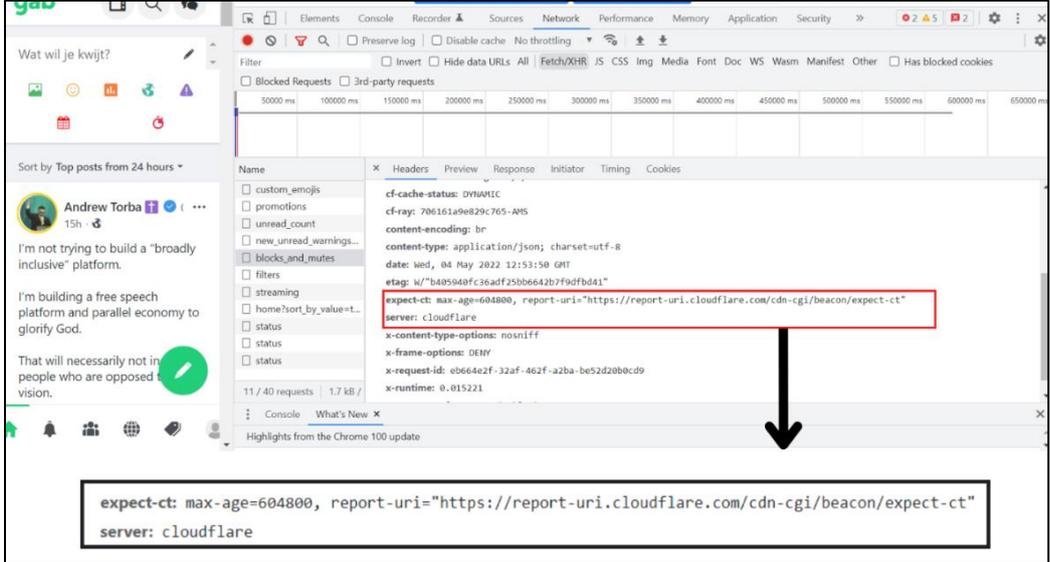


Figure 6: Gab using the services of Cloudflare.

Moreover, Gab has had a lot of trouble keeping (4) payment services on the platform. Gab lost most of the payment services in 2018 and 2019. Even so, Gab still managed to receive income during that period, which according to Torba, was derived from Bitcoin and physical checks that people would mail. Torba continues by stating, "we had old technology and new technology and that is what kept us afloat for an entire year before we were able to build our own payment system" (ibid). The payment system turned out as *GabPay*, released in December 2021. Unlike PayPal or Stripe, GabPay is not a payment aggregator but a dedicated merchant account provider (Walker, 2021). At this time of writing GabPay is building the GabPay App, a Person-to-Person payment network: "The new app allows users to instantly transfer money from nearly any bank account in the United States to anyone or any business with a cell phone or email" (GabPay, n.d.). According to Gab, GabPay is a solution to help the "Parallel Economy" (ibid). Their website states: "This solution allows you to spend your processing dollars with companies who share your values rather than major monopolies who have hijacked our payment processing sectors. We must first begin to vote with our dollars to cripple these "woke" processing companies while we continue to explore new payment methods that do not contribute to causes we directly oppose" (ibid). GabPay is a joint venture with Gab AI Inc. (ibid). The move of Gab to build its own independent payment system that

opposes the "major monopolies" is likely related to the strategic change that champions the rhetoric of decentralization, openness of software, and user privacy and agency, as mentioned before (Van Dijck et al., 2021, 10).

