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TAMING PLATFORM POWER: TAKING ACCOUNTABILITY INTO ACCOUNT IN THE MANAGEMENT OF PLATFORMS

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Research on multisided platforms has emphasized how platform owners accumulate significant power over other platform actors, such as producers and customers, arguing for the need to balance such power with accountability. We review two perspectives on platform accountability: (a) a bottom-up, emergent perspective that focuses on the collective action taken by lower-powered platform actors such as producers (e.g., gig workers, app developers) to enhance rule adequacy and push back against platform owners' power; and (b) a top-down, institutional perspective that emphasizes preventing extractive opportunism and maintaining a level playing field among different platform actors by enabling legal, regulatory, and governance changes. The bottom-up perspective's overarching focus is on procedural (rule-focused) fairness, while the top-down perspective's focus is largely on distributive (outcome-focused) fairness. While both perspectives are important, they have limitations regarding platform accountability, especially given the power and informational asymmetries inherent among platform actors. Therefore, synthesizing across literatures, we provide a framework for platform accountability that accounts for both procedural and distributive fairness, and is based on a fundamental premise: *multisided platforms require multisided accountability systems.* Thus, our review proposes an approach for enforcing platform accountability that has the potential to rebalance the power between high-powered and low-powered platform actors.

Platforms are integral to many industries and are an important aspect of the global economy that impacts work, innovation, and employment in significant ways (Gawer & Cusumano, 2002; Parker & Van Alstyne, 2005; Rochet & Tirole, 2003; Vallas & Schor, 2020). These platforms are typically characterized by multisided markets and are often referred to as multisided or two-sided platforms (Boudreau & Hagiu, 2009), as they facilitate transactions between at least two groups—or sides—of actors, such as customers and sellers at Amazon, riders and drivers at Uber, hosts and guests at Airbnb, and consumers and application (app) developers at the Apple App Store.

Platform firms account for over 7 trillion USD in annual revenues, and seven of the top 10 most valuable firms in the world are platform firms (Cusumano, Yoffie, & Gawer, 2020; Parker, Van Alstyne, & Choudary, 2016). The most valuable platform firms, such as Amazon, Apple, Google's Alphabet, and Microsoft, had a combined market capitalization exceeding 5 trillion USD in 2021 (Cusumano,

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Yoffie, & Gawer, 2020). Moreover, between 1995 and 2015, 43 publicly listed platform companies in the Forbes Global list were twice as profitable and valuable and growing twice as fast as compared to the 150 nonplatform firms (Cusumano, Yoffie, & Gawer, 2020). Notably, these platform firms were able to achieve this growth and valuation with *far fewer* the number of full-time employees than other firms in nonplatform businesses (Cusumano et al., 2019; Davis, 2016). Platform-based businesses span a vast array of market sectors and geographies, including retail (Alibaba, Amazon, eBay); transportation (Lyft, Uber); accommodation and hospitality (Airbnb); personal services (99designs, DoorDash, TaskRabbit, Upwork,); mobile, telecommunication, and software applications (Apple Appstore, Google Play); business-to-business infrastructure (Amazon AWS, Google Cloud, Microsoft Azure); software services (Salesforce, Workday); finance (PayPal, Square, Venmo); entertainment (Netflix, Spotify); and social networking and communication (Facebook, LinkedIn, Twitter). This has restructured the nature of industry value chains and competitive dynamics (Katila, Piezunka, Reineke, & Eisenhardt, 2022; Parker et al., 2016; Thatchenkery & Katila, 2023; Van Alstyne, Parker, & Choudary, 2016). The rapid growth and rise in the financial value of platform firms indicate a fundamental structural shift in the economy, marked by platform firms with high market capitalization, concentrated ownership, and substantially fewer full-time employment opportunities (Davis, 2022).

Owing to the multisidedness of platforms (i.e., involving actors such as platform owners, producers, and customers), scholars have characterized them as having a triadic exchange structure and showed that the mutual presence of actors can bring value to each individual actor and to the platform ecosystem at large (Bhargava, 2022; Bresnahan, Davis, & Yin, 2014; Cameron & Thomason, 2023; Gawer, 2014; Jacobides, Cennamo, & Gawer, 2018; Zhu & Iansiti, 2012). Consequently, a vast body of empirical work on multisided platforms has emerged across different disciplines, ranging from management and sociology, to economics and law, to communications and information science.

Platform scholars have emphasized how and why platform owners have accumulated significant power that puts them in a cumulatively advantageous position over other low-powered platform actors (e.g., producers, customers), which enables them to dictate these actors' conditions on a platform and exacerbates the precarious nature of their work (Dubal, 2017; Jacobides, 2021; Khan, 2017; Rilinger, 2023b; Zuboff, 2019). Empirical research has also highlighted how platform owners impact, often negatively, low-powered providers (e.g., gig workers, third-party app developers) and customers through various means (Cameron, 2022; Karunakaran, 2022; Rahman, 2021), such as appropriating providers' ideas, products, and services; heightening providers' financial precarity; and misleading customers. Consequently, there have been increasing calls—both in the research and policy spheres—about examining the mechanisms and processes to rebalance such platform power with accountability (Baker, Sallet, & Morton, 2018; Davis, 2022; Gawer, 2022; Khan, 2019; Ozalp, Ozcan, Dinckol, Zachariadis, & Gawer, 2022; Rahman, Weiss, & Karunakaran, 2023).

THE DIFFICULTY OF ACHIEVING PLATFORM ACCOUNTABILITY

Over the past two decades, "accountability" has emerged as a prominent category of concern in organizations, markets, and society at large (Espeland & Sauder, 2016; Hallett, 2010; Power, 1996). The prominence of accountability in popular discourse has "transformed it from a 'culturally innocuous term' to a 'cultural keyword'" (Dubnick, 2014: 23). In management research, the term "accountability" was initially conceptualized at the individual level as "the implicit or explicit expectation that one may be called on to justify one's beliefs, feelings, and actions to others" (Lerner & Tetlock, 1999: 255). However, since accountability requires actors to "explain and justify their decisions and behaviors to other actors within the social system" (Jensen, 2006: 99; see also Scott & Lyman, 1968), the notion of accountability has been extended to the organizational realm as well (Ohmann, 2014; Sauder & Espeland, 2009). *Organizational accountability*, defined as the way "organizations conduct, implement, and monitor policies and practices in relation to the demands of various stakeholder groups" (Frink et al., 2008: 186) is considered critical for creating and sustaining stakeholder relationships (Dubnick, 2005; Roberts, 1991). Moreover, several high-profile corporate scandals in the past three decades, including the BP oil spill (Kanter, 2011), the 2008 financial crisis (Sorkin, 2010), and corporate wrongdoings in firms such as Enron, Worldcom, Arthur Andersen, and Volkswagen (Patil, Vieider, & Tetlock, 2014) have emphasized the importance of organizational accountability.

Consequently, the various mechanisms and processes for enforcing organizational accountability, such as oversight and external control, voice, monitoring, and transparency, have received considerable scholarly attention in management and organizational research (for an elaboration of the mechanisms, see Dubnick, 2014; Frink et al., 2008; see also Morris & Moore, 2000; Power, 1996), as well as within social science scholarship more broadly (Espeland & Vannebo, 2007; Roberts, 2001). To elaborate, oversight and external control are a prominent way of maintaining organizational accountability. As explained by Roberts (1991), organizations must be subjected to regulatory oversight and scrutiny to ensure they are operating within legal and ethical boundaries. These external entities—auditing firms, regulatory agencies, and other third-party stakeholders—act as impartial observers, assessing the organization's actions and exerting control when necessary (Power, 1997). This oversight provides a check on organizational behavior and ensures that firms operate within the bounds of legal and ethical standards. External control can also be exerted by shareholders or investors who can hold the organization accountable for its financial performance and strategic direction (Frink et al., 2008). Relatedly, monitoring is a critical mechanism for enforcing organizational accountability (Power, 1997). This involves regularly reviewing and assessing the organization's activities and outcomes. Monitoring can be carried out internally by managers and supervisors, or externally by auditors, regulators, or other stakeholders, and helps to identify any deviations from planned goals or standards; thus, monitoring can trigger corrective action when needed (Power, 1997). Voice is another crucial mechanism for enforcing organizational accountability. Employees, customers, and community members can voice their opinions, expressing dissatisfaction or raising concerns about organizational practices, and, in the process, can promote change and accountability (Hirschman, 1970). Dubnick (2005) and Frink et al. (2008) have further emphasized the importance of voice, arguing that it fosters organizational learning and adaptation, which in turn enhances accountability. Finally, transparency is increasingly recognized as a crucial accountability mechanism (Bernstein, 2017; Dubnick, 2005; Roberts, 2001). A transparent organization openly communicates its policies, decisions, and actions to its stakeholders. By disclosing policies, decisions, and actions, organizations can build trust with their stakeholders. Such openness makes unethical or illegal activities difficult to hide, enhancing organizational accountability (Bovens, 2007). Each of these mechanisms contributes to a system of checks and balances to enforce organizational accountability in an ongoing manner.

While the mechanisms and processes identified in prior research advance our understanding of organizational accountability, they nonetheless have limitations in terms of their applicability in the context of multisided platforms. We identify five factors that limit their generalizability. First, multisided platforms exhibit characteristics of both an *organization or firm* and a *marketplace* (Altman, Nagle, and Tushman, 2022; Gawer, 2014, 2022). Although these platforms are generally owned and managed by private actors (e.g., platform owners), their value depends on the direct and indirect network effects created within their respective marketplaces, which are managed and governed by platform owners. These marketplaces, in turn, facilitate interactions with various platform actors, such as providers (e.g., Lyft drivers, Apple iOS developers) and customers (e.g., Lyft passengers, Apple app users). Since the services on these platforms are provided by independent entities (e.g., producers, customers), traditional mechanisms of oversight and external control for enforcing accountability can be less effective. Moreover, unlike the boundary of a firm, the boundary of a multisided platform is difficult to demarcate, as the relationship between providers, customers, and platform owners is amorphous (Karunakaran & Van Angeren, 2023; Rahman, 2024; see also Altman & Tripsas, 2015), thereby making it difficult to enforce accountability. Second, multisided platform firms claim that they primarily act as intermediaries, facilitating interactions between different groups (e.g., drivers and riders in the case of Uber), rather than delivering the service themselves. This intermediary nature can make it challenging to enforce accountability, as the platform owner can claim to merely be a conduit for a service (Lefouili & Madio, 2022). Consequently, platform owners evade traditional industry classification (e.g., Upwork categorizes itself as being a marketplace as opposed to a staffing company, Lyft categorizes itself as a technology company as opposed to a transportation company) and, in the process, avoid being subject to accountability mechanisms that come with belonging to a traditional industry, with its own rules, regulations, and norms (Curchod, Patriotta, Cohen, & Neysen, 2020; Davis & DeWitt, 2022).

