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# No Easy Way Out? Platform-Mediated Political Externalities and Platform Strategy

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## ABSTRACT

Digital content-sharing platforms manage network effects by affecting user access and behavior but in the process also generate non-pecuniary externalities. We focus on platform-mediated political externalities—that is, changes in political interactions among political agents due to platforms’ intermediation activities. We develop a theoretical framework that explains the origins of these political externalities, the strategic tradeoffs it creates for platforms vis-à-vis network effects, and how and why platforms respond to these tradeoffs by creating and enforcing rules. We theorize that a higher potential for network effects leads platforms to generate more negative political externalities, to more negatively affect non-users than users, and to selectively enforce rules based on users’ contribution to network effects. By focusing on the interaction of political externalities and network effects, and how platforms respond to it, our framework explains when and why platforms may choose *not* to mitigate negative political externalities. We contribute to research on externalities arising due to platform actions, particularly in their role as private regulators, and offer implications for managerial practice and policymakers.

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Digital content-sharing platforms<sup>1</sup> (hereafter, “platforms”) increasingly intermediate how political actors, individuals and organizations alike, interact and influence each other in the political realm. Platforms’ reactions to the January 6, 2021, Capitol Hill riot in the U.S. and its aftermath provide a vivid illustration of the issues addressed in this paper. In the wake of the riot, two of the most prominent content-sharing platforms (Facebook and Twitter) revoked the user account of Donald Trump, then president of the United States (Nicas & Alba, 2021). The platforms justified the revocation by asserting that Trump had violated their terms of use, particularly those prohibiting incitement of violence. Meanwhile, media reporting indicated that the riot was primarily coordinated and organized via social media on the back of a long-running disinformation campaign that falsely asserted that the 2020 U.S. presidential election results were tainted by electoral fraud (Nicas & Alba, 2021). Trump’s “de-platforming” was met with widespread criticism from various political leaders across the world (e.g., European Union lawmakers and French and German politicians), who expressed concerns about the political consequences of the platforms’ decision (Breton, 2021; Le Monde, 2021; Yahoo News, 2021).

In this case, then, platforms were used to communicate, spread, and amplify political content about electoral fraud in the U.S., as well as to coordinate and organize a political movement—a violent one, moreover. Platforms were compelled to react to these large-scale political externalities by excluding one prominent user. However, as the reactions of other political leaders demonstrate, even in such an extreme situation, the platforms’ decision was not made by

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<sup>1</sup> Platforms are defined as firms that enable interactions between two or more participant or end-user sides (Rochet & Tirole, 2003, 2006; Parker & Van Alstyne, 2005). In this paper, we focus on digital content-sharing platforms—that is, private entities that, irrespective of their market share (Bourreau & Perrot, 2020), mediate interactions among several participant sides, primarily or largely using digital means, and allow the creation and distribution of content (e.g., information, images, videos, audio, web links etc.). The term encompasses social networks (e.g., Facebook, Twitter), media platforms (e.g., YouTube, TikTok), and communication platforms (e.g., Telegram, WeChat).

a political process involving consensus building among key stakeholders. Interestingly, both the politicians and platforms' decision-makers agreed that platform actions can generate negative externalities of a fundamentally *political* nature (in this case, by amplifying or censoring political content). While originating in user behavior, these externalities are mediated by platforms as a result of the rules created and enforced by platforms (in this case as “terms of use”). That these arguments were made by a broad set of politicians highlights the dilemma for platforms: the interactions they enable between users create not only network effects<sup>2</sup> but also externalities that affect political actors.

Given the criticality of network effects to the business model of platforms, research in strategy and management of these organizations has explored how platforms' decisions on pricing, scope choices, and governance enables network effects (Rochet & Tirole, 2006; Boudreau & Hagiu, 2009; Eisenmann, Parker & Van Alstyne, 2011; Hagiu & Wright, 2015; Luo & Kaul, 2019). In particular, nascent literature on rule-making by platforms i.e., rule created and enforced by platforms on design, user access and behavior provides insights on how platform rules facilitate network effects by reducing uncertainty, free-riding, and information asymmetry for various user sides of the platform (Boudreau & Hagiu, 2009; Luo & Kaul, 2019; Kuan & Lee, 2020; Chu & Wu, 2021).

However, research has yet to fully examine what consequences these platforms' business strategies have on the civic and political life of citizens. Specifically, it has neglected two features.

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<sup>2</sup> Network effects are integral to value creation and capture of digital content-sharing platforms. It is the property that a platform is more valuable to users as more users join and interact on the platform (Rochet & Tirole, 2006; Belleflamme & Peitz, 2021). While extant literature in strategy and management has evaluated other levers of value creation and capture of platforms (e.g., reduction in transaction and search costs, variety vs. exclusivity of complements, competing in broad markets vs. deep niches etc.), we restrict our scope to network effects, as defined above, for analytical tractability.

First, platform users are both political and economic agents. Second, as we show below, platforms’ actions lead to both network effects and non-pecuniary externalities<sup>3</sup>—especially political externalities—for users and non-users. Hence, to fully characterize the impact of platform actions, such political externalities need to be taken into account.

In this paper, we focus on how platforms’ actions to manage network effects, lead to a specific type of non-pecuniary externalities that we refer to as *platform-mediated political externalities* i.e., how political actors — individuals and organizations — interact and influence each other in the public sphere (Habermas, 2006). These political actors may be both users as well as non-users of platforms. We develop a theoretical framework consisting of three parts. First, we provide a conceptual understanding of platform-mediated political externalities; in doing so, we set out how these are by-products of actions taken by platforms to manage network effects. Second, we evaluate the strategic tradeoffs that arise for platforms as a result of the interaction between network effects and these externalities and extend the baseline model to examine the impact of competition and political conditions. Finally, we analyze platforms’ responses to these tradeoffs and the choices they make on rule creation and enforcement to implement these responses. Our analysis is positive rather than normative. Figure 1 presents an overview of the main concepts contained in the paper and how they relate to each other.

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Insert Figure 1 about here

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Our paper contributes to research on platform governance by theorizing on externalities arising due platforms role as private regulators. By offering a fine-grained analysis of various

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<sup>3</sup> Following Buchanan & Stubblebine (1962) and Liebowitz & Margolis (1994), we focus on non-pecuniary externalities (also named “real” or “technological” externalities) which result in changes that impact the actions or outcomes of the focal actor and are not the outcome of market mechanisms.

platform choices on rule creation and enforcement, we demonstrate how these rules may also lead to externalities in addition to network effects, thus extending the theoretical scope of platforms' private regulation. Further, by analyzing how platforms manage the tradeoffs between network effects and externalities, we shed light on when and why platforms may choose to *not* act or to maintain the status quo instead of mitigating negative externalities, *despite* their being able to create and enforce rules. Scholars across multiple disciplines and policymakers who are interested in the consequences of platforms' actions could thus benefit from our insights.