To summarize all services used by Gab: (1) the alternative hosting service Epik, besides Mastodon, a service that is part of the Fediverse (a network of independent social media sites); (2) Dissenter.com, Gab's own web browser services, and extension; (3) the move of Gab to rent hardware in an undisclosed data center; (4) GabPay, the alternative payment system offered by Gab. As such, all services oppose the Big Five tech companies in their own way and therefore seem to fit the strategic change that champions the rhetoric of decentralization, openness of software, and user privacy and agency (ibid). Van Dijck et al. argue that it is not a coincidence: Big Five tech companies are under mounting attack, particularly by conservative politicians who argue that GAFAM platforms have too much power to censor their right to free speech (ibid). Concerning this criticism towards the GAFAM platforms, Torba asked Musk to invest in their 'free speech internet infrastructure company,' especially in the Internet Service Provider (ISP) (Torba, 2022) (see 4.2). Van Dijck argues that ISPs belong to the roots of the Platformization Tree. Roots can run deep underground and spread widely, connecting trees to one another (2021, 2805). Torba fears that the next big leap of censorship is at the ISP level and worries that ISPs will block access to Gab.com (Torba, 2022). However, the struggle to design and build a self-governed, decentralized alternative to the centralized, economic powers of the mainstream gatekeepers reveals the same intricacies as the larger struggle between the GAFAM platforms and the fringe platforms communities (Van Dijck et al., 2021, 11). As such, Gab's efforts to stay afloat as a part of the ecosystem divulge the interdependence of mainstream and fringe platforms as a part of the same online dynamic (ibid). Van Dijck et al., therefore, stress an important insight about the platform ecosystem: "it operates not as a constellation of separate sociotechnical universes, but as an online infrastructure where all platforms are inextricably intertwined and mutually shaped" (ibid). Taken together, and thereby referring back to the purpose of this part of the analysis, it turns out that, despite Gab's effort to be separated from the Big Five tech companies by using and creating alternative services, they always remain part of the same online dynamic in the platform ecosystem.

	Hosting services (and domain register)	Web browser	Cloud provider	Payment services	Other infrastructural services
Current	Epik	Dissenter browser (Fork of Brave) (Gab)	Cloudflare (DDoS Mitigation)	GabPay (Gab)	
	Mastodon (forked) (Fediverse)	Dissenter browser extension (Gab)		BTCPay server	
				E-Check	
				Bitcoin Lightning Network	
Lost	GoDaddy (2018)	Amazon Web Services (2019)	Joyent (2018)	PayPal (2018)	Start Engine (2018)
	Joyent (2018)		Backblaze (2018)	Cash App (2018)	Apple Store (2017)
	AsiaRegistry (2017)		Microsoft Azure (2018)	Stripe (2018)	Play store (2017)
			Amazon Web services (2019)	Coinbase (2019)	
				Square (2019)	

Table 2: Overview of the current and lost infrastructural services of Gab.

5.2 The absence of API-based partnerships

Helmond and Van der Vlist argue that API-based partnerships contribute to 'platformization' through their collective development of business-to-business platform infrastructure (2021, 1). Correspondingly, I analyzed Gab.com using the Google Developer Tool and found several internal APIs. Besides these APIs, no APIs to external services were found. This section touches upon these findings and discusses what it signifies for Gab.

Internal APIs are meant for internal company use only and enable access to a company's information (Staff, 2021). As mentioned earlier, this study has found multiple internal APIs; figure 7 shows the API to sort posts by request. These APIs are not exceptional, in fact, they are essential to make use of the platform as a user. Moreover, the internal APIs could have another important function; they allow the process of capturing user interaction, in other words: datafication. Yet, analyzing Gab's internal APIs, one interesting finding is that the process of capturing user interaction seems not to occur very often, if at all. The lack of datafication affects Gab, especially in the participation in the online economy. Platforms systematically collect and analyze user data; they also constantly circulate these data through application programming interfaces (APIs) to third parties and through user interfaces to end users, thereby participating in the online economy (ibid).

As such, datafication can be understood as a techno-commercial strategy deployed by platform owners (Van Dijck et al., 2018, 33).