Third, multisided platforms have multiple stakeholders (e.g., customers, service providers, advertisers), each with different expectations and interests. Balancing these interests can make accountability mechanisms such as voice and transparency difficult

to implement effectively (Rahman et al., 2023). Even the scope of accountability in the context of multisided platforms is contingent on the types of issues that are endemic to that platform. Moreover, these multisided platforms are often characterized by a triadic exchange structure (platform owner, provider, customer), with the platform owner occupying a central position in the triad (Altman & Tushman, 2017; Boudreau & Hagiu, 2009; Gawer, 2014; Kretschmer, Leiponen, Schilling, & Vasudeva, 2022; McIntyre, Srinivasan, Afuah, Gawer, & Kretschmer, 2021). This triadic characterization is a classic example of "tertius gaudens [the third who rejoices]" (Simmel, 1950: 154) because the platform owner's central position in the triad grants it privileged information and visibility of transactions, as all the data and transactions flow through it. These information asymmetries enable platform owners to leverage information, providing them with an unfair advantage over low-powered providers (e.g., Amazon has information regarding high-potential products and product categories, which enables it to introduce and promote its own products in these categories and thus undercut sellers on its platform; see also Gregory, Henfridsson, Kaganer, & Kyriakou, 2021) and customers (e.g., safeguarding the interests of the platform owner in provider–customer disputes; see also Cameron & Rahman, 2022). However, implementing accountability mechanisms such as transparency can be challenging due to local laws with respect to privacy, data protection, and competition. In addition, platform firms claim that providing too much transparency might enable the risk of disintermediation, where providers and customers can bypass the platform and engage in direct interactions, thus hurting the platform's revenues and competitiveness (Gu, 2022; Gu & Zhu, 2021).

Fourth, since platform firms operate across multiple jurisdictions, it is difficult for external actors to apply oversight consistently. Laws and regulations vary from region to region, which can create challenges for establishing and enforcing accountability, leading to regulatory ambiguity about how traditional accountability mechanisms should apply. This is often seen in platform firms such as Airbnb and Uber that have faced legal challenges related to property rights (Airbnb), worker rights (Uber), and safety regulations. In addition, the global reach and the sheer scale of change in many platform firms can make it difficult to apply localized oversight and regulatory control (Paul, 2017).

Fifth, platform firms benefit from network effects—the value of the platform increases with each new user (Sundararajan, 2016). This can lead to the rapid growth of these firms and the creation of quasi-monopolies (Davis, 2016, 2022). This market power can limit the effectiveness of accountability mechanisms such as voice and external control, as both providers and customers have fewer alternatives and exit options, and hence less power to influence the platform owner's actions. Finally, compared to conventional organizations, issues concerning ownership, property rights, locus of responsibility, fair competitive practices, labor–management relations (e.g., wage-setting, collective bargaining), and supplier–vendor relations are quite different in the context of multisided platforms (Gawer, 2014; Jacobides et al., 2018). As a result, existing mechanisms for enforcing organizational accountability (e.g., oversight and external control, voice, transparency, and monitoring) are limited or even ineffective in the context of multisided platforms.

Recognizing these limitations, over the past decade scholars have attempted to examine novel processes and mechanisms for enforcing platform accountability. Our review of existing scholarship in this area reveals two perspectives on platform accountability: a bottom-up, emergent perspective that focuses on the collective action taken by low-powered platform actors (e.g., providers such as gig workers and sellers) to push back against platform owners' accrued power, and a top-down, institutional[1] perspective that focuses on legal, regulatory, and governance changes that could increase platform accountability.

The former, bottom-up perspective has its roots in management and sociological scholarship on platforms and precarious work (e.g., Maffie, 2020; Occhiuto, 2017; Vallas & Schor, 2020). It focuses on (a) documenting how and why the various policies and practices of platform owners put low-powered platform actors in a precarious position and exacerbate socioeconomic inequality (Schor, Attwood-Charles, Cansoy, Ladegaard, & Wengronowitz, 2020; Vallas, Johnston, & Mommadova, 2022); and (b) examining the processes through which these low-powered actors can organize, take collective action, and push back against the platform owner's power, while enforcing platform accountability in

[1] By institutional perspective, we do not refer to institutional or neoinstitutional theory in organizational studies, but rather, more broadly, to perspectives that focus on scrutinizing existing macroinstitutional arrangements, such as the legal, regulatory, and technology governance frameworks under which platforms operate.

the process (Lehdonvirta, 2016; Ravenelle, 2019; Tassinari & Maccarrone, 2020). Our review identifies how the bottom-up practices that low-powered actors employ are an attempt to increase platform accountability by improving rule adequacy—or the extent to which low-powered actors believe platform rules protect their interests (Hurni, Huber, & Dibbern, 2022)—in order to enhance procedural fairness.[2]

The latter, top-down perspective has its roots in scholarship on management (Cusumano, Gawer, & Yoffie, 2021; Jacobides & Lianos, 2021a, 2021b), law and organizations (Aloisi, 2015; Kocher, 2020), and law and economics (Baker & Morton, 2018; Khan, 2019; Khan & Vaheesan, 2017). This perspective generally focuses on scrutinizing existing institutional arrangements (including the legal-regulatory regime) and proposing alternative arrangements that enable better platform governance and thereby more effectively enforce platform accountability (Davis, 2022; Gillespie, 2018). Specifically, this top-down perspective focuses on proposing and examining legal-regulatory frameworks aimed at instituting fundamental changes regarding how platforms should be governed to ensure fairness and a level playing field for all the actors involved to advance distributed fairness (Khan, 2017). This includes demarcating the boundaries of a platform, limiting unfair competitive practices (e.g., regulating platform monopolies and industry consolidation), and changing the processes regarding how platform owners categorize themselves (e.g., "intermediaries," "market facilitators," "market makers," or "orchestrators"), the industries in which these platforms operate (e.g., Uber's self-classification as a technology company as opposed to a transportation company), and their providers (e.g., as contractors or as employees) (e.g., Gawer, 2022; Ozalp et al., 2022; Stark & Pais, 2021). Our review identifies how the top-down processes are an attempt to increase platform accountability through maintaining a level playing field (Davis, 2022; Keller, D., 2018) and preventing extractive opportunism (actions that solely advance the interests and rent-seeking of the platform owner at the expense of other actors, such as providers, in the platform ecosystem) (Keller, 2021; Khan, 2019), in order to advance distributive fairness.[3]

Table 1 highlights the differences between these perspectives in terms of their *locus of accountability* (e.g., internal mandate for change from platform actors such as producers and customers versus external mandate from regulators), *mechanisms of accountability* (e.g., ensuring rule adequacy versus preventing extractive opportunism and maintaining a level playing field), *underlying goal* (e.g., procedural fairness versus distributive fairness), *disciplinary focus and methodological approaches* (e.g., empirical research using qualitative and quantitative research drawn from management and sociology research versus largely deductive reasoning and legal-regulatory arguments drawn from legal or law and economics scholarship), and their *respective limitations*. Both perspectives advance our understanding of platform accountability. However, given the nature and triadic structure of multisided platforms, our review also shows that each of these perspectives—especially when considered in isolation—have limitations. For example, while a top-down, institutional perspective provides the legal-regulatory levers to enforce accountability, due to the perpetual gap between law-on-the-books and law-on-the-ground the enacted regulations are often reactive and off-target in creating the desired accountability outcomes or are easily bypassed by platform owners (Burrell & Fourcade, 2021; Stark & Pais, 2021; see also Rilinger, 2023a ; Silbey, 2019). Similarly, while the bottom-up, emergent perspective focuses on the collective action taken by low-powered platform actors against platform owners' policies and practices, such collective action is often the exception rather than the norm due to the high coordination costs and disparate interests of the involved platform actors (e.g., DeAmicis, 2015; Rosenblat, 2018). Even in successful cases of collective action taken by low-powered platform actors, the platform accountability outcomes

[2] Procedural fairness focuses on the fairness of the processes that lead to outcomes. It considers the perceived fairness of the methods, mechanisms, and processes used to make decisions. Key elements of procedural fairness include *consistency* (applying the same rules across time and people), *bias suppression* (making decisions without personal bias), *accuracy* (making decisions based on accurate information), *correctability* (providing opportunities to modify and reverse decisions), *representativeness* (ensuring all stakeholders are considered in decision-making), and *ethicality* (adherence to ethical standards).

[3] Distributive fairness focuses on the fairness of outcomes or distributions. It evaluates the perceived equity of the allocation of resources, rewards, or outcomes among individuals. Distributive fairness is often assessed based on the ratio of an individual's inputs (e.g., effort, skills, experience) to outputs (e.g., rewards, recognition, resource allocation, money). If people perceive that they receive outputs commensurate with their inputs, especially in comparison with others, they are likely to view the distribution as fair.

TABLE 1
Differences between Top-Down and Bottom-Up Literatures on Platform Accountability

	Top-Down	Bottom-Up
Discipline	Law and economics, management	Organizational studies, labor relations, and sociology
Methodological approach	Deductive reasoning, legal-regulatory arguments	Empirical, mix of qualitative (inductive) and quantitative (deductive)
Locus of accountability	External mandates from regulators, self-regulation from platform owners	Internal mandates from platform producers such as gig workers and app developers (primarily) and customers
Mechanisms of accountability	Preventing extractive opportunism, maintaining a level playing field	Rule adequacy
Underlying goal	Fairness in how outcomes are distributed (distributive fairness)	Fairness in how procedures are consistently applied within and across different platform actors (procedural fairness)
Limitations	Regulatory–Implementation gap, limited attention to procedural fairness	Gains tend to be narrow and transient, with little impact on platform owner's operations; limited attention to distributive fairness

are more transient than expected, as platform owners are capable of countermobilization (Garud, Kumaraswamy, Roberts, & Xu, 2022).

To overcome the limitations of the bottom-up and top-down perspectives, we synthesize these perspectives to better understand how platform accountability is achieved in an ongoing, distributed manner. In this review, we provide a framework (see Figures 1 and 2) for platform accountability that is based on a fundamental premise: *multisided platforms require multisided accountability systems* that involve an integrative combination of both top-down and bottom-up processes. In doing so, our review considers the multisidedness of platform accountability and synthesizes the mechanisms and processes of enforcing accountability that could rebalance the power between the high-powered platform owners and low-powered platform actors.