### **ORIGINS OF PLATFORM-MEDIATED POLITICAL EXTERNALITIES**

Platforms' strategies consists of actions that are intended to generate and maintain network effects, since these effects are critical to their business models. We argue that in addition to generating network effects, actions of digital content-sharing platforms may also lead to non-pecuniary externalities. In this section, we focus on the origins of a specific type of non-pecuniary externalities, which we term *platform-mediated political externalities*. We provide a definition for these externalities, and we explicate the origin of these in platforms' actions—particularly in the rules created and enforced by the platforms—as well as the nature of their impact in terms of how political actors interact with and influence each other in the political realm.

#### **Network Effects and Non-Pecuniary Externalities**

The literature on platforms emphasizes the significance of network effects, both direct and indirect (or cross-side), to their business models (Rohlf, 1974; Katz & Shapiro, 1985). Platforms undertake various actions to generate, grow, and maintain these network effects. These actions include pricing (Caillaud & Jullien, 2003; Rochet & Tirole, 2003; Parker & Van Alstyne, 2005), envelopment (Eisenmann, Parker & Van Alstyne, 2011), vertical scope choices (Hagiu & Wright, 2015), and rules on design, user access, and behavior (Boudreau & Hagiu, 2009; Crémer, de

Montjoye & Schweitzer, 2019; Koo & Easley, 2021). Network effects imply that an additional user affects the value that other users may derive from accessing or participating in an interaction on the platform (Rochet & Tirole, 2006; Belleflamme & Peitz, 2021). Direct network effects arise when users belong to the same group, and indirect network effects occur when users belong to different groups or user sides (Katz & Shapiro, 1985; Rochet & Tirole, 2006; Belleflamme & Peitz, 2021). Thus, platforms prioritize both number of users and users' participation on the platform in order to manage network effects.

However, in the context of digital content-sharing platforms, non-pecuniary externalities may also exist in addition to network effects. Non-pecuniary externalities (termed "technological externalities" by Liebowitz and Margolis, 1994) arise where the action of a user impacts the actions or outcomes of other users or non-users, with no mediation by any market mechanism. Unlike network effects, non-pecuniary externalities may not necessarily be driven by an additional user's participation on (or usage of) a platform. Yet, similar to network effects, non-pecuniary externalities may be network specific (i.e., affect platform users only) or non-network specific (i.e., spill over and affect non-users of the platform) (Belleflamme & Peitz, 2021).

Examples of network-specific non-pecuniary externalities include seller discrimination on the basis of race or ethnicity (Edelman, Luca & Svirsky, 2017; Lambin & Palikot, 2019); cyber-bullying, online harassment, or criminal activity (Klonick, 2017); online diffusion of disinformation (Allcott & Gentzkow, 2017); and political-influence operations (Farrell & Newman, 2019). Instances of spillovers of non-pecuniary externalities include the spread of vaccine hesitancy offline due to disinformation (Murphy, Vallières, Bentall et al., 2021), offline social or political protests and campaigns (Tufekci & Wilson, 2012; Zhuravskaya, Petrova &

Enikolopov, 2020; Cohen & Fung, 2021), and politically motivated riots such as that which took place on Capitol Hill, U.S. in 2021 (Nicas & Alba, 2021).

### **Platform-Mediated Political Externalities and the Public Sphere**

In the remainder of the paper, we focus on a particular type of non-pecuniary externalities: *platform-mediated political externalities* (hereafter, “political externalities”). We define<sup>4</sup> political externalities as the changes in political interactions among political agents that (i) are due to the existence and operation of digital platforms, (ii) are consequential to political outcomes, and (iii) are non-pecuniary—that is, not mediated by the market<sup>5</sup>. These externalities can be network specific (i.e., affect platform users only), though they can also spill over and affect platform non-users as well<sup>6</sup>.

To conceptualize how political externalities arise, we use the concept of the “public sphere” (Habermas, 2006)<sup>7</sup>. The public sphere is the actual and metaphorical space in which citizens can meet and interact in order to deliberate on and prioritize political issues and actions (Habermas,

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<sup>4</sup> The definition excludes the political consequences of economic changes brought about by the emergence of platforms as economic actors, however indirectly. For instance, the rise of real estate values in California due to the influx of technology workers has political consequences but is beyond the scope of the definition, because changes in real estate prices are not fully mediated by digital platforms’ operations. Similarly, an increase in lobbying activities undertaken by established taxi companies in response to competition from Uber in a given city would be beyond the scope of the definition because competition between Uber and established taxi companies is mediated through the market (Paik, Kang & Seamans, 2019; Ricart, Snihur, Carrasco-Farré & Berrone, 2020).

<sup>5</sup> Given the three boundary conditions of the definition, the two critical assumptions of Coase (1960) — that is, first, there are two identifiable parties or agents to contract with i.e., property rights are proven and tradeable, and second, the two parties or agents can bargain and arrive at a mutually acceptable contract i.e., there are no transaction costs nor information asymmetry — break down (Rochet & Tirole, 2006). Platform-mediated political externalities thus fall outside the scope of solutions arising from Coase (1960).

<sup>6</sup> We acknowledge that political externalities would exist even in the absence of platforms. However, our central argument is that digital content-sharing platforms structure and influence political externalities, as these are conceptualized in the paper, by intermediating how political actors —individuals and organizations —interact with and influence each other in the political realm. Further, we do not take a side in the debate as to whether platforms have made public sphere better or worse relative to a counterfactual world where platforms don’t exist. .

<sup>7</sup> In the management literature, the Habermasian concept of democratic deliberation has been applied in research on political corporate social responsibility (Scherer & Palazzo, 2007). Our study differs from this research stream in its application of the concept in two ways: first, our analysis of platform-mediated political externalities is positive, not normative; and second, the focal actor in our analysis of the public sphere are platforms’ users and non-users, not platforms themselves.