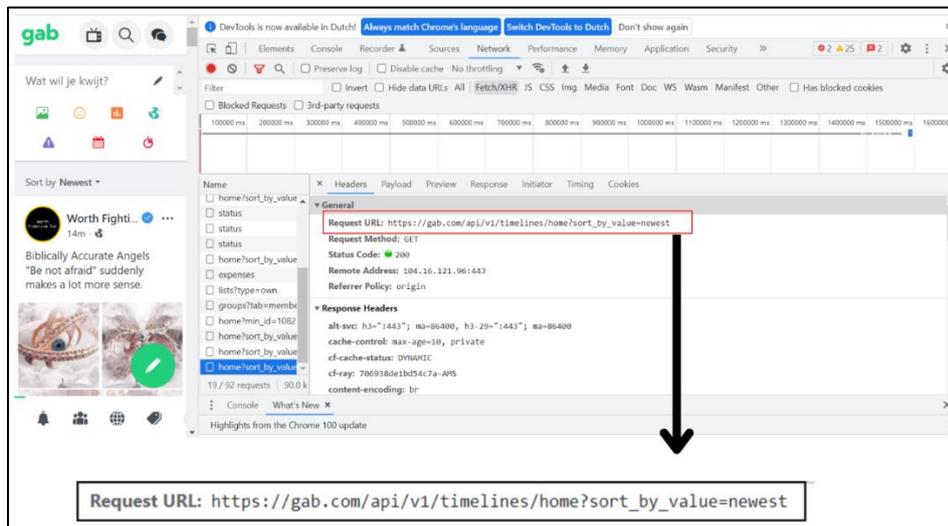


Figure 7: Internal API Gab (Newest post), using Google's Developer Tool.

Platforms can function as an ecosystem because data are constantly exchanged between various online services (ibid, 35). They do so mainly through external APIs, which allow third-party applications to access platform data (ibid). In relation to the lack of datafication, another interesting finding shows that there are no APIs to external services found for Gab in this study.

The consequences of the absence of the external APIs and the lack of datafication could be understood and explained in various ways. Again, there is a parable in the events described in the previous section: Gab is denied access to using external APIs. For example, it is known that Twitter cut off Gab's access to the Twitter API in 2017 (Van Dijck et al., 2021, 7). In that case, the absence of external APIs could be due to the prohibition of use.

This absence of APIs appears to have consequences. Helmond and Van der Vlist found that partnerships, and the API-based software integrations that underlie partnership relations, are significant in mediating the effects of social media in different markets and industries worldwide, practically in advertising (2021, 13). They state that advertising has become the primary income for social media platforms and that earnings rely on the development of both their end-user and business platform 'sides' (ibid, 1). Furthermore, these findings suggest that the absence of API-based partnerships affects advertising on a platform, which appears to be consistent with the previous findings in the analysis: advertisement is not Gab's primary source of income (4.2). As such, the lack of datafication and the absence of external APIs is comprehensible. Torba admits it as well: "We now have advertisement, but we are not tracking you creepily like Facebook and stuff"

(Timcast IRL, 2022). These findings, therefore, contradict Helmond and Van der Vlist their argument (2021,1) since advertisement is not the primary income source for all social media platforms.

In addition, the above statement of Torba refers to datafication. Datafication enables personalized advertisement and therefore depends on "predictive analytics" (Van Dijck et al., 2018, 41). Predictive analytics refers to the ability to predict future choices and trends based on analyzing historical patterns of individual and aggregate data (ibid). The lack of datafication implies that advertisement on Gab is shown to users randomly in a sense. In fact, the results of this study show that advertisement on Gab is very rare. Nevertheless, chapter 4.2 reveals that Gab did get paid to advertise. With that, it becomes clear that APIs-based partnerships are not required to advertise.

Furthermore, according to the ProgrammableWeb API directory, Gab does not offer APIs to third parties. There could be several possible reasons for this result. For example, Gab has little to offer to third parties, e.g., due to the lack of datafication. Another possible reason could be an ideological motive, in line with their well-known aim to be separated from the Big Five tech companies. Still, it seems that the reason is mainly practical, as Gab currently claims to be working on an external API for their payment service GabPay. As such, Gab states on their platform, "Once we get an approval from the bank, WE will integrate our API and get you set up" (@GabPayPayton, 2022). This leads me to another explanation for the absence of external APIs. In recent research by Van der Vlist et al., they traced the evolution of Facebook's APIs (2022). It appears that in the early stages of the platform (2006-2010), Facebook only included the Facebook API (ibid, 6). Over the years, this number has increased significantly. As a result, it is possible that Gab is still in the early stages of API development.