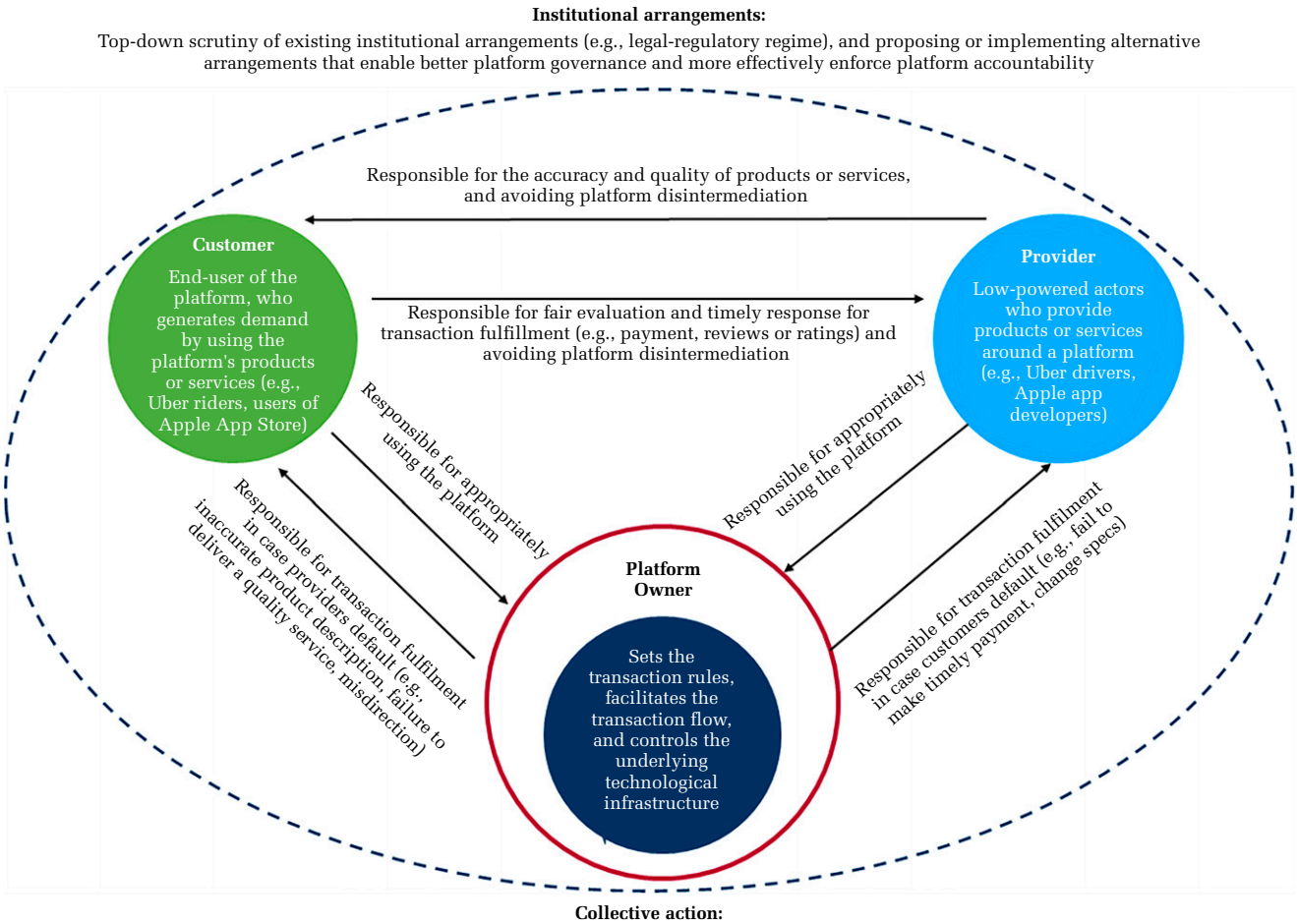
Using this framework, we accomplish the following. First, we review and integrate the above two perspectives on platform accountability. By doing so, we foreground the perspectives of low-powered platform actors (providers and customers), as opposed to just those of platform owners. Our framework also fills in the gaps and addresses the limitations of taking an isolated bottom-up or top-down perspective on platform accountability. Second, our framework on multisided accountability highlights (a) the importance of the accountability mechanisms (ensuring rule adequacy, preventing extractive opportunism, and maintaining a level playing field) directed toward platform owners, as well as customers and providers; (b) the need to consider accountability mechanisms holistically given the complementarities between them; and (c) how a synthesis between the bottom-up and top-down perspective will advance procedural *and* distributive fairness for the platform actors. Through elaborating on this framework, we offer insights into the following overarching questions: Why is it so difficult to hold platforms accountable for their actions? How can integrating the bottom-up and top-down perspectives provide us with the requisite pathways to balance the power of platform owners with accountability in an ongoing (as opposed to transient) manner that improves both procedural and distributive fairness?

Such a framework not only helps organize research in this area but also provides directions for future scholarship on platform accountability. Specifically, we offer a direction for future research that advocates for greater attention to the relational dynamics among various platform actors marked by power differentials, and encourages scholars to focus on the processes that link high-powered platform owners and other low-powered platform actors to build more equitable outcomes for platform owners, providers, customers, and society in general.

REVIEW SCOPE AND METHODS

Our review focuses on the multidisciplinary literature that has examined bottom-up and top-down approaches to platform accountability. This literature spans communications, information science, law, labor relations, management, sociology, strategy, and work and occupations. Given the breadth of these disciplines, we employ best practices for conducting an integrative, systematic literature review

FIGURE 1
A Framework for Multisided Accountability: Delineating the Locus and Dimensions of Responsibility between Platform Actors



(Cronin & George, 2020; Siddaway, Wood, & Hedges, 2019; Snyder, 2019). In particular, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) includes a 27-item checklist to guide systematic literature reviews (Siddaway et al., 2019). As such, we utilized PRISMA to define our research question, data collection strategy, screening criteria, selection strategy, data extraction, critical appraisal, and synthesis (see Appendix A in Additional Materials).

We first applied the search terms "platform," "multi-sided platform" (our search criteria ensured we gathered any paper that used variations of the platform term, such as "digital platform" and "labor platform"), "gig work," "sharing economy," and "on-demand economy" on the Web of Science and Google Scholar platforms, focusing on articles published through 2022.[4] Because article quality is not always correlated with journal quality, we cast a wide net to identify articles for our review. Our initial search yielded 4,009 articles from over 60 journals across disciplines.

In reviewing these articles, we identified that prior reviews on platforms have primarily focused on how platform owners can maximize value creation and value capture (e.g., Chen, Tong, Tang, & Han, 2022;

[4] We excluded articles related to social media platforms, since such platforms were covered by Leonardi and Vaast (2017).

Rietveld & Schilling, 2021), while not taking into consideration the substantial literature at the intersection of law, management, and sociology (e.g., Vallas & Schor, 2020; see Table 2 for a comparison).

As such, when going through our initial list of articles, we considered only those that were about multisided platforms that facilitate an economic exchange (e.g., Amazon, Apple, DoorDash, Instacart, Lyft, Swiggy, TaskRabbit, Uber, Upwork). We included any article that studied multisided platforms in an organizational or market setting. Additionally, we focused more on articles—both empirical and conceptual—that (a) unpacked what platform owners do in practice, and the consequences of these acts; (b) examined the various tactics and practices that low-powered providers and customers use to cope with and navigate the challenges associated with platforms (e.g., opaque evaluation, precarious nature of work, idea appropriation and envelopment by platform owner); and (c) either explicitly or implicitly focused on the institutional challenges of enforcing and improving platform accountability. We used two research assistants who worked independently to find articles that met these criteria. Additionally, each author independently assessed the articles included in the review. The final list included 287 articles across 61 journals. Table 3 shows the initial total number of articles corresponding to the journal and discipline we found, as well as the final number of articles retained in our analysis based on the selection criteria detailed above. Appendix B in Additional Materials provides a complete list of the articles we used in our review, including the primary discipline, methods, and setting of each article.

Our review proceeds as follows. We provide a summary of the bottom-up and top-down perspectives on platform accountability and identify the limitations of each approach. Synthesizing these perspectives, we explicate a framework that emphasizes the responsibility of platform owners, providers, customers, and other regulatory actors in creating and sustaining multisided accountability. We conclude by discussing promising areas for future research on platform accountability that we hope could help rebalance the power between high-powered and low-powered platform actors and lead to more equitable outcomes.

BOTTOM-UP ACCOUNTABILITY ON PLATFORMS

The bottom-up perspective on platform accountability has its roots in the labor relations, management, and sociology literature on platforms and precarious work (Kellogg, Valentine, & Christin, 2020; Maffie, 2020; Occhiuto, 2017; Vallas & Schor, 2020). This scholarship has examined the processes through which lower-powered providers can organize their labor, take collective action, push back against the platform owner's power, and, in the process, prod platform owners to take more accountability for their practices and policies that promote procedural fairness (Lehdonvirta, 2016; Ravenelle, 2019; Tassinari & Maccarrone, 2020). Our review first describes the conditions under which providers engage in these bottom-up accountability tactics. We then describe the three levels of accountability tactics these actors use: independent individualized tactics, collective mobilization, and forming strategic partnerships and alternative organizations. We highlight how these tactics aim to increase accountability through enhanced rule adequacy, which improves procedural fairness. (See Appendix C in Additional Materials for a summary table of bottom-up accountability on platforms, with a brief description of the overarching themes and representative scholarship.)

Why Lower-Powered Providers Engage in Bottom-Up Accountability Tactics

On the surface, it may seem difficult to understand why providers need to engage in bottom-up accountability tactics. Platform owners such as DoorDash, eBay, and Instacart grant individuals greater control over their schedules, working times, and take-home pay (Jarrahi, Sutherland, Nelson, & Sawyer, 2020; Sundararajan, 2016). Platform owners can offer this flexibility because they act as "matchmakers" who require individuals to possess all the tools, training, and expertise to complete a job or service and rely on "algorithmic management" (Lee, Kusbit, Metsky, & Dabbish, 2015) to match providers and customers. Many studies have, in fact, documented how providers enjoy the increased agency provided by platform owners, such as choosing their own working times and earning strategies, which are typically not afforded by similar jobs offered by conventional employers (Ravenelle, 2019; Shapiro, 2017; Schüßler, Attwood-Charles, Kirchner, & Schor, 2021).