2006). Through the deliberation of political agents, the public sphere plays a key role in the formation of political opinion. . Deliberation occurs when political agents—that is, individuals and organizations representing individuals—participate in the political process through information dissemination and exchange, opinion formation on political issues, and mobilization for civic activism (Habermas, 2006; Cohen & Fung, 2021). Deliberation happens through information sharing, and it leads to the prioritization of political issues as well as to the public’s paying attention to these. When supplemented with civic activism, it may eventually lead to more formal political activity—for example, participating in elections, lobbying for legislation, and bringing cases before the courts (Cohen & Fung, 2021). Thus, deliberation by political agents complements formal participation in the political process such as voting or lobbying (Habermas, 2006; Cohen & Fung, 2021).

New modes of interactions enabled by information and communication technology have led to the emergence of a *digital* public sphere. The digital public sphere has taken on an ever-greater importance in facilitating major changes in how citizens and political actors relate to each other. These changes include, for instance, the increased availability of diverse opinions and voices, easier organization of new political movements, weakening of traditional political structures, and increased dissemination of disinformation (Cohen & Fung, 2021). As interactions in the digital public sphere happen almost entirely on platforms, we construe this non-pecuniary externality stemming from platforms’ operations as platform-mediated political externalities.

In the digital public sphere, content-sharing platforms have been increasingly intermediating users’ political activities (Cohen & Fung, 2021). To analyze how platforms generate political externalities in the digital public sphere, we characterize the activities of political agents as being built on three cumulative processes: communication, participation, and association.

Forming a required basis, *communication* is the ability of agents to engage in exchanges with other political actors, as well as their capacity to search for, discover, and exchange information and political perspectives. Building on communication, *participation* consists of the provision and dissemination of arguments, leading to opinion formation, the orientation of public attention, and the prioritization of political issues. Finally, communication and participation in the public sphere can motivate *association* among participants—that is, organized action, campaigns, or resource mobilization by political agents.

We use the *communication–participation–association* typology to organize our discussion of the relationships between platform rules, political externalities, and platforms’ responses to political externalities. Platforms simultaneously affect these three elements of public sphere activity. We focus on private regulation by platforms—that is, rules that platforms create and either impose on users via “terms of use” or automatically enforce via computer code (Lessig, 1998; Boudreau & Hagiu, 2009). Platform rules are the specific means by which political externalities may be both mediated and managed, particularly in the context of digital content-sharing platforms. This occurs due to two mechanisms—first, framing users’ incentives and constraints, and second, reducing users’ search and information costs.

First, platforms’ rules frame user access and activity by specifying, incentivizing, and enforcing actions and outcomes that are “*required, prohibited, or permitted*” (Ostrom, 1986; emphasis original), thus enforcing limits on users’ participation and political activities in the digital public sphere. Second, platforms’ rules allow users to communicate and search for, discover, and distribute information at nearly zero marginal costs (Evans, 2003; Goldfarb & Tucker, 2019). We will now shift our focus to how platform rules intermediate political externalities and then provide a detailed analysis of how political externalities may be managed through the same means.

### *Communication in the digital public sphere*

Rules set by platforms have a considerable influence on how users can communicate with one another in the digital public sphere. Platform rules define access (who can join) and stipulate user activity (who can contact whom, what users can do, and who can collaborate with whom) (Hagiu, 2015). Access is specified and enforced through terms of use and platform design choices that are implemented as code. For example, WhatsApp and Signal require a user to have an operational phone number to join the platform, while would-be Clubhouse users need an “invite” or referral from an existing user to join the platform (Guardian, 2021; WhatsApp, 2022; Signal, 2022). User activity—that is, who can contact whom and how users may distribute content—is also governed by platform rules. For instance, Telegram allows very large groups (up to 200,000 members), while WhatsApp officially limits group membership to 256 members (Telegram, 2022; WhatsApp, 2022). This difference thus reflects not technical constraints but the rule choices that platforms can make in terms of what users are allowed to do (i.e., limits on users’ ability to distribute content). Overall, rules governing who can join and with whom communication can be established have a direct effect on the creation and shape of users’ online communication networks.

Increased opportunities for communication can create both positive and negative political externalities. From the viewpoint of a well-functioning public sphere, the facilitation of communication creates many positive externalities. Information and opinions can be more readily shared; marginalized individuals and groups can be given a voice they would not have without these platforms; and a broad set of civil society actors can easily exchange opinions and facts, thus enriching the public sphere. These range, for instance, from individuals, firms, advocacy organizations, celebrities, corporate leaders, political representatives, political parties, and

candidate campaigns to heads of state, police forces, city administrations, and even supra-national entities (Cohen & Fung, 2021).

However, on the negative side, more opportunities for communication also means more opportunities for the diffusion of disinformation, which undermines deliberation in the public sphere. For instance, scholars have found evidence that online diffusion of disinformation (e.g., fake news during Italy's 2012 elections) was comparable to that of correct information (Mocanu, Rossi, Zhang et al., 2014). Regardless of whether political externalities are positive or negative, we posit that increased communication possibilities mediated by platforms means increased possibilities for political externalities. We thus argue,

*Proposition 1: The more a platform facilitates communication in the public sphere, the more political externalities are generated in the public sphere.*

#### *Participation in the public sphere*

While communication forms the basis for the public sphere, the key function of the public sphere is to enable its members to engage in deliberation, understood as the process by which informed opinions can be formed and political priorities can be collectively determined within civil society. Participation in deliberation is thus essential for prioritizing and bringing visibility to political issues for the benefit of all society (Habermas, 2006).

Platforms, by the rules they set, extend and affect their users' ability to debate and deliberate on political issues. On platforms, deliberation is influenced and enhanced by concrete choices of rules and features that determine what users are allowed to do. Users' capacity to influence each other on the platform through argument depends, for instance, on whether linking to external resources (e.g., other platforms or websites) is permitted and how easily users can do

so. For example, a simple feature enabled by code, such as the embedding of a preview of the media or the linked-to website, can enhance the impact of the user's post (Ng & Taeihagh, 2021).

Other attributes—for example, which media can be created, distributed, or exchanged on the platform (e.g., images, videos, words, audio, documents)—and in-built features that enhance users' ability to present an influential argument affect users' participation in the digital public sphere on a given platform. For instance, TikTok allows users to produce and edit high-impact content (e.g., short videos) on their mobile phones, and such content has been used for political-influence purposes. Recently, analysts have linked the increased production of disinformation content on the Russia-Ukraine war to TikTok users' ability to replace entire soundtracks of videos (Guardian, 2022).

Additionally, platforms' rules (in the form of code or algorithms) influence the outcome of participation and deliberation in the public sphere, because they selectively amplify content, which gives more visibility to users' contributions deemed to be more interesting to the audience and thereby reinforces network effects. Some of these actions may be content agnostic, but other choices are determined by what increases users' participation on the platform. For instance, Facebook, through algorithmic implementation, favored the visibility of sensitive content that provoked user responses in the form of comments, re-sharing of posts, and so on. (Horwitz, 2021).