6. [Conclusion] Theoretical implications on the concept of platformization

This study explored the process of platformization on fringe platform Gab, in order to answer the question: how can we understand the development of fringe platforms in relation to the process of platformization? Platformization refers to the dynamic in the platform ecosystem rather than a platform as an object (Van Dijck et al., 2021, 4). There is a large volume of published studies describing the process of platformization, yet it is currently unclear how fringe platforms relate to this process. Because of this, the current study strived to examine how we can understand the development of fringe platforms in relation to the process of platformization. In order to examine platformization, the method of a Platform Infrastructure Analysis was used. This method combined two methodological approaches: the approach of Helmond and Van der Vlist of API-based partnerships (2021) and the concept of Platform Mechanisms by Van Dijck et al. (2016). As such,

Gab was first analyzed on an institutional level to subsequently trace and analyze the technical infrastructure services and the internal and external APIs.

In chapter 2, the concept of platformization was described based on the theory of key author José Van Dijck. Van Dijck et al. argue that platformization refers to how the entire societal sector is transforming due to the mutual shaping of online connectors and complementors. Moreover, the distinction between infrastructural and sectoral platforms is not fixed or set; a constant dynamic drives them toward integration (2018, 18-20). This platformization dynamic happens in a platform ecosystem, which represents a corporate space that in the Western hemisphere is dominated most notably by the Big Five tech companies (Google, Apple, Facebook, Amazon, Microsoft) (Van Dijck et al., 2021, 4). These tech companies have succeeded in building a sociotechnical infrastructure they rely on for their own financial health and global reach. An essential addition is that the entire public sector and public communication spheres have become dependent on this infrastructure (ibid).

In order to examine platformization, Gab was first analyzed on an institutional level. Chapter 4 has shown that Gab is not transparent about how they function as a platform. For example, annual reports are missing, or some information seems implausible; this makes it unclear how Gab operates financially, among other things. Despite the lack of information, the most significant finding presents that Gab financially depends on investors and sponsors. Some sponsors and investors found in this study appear to be either Republican politicians or seem to fall within the characteristics of the radical right. Moreover, it became clear how Gab is increasingly focusing on selling and offering goods and services, besides on Gab just as a social network.

Considering the findings of chapter 4, chapter 5 analyzed Gab on a technological level. Gab has lost a lot of external infrastructural services over the years due to its controversial nature, which resulted in a small collection of current infrastructural services. The founder of Gab, Andrew Torba, claimed to be building and making use of an infrastructure separate from the Big Five tech companies (Torba, 2022). It appears that despite Gab's effort to stay afloat as part of the ecosystem divulges the interdependence of mainstream and fringe platforms as a part of the same online dynamics in the platform ecosystem (Van Dijck et al., 2021, 11).

To further explore the process of platformization, chapter 5.2 traced the internal and external APIs on Gab. Analyzing the internal APIs on Gab, it turned out that the process of datafication does not occur very often on the platform, if at all. Moreover, no APIs to external services were found in this study. Helmond and Van der Vlist argue that partnerships, and the API-based software integrations that underlie partnership relations, are significant in mediating

advertisement (ibid, 13). The absence of the external APIs and the lack of datafication appears to be reasonable; advertisement is not Gab's primary source of income.

As the results of this study have shown: advertisement on Gab is very rare. Although Helmond and Van der Vlist argue that advertising has become the primary income source for social media platforms (ibid, 1), this does not apply to Gab. As such, this research offered insights that contradict their argument. Still, these findings do not imply that Gab will never use or offer third-party APIs. It has become clear, for example, that Facebook started with little to no APIs offered to third-parties in its startup phase, after which its APIs have increased exceptionally (Van der Vlist., 2022, 6).