Yet, at the same time, many studies have lamented the "tyranny" (Gandini, 2019), "algorithmic despotism" (Griesbach et al., 2019), and "invisible cage" (Rahman, 2021) that providers encounter on platforms, highlighting how low-powered actors perceive platforms' commitment to procedural fairness through rule adequacy to be inadequate and superficial

TABLE 2
Scope of Our Review

Citation	Primary Discipline	Primary Perspective	Primary Theoretical Lens	Key Findings
Chen, L., Tong, T. W., Tang, S., & Han, N. (2022). Governance and design of digital platforms: A review and future research directions on a meta-organization. ***Journal of Management,*** 48: 147–184.	Innovation	Platform owner	Strategic governance	• Focus on digital platform owner's use of incentives and control governance mechanisms, such as sharing of resources, conferring autonomy, output control, behavioral control, and access control. • Platform owner's design decisions influence incentives and control and participants' behavior.
Rietveld, J., & Schilling, M. A. 2021. Platform competition: A systematic and interdisciplinary review of the literature. ***Journal of Management***, 47: 1528–1563.	Strategy	Platform owner	Competitive strategy	• First focuses on documenting how the literature on platform competition has evolved. • Outlines four themes of shared scholarly interest in the platform competition literature regarding how network effects generate "winner-takes-all" dynamics that influence strategies, how network externalities and platform strategy interact with corporate-level decisions. how heterogeneity in the platform and its users influences platform dynamics, and how the platform "hub" orchestrates value creation and capture in the overall ecosystem.
Vallas, S., & Schor, J. B. 2020. What do platforms do? Understanding the gig economy. ***Annual Review of Sociology***, 46: 273–294.	Sociology	Platform owner, workers	Work and labor	• Previous studies examining labor platforms have conceptualized them as entrepreneurial incubators, digital cages, accelerants of precarity, and chameleons adapting to their environments. • Platforms represent a distinct type of governance mechanism, different from markets, hierarchies, or networks, and therefore pose a unique set of problems for regulators, workers, and their competitors in the conventional economy. • Labor platforms should be conceptualized as permissive potentates that externalize responsibility and control over economic transactions while still exercising concentrated power.
Our review.	Organizational theory	Multisided, triadic perspective (platform owner, provider, customer)	Accountability	• Multisided platforms require multisided accountability systems incorporating platform owner, provider, and customer interests. • Novel conceptualizations of accountability mechanisms (enforcing rule adequacy, maintaining a level playing field, preventing extractive opportunism) and its potential enforcement in platform contexts.

TABLE 3
Number of Articles Identified and Retained in Systematic Search by Journal

Journal	Discipline	Total Number of Articles	Articles Retained in Analysis
Management Science	Management	165	49
MIS Quarterly	Management	92	14
Harvard Business Review	Management	55	12
Strategic Journal of Management	Management	48	22
California Management Review	Management	30	4
Organization Science	Management	28	10
Journal of International Business Studies	Management	22	8
Organization Studies	Management	20	3
Human relations	Management	16	6
Academy of Management Discovery	Management	12	6
Academy of Management Journal	Management	9	4
Strategic Entrepreneurship Journal	Management	9	2
Administrative Science Quarterly	Management	8	4
Academy of Management Annals	Management	6	1
Academy of Management Review	Management	5	1
Journal of Applied Psychology	Management	5	2
Human Resource and Management Review	Management	4	2
Journal of Vocational Behavior	Management	3	3
Group and Organizational Management	Management	3	2
Journal of Personality and Social Psychology	Management	3	0
Organizational Behavior and Human Decision Processes	Management	3	0
Personnel Psychology	Management	2	0
Journal of Occupational and Organizational Psychology	Management	2	1
Journal of Organizational Behavior	Management	1	0
Journal of Organizational Management	Management	0	0
Discipline Total		**551**	**156**
Work, Employment & Society	Sociology	25	17
Socio-Economic Review	Sociology	19	9
Poetics	Sociology	10	2
Sociologica	Sociology	10	1
Social Forces	Sociology	8	0
American Journal of Sociology	Sociology	7	0
Annual Review of Sociology	Sociology	6	3
Theory & Society	Sociology	5	3
Contemporary Social Science	Sociology	5	2
American Sociological Review	Sociology	4	1
Work & Occupations	Sociology	1	1
Social Problems	Sociology	1	0
Contemporary Sociology	Sociology	1	0
Discipline Total		**102**	**39**
New Media and Society	Communication	353	24
Social Media + Society	Communication	267	15
Information Communication and Society	Communication	242	10
International Journal of Communications	Communication	231	5
Big Data Society	Communication	59	7
New Technology, Work and Employment	Communication	36	29
Discipline Total		**1188**	**90**
National Bureau of Economics Working Papers	Economics	50	5
American Economic Review	Economics	25	1
Quarterly Journal of Economics	Economics	8	0
Discipline Total		**83**	**6**
PNAS	General Science	1185	2
Nature	General Science	449	0
Science	General Science	319	0
Discipline Total		**2019**	**2**
Columbia Law Review	Law	13	2

TABLE 3
(Continued)

Journal	Discipline	Total Number of Articles	Articles Retained in Analysis
California Law Review	Law	12	1
Fordham Law Review	Law	11	1
Yale Law Journal	Law	8	2
University of Pennsylvania Law Review	Law	5	1
UCLA Law Review	Law	4	0
Virginia Law Review	Law	4	0
Harvard Law Review	Law	3	1
The Georgetown Law Journal	Law	3	1
Stanford Law Review	Law	2	0
Michigan Law Review	Law	1	0
Discipline Total		**66**	**9**
Overall Total		**4,009**	**287**

(Schor, 2020). In particular, Wood and Ledhonvirta (2021a) introduced the concept of "subordinated agency" to explain why lower-powered platform actors, such as providers (e.g., gig workers) develop antagonistic feelings toward labor platform owners to such an extent that they are willing to collectively mobilize—and even jeopardize their own standing with the platform—in an attempt to hold platform owners accountable for how their rules impact the treatment of providers. Subordinated agency refers to the fact that while labor platforms allow providers greater agency in choosing when and how to work with customers, they also accrue almost exclusive power because they control the rules governing providers' success on the platform (Vallas & Schor, 2020). Providers, for example, have almost no agency in providing input regarding the fees they pay to platform owners, or the algorithms used by platform owners to manage providers' experiences on the platform (Rahman, 2021). In other cases, algorithms regulate the rules regarding when and where providers show up in the search results, directly affecting providers' visibility and pay (Cameron, Thomason, & Conzon, 2021; Sicilano, 2020). Providers' subordination to platform owners' rules is thus theorized as the main mechanism contributing to providers developing bottom-up tactics to push for increased accountability via enhanced procedural fairness (Kumar, Jafarinaimi, & Bin Morshed, 2018).

Bottom-Up Accountability through Independent, Individualized Tactics

Social isolation is common among providers on platforms, given that their work is largely independent and spatially distributed (Anicich, 2022; Ravenelle, 2019; Schor, 2020; Wood, Graham, Lehdonvirta, & Hjorth, 2019). Providers on product marketplace platforms, such as eBay and Etsy, and open-labor market platforms, such as TaskRabbit and Upwork, work remotely from any location in the world at times of their choosing (Kuhn & Maleki, 2017; Shevchhuk et al., 2019). Even on platforms on which transactions require in-person interactions, such as Airbnb, Postmates, and Uber, there are no centralized physical spaces for providers and customers to regularly interact with each other (Anicich, 2022; Jhaver, Karpfen, & Antin, 2018; Kameswaran, Cameron, & Dillahunt, 2018). Because providers are largely atomized, scholars have focused on how they independently take accountability "into their own hands" in their day-to-day work, rather than waiting for platform owners to enact changes to rule adequacy themselves (Cameron & Rahman, 2022; Curchod, Patriotta, & Wright, 2020; Occhiuto, 2017; Shapiro, 2018; Woodcock, 2021). In particular, this literature has identified practices and tactics that lower-powered actors use to counter platform owners' power and information asymmetries in an attempt to ultimately push platform owners to be more accountable for their practices, policies, and rules impacting procedural fairness (Purcell & Brook, 2020).

Bottom-up accountability through intimate knowledge of platform algorithms. Lower-powered providers develop intimate knowledge of a platform owner's rules, especially as it pertains to their algorithmic management practices, as they gain experience interacting with a platform (Cameron, 2022; Jarrahi & Sutherland, 2019; Lee et al., 2015; Rosenblat, 2018; Thomason & Cameron, 2023).

Given the paucity of onboarding and limited relationships with other providers, providers are often "left to their own devices" (Ticona, 2022a). The experience providers gain from using a platform helps them accumulate fine-grained information about the platform's rules and procedures (Rahman & Valentine, 2021). This knowledge is useful for providers attempting to achieve accountability in their day-to-day practices because platform owners rely on algorithms as stand-ins for middle managers, yet these algorithms have "gaps" in their ability to interpret many situations, such as why a customer cancels or ends a transaction with a provider (Cameron & Rahman, 2022). Providers can use these information asymmetries to their advantage. Lee et al. (2015) found that some drivers using Lyft or Uber developed an intimate understanding of the rules ride-hailing platforms' algorithms used to assign ride requests, observing that the longer they were logged into the platform's app, waiting for a ride request, the more likely they were to be assigned a ride with a farther pick-up location. To counteract these distant-ride requests, drivers periodically closed and restarted the app to circumvent the matching algorithm. Similarly, Cameron (2024) found that workers would decline consecutive multiple rides in the hopes of driving up demand-based pricing.

Cameron and Rahman (2022) built on these insights to provide a more comprehensive theoretical framework for understanding how providers can achieve accountability (e.g., protect their rating scores even when the platform may unfairly lower their score) when subject to platform owners' algorithmic management systems. Their comparative ethnography of open and closed labor platforms suggested that lower-powered workers' ability to achieve accountability varies according to the phase of work. Early on, workers can subvert a platform's algorithm because the algorithm relies on humans' situated judgments, such as determining who to work with in highly skilled labor markets. As the work progresses, however, the platform's algorithms leave less space for human intervention, thus decreasing lower-powered workers' ability to enact accountability practices. Cameron and Rahman's (2022) research thus suggested that there is a temporal element to providers' ability to hold platforms accountable for their rules in their day-to-day operations.