More subtly, how political opinions evolve in the aggregate can also be influenced by platforms' design and rules. Despite the diversity of political perspectives, opinions, and narratives, polarization has been enabled through the emergence of “filter bubbles” and “echo chambers.” Users in filter bubbles lock themselves into receiving information and perspectives slanted toward a certain viewpoint, preventing any possible change in opinion. Echo chambers are user communities that are oblivious to the existence of other communities and evolve in an insular

way (Cohen & Fung, 2021). In both cases, we see the indirect effect of platforms' choices on the public sphere based on what users are allowed to do, in terms of selection of specific sources of content on the platform and rules that determine what content users may be exposed to.

Empirical evidence for externalities arising due to the impact on participation to the public sphere is mixed — such changes affecting the public sphere are not necessarily all positive or all negative. For instance, some empirical studies find the dissemination of 3G connectivity has a negative effect on government approval (Guriev, Melnikov & Zhuravskaya, 2021). Another study finds that early adopters of Twitter due to their participation in the 2007 South by Southwest music festival led to persistent network effects that influenced Democrats' vote share in the 2016 U.S. elections; this the authors attribute to the influence of more liberal views available on Twitter (Fujiwara, Müller & Schwarz, 2021). We thus surmise that participation in the digital public sphere, enabled by platforms, leads to more political externalities (positive or negative). We thus propose,

*Proposition 2: The more a platform facilitates participation in the public sphere, the more political externalities are generated in the public sphere.*

#### *Association in the public sphere*

Enabled by communication, and building on participation, association in the public sphere is the step that converts collective deliberation into organized political action. Platforms potentially offer and regulate many practical aspects of association in the public sphere by enacting rules that permit the creation of communities or interest groups, as well as by providing software features that allow users themselves to manage and moderate communities (Ng & Taeihagh, 2021). These are powerful additions to the traditional ways in which users can associate in the public sphere. Platforms also facilitate other mechanisms that are crucial to the organization of political activity—

for instance, online petitions and fund-raising campaigns. As a result, platforms’ private regulation also enables political organization and arguably lowers barriers to entry into politics (Zhuravskaya et al., 2020).

Empirical studies provide evidence of association enabled by platforms. One study describes the VK social network’s facilitation of protests against electoral fraud in 2011 and 2012 in Russia (Enikolopov, Makarin & Petrova, 2020). Others examine how the Chinese social platform Sina Weibo helped people to share information, despite the imposition of state censorship in China, about protests and strikes taking place offline (Qin, Strömberg & Wu, 2017), which further stimulated the latter (Zhuravskaya et al., 2020) etc. Research also indicates that platforms have enabled the rise of anti-establishment movements—for example, support for populists in Italy (the Five Star movement in 2013) and Germany (Alternative for Germany or AfD in 2017) (Campante, Durante & Sobbrío, 2018; Schaub & Morisi, 2020; Zhuravskaya et al., 2020). We thus contend,

*Proposition 3: The more a platform facilitates association in the public sphere, the more political externalities are generated in the public sphere.*

Table 1 summarizes the relationships between processes of communication, participation, and association in the digital public sphere; the platform rules (including code and terms of use) that frame them; and the resulting political externalities.

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## **PLATFORMS' TRADEOFFS BETWEEN NETWORK EFFECTS AND POLITICAL EXTERNALITIES**

How do political externalities interact with network effects? What are the strategic trade-offs this creates for platforms and what are platforms' likely responses? How do competition and political conditions affect platforms' responses? In this section we develop the theoretical model that evaluates how platforms are likely to respond to trade-offs created as a result of the interaction between network effects and political externalities. We recognize that the propositions that follow may apply to other kinds of non-pecuniary externalities, of which political externalities are one type. However, these propositions provide an important baseline that allow for theorizing on platform' strategic choices in terms of rule creation and enforcement in order to manage the tradeoff between network effects and political externalities.

### **Baseline Model: Tradeoffs without Competition**

When political externalities are uniformly positive for all users and have no impact on non-users, there are no trade-offs created for platforms because these further increase network effects, either due to increase in user membership (i.e., attract new users) or increase in user activity (i.e., more involvement by current users). However, when negative externalities exist, a tradeoff arises for platforms: how to maximize (or at least maintain) network effects while mitigating negative political externalities, that we now analyze.

At the baseline, platforms will prefer to only deal with negative political externalities that directly affect their current user base; they tend not to account for the impact of these externalities outside the platform itself. This is because platforms can observe and mitigate negative externalities that occur because of the composition and behavior of users across different sides of a platform (Boudreau & Hagiu, 2009). For instance, Facebook actively enforces rules that prevent the upload of illegal images or videos through the picture recognition algorithm PhotoDNA and



thus affect user participation on the platform (Klonick, 2017). Hence, a platform is likely to maximize network effects while attempting to minimize negative political externalities *within* its user base, disregarding the impact of these externalities outside its boundaries.

When a platform does account for negative political externalities in its user base, it has to forgo some network effects in order to limit negative externalities among its users. Negative externalities, when they exist, effectively constrain network effects, because a very high level of negative externalities would alienate the user base and backfire on the platform. Further, a platform may solely take into account externalities that affect its user base, since only those have an immediate and direct impact on its business, unless other pressures exerted by stakeholders are at play. This implies that platforms always proportionally affect more non-users than users, through negative externalities. *Ceteris paribus*, if a platform accepts more negative externalities so it can generate more network effects for its users, then non-users will be disproportionately more negatively affected relative to users. To summarize, we posit,

*Proposition 4: The higher the potential for network effects within its user base, the more likely it is that a platform will allow negative political externalities overall.*

*Proposition 5: The higher the potential for network effects within its user base, the more likely it is that a platform will allow negative political externalities for non-users relative to its users.*

The first proposition is a consequence of platforms' choosing to generate negative political externalities in return for more network effects. The second proposition reflects platforms' prioritizing users over non-users when they weigh the effects of political externalities. Taken together, the two propositions reflect the baseline of platforms' strategy with respect to negative

political externalities: if they do not come under external pressure, platforms do not account for negative political externalities that have no impact on their own users.

### **Competition Affecting Platforms' Responses**

So far, we have assessed platforms' likely response by assuming away competition. We will now analyze how competition moderates a platforms' response when its users multi-home—that is, interact with more than one platform (Caillaud & Jullien, 2003). We argue that when users multi-home, platforms are less likely to respond by trading off network effects to mitigate negative externalities. This stems from two mechanisms.