By raising the question "do fringe platforms belong within the characterization of the theoretical understanding of platformization?" the current study contributes to our understanding of the concept of platformization, by revealing that Gab does not function according to the theoretical understanding of the concept of Platform Mechanisms (Van Dijck et al., 2016). Since the process of datafication hardly occurs on Gab, it directly affects the functioning of the other two mechanisms (commodification and selection). Because of this, the concept of Platform Mechanism is unfit to adequately describe the working of Gab. In relation to this, the theory by Helmond and Van der Vlist is unfit as well, because Gab does not offer or use external APIs based on this study's findings. As it turns out, their approach to examining platformization is based on advertisement on social media platforms and seems to be profit-oriented. Contrastingly, Gab is currently financially dependent on sponsors and investors. It appears that the concept of platformization is described based on 'mainstream' platforms or regular platforms. As such, the characteristics of the concept of platformization do not include fringe platform Gab.

Consequently, I explored upon the additional question: "does the process platformization occur on fringe platform Gab, despite these theoretical implications?" The findings of the current study have identified that despite the desire of Gab to be separated from the Big five tech companies, the mainstream and fringe platforms will still be part of the same online dynamic in the platform ecosystem. Since platformization refers to this dynamic, the answer to the aforementioned question seems to be "yes". Because ecosystems are complex, challenging to understand and study, and therefore difficult to trace (Helmond and Van der Vlist, 2021, 5), it is essential to adapt the theory accordingly. On that account, this leads me to the request to update and broaden the theoretical understanding of platformization because the theory is not comprehensive at this point.

Gab gained much academic attention in media studies that focused on documenting the origins, uses, and levels of toxicity and hate speech that characterized the platform (e.g., Donovan

et al., 2019; De Winkel, forthcoming; Zannettou et al., 2018; Jasser, 2021). In addition to this focus, I stress that more media research should be undertaken to explore the technological development of fringe platforms, especially concerning the process of platformization, because we will continue to encounter fringe platforms in the future.

Furthermore, several researchers have already warned about: the danger of alt-right and the far-right platforms building a media ecosystem outside the mainstream (Benkler et al., 2018; Freelon et al., 2020, 3). This is again evident concerning Gab's strategic change that fits the motivation to create an alternative ecosystem from free speech toward a new narrative that champions the rhetoric of decentralization, openness of software, and user privacy and agency (Van Dijck et al., 2021, 10). This is noticeable in the rapid pace at which Gab creates, offers, and desires decentralized services and the aim to build its own infrastructure separate from the Big Five tech companies. Following these observations, I claim that Gab is slowly but surely penetrating the roots of digital infrastructures.

Although this study has created academically relevant insight, it also comes with a set of limitations. Due to the theoretical implications, the used method was not able to examine all that this research intended to. As a result, ProgrammableWeb's API directory turned out to be unusable; because of this, I was limited to using the Google Developer Tool. Despite this limitation, the Google Developer Tool has provided sufficient insights. Moreover, it is essential to stress that due to the scope of this research, I was unable to use additional digital methods. Therefore, future research could generate and analyze additional data, using other methods and techniques that contribute to examining platformization. Despite these limitations, the exploratory nature of this research has allowed for gaining valuable insights that have proven sufficient.

References

Advertising on Gab. (2021, August 5). Gab News. Retrieved April 21, 2022, from <https://news.gab.com/2021/08/05/advertising-on-gab/>

Anthony, A. (2018, February 9). *Inside the hate-filled echo chamber of racism and conspiracy theories.* The Guardian. Retrieved March 3, 2022, from <https://www.theguardian.com/media/2016/dec/18/gab-the-social-network-for-the-alt-right>

Benkler, Y, Faris, R, Roberts, H (2018) *Network Propaganda: Manipulation, Disinformation, and Radicalization in American Politics.* New York: Oxford University Press.