Other studies have suggested that providers have the agency to push for increased rule adequacy, thereby enhancing procedural fairness, through a platform owner's built-in affordances (Bellesia, Mattarelli, & Bertolotti, 2023). Bucher, Schou, Waldkirch (2021) theorized that providers can enact "anticipatory compliance," which involves understanding which actions a labor platform owner's algorithms reward and sanction and subsequently adjusting their behavior to align with these rules. An example of this is that providers become more selective when choosing which customers to work with so as to decrease the possibility of receiving a negative rating that could hinder their visibility on algorithm-mediated search results (Bucher et al., 2021). Such practices are sanctioned by the platform owner and may not even be recognized by the platform's algorithms but hurt the platform owner's overall business model because providers become hesitant to work with new customers, which ultimately limits the platform's ability to efficiently match providers and customers.

Bottom-up accountability through disintermediation. Providers also seek accountability through disintermediation, such as providers "teaming up" with customers found on platforms and conducting transactions off the platform (Gu & Zhu, 2021). By taking transactions off-platform, they avoid being subject to a platform's algorithm rules, including monitoring, and can also prevent the platform owner from taking a cut of their income or revenue.[5] As another illustrative example, when sellers perceive that eBay's algorithms favor the platform, they directly contact buyers asking to conduct a sale face-to-face to avoid transaction fees and the rating algorithm (Curchod, Patriotta, & Wright, 2020). Such practices are in violation of the platform's rules, yet lower-powered providers feel they are necessary to redress the power and information asymmetries that favor platform companies.

Bottom-up accountability through strict adherence to platform policies. Providers can also use the platform's tools and official policies to enhance rule adequacy and procedural fairness (Bellesia et al., 2023; Sutherland, Jarrahi, Dunn, & Nelson, 2020). By having lower vetting standards for customers and other actors who pay money for fees or services brokered by platform owners, platforms privilege customers (e.g., buyers on eBay, riders on Lyft, clients on TaskRabbit) (Maffie, 2022b; Rahman & Valentine, 2021). This dynamic has led studies to highlight the prevalence of "scammers" and unethical actors

[5] Apple takes a 30% cut of the revenues generated by app developers in the iOS App Store; depending on the amount exchanged, Upwork can take as much as a 20% cut of the customer fee earned by workers via their platform.

on platforms (Grohmann, Pereira, Guerra, Abilio, Moreschi, & Jurno, 2022; Ticona, 2022b), especially during the height of the COVID-19 pandemic (Ravenelle, Janko, & Kowalski, 2022). While platform owners are notoriously lax with enforcing rules to hold such bad actors accountable (Ticona, 2022b), Sutherland et al. (2020) found that some providers leveraged labor platform owners' own resources to mitigate the risk of working with unethical customers. Providers avoided deadbeat customers by refusing to begin working on a project until the customer deposited the promised wages into the platform's escrow account. Amping up the surveillance of their own work activities, providers can purchase their own equipment to monitor customers' actions and treatment toward them (Mosseri, 2022). Such data have been shared with platform owners to providers' advantage, exonerating drivers in accidents and sellers in customer disputes. This research has thus suggested that bottom-up accountability, in some instances, can be achieved by lower-powered providers turning the tables on more powerful actors to enforce rule adequacy (Almoqbel & Wohn, 2019; Geary, 2017; Kerr, 2020; Ladegaard, Ravenelle, & Schor, 2022).

Bottom-up accountability through fueling platform competition. Providers may also take advantage of the competition between platform companies to obtain accountability through enhanced rule adequacy (Maffie, 2020; Rosenblat, 2018). Providers and, to a lesser extent, customers, care about a platform owner's accountability standards that govern exchanges between providers, even though such information may be in short supply (Belanche, Casaló, Flavián, & Pérez-Rueda, 2021). For example, to differentiate itself from Uber, Lyft has highlighted its worker-centric labor rules (e.g., allowing drivers to directly block abusive customers) to both customers and workers (Maffie, 2022b). Drivers freely share this information with customers in hopes of converting existing Uber customers to Lyft (Maffie, 2023; for similar dynamics on grocery shopping platforms, see Cameron, Chan, & Anteby, 2022).

Bottom-Up Accountability through Collective Mobilization Tactics

Despite the challenges of being socially isolated and spatially distributed, our review uncovered that when interacting in virtual or physical spaces, providers can employ traditional collective mobilization tactics, including boycotts, strikes, and collective bargaining, to obtain bottom-up accountability (Aleks, Maffie, & Saksida, 2020; Chen, 2018; Harlow, 2012; Lehdonvirta, 2016; Lei, 2021; Newlands, Lutz, & Fieseler, 2018). Lower-powered actors can share information and grievances in web forums, or "virtual water coolers" (Rosenblat & Stark, 2016), and then undertake independent action to hold platforms accountable (Gerber, 2021; Karunakaran, Orlikowski, & Scott, 2022). Delivery drivers described having "awakening moments" (Mayberry, Cameron, & Rahman, 2024) through online conversations with coworkers and then advocated independently for greater accountability. For example, after being alerted by forum members, drivers who were not receiving geographic-based incentives pushed to receive them from ride-hailing management (Cameron, 2020).

Bottom-up accountability through online-enabled collective mobilization tactics. In addition, workers can coordinate collective actions through web forums and group chats. These online communities serve as spaces for providers to share information, network with each other, share common grievances, and strengthen solidarity among actors (Chan & Humphreys, 2018; Lehdonvirta, 2016; Maffie, 2020). On Facebook, food delivery drivers in the #DeclineNow movement discussed what type of orders they would accept (Mayberry et al., 2024). WhatsApp groups are especially vibrant among workers in the Global South, where online and in-person networks frequently overlap (Soriano & Cabañes, 2020; Wood, Lehdonvirta, & Graham, 2018). For example, drivers in the Global South coordinated a wildcat strike by requesting Uber rides and then ensuring unwitting providers ended up in a manufactured traffic jam (Cameron & Thomason, 2023).

Recent work has also suggested that providers can use the affordances from online communities to form a "participation architecture" (Massa & O'Mahony, 2021), which helps new providers acclimate to the online community while empowering emerging leaders to manage mobilization efforts and allowing online collective mobilization to scale more easily. Typically, in these structures, a core group of lower-powered actors assumes a managerial role, akin to the lead organizer of a protest, to coordinate how the crowd should push for increased procedural fairness rules (Massa & O'Mahony, 2021; Panteli, Rapti, & Scholarios, 2020). These lead organizers provide other lower-powered actors with concrete suggestions for which issues are important and how they should express their opinions to obtain greater rule adequacy (Moore & Joyce, 2020). On MTurk forums, for example, organizers coordinated a public letter to Amazon's then-CEO, Jeff Bezos, to generate attention

about their poor working conditions and limited voice (Panteli et al., 2020). These efforts bring exposure to providers' bottom-up accountability attempts to enhance procedural fairness.

Emerging research has examined how lower-powered actors' collective mobilization efforts, particularly through online channels, can lead to concrete outcomes tied to accountability (Karunakaran, 2024; Karunakaran et al., 2022). In a comparative study of 911 dispatchers and TripAdvisor users, Karunakaran et al. (2022) provided empirical evidence elucidating how crowd-based accountability may impact platforms and organizations. Their study documented how lower-powered actors can use social media to amplify less favorable experiences. When these experiences become public, the authors found, organizations are likely to respond, provide more context to their actions, and sometimes even apologize. Notably, Karunakaran et al. (2022) found that organizations subject to online collective grievances reconfigured their work practices to be more responsive to such grievances and improve their operating rules.

Bottom-up accountability through traditional collective mobilization tactics. In the absence of permanent colocated physical spaces to collectively mobilize, providers can meet one another and develop relationships in temporary free spaces, such as airport parking lots, parks, grocery stores, and app developer conferences (Cini & Goldmann, 2021; Galière, 2020; Le Breton & Galière, 2022; Möhlmann & Zalmanson, 2017; Newlands, 2021; Schwartz, 2018). From these organic interactions, providers can build solidarity that ultimately culminates in calls for action to improve fairness concerns across workers, such as advocating for better pay and paid time off (Mose, 2011), or to advocate for fair competition across the app ecosystem through forming a "Coalition for App Fairness" (Perez, 2020). Similarly, Uber drivers coordinated earning strategies in airport parking lots to influence algorithmic pricing (Robinson, 2017; Wells, Attoh, & Cullen, 2021, 2023). These organic interactions allow providers to share grievances about the information and power asymmetries favoring platforms and to discuss how they can collectively mobilize to improve rule adequacy on platforms. Researchers have also found that when low-powered actors have overlapping preexisting social networks, such as in the Global South, they are more easily able to build solidarity and advocate for increased procedural fairness (Aslam & Woodcock, 2020; Kumar et al., 2018; Tassinari & Maccarrone, 2020).

One of the most common mobilization tactics that providers employ is the organization of protests and strikes (Woodcock, 2020). These strikes and protests can take on multiple forms and can occur at the local level (i.e., within the same city) or across multiple platforms (Wood & Lehdonvirta, 2021). Ride-hailing drivers, for example, have collectively turned off their platform apps, often during periods of peak ridership, such as during the Super Bowl (Alba, 2016). Such tactics are closely monitored by platform owners. Aslam and Woodcock (2020), for example, documented their firsthand experiences of organizing strike attempts against Uber in the United Kingdom. Their research revealed how platform owners can actively take steps to target and punish providers who try to mobilize others, including by deactivating their platform accounts.

Structural factors explaining variation in lower-powered actors' willingness to collectively mobilize. Emerging research has investigated how the technical, legal, and organizational structures within a platform ecosystem shape providers' collective mobilization tactics. In a cross-comparison of two food delivery platforms in China, Lei (2021) found that for "platform architectures" in which providers do not have access to established legal or organizational grievance and recourse pathways, providers are more likely to collectively mobilize against platforms despite the similarity of the providers' grievances across platforms. Mobilizing may also be more challenging in countries that require providers to interface with platform owners through intermediaries, such as when ride-hailing drivers are required to use a fleet-owned vehicle or be hired by a third party (Mika & Polkowska, 2022). These findings suggest that the institutional environment in which platforms are embedded plays an important role in providers' attempts to find bottom-up accountability through collective mobilization practices advocating for increased procedural fairness.

Bottom-Up Accountability through Strategic Partnerships and Alternative Organizational Forms

Because providers are largely atomized and ineffective at sustainably organizing collectively, their collective issues are often represented by surrogate actors—academics, unions, alternate labor groups, and even the platform owner itself (Collier, Dubal, & Carter, 2018; Irani & Silberman, 2013). Alternatively, lower-powered providers can create a cooperative ownership structure that centers their interests

(Anner, Fischer-Daly, & Maffie, 2021; Scholz, 2023). Each of these relationships involves different stakeholders and mechanisms for how to hold platform owners accountable.