First, owing to perceived restrictions on platform activity or to loss of platform access (i.e., being suspended or removed from the platform), users may reduce their activity or even leave the platform and join one of its competitors. Further, these mitigation strategies may also lead to migration of a critical mass of users from the platform, in which case there is a risk that negative network effects will be generated within the platform. Thus,

*Proposition 6: The higher the potential of losing a critical mass of users to competitors, the less likely it is that a platform will trade off network effects for reduced negative political externalities.*

Second, when users multi-home and the negative externalities are not specific to a platform, there may be a collective coordination failure. When any platform's effort helps reducing externalities in the entire public sphere, this makes other platforms less incentivized to follow suit. As a result each platform shirks in its effort to reduce negative externalities (Ostrom, 2008). Specifically, any platform that mitigates negative externalities by enforcing rules on user behavior or activity impacts its own network effects—not only directly but also, due to user migration to other platforms (see Proposition 6 above), indirectly. If the overall level of negative externalities

decreases, other competitors may then freeride on the focal platform's effort to reduce negative externalities. Anticipating such a response from its competitors, each platform may then choose to shirk instead of regulating negative externalities. We thus argue,

*Proposition 7: The more users multi-home across platforms, the less likely it is that a platform will trade off network effects for reduced negative political externalities.*

### **Political Conditions Affecting Platforms' Responses**

We now address the political conditions that make platforms more (or less) willing to address political externalities. We identify two key contingencies that make a platform less likely to mitigate negative political externalities by reducing network effects, particularly when platforms may be under pressure from various actors—for example, civil society groups, media, or states—to reduce these negative political externalities (Klonick, 2017). These political conditions may exist in the home, host, or foreign markets that a focal platform may operate in.

When facing external pressure, platforms may choose not to change anything fundamental about the tradeoff between network effects and political externalities, instead responding through non-market strategies (e.g., lobbying, as in Dorobantu, Kaul & Zelner, 2017). Indeed, the baseline model assumes that platforms maximize their interests without accounting for externalities affecting non-users. Thus, any reduction in negative political externalities by the platform implies a direct cost, at least in terms of foregone profits. However, if the negative externalities are too large to be mitigated using non-market strategies, or if an exogenous shock occurs (e.g., the COVID-19 pandemic or an international conflict), platforms may be compelled to respond to external pressure.

In such a case, two factors may moderate platforms' likely response based on existing political conditions: first, the distribution of political externalities across various political actors;

and second, the ability of these actors to deter changes they oppose. Platforms are most likely to address issues if there is effective and concerted action among stakeholders that forces platforms to respond—that is, collective action. However, political externalities by their nature are multi-leveled and heterogenous in their impact across political actors—that is, what may be a negative political externality for one group of actors may be a positive externality for another group (Freelon, Marwick & Kreiss, 2020). Faced with a lack of consensus, a platform is likely to maintain the status quo (i.e., do nothing) or play one group off against the other. Similarly, if the political system includes veto points such that a minority group who benefits from the externalities can impede action by a majority who suffers from negative political externalities, a platform is likely to maintain the status quo or only concede minimal changes (Jia, Markus & Werner, 2021). We thus posit,

*Proposition 8: The more political externalities have simultaneously positive and negative effects across distinct groups of political actors, the less likely it is that a platform will respond by mitigating negative political externalities.*

*Proposition 9: The more a political system includes veto points that permit a minority group to block collective action, the less likely it is that a platform will respond by mitigating negative political externalities.*

#### **PLATFORM STRATEGY: TRADEOFF MANAGEMENT THROUGH PRIVATE REGULATION**

In this section, we analyze how digital content-sharing platforms may respond to the strategic tradeoffs between network effects and (negative) political externalities. We focus on platforms' deployment of rules that are either formulated as terms of use or are automatically enforced via computer code. Further, we argue that a large share of digital content-sharing platforms' key activities can be understood as the private regulation of user access and behavior.

## **Platforms as Private Regulators: Creating and Enforcing Rules**

To explain how platforms manage network effects and political externalities at the same time, we posit that an essential part of a digital platform’s role is private regulation—that is, setting and enforcing rules over interactions taking place on the platform. We argue that these rules constrain and frame the access and behavior of platform users and thus influence the political externalities mediated by platforms. In turn, platforms’ strategies to deal with political externalities can be studied and understood through the lens of their rule creation and enforcement.<sup>8</sup> This starting point is also consistent with Boudreau and Hagiu’s (2009) insight that platforms are rule-makers.

We further their insight by offering a fine-grained analysis of platforms’ rule creation and enforcement. We build on legal literature on the regulation of cyberspace to take an expansive view of regulation by digital platforms (Reidenberg, 1997; Lessig, 1998). In their most obvious form, the rules set by platforms include contractual obligations such as terms of use and community standards. However, digital platforms have the distinctive characteristic of extensively using computer code to frame and determine what users can and cannot do on the platform. As Lessig (1998) argues, designing and implementing code is fully a rule-making activity in that it creates as many constraints on platform users, if not more, as do laws, social norms, and market forces.

Political externalities mediated by platforms ultimately originate in user behavior, which in turn is framed by the rules created and enforced by platforms. With respect to network effects, the goal of these rules is to overcome market frictions such as high uncertainty, freeriding, or

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<sup>8</sup> This does not imply that platforms are benevolent regulators who maximize collective welfare. Instead, we consider them to be self-interested regulators, who regulate others to maximize their own welfare. Moreover, the question of whether platforms should be subjected to public regulation or self-regulate in order to maximize collective welfare (e.g., Cusumano, Gawer & Yoffie, 2021) is distinct from that of how platforms use rules to regulate their own users and is outside the of scope of this paper.

information asymmetry that may arise in the context of platform interactions (Boudreau & Hagiu, 2009; Evans, 2003; Luo & Kaul, 2019). By specifying sets of actions or outcomes (Ostrom, 1986), the rules created and enforced by platforms thus define the incentives and constraints that structure the behavior of platforms' user sides.

For instance, Zoom users are *required* to have the link or credentials (i.e., meeting ID and password) for the meeting that they wish to join (Zoom, 2022). Similarly, WhatsApp *permits* a message to be forwarded up to a maximum of five times per user (WhatsApp, 2022). Social media platforms such as Twitter and Facebook specify rules regarding content that users are *prohibited* from posting or sharing—for example, violent images and videos, or other individuals' addresses, phone numbers, and so forth. (Twitter, 2020; Facebook, 2020). Further, platforms can change these rules frequently and at their own discretion, and they may enforce rules heterogeneously across users, groups of users, or user sides (Klonick, 2017; Horwitz, 2021).