Benson, T. (2016, November 5). *Inside the "Twitter for racists": Gab — the site where Milo Yiannopoulos goes to troll now*. Salon. Retrieved March 3, 2022, from <https://www.salon.com/2016/11/05/inside-the-twitter-for-racists-gab-the-site-where-milo-yiannopoulos-goes-to-troll-now/>

Bowker, G. C., & Star, S. L. (2000). *Sorting Things Out: Classification and Its Consequences (Inside Technology)* (Revised ed.). The MIT Press.

Bijker, W, Hughes, TP, Pinch, T (1987) *The Social Construction of Technological Systems*. Cambridge, MA: The MIT Press.

De Winkel, Tim (forthcoming) "Introducing the Fringe Platforms of the platformized Public Sphere." *Fringe Platforms: The Role of the Contesting Alternatives to the Mainstream Social Media Platforms in a Platformized Public Sphere*, University of Utrecht, pp. 1–24.

Colbert, R. (n.d.). *Rob Colbert | Gab TV. Gab TV*. Retrieved April 21, 2022, from <https://tv.gab.com/channel/shadowknight412>

Dougherty, J., & Edison Hayden, M. (2019, January 24). *How Gab Has Raised Millions Thanks to This Crowdfunding Company*. Southern Poverty Law Center. Retrieved April 21, 2022, from <https://www.splcenter.org/hatewatch/2019/01/24/how-gab-has-raised-millions-thanks-crowdfunding-company>

Cukier, K., & Mayer-Schonberger, V. (2013). *Big Data: A Revolution that will Transform How We Live, Work and Think*. Hodder & Stoughton.

Dijck, Van José, et al. "Platform Mechanisms." *The Platform Society: Public Values in a Connective World*, Oxford University Press, 2018, pp. 37–57.

Dijck, Van José, et al. *The Platform Society: Public Values in a Connective World*. Oxford University Press, 2016.

Donovan, Joan; Lewis, Becca; Friedberg, Brian: Parallel Ports: Sociotechnical Change from the Alt-Right to Alt-Tech. In: Maik Fielitz, Nick Thurston (Hg.): *Post-Digital Cultures of the Far Right: Online Actions and Offline Consequences in Europe and the US*. Bielefeld: transcript 2019, S. 49–65. DOI: <https://doi.org/10.25969/mediarep/12374>.

Edwards, PN, Jackson, SJ, Bowker, GC. (2007) *Understanding infrastructure: dynamics, tensions, and design*. Working paper, January. Available at: <http://deepblue.lib.umich.edu/handle/2027.42/49353>

Federal Election Commission (n.d.). FEC.Gov. Retrieved April 21, 2022, from https://www.fec.gov/data/disbursements/?data_type=processed&committee_id=C00708289&recipient_name=GAB&two_year_transaction_period=2022&min_date=01%2F01%2F2021&max_date=12%2F31%2F2022

Freelon, D, Marwick, A, Kreiss, D (2020) False equivalencies: online activism from left to right. *Science* 369: 1197–1201.

Gab AI Inc. (n.d.). LinkedIn. Retrieved April 21, 2022, from <https://www.linkedin.com/company/gab-ai-inc/>

Gab AI Inc. (2020, May). *Annual Report*. https://www.sec.gov/Archives/edgar/data/1709244/000110465920067852/annual_report.pdf

Goodin, D. (2021, March 2). *Rookie coding mistake prior to Gab hack came from site's CTO*. Ars Technica. Retrieved April 21, 2022, from <https://arstechnica.com/gadgets/2021/03/rookie-coding-mistake-prior-to-gab-hack-came-from-sites-cto/>

Graham, S, Marvin, S (2001) *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*. London; New York: Routledge.