Bottom-up accountability through third-party partnerships. A consistent theme in our review is that providers face a notable information asymmetry in enforcing rule adequacy, in that platform owners have more information about other actors on the platforms (Calo & Rosenblat, 2017; Rahman & Thelen, 2019; Schüßler et al., 2021). Many platform owners provide customers with detailed information about providers, such as their ratings, platform history, and skills background, but rarely give commensurate information about customers to providers (Gray & Suri, 2019). This asymmetry is significant because it creates an environment in which the platform does not—and providers cannot—directly hold customers accountable, especially when customers act in unethical ways, breaching platform rules (Grohmann et al., 2022). To address this asymmetry, providers have formed strategic partnerships with third-party actors to create alternative accountability systems that enhance procedural fairness. The most notable example is Turkopticon, a crowdsourced rating system whose mission is to "organize mutual aid, resources, and advocacy to make Amazon Mechanical Turk work a good job, while also improving conditions for all workers" (Turkopticon, 2023). Turkopticon allows Amazon MTurk workers to provide ratings and comments about clients they have worked with on the platform that other workers can also view (Irani & Silberman, 2013). This partnership developed into a worker-led nonprofit, exemplifying how lower-powered actors can form strategic partnerships with key third-party actors to increase accountability on platforms.

Bottom-up accountability through unions and labor groups. In other instances, providers have formed grassroots organizations (Dubal, 2020) or entered into strategic partnerships with existing unions (Moore & Joyce, 2020). Joining forces with established organizations allows lower-powered providers to tap into unions' expertise in mobilizing providers to call for increased platform accountability through better procedural fairness practices that enhance rule adequacy. The benefits are often reciprocal because providers receive critical support and resources to mobilize, and unions boost their membership (Redmond, 2022). The Independent Workers Union of Great Britain (IWGB), for example, helped workers on a U.K. food delivery platform (Deliveroo) articulate their demands, crowdfund resources, and increase public awareness of their quest to improve rule adequacy on platforms (Cini, Maccarrone, & Tassinari, 2022). Over time, more workers joined the IWGB to push for greater systematic accountability, such as calling for a guaranteed minimum wage, insurance coverage, and sick pay. Given the novel and often disempowering circumstances platforms present to providers, a strategic partner's capabilities can be critical to achieving bottom-up accountability.

Bottom-up accountability through cooperative ownership structure. Perhaps the most sweeping bottom-up accountability tactic is when providers attempt to disrupt the platform ecosystem by forming cooperatives. Cooperatives are jointly owned, organized, and split profits among all members (Scholz & Schneider, 2017; Schor, 2020). Moreover, providers directly establish and implement procedural fairness practices that protect rule adequacy. Cooperatives and similar organizational forms are especially attractive to lower-powered providers because platform owners generate outsized revenue that can be distributed to providers to gain social and economic mobility (Khan & Vaheesan, 2017). Other cooperatives more directly mimic their traditional platform counterparts, such as Eva and the Drivers Cooperative (Lyft, Uber), Fairbnb (Airbnb), and FairMundo (eBay and Etsy). Early evidence has suggested that the formation of provider-led cooperatives has forced other platform owners to change their policies in ways that benefit lower-powered actors so that platforms can retain their loyalty (Conger, 2021). To date, however, platform cooperatives have yet to scale and seriously challenge dominant platform operating models (Rahman & Thelen, 2019).

Limitations to Bottom-Up Accountability

Our review of the rich, burgeoning literature examining bottom-up accountability reveals important limitations. An overarching limitation is that such bottom-up accountability attempts to enhance procedural fairness through improved rule adequacy has led to limited gains (Davis, 2022; Gerber, 2021; Rahman & Thelen, 2019). In fact, some scholars have argued that platforms have further entrenched their power and information asymmetries because bottom-up accountability attempts lack scale and longevity and are disconnected from distributive fairness (Schüßler et al., 2021). Furthermore, in the absence of regulatory action, platform owners can make ceremonial concessions to improve procedural fairness that do not impede their operations, such as through the creation of company unions (Scheiber, 2017).

Many platform owners, for example, redesign their platform interface ostensibly for the benefit of lower-powered providers (Siân & Rao, 2023) while also enhancing their power and control on the platform (Rosenblat, 2018). Even when a group of providers successfully mobilize, dominant platforms have the advantage of achieving large-scale network effects such that they can easily replace providers who push for greater accountability. Amazon, for example, has successfully rebuffed several bottom-up accountability attempts from independent book publishers, workers, and sellers to enhance procedural fairness practiced through improved rule adequacy (Streitfeld, 2021).

Research has highlighted that even independent, individual accountability attempts ultimately enmesh providers further within a platform's ecosystem (Cameron, 2022, 2024; Rahman, 2024). While lower-powered providers are certainly able to obtain temporary accountability in their day-to-day activity, the power and information asymmetries favoring platforms allow these platforms to stay one step ahead (Gray and Suri, 2019). Researchers have highlighted that, over time, platform owners' algorithms dynamically change to prevent and penalize providers from using tactics that may hurt the platform owner's profitability (Caplan & Gillespie, 2020). On ride-hailing platforms, for example, platforms have continued to adapt their algorithmic rules to prevent drivers from rejecting their algorithmic task assignments (Cameron, 2021, 2024; Lee et al., 2015). Similarly, collective mobilizations have had limited success in systematically increasing platform accountability. The atomized nature of interactions on platforms and differential economic motivations makes it challenging for providers to coalesce around a shared set of interests in the long term (Schor et al., 2020). Moreover, the changing nature of algorithmic management and the rapid experimentation conducted on these algorithms mean that providers, even those within the same geography, will not encounter the same platform experience and rules as other providers (Garud & Karunakaran, 2018; Karunakaran, 2022; Rahman et al., 2023; van Doorn & Chen, 2020), which makes it even more difficult to enhance procedural fairness practices.

Platform owners have effectively used tactics to create division among lower-powered platform actors, such that collective mobilization attempts have largely fizzled. Coordinated efforts between ride-hailing and several other labor platform owners eventually coopted worker, customer, and public support for regulations in California that would have given workers higher pay, better benefits, and greater protections, in essence convincing providers to vote against their own self-interests (Dubal, 2020). Even the largest worker-led collective mobilizations by platform providers achieve only modest success. More generally, boycotts contain their own contradictions in that they induce a provider shortage that drives up algorithmically determined demand-based pricing, which entices more individuals to work (Rosenblat, 2018).

Lower-powered providers' strategic partnerships and alternative forms of organizing have similarly faced difficulties in scaling to compel greater platform accountability. Even when partnering with other organizations, providers endure enormous physical, mental, emotional, and monetary strains in just trying to make a living wage (Cameron et al., 2021; Ravenelle, 2019), and trying to hold platforms accountable takes a further toll. Speaking out entails risk; many studies have highlighted how platform owners single out and unilaterally remove providers they perceive as problematic (Aslam & Woodcock, 2020). As a result, there is frequent turnover and attrition among providers who push for bottom-up accountability, making such tactics less sustainable in the long run. Furthermore, platform owners have benefited from enormous amounts of capital and human resources to scale their operations through their years (Davis, 2022). Cooperatives and other partnerships lack access to such resources, which has contributed to the slower growth of such models of bottom-up accountability. Moreover, the expertise to build the technical infrastructure that houses platform work is nontrivial and requires multiple experts in software engineering, programming, and cyber security—professionals that are not likely to have sustained professional interactions with lower-powered actors. Together, while bottom-up accountability attempts have excelled at identifying how platforms should be held accountable by improving procedural fairness via enhanced rule adequacy, this approach struggles to enforce and compel ongoing platform accountability in part because it does not center distributive fairness practices and outcomes.

TOP-DOWN ACCOUNTABILITY ON PLATFORMS

While the bottom-up perspective on platform accountability is a relatively well-developed area with an active empirical research program, the top-down perspective is still at a nascent stage but nonetheless possesses a growing research agenda.

The top-down perspective has its roots in the fields of law and economics, law and organizations, and management (Aloisi, 2015; Baker & Morton, 2018; Cusumano et al., 2021; Jacobides & Lianos, 2021a; Khan & Vaheesan, 2017; Kocher, 2020; Paul, 2017; Paul & Vaheesan, 2022), and is focused on enhancing distributive fairness by preventing extractive opportunism and maintaining a level playing field among platform actors. As discussed above, compared to traditional firms or markets, platforms are a relatively new phenomenon with unclear boundaries and indistinct industry classification (Davis, 2022; Gillespie, 2018; McIntyre et al., 2021). Consequently, this domain is typically characterized by weak legal, institutional, and regulatory governance regimes.

Specifically, this perspective focuses on examining and proposing legal, regulatory, and governance frameworks aimed at instituting changes regarding how platforms should be governed to ensure that there is a level playing field among providers, customers, and platform owners (Gleiss, Degen, & Pousttchi, 2022; Kenney, Bearson, & Zysman, 2021). This includes demarcating the boundaries of a platform, limiting extractive opportunism, regulating data ownership and use by platform owners (e.g., data network effects and the information or power asymmetries it creates for the platform owner), and changing the classification processes for platform owners (e.g., the industries in which these platform owners operate) and providers (e.g., as contractors or as employees). This top-down perspective also focuses on the different challenges and consequences—both intended and unintended—that emerge in the process of implementing these legal and regulatory mechanisms (Cusumano et al., 2021; Gawer, 2022; Khan, 2019; Ozalp et al., 2022; see also Peukert, Bechtold, Batikas, & Kretschmer, 2022). (See Appendix D in Additional Materials for a summary table of top-down accountability on platforms, with a brief description of the overarching research themes and representative scholarship.)

Within this top-down perspective, several different mechanisms and processes have been proposed to address the challenges of platform accountability and improve distributive fairness outcomes through maintaining a level playing field and preventing extractive opportunism. Some scholars have called for new forms of government regulation (Baker & Morton, 2018; Khan & Vaheesan, 2017; Paul, 2017), while others have proposed internal regulation by the platform owners themselves, using a combination of process controls, third-party auditors, and granting more significant roles to customers and end users for platform moderation and governance (Cusumano et al., 2021). Other scholars have suggested alternative approaches, such as enabling competition (Tirole, 2022), developing a middleware layer (Fukuyama, Richman, Goel, Katz, Melamed, & Schaake, 2020; Keller, 2021), and mandatory interoperability between platforms to enable low switching costs for providers and customers (Hovenkamp, 2020). We organize our review of the top-down perspective based on two overarching themes that emerged on the locus of accountability: accountability through external regulation and accountability through internal regulation.