Platforms create and enforce three types of rules to facilitate interactions between various user sides (Crémer et al., 2019). First among the rules imposed by platforms are code (e.g., application programming interfaces or APIs) and design features of platforms—for example, search rankings and filters; default options; feedback, screening, and verification and recommendation systems (Lessig, 1998; Crémer et al., 2019; Koo & Eesley, 2021). While these may be commonly seen as product features from a business perspective, legal scholars who focus on the digital domain view them as a source of regulation (e.g., Lessig, 1998, who coined the expression “code is law”).

Platforms also impose rules that shape the relationship among different user sides and rules that govern the relationship between a platform and its users. These are implemented via terms of use or community standards that include rules governing information sharing, or prohibiting the

sale of counterfeit or “immoral” goods, or setting third parties’ data access (Crémer et al., 2019; Liu & Weingast, 2017). Platforms’ terms of use also regulate who can join the platform and what different user sides are allowed to do (Hagiu, 2015). For instance, marketplaces such as Amazon and Uber enforce price controls, parity clauses, and specify which types of selling mechanisms are allowed whereas content sharing platforms such as Twitter and YouTube enforce limits on users’ creation and distribution of information or content (Liu & Weingast, 2017; Crémer et al., 2019).

### **Platforms’ Rule Choices to Manage Tradeoff**

We argue that platforms have four rule-creation and enforcement levers to choose from when they seek to manage the strategic tradeoff between network effects and negative political externalities through regulation: first, the type of rule to create; second, how to implement the rule; third, the intensity with which to enforce the rule; and fourth, the type of user activity that the rule seeks to regulate. We now evaluate each of these levers of platforms’ rule choices in turn.

#### *Platforms’ rule-creation choices*

Regarding the type of rule created, platforms can choose whether a specific rule permits, requires, or prohibits a set of user actions or outcomes (Ostrom, 1986). Rules that *permit* user actions or outcomes are the least restrictive form of rules created by platforms. The level of restriction on user behavior is higher when a rule *requires* specific user actions, while the most restrictive type of platform rule *prohibits* certain user actions or outcomes. To control political externalities, a platform will have to restrict what its users are doing, and thus it becomes more linked with restrictions as the need to limit negative political externalities increases. Consequently, as negative political externalities increase, we can expect that platforms are more likely to create rules that require or prohibit particular user actions than they are rules that permit actions. We thus postulate,

*Proposition 10: The more a platform needs to curtail negative political externalities, the more likely it is to respond by setting rules that “require” as opposed to rules that “permit,” and by setting rules that “prohibit” as opposed to rules that “permit.”*

#### *Platforms’ rule-implementation choices*

Platforms’ choices over the different types of rule implementations entail tradeoffs. Rules implemented as code have the advantage of being automatically implemented, unless users hack the platform’s code or find loopholes. Compared to adding another rule to its terms of use, a platform’s use of code for rule implementation is advantageous when that platform needs to ensure the highest level of user compliance. Moreover, once set, rules implemented as code require less human intervention for monitoring and enforcement than do rules implemented as terms of use. This means that they offer higher potential for economies of scale, allowing the platform to compensate for the loss of network effects. We thus hypothesize,

*Proposition 11: The more a platform needs to curtail negative political externalities, the more likely it is to implement rules via code than it is to implement them via terms of use.*

As an illustration, in April 2020, when many social, work, and educational activities across the world were shifting online in response to COVID-19-induced lockdowns, Zoom’s average number of daily meeting participants reached 300 million, that figure having stood at 10 million in December 2019 (Verge, 2020). Network effects, aided by the fact that all a person needs to join a Zoom meeting is a single link (that is, no Zoom user account is required), contributed to user growth. However, in parallel, Zoom users faced negative externalities in the form of privacy and security breaches. For example, the phenomenon of “Zoom bombing”—that is, unauthorized persons disrupting meetings and subjecting users to violent or explicit content—emerged. As a result of a user and media backlash, Zoom introduced an additional layer of security by requiring



meetings to have a password; in so doing, it forwent network effects in the short run to mitigate these externalities. This rule, implemented in the form of code, was imposed on users by a software update (Verge, 2020).

### *Platforms' rule-enforcement choices*

Platforms can also vary the intensity of enforcement across users. Most importantly, a platform can discriminate among its users as a function of their contribution to network effects, which need not be perfectly correlated with a user's contribution to political externalities. Since contributions to network effects may be highly concentrated on a few influential users, it may be advantageous for the platform to be especially lenient toward these users, while being much stricter on other users who are only marginal contributors to network effects.

There are several ways to implement different degrees of discrimination in rule enforcement. Platforms can choose to restrict user activity uniformly across all users and user sides. For instance, WhatsApp restricted the number of forwarded messages per user to five in response to the spread of political disinformation in India (Wagner, 2018). Alternatively, platforms may prohibit user activity of specific users through a combination of terms of use and code. For example, Twitter flags specific user activity (tweets) that may contain sensitive content or fraudulent information (Twitter, 2020). In a more targeted way, platforms may even suspend or remove users or user groups—that is, prevent them from continuing to be an active member of or actively participating on the platform temporarily or permanently (“de-platforming”). For example, in January 2017, Reddit banned the subreddit r/Alright for violating the website's terms of service by “doxxing”—that is, posting on the subreddit the real-life identities and locations of people without their consent (Yeaton, 2021).

The most severe restriction (i.e., an account suspension or removal) generally results from platforms' application of their terms of use. Studies have found that this restriction is enforced with discretion (Klonick, 2017; Horwitz, 2021). This discretion can be leveraged by platforms to purposefully limit negative political externalities outside the platform while preserving, as much as possible, the benefits of network effects within the platform.

To understand how platforms may use discretion in the application of their own rules, we theorize that two measurable dimensions of user heterogeneity matter: first, the extent to which a user generates network effects; and second, the extent to which the same user generates negative political externalities. Since these two dimensions are not exactly correlated, a platform could potentially use its discretion to skew its user base by removing users who are generating the most negative political externalities, while retaining those who are creating the most network effects. In other words, what triggers a user's account suspension from a platform is not only the overall negative political externalities they generate, but also the relative dependence of the platform on the user's contribution to network effects. We thus posit,

*Proposition 12: The higher the contribution of a user to a platform's network effects, the less likely it is that, relative to other users responsible for a similar level of negative political externalities, a platform will subject this user to the enforcement of rules seeking to restrict negative political externalities.*

Evidence of the selective enforcement of rules by platforms according to a given user's contribution to network effects can be found in media reports that Facebook had a specific process, named "Xcheck," for dealing with the moderation of high-profile individuals' content. This process effectively shielded users with large numbers of followers—for example, media, political, and sport personalities—from the indiscriminate enforcement of rules preventing harassment and

bullying (Horwitz, 2021). When such users' activity was potentially in violation of the platform's terms of use, it was escalated to a special decision-making body; the users were reportedly given more lenient treatment.