@GabPayPayton. (2022, February 11). *GabPay Payton on Gab: "@artpartyunlimited Yes! We are integrated with Wix."* [Toots]. Gab Social. <https://gab.com/GabPayPayton/posts/107785714040361680>

@getongab. (2019, February 26). *Press release for http://Dissenter.com* [Tweet]. Twitter. <https://archive.ph/20190503002616/https://twitter.com/getongab/status/1100414843142705152#selection-3589.0-3607.1>

Hughes, TP (1983) *Networks of Power: Electrification in Western Society, 1880-1930*. Baltimore, MD: Johns Hopkins University Press.

Hananoki, E. (2022, February 1). *Rep. Marjorie Taylor Greene has been paying for marketing on Gab, a haven for white nationalists and antisemites*. Media Matters for America. Retrieved April 21, 2022, from <https://www.mediamatters.org/gab/rep-marjorie-taylor-greene-has-been-paying-marketing-gab-haven-white-nationalists-and>

Jasser, G. (2021). Gab as an imitated counterpublic. In *Rise of the Far Right: Technologies of Recruitment and Mobilization* (pp. 190–209). Rowman & Littlefield.

Kates, G. (2018, October 30). *Gab appears to be losing investors after the Pittsburgh synagogue shooting*. CBS News. Retrieved April 21, 2022, from <https://www.cbsnews.com/news/pittsburgh-shooting-gab-appears-to-be-losing-investors-after-synagogue-attack-robert-bowers/>

Kittler, F., & Johnston, J. (1997). *Literature, Media, Information Systems (Critical Voices)* (1st ed.). Routledge.

Lee, M. (2021, March 15). *Inside Gab, the Online Safe Space for Far-Right Extremists*. The Intercept. Retrieved April 21, 2022, from <https://theintercept.com/2021/03/15/gab-hack-donald-trump-parler-extremists/>

Mann, B. (2020, November 11). *Dissenter Review 2020 - The Ad Blocking "Free Speech" Browser by Gab*. Blokt - Privacy, Tech, Bitcoin, Blockchain & Cryptocurrency. Retrieved May 4, 2022, from <https://blokt.com/guides/dissenter-review>

Mayntz, R, Hughes, TP (1988) *The Development of Large Technical Systems*. Boulder, CO: Westview Press.

Meyrowitz, J. (199 C.E.). Understanding Media. *ETC: A Review of General Semantics*, 56(1), 44–52. <https://www.jstor.org/stable/42579860>

McMillan, R, Tilley, A (2021) *Parler faces complex, costly route to getting back online*. Wall Street Journal, January 12. Available at: <https://www.wsj.com/articles/parler-faces-obstacles-to-getting-back-online-11610474343#:~:text=Parler%2C%20the%20social%20network%20popular,Sunday%20night%2C%20knocking%20Parler%20offline.>

Nolan, L. (2019, April 11). *Google, Mozilla Blacklist Gab's 'Dissenter' Free Speech Browser Extension*. Breitbart. Retrieved May 4, 2022, from <https://www.breitbart.com/tech/2019/04/11/google-mozilla-blacklist-gabs-dissenter-browser-extension/>

Peters, J. D. (2015). *The Marvelous Clouds: Toward a Philosophy of Elemental Media* (Illustrated ed.). University of Chicago Press.

Plantin, J. C., Lagoze, C., Edwards, P. N., & Sandvig, C. (2016). Infrastructure studies meet platform studies in the age of Google and Facebook. *New Media & Society*, 20(1), 293–310. <https://doi.org/10.1177/1461444816661553>

Poell, T, Nieborg, D, Van Dijck, J (2019) Concepts of the digital society: platformisation. *Internet Policy Review* 8(4). Available at: <https://doi.org/10.14763/2019.4.1425>

Roose, K (2017) The Alt-Right created a parallel Internet. It's an unholy mess. *The New York Times*, December 11. Available at:

<https://www.nytimes.com/2017/12/11/technology/alt-right-internet.html>

Rogers, R. (2020). Deplatforming: Following extreme Internet celebrities to Telegram and alternative social media. *European Journal of Communication*, 35(3), 213–229.

<https://doi.org/10.1177/0267323120922066>

Ribes, D, Finholt, TA (2009) The long now of technology infrastructure: articulating tensions in development. *Journal of the Association for Information Systems* 10: 375–398.