Accountability through External Regulation

As platforms have grown in market capitalization and influence, concerns have emerged about the mechanisms to keep them accountable for their actions. Historically, there have been several existing legal and external regulatory mechanisms for effective firm governance and organizational accountability (Baker & Morton, 2018; Bloodstein, 2019; Khan, 2017). This includes competition laws that focus on ensuring that firms do not engage in anticompetitive practices, such as monopolistic conduct or abuse of market power; and consumer protection laws that focus on ways to protect consumers from deceptive or harmful practices by firms, such as false advertising, data brokerage, or consumer data privacy breaches.

Limitations of existing approaches. However, scholars have argued that such legal and regulatory mechanisms formulated during the industrial era are ill-equipped to maintain a level playing field and prevent extractive opportunism by platform owners (Baker & Morton, 2018; Bloodstein, 2019; Khan & Pozen, 2019; Paul, 2017; Sokol & Van Alstyne, 2021; Tirole, 2022). Unlike in the previous era, characterized by firms in manufacturing and service industries, platforms in the digital economy can create and leverage network effects through which the value of a platform increases as more customers and providers join (Cennamo, 2021; Parker & Van Alstyne, 2005). This can lead to winner-takes-all markets, where once a particular platform acquires a critical mass of customers and providers, the platform becomes dominant and can charge customers high fees, set unfair terms for providers, or discriminate against competitors.[6]

[6] Some scholars do not believe that platforms are structurally in a "winner-takes-all" market. Instead, they have argued that it is the competitive strategy that platform owners enact that helps them accrue substantial market power (Hovenkamp, 2020).

Moreover, since platform owners occupy a central position in the triadic exchange structure, they can capture and mine the data flowing between consumers and providers, creating data monopolies (Gregory et al., 2021; Zuboff, 2019). Platform owners leverage such data to create barriers to entry for new platform competitors, target ads to specific users, stifle innovation, and engage in anticompetitive practices, all of which hinder distributive fairness between platform actors (Davis, 2022; Tucker, 2019). Because of increased market power gained through network effects and data capture, platform owners can also engage in extractive opportunism in the form of self-preferencing and even outright discriminatory practices, such as hiding providers' products in search results or favoring their own products or services over those of competitors (Stark & Pais, 2021; Tucker, 2022). Platforms may use their concentrated market power to control prices, thus making it difficult for rivals to compete on price (Tirole, 2022). All of these, in turn, limit competition and, by extension, consumer choice and welfare.

The market dominance of platform owners is also a critical factor that allows them to pursue mergers and acquisitions, which give them competitive advantage over other firms (Miric, Pagani, & El Sawy, 2021; Parker, Petropoulos, & Van Alstyne, 2021, 2022; Thatchenkery & Katila, 2023). That is, using their outsized market cap and projected revenues, platform owners can gain access to substantial credit, which allows them to outcompete other firms and pursue a strategy of "hostile mergers" and "killer acquisitions" (Cunningham, Ederer, & Ma, 2021). For example, before Amazon's acquisition of Zappos, Amazon leveraged the pricing and sales data from its platform, engaging in a campaign to lower its own shoe prices (at a loss) to capture market share from Zappos and, as a result, leaving Zappos executives with no better choice than to be acquired by Amazon (Bloodstein, 2019). Scholars have also argued how the structure of platform companies in today's digital economy enables them to engage in "digital colonization" (Ozalp et al., 2022) of existing industries, such as retail, healthcare, finance, and media.

Historically, court cases in the United States have played a large role in the laissez-faire relationship between the government and platforms, largely through decisions that set mild future precedents for enforcing platform accountability (Baker & Morton, 2018; Davis, 2016).[7] Consequently, scholars have argued that existing mechanisms, such as competition laws and consumer protection laws, are ineffective at maintaining a level playing field and preventing extractive opportunism in the context of platforms (Baker & Morton, 2018; Khan, 2019). This is especially true for issues that arise from vertical integration and self-preferencing, where platform owners use their control over key inputs and distribution channels to discriminate against providers and disadvantage platform competitors (Jacobides & Lianos, 2021b; Parker et al., 2021; Paul, 2017).

For example, in a highly influential article, Khan (2017) argued that current antitrust laws and enforcement practices do not effectively address the concentration of power and market dominance of platforms, especially "big tech" platforms, such as Amazon, Apple, Facebook, and Google. She posited that while these laws were originally designed to promote competition and protect consumer welfare, they are now being used to justify and reinforce the dominance of these platform companies. Therefore, efforts to promote a level playing field in a market can sometimes lead to reduced competition and increased market concentration that provides an undue advantage for incumbent platform owners (Khan, 2017). This can happen if antitrust enforcement is not carefully crafted and implemented, as it can lead to the creation or strengthening of incumbent platforms firms (such as Amazon and Apple) at the expense of newer entrants and other smaller competitors. All of these create the "antitrust paradox," in which the laws intended to promote competition and create a level playing field limit competition and perpetuate the concentration of a platform owner's power in a market (Khan, 2019). Additionally, the antitrust paradox can occur when antitrust laws are applied in a way that harms consumers by raising prices or limiting choice rather than promoting fair competition (Khan & Vaheesan, 2017; see also Bloodstein, 2019; Davis, 2022; Paul & Vaheesan, 2022).

Similarly, Baker and Morton (2018) argued that the "most-favored nation" (MFN) clauses in platform-based markets have negative implications for antitrust enforcement and, by extension, platform

[7] For example, the *United States v. Microsoft* case, while ultimately finding Microsoft liable, set an ambiguous precedent for the definition and implications of "innovation-based harms" for providers (e.g., app developers) and competitors implicated by the platform's actions. Since this case, antitrust establishments have yet to discover another innovation-based harm within a monopoly (for an elaboration, see Baker, Sallet, & Morton, 2018).

accountability. MFN clauses are agreements that require a platform to offer the same terms to all providers or sellers, consequently preventing them from offering better terms to some providers over others. MFN clauses are prevalent in several platform-based markets, including e-commerce, travel, search, and digital advertising. Such clauses can create a "lock-in" effect, where providers are unable to leave the platform without losing the benefits of the MFN clause. This makes it difficult for providers to switch to rival platforms, even if the platforms offer better terms.[8] All of these could entrench a platform's dominance, prevent new entrants to the market, reduce competition among different platforms, harm innovation, and result in higher prices for consumers (Baker & Morton, 2018; Kenney et al., 2021).

More recently, Tirole (2022) argued that traditional frameworks for regulation and antitrust enforcement are no longer sufficient to address the issues of platform accountability, including maintaining a level playing field and preventing extractive opportunism. He noted that existing antitrust laws were not designed to address the unique characteristics of platforms characterized by multisided markets—that is, markets that connect two or more different groups of users, such as buyers and sellers or advertisers and users. In these contexts, challenges with vertical contracting arise, where a firm controls the upstream infrastructure and can use that power to discriminate against downstream competitors (Boyer, 2022; Parker et al., 2019). In addition, there are issues regarding the privacy and protection of customer data in platforms that current legal and regulatory approaches are largely ill-equipped to handle (Cohen, 2019).

Due to these limitations in existing approaches to external regulation aimed at platform accountability, scholars have proposed alternative approaches that consider the unique characteristics of platforms, such as direct and indirect network effects, data monopolies, and market power, to enforce accountability by enhancing distributive fairness. We begin by considering more radical and interventionist approaches to platform accountability, then progress into more targeted and incremental approaches.

Radical and broad-based interventionist approaches to platform accountability. To begin, Cammaerts and Mansell (2020) called for an entire reimagining of governmental interactions with platform owners. These scholars developed a vision for an "agonistic approach" to platform accountability and digital platform policy, more broadly. These scholars suggested that earlier approaches to antitrust regulation in markets such as telecommunications (e.g., the case of Bell Corporation) are ineffective in the context of multisided platforms. Cammaerts and Mansell (2020: 136) argued that simply enhancing existing legal-regulatory frameworks in an incremental manner is inadequate and will not alter "sophisticated commercial datafication processes" that are a feature of platform-based markets. Instead of altering regulation in an incremental manner, these scholars argued that a radical democratic turn, wherein a representative body is charged with the responsibility of overseeing and evaluating platform owners' power and is given the authority to implement suitable remedies, would adequately maintain a level playing field and prevent extractive opportunism in platform-based markets (Paul, 2020).

Other scholars, such as Khan (2019), have called for an *interventionist* approach to regulating platforms to ensure distributive fairness such that platform owners are held accountable for their actions and the impact they have on customers, providers, and society at large. Such an interventionist approach focuses on structural remedies in external regulation and antitrust enforcement, such as breaking up large platform companies and regulating their conduct to maintain a level playing field (e.g., platform acquisitions, envelopment of providers' ideas and products into the core platform, ad hoc changes to terms of service). Khan (2019) also argued that traditional antitrust metrics, such as market share and price, are not sufficient to capture the ways in which platform owners can maintain control over data, network effects, and other elements of the digital economy to harm competition. Therefore, her suggestion was to use alternative metrics for external regulation and accountability that are focused on issues such as privacy, worker rights, consumer welfare, and the effects of these platforms on smaller businesses and innovation.

An overarching proposal emerging from this interventionist approach is that platforms should be treated as separate entities from the providers that operate within them (e.g., app developers on Apple, sellers on Amazon) and that regulation should focus on ensuring *the separation of platforms and commerce*. Such separation would promote both

[8] Court cases in the United States followed price-based measures of harm within an MFN provision. This resulted in the creation of a rule that makes it even more difficult for plaintiffs to pursue anticompetitive harm by requiring them to add a *prima facie* case against platform owners, such as Microsoft (see Baker & Morton, 2018).

competition and innovation by preventing platforms from using their power to discriminate against rivals and to engage in extractive opportunism by undercutting providers (Khan, 2017, 2019; see also Gorwa, 2019). This approach would also likely limit platform owners' ability to use their dominance in one market to expand into other markets and create barriers to entry. Finally, such an approach is posited to address issues of privacy and data protection by preventing platforms from using consumer data to further entrench their dominance and harm competition.

Specific, incremental, and targeted approaches to platform accountability. Other scholars have pointed out the pitfalls of such radical and interventionist approaches to platform accountability. U.S. court precedent demonstrates that it is difficult to condemn monopolization and platform power using antitrust doctrine without first defining the boundaries of a market in which the platform owner operates (Hovenkamp, 2020). The multisidedness of platforms, however, makes it difficult to demarcate such boundaries and categorize platform owners (and their competitors). Therefore, these scholars have argued for a more *specific, incremental, and targeted* approach to platform accountability and regulation that is flexible and adaptive in maintaining a level playing field and preventing extractive opportunism (e.g., Baker & Morton, 2018; Cabral et al., 2021; Tirole, 2022). These scholars have argued that a targeted regulatory approach should focus on concerns that are unique to platform-based markets, such as data privacy, data ownership, and vertical contracting, in order to design effective regulatory governance mechanisms that could keep up with the rapidly changing nature of platforms (Bhargava, Wang, & Zhang, 2022; Hagiu & Wright, 2019; Parker et al., 2021).