Of particular relevance here is how major platforms dealt with Donald Trump, former U.S. president and an influential user of social media platforms with a large number of followers. In the face of his repeated abuse of its rules, Twitter changed its terms of service as well as its enforcement of them. Twitter's CEO, Jack Dorsey, refused to take down a Trump tweet threatening war with North Korea, even though it was a clear violation of the platform's rules against inciting violence. The "newsworthiness" argument was used earlier by Facebook as a basis for not taking down some of Trump's Facebook posts that were deemed to be hate speech (Guardian, 2020).

Twitter's exception was then formalized as a rule that exempted all political leaders (Guardian, 2020) but gave Twitter the ability to apply a label to specific tweets. Later, in the face of even more controversy, Trump used the platform to disseminate disinformation concerning the 2020 U.S. presidential election. At this point, Twitter finally implemented its own policy and applied labels to the infringing tweets (Guardian, 2020). Eventually, Trump was banned from Twitter in January 2021 in the wake of the Capitol Hill riot. This example illustrates how ad hoc exceptions (such as those motivated by "newsworthiness") can become part of a set of rules that is then superseded by new and more restrictive rules that are not initially enforced but finally are, at which point the specific user is removed from the platform.

The selective enforcement of rules, however, may have a subtle impact on the composition of a platform's membership itself because of a selection effect. A corollary of Proposition 12 is that the population of users who generate negative political externalities becomes depleted in inverse proportion to their contribution to network effects. This implies that the proportion of high-

network-effect users among the population of users that generate negative political externalities will increase as low-network-effect users are removed due to platforms' rule enforcement. We thus argue,

*Proposition 13: The more a platform uses discretion to enforce its rules against negative political externalities, the higher the proportion of high-network-effect users it will have among the segment of its user base that causes negative political externalities.*

*Platforms' choices on users' activity to be regulated*

Platforms' rule-creation and enforcement choices that aim to mitigate negative political externalities are also driven by the type of user activity — that is, communication, participation, or association—that the rule targets in the digital public sphere. We argue that political externalities created through association are strongest. This is because association has the highest potential impact on a political system by allowing the coordination of actions of many individuals in ways that can have a major impact on the political system either through democratic institutions (political parties, participation to elections, peaceful demonstration etc.), or through other modes of action (e.g., riots, armed resistance) (Tufekci & Wilson, 2012; Zhuravskaya et al., 2020). For a platform, the most efficient way to reduce such an effect is to curtail the possibilities of association, either by suspending or disintermediating specific users or user groups or by systematically changing rules so as to reduce how strongly association among users can be facilitated.

The second most efficient move is to reduce the possibilities of participation in the public sphere. Participation is the second most consequential activity on the public sphere, because it is the largest driver of content creation, and it is directly oriented toward influencing other political actors. Reducing participation also reduces association further, because association builds on participation. Only as a last resort does a platform reduce the possibilities of communication, since

communication is the basis upon which content-sharing platforms are built. Accordingly, we contend,

*Proposition 14: The more a platform needs to curtail negative political externalities, the more likely it is to give greatest priority to enacting rules that reduce possibilities of association, to give second-greatest priority to enacting rules that reduce possibilities of participation, and to give the least priority to enacting rules that reduce possibilities of communication.*

A series of studies by King, Pan, and Roberts (2013, 2014, 2017) and a study by Qin et al. (2017) offer evidence that is consistent with this proposition. These scholars researched how the Chinese state conducted online censorship of public internet forums and social media—an activity aimed at regulating the public sphere, albeit one performed by an authoritarian state. They found that censoring specific posts or banning users was more likely to affect content when users were directly attempting to foster collective action (i.e., association), as opposed to when users’ content was simply reporting political issues such as corruption (i.e., communication).

## **DISCUSSION**

Our analysis of how platforms generate political externalities carries important implications for management theory and for policy. In contrast to prior research that primarily emphasizes network effects as the key driver of platforms’ success, our analysis reveals that to fully characterize platform strategy, the resultant political externalities generated also need to be factored in, because these may be co-produced by the same platform actions that enable network effects. From the perspective of platforms, our paper highlights the complex tradeoffs involved in managing network effects through rule creation and enforcement while mitigating negative political externalities, given that these externalities may be multi-leveled and heterogeneous in their impact across various actors.

Since the primary objective of platforms is to maximize network effects, our paper posits that at the baseline there is a minimum level of negative externalities that are not internalized by the platform. Further, platforms are likely to prioritize managing externalities within their user base, and unlikely to account for these externalities' negative impact on non-users. Our analysis also highlights that when platforms do attempt to mitigate negative political externalities, they are likely to limit the activity of or suspend users who contribute little to network effects while generating more negative political externalities — that is, platforms selectively enforce their rules based on users' relative contribution to network effects.

From a policy perspective, particularly the political externalities generated as a result of platforms' private regulation have implications beyond the issues of data privacy and competition policy. As our analysis suggests, there is a larger question of whether private, for-profit entities can be allowed to act as regulators, particularly when their business decisions set limits on the behavior of users as political agents and cause externalities for their political interactions and ability to influence other political actors.

### **Contributions**

First, we contribute theoretically to nascent research on externalities arising in the context of platforms. Specifically, we theorize on the origins of political externalities that arise due to platforms' actions, particularly in their role as private regulators. Research on platform governance has thus far only analyzed the impact of rules created and enforced by platforms in terms of their positive impact on network effects—that is, encouraging user membership and activity on the platform. By offering a more nuanced analysis of the various levers platforms have on rule-making and explicating how political externalities may also result from these same platform actions, our paper extends the scope of their impact.

Second, the baseline model developed in our paper can be applied more generally to understand not only interactions between non-pecuniary externalities and network effects but also the resultant strategic tradeoffs for platforms. By examining when, how, and why platforms respond to non-pecuniary externalities, this paper provides a theoretical basis for unpacking underlying platform decision-making, particularly for empirical studies on topics such as diffusion of disinformation and political-influence operations (Allcott & Gentzkow, 2017; Farrell & Newman, 2019).