Staff, R. (2021, March 11). *Internal vs External APIs. The Last Call - RapidAPI Blog*. Retrieved May 5, 2022, from

[https://rapidapi.com/blog/internal-vs-external-](https://rapidapi.com/blog/internal-vs-external-apis/#:~:text=An%20internal%20API%20is%20an,use%20by%20the%20organization's%20developers.)

[apis/#:~:text=An%20internal%20API%20is%20an,use%20by%20the%20organization's%20developers.](https://rapidapi.com/blog/internal-vs-external-apis/#:~:text=An%20internal%20API%20is%20an,use%20by%20the%20organization's%20developers.)

Star, SL, Ruhleder, K (1996) Steps toward an ecology of infrastructure: design and access for large information spaces. *Information Systems Research* 7: 111–134.

Silverman, J. (2021, August 23). *The CEO Trying to Build a White, Christian, Secessionist Tech Industry*. *The New Republic*. Retrieved March 3, 2022, from <https://newrepublic.com/article/163285/andrew-torba-gab-white-christian-internet>

The App | GabPay. (n.d.). GabPay by Gab. Retrieved May 5, 2022, from <https://www.gabpay.com/>

Timcast IRL. (2022, January 21). *Gab CEO Explains How Big Tech Is Trying To DESTROY Free Speech*. YouTube.

Retrieved April 21, 2022, from

https://www.youtube.com/watch?v=8WzPgAsB3xl&t=261s&ab_channel=TimcastIRL

Torba, A. (2022, April 14). *Gab.com's Offer To Elon Musk*. *Gab News*. Retrieved April 21, 2022, from

<https://news.gab.com/2022/04/14/gab-coms-offer-to-elon-musk/>

Torba, A. (2022a, January 10). *The Real Big Tech Exodus*. *Gab News*. Retrieved April 21, 2022, from

<https://news.gab.com/2022/01/10/the-real-big-tech-exodus/>

Van Dijck, J., de Winkel, T., & Schäfer, M. T. (2021). Deplatformization and the governance of the platform ecosystem. *New Media & Society*. <https://doi.org/10.1177/14614448211045662>

Van Dijck, José. "Seeing the Forest for the Trees: Visualizing Platformization and Its Governance." *New Media & Society*, vol. 23, no. 9, Sept. 2021, pp. 2801–2819, doi:10.1177/1461444820940293.

Vlist, Fernando N. van der, and Anne Helmond. "How Partners Mediate Platform Power: Mapping Business and Data Partnerships in the Social Media Ecosystem." *Big Data & Society*, vol. 8, no. 1, 2021, pp. 1–16. *Crossref*, <https://doi.org/10.1177/20539517211025061>.

Van der Vlist, F. N., Helmond, A., Burkhardt, M., & Seitz, T. (2022). API Governance: The Case of Facebook's Evolution. *Social Media + Society*, 8(2). <https://doi.org/10.1177/20563051221086228>

Walker, J. (2021, December 22). *Free Speech Platform Gab Gets Own Payment Processing Service*. Vision Times. Retrieved May 5, 2022, from <https://www.visiontimes.com/2021/12/21/free-speech-platform-gab-gets-own-payment-processing-service.html>

Wendy Rogers (@wendyrogersaz) • *gab.com*. (n.d.). Gab Social. Retrieved April 21, 2022, from <https://gab.com/wendyrogersaz>

Winthrop-Young, G., & Wutz, M. (2002). Introduction: Media--Models, Memories, and Metaphors. *Configurations*, 10(1), 1–10. <https://doi.org/10.1353/con.2003.0012>

Zannettou, S., Bradlyn, B., de Cristofaro, E., Kwak, H., Sirivianos, M., Stringini, G., & Blackburn, J. (2018). What is Gab. *Companion of the The Web Conference 2018 on The Web Conference 2018 - WWW '18*. <https://doi.org/10.1145/3184558.3191531>