Third, by applying our theoretical model to political externalities, our paper contributes to contemporary calls for management studies that evaluate the simultaneous and interdependent public and private character of organizations (Mahoney, McGahan & Pitelis, 2009). By explicitly modeling the impact of platform actions on non-users as well as on users, we also contribute to research on how firm market actions interact and shape the non-market environment for other stakeholders (Ahuja, Capron, Lenox & Yao, 2018).

### **Boundary Conditions and Future Research Avenues**

In our paper, the term *platforms* refers to digital platforms with a critical mass of users—that is, where network effects occur. Further, we focus on political externalities that arise particularly due to user activity on social media, communication, and other content-sharing platforms. Future research could evaluate other non-pecuniary externalities that may arise in this context, and it extend the scope to transaction platforms such as Amazon and Uber (Cusumano, 2020).

We recognize that neither platforms nor political actors are monolithic entities; they are composed of individuals, political representatives and organizations, and various other actors with divergent interests (Eichensehr, 2018). We acknowledge that there is significant heterogeneity

across platforms in terms of their organizational forms and the product or service they offer (Crémer et al., 2019). Similarly, there is significant variation across political actors in terms of regimes; institutional environments; ideologies; resources; the relative power of the various political, economic, and social actors involved; and the ways in which divergent interests within each of these entities aggregate (Mahoney et al., 2009). Additional research could shed light on these topics.

The analysis we present in our paper can be extended to evaluate the impact of time as the various actors involved—platforms, users, and non-users—evolve over time. Changes that could arise may be related to learning, the accumulation of experience, and the response of these actors with respect to the externalities created (Henisz & Delios, 2004). Specifically, further research in the context of political externalities is also required to analyze how temporal changes may be driven by broader institutional changes in the economic or political environment—for instance, policy shifts that may result from elections or any other kind of regime change (Kivleniece & Quelin, 2012).

## **Conclusion**

In this paper, we contribute to research on how actions taken by platforms to manage network effects also create political externalities for users and non-users. The paper explicates the origin of these externalities, the interplay between political externalities and network effects, and the conditions under which platforms manage the strategic tradeoff between encouraging balancing network effects and mitigating (negative) externalities. In addition to having theoretical implications for platform strategy, our paper contributes to the broader discussion on the emergence and role of platforms in society.



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**TABLE 1**  
The Digital Public Sphere, Platform Rules, and Political Externalities

Activity in the digital public sphere	Corresponding platform rules and design features affecting public sphere activity	Corresponding examples of political externalities
<p style="text-align: center;"><i>Communication</i></p> <p>Ability to connect with another user of the platform and send information and content</p>	<p><i>Rules facilitating establishment of contact and communication</i></p> <ul style="list-style-type: none"> <li>• Who can contact whom in the network:               <ul style="list-style-type: none"> <li>○ Requires knowing the phone number (WhatsApp, Signal, Telegram)</li> <li>○ Requires a referral to get in the network</li> <li>○ Equivalent of a public phone book (Twitter)</li> <li>○ A convenor creates a link that is made available to a select few (Zoom, Discord) via another network</li> <li>○ Physical proximity between two otherwise unrelated users (Telegram)</li> </ul> </li> <li>• Ease of access to the platform itself</li> <li>• Algorithmic recommendations to connect to members who are not in the initial social graph</li> </ul>	<p><i>Easier spread and access to ideas and political content as platforms enable reaching others at scale</i></p> <ul style="list-style-type: none"> <li>• Example of positive externalities               <ul style="list-style-type: none"> <li>○ More viewpoints are available</li> <li>○ More diversity of otherwise suppressed voices thanks to lower barriers to entry</li> </ul> </li> <li>• Example of negative externalities               <ul style="list-style-type: none"> <li>○ More opportunities to spread disinformation</li> </ul> </li> </ul>
<p style="text-align: center;"><i>Participation</i></p> <p>Creation and exchange of arguments with a view to establish common grounds and disagreement</p>	<p><i>Rules facilitating participation in the deliberation of political issues</i> (in addition to communication)</p> <ul style="list-style-type: none"> <li>• Presence (or absence) of rules allowing and enhancing deliberation               <ul style="list-style-type: none"> <li>○ Type of media of communication: voice, written, video, pictures, exchange of documents etc.</li> <li>○ Rules facilitating argumentation and deliberation:                   <ul style="list-style-type: none"> <li>▪ Ability to link evidence outside of the platform</li> <li>▪ Votes and polls</li> <li>▪ Support for multiple languages (e.g., non-Latin character sets)</li> </ul> </li> <li>○ Rules facilitating persuasion                   <ul style="list-style-type: none"> <li>▪ Link to rich media</li> <li>▪ Enhance users' ability to produce content</li> </ul> </li> </ul> </li> <li>• Algorithmic recommendations of content deemed interesting to a broader audience</li> </ul>	<p><i>Change and influence opinions of members of the public sphere</i></p> <ul style="list-style-type: none"> <li>• Example of positive externalities               <ul style="list-style-type: none"> <li>○ Richer arguments and debates</li> <li>○ More evidence can be shared</li> </ul> </li> <li>• Example of negative externalities               <ul style="list-style-type: none"> <li>○ Easier to deceive and fabricate material</li> <li>○ More ways to covertly manipulate audiences</li> </ul> </li> </ul>
<p style="text-align: center;"><i>Association</i></p> <p>Forms the basis for collective action</p>	<p><i>Rules to facilitate association</i> (in addition to communication and participation)</p> <ul style="list-style-type: none"> <li>• Creation of group-specific content and moderation               <ul style="list-style-type: none"> <li>○ Community-based moderation</li> </ul> </li> <li>• Rules to organize in physical world               <ul style="list-style-type: none"> <li>○ Payment system integration for fees</li> <li>○ E-commerce for raising fees</li> <li>○ Petition infrastructure</li> <li>○ Certification of who is in and who is outside the association</li> </ul> </li> </ul>	<p><i>Formation and emergence of groups that would not have organized otherwise</i></p> <ul style="list-style-type: none"> <li>• Example of positive externalities               <ul style="list-style-type: none"> <li>○ Emergence of new voices that represent relevant stakeholders</li> <li>○ Collective action against authoritarian regimes</li> </ul> </li> <li>• Example of negative externalities               <ul style="list-style-type: none"> <li>○ Political extremism seeking to disempower other groups</li> <li>○ Formation of groups undermining democratic institutions including by political violence</li> </ul> </li> </ul>