For example, antitrust enforcement could focus on challenging MFN clauses in platform markets to protect the interests of the providers and, in doing so, prevent extractive opportunism (Baker & Morton, 2018; see also Bloodstein, 2019). Such efforts could focus on whether MFN clauses are being used to entrench a platform's dominance, prevent new entrants from entering the market, or prevent platforms from discriminating in favor of certain providers. Even if MFN clauses are not being used to harm competition, they can still create a "lock-in" effect that makes it difficult for sellers to switch to rival platforms. Regulatory mechanisms, therefore, should focus on investigating whether MFN clauses are being used to entrench a platform's dominance and prevent new entrants from entering the market; if so, these mechanisms should be more aggressive in challenging MFN clauses, even if they are not overtly anticompetitive. Other scholars have called for the enforcement of "neutrality" clauses to ensure that platform owners do not discriminate against certain types of provider content or services by throttling or blocking access to them (Cusumano et al., 2021; Suzor, West, Quodling, & York, 2019).

Research has also focused on specific issues, such as preventing the misuse of consumer data by platforms, thereby stressing the need for targeted external regulation focused on data privacy, ownership, and use (Srinivasan, 2019). Since platform owners often collect vast amounts of data from customers and providers (Bhargava et al., 2020), these scholars have argued for the need for better regulatory mechanisms, such as transparency around the collection and use of consumer data, in order to improve platform accountability. For example, external platform regulation focuses on robust data privacy and security regulations (e.g., the European Union's General Data Protection Regulation [EU GDPR]; right to be forgotten; and rights to access, control, and delete personal data), along with greater transparency to providers and customers when it comes to data collection and use by platform companies (Gorwa, 2019; Suzor, 2019).

However, many other scholars have express skepticism regarding the effectiveness of transparency as a regulatory tool to enforce platform accountability (Ananny & Crawford, 2018; Gorwa, 2019). First, the functioning of many data-equipped algorithms used by platform owners is difficult for customers to meaningfully interpret (Pasquale, 2015). Transparency does little to change the effect of such algorithms used by platform companies and can confuse or overload consumers with information they cannot fully understand (Ananny & Crawford, 2018). Moreover, transparency can be used as a tactic to intentionally obfuscate other internal practices that customers or users might otherwise scrutinize (Proctor, 2012). As a result, scholars have deemed transparency in the case of platforms as little more than an obfuscatory tactic (Zuboff, 2019) used by platform owners that is largely ineffective in improving platform accountability.

Moreover, while scholars have agreed on the need for international cooperation in regulating global platform companies, this is difficult to do in practice. Regulatory institutions in multiple countries should be able to cooperate and share information with each other in order to effectively regulate platforms and enhance distributive fairness (Cabral et al., 2021;

Jacobides, Cannamo, & Gawer, 2022; Ozalp et al., 2022; Tirole, 2022). Thus, scholars have highlighted the need for targeted, incremental, and flexible regulatory mechanisms to adapt to and keep up with the fast-changing nature of platforms (Lee, 2022).

Accountability through Internal Regulation

Internal regulation of platforms is the dominant mode of accountability espoused by platform owners (Cotter, 2021; Cunningham & Craig, 2019; Nurik, 2019; Rietveld, Seamans & Meggiorin, 2021). Conceptualized as voluntary actions taken by platforms to regulate themselves without government intervention, internal regulation, or self-regulation, these proposals have garnered increasing scholarly attention, specifically regarding the practices and processes of platform owners (Cusumano et al., 2021). The main benefits of internal regulation include platform owners being able to quickly address harmful practices, content, and behavior or respond to emerging threats. Internal regulation also gives platform owners the opportunity to tailor their policies according to the specific needs of different provider and customer communities. The establishment of the Electronic Software Rating Board by videogame platforms in the 1990s to provide content ratings for games is an often-used example of the benefits of internal regulation by platform companies (Cusumano et al., 2021). More recently, Airbnb implemented internal regulations that require hosts to abide by a nondiscrimination policy, enhancing distributive fairness for users (Airbnb, 2023).

However, there are also several disadvantages to platform self-regulation. One major criticism is that platforms may prioritize their own financial or political interests over the well-being of their users, exacerbating extractive opportunism (Bietti, 2021). Additionally, self-regulation can be ineffective if platforms do not have the resources or expertise to effectively address harmful content or behaviors. Within the past two years, self-regulation has primarily occurred through the development of transparency efforts and technical tools on content moderation (Gorwa, 2019). Scholars have focused on how platforms implement self-regulation policies, such as how platforms communicate their policies and enforce them internally, as well as how they handle customer or user appeals and complaints. Research has also focused on the transparency of platforms' decision-making processes and the data they collect and use. Various self-regulatory models that have been proposed or implemented by platforms include industry-wide codes of conduct, independent oversight bodies, and coregulation (Cusumano et al., 2021; Gillespie, 2018; Gorwa, 2019).

Internal self-regulation to preempt external government regulation. While some platform owners may establish self-regulation policies to govern their operations, scholars have argued that most of their internal self-regulation policies and practices are aimed at preempting and even diluting the scope of external government regulation (Cusumano et al., 2021; Medzini, 2021; Zuboff, 2019). Platform owners do this, in part, due to their preference for creating a noninterventionist relationship between regulators and their platforms.

Whether as an independent firm, or alongside a coalition of similar platforms, self-regulation ahead of government action is a common guiding principle. For example, in collaboration with the European Commission, Facebook, Google, Microsoft, Mozilla, TikTok, and Twitter agreed to a "Code of Practice on Disinformation," a contract stating that these companies agree to ethical advertising and commit to eliminating bots and misinformation from these platforms (Cusumano et al., 2021). In a preemptive response to impending government regulation to prevent extractive opportunism, Uber has provided additional information to providers about their trips (e.g., upfront destination information and pricing) to bolster their claims that drivers are independent contractors and not employees (Clark, 2022).

However, it is worth noting that platforms such as Apple, Facebook, and Twitter have all faced criticisms and controversies regarding their handling of self-regulation. For example, Facebook's team of content moderators and fact checkers are said to have limited resources, as well as relatively low status and power, thereby limiting the effectiveness of these self-regulation initiatives (Newton, 2019). Even more importantly, types of internal self-regulation that could potentially impact the bottom line (e.g., ad revenues) are said to be either gradually retracted or weakly enforced and thus rendered ineffective (Cusumano et al., 2021). All these point to the overarching challenge of enforcing platform accountability through acts of internal self-regulation by the platform owner.

Internal self-regulation in response to government action. While self-regulation can appease governments and even preempt legal action, some governments are dissatisfied with the internal self-regulation pursued by platforms (Gorwa, 2019; Medzini, 2021). As a result, some governments and entities have introduced their own regulation, such as the U.S.

Communications Decency Act and the EU E-Commerce Directive, to hold platforms accountable. For example, in response to government regulation, Apple launched a number of external initiatives, such as its partnership with the Children's Advertising Review Unit, to ensure that apps targeted to children meet appropriate guidelines (Apple App Store Policy, 2023). Likewise, Facebook has several external partnerships, such as the Global Internet Forum to Counter Terrorism, aimed at tackling extremist content on the platform, as well as partnerships with independent bodies to increase its accountability (Meta, 2022). Germany's 2017 Network Enforcement Act serves as a precedent for future government action, as the policy was a result of firms—specifically American firms—failing to respond and change quickly enough to meet the needs of the German government. The legislation makes platform owners liable for hate speech that occurs on their platforms.

Role of customer communities in platform self-regulation. Scholars have argued for increasing the role that platform customer communities, especially end users, have in shaping the self-regulation of platforms (Medzini, 2021; Nurik, 2019). This could involve creating a mechanism for users to elect representatives who would have a role in decision-making, as well as an independent body of users to oversee the platform's operations and ensure that it is operating in the best interests of all.

Users can already influence the platform's rules and policies through their everyday behavior, such as feedback, complaints, reviews, and ratings, which can shape the platform's reputation and influence the behavior of others (Chen & Sun, 2020; Shapiro, 2020; Wood et al., 2019). This information can help platforms identify areas where their policies and practices may be lacking and make improvements accordingly, ensuring that the policies and practices are responsive to the needs and concerns of the user base. For example, Botelho and Gertsberg (2022) found that giving status awards to customers decreased the level of observed gender bias in their subsequent ratings. Similarly, in an experimental intervention, Siân and Rao (2023) found that implementing community-suggested design features decreased labor market discrimination of women and non-Whites. However, such an approach has its limits in that platforms can decide which features are exposed to users for testing and feedback and which ones are kept hidden (Cusumano et al., 2021; Gorwa, 2019; Rahman et al., 2023).

Another approach is to create an ongoing role for users and user communities in monitoring and enforcing platform policies and practices. Users can report content or behavior that they believe violates the platform's rules, and they can participate in community moderation efforts, such as flagging and reporting content. These users can also be involved in platform governance through representation on platform governance bodies, such as oversight boards or councils (Cunningham & Craig, 2019; Lei, 2021), ensuring that the perspectives and needs of users and communities are considered in the decision-making processes. For example, Apple has a system for users to report apps that they believe violate the App Store's guidelines. The company's team of app reviewers then assesses these reports to determine whether the app should be removed or updated (Apple App Store Policy, 2023). Another way in which users and communities can be involved is through the creation and promotion of alternative groups that prioritize user privacy, security, and community well-being over profit (Conger, 2021; Davis, 2022). They can play an external role in holding platforms accountable for their actions, for example, through advocacy groups, media and online campaigns, and even legal action. They can also advocate for regulations that protect user rights and interests (Gramano, 2021; Lei, 2021).

In summary, users and communities can play a role in the governance of platforms by providing feedback to and input on platform policies and practices, monitoring and enforcing these policies, participating in moderation efforts, promoting alternative platforms, shaping the broader political and legal environment, and thereby improving platform accountability.

Limitations of Top-Down Approaches to Platform Accountability

The most looming limitation in our examination of the top-down accountability literature is that such top-down accountability attempts have not led to fundamental changes in how platform owners operate, with owners often evading or ceremonially complying with regulatory mandates (Davis, 2022; Gerber, 2021). In fact, some scholars have argued that platforms have further entrenched power and information asymmetries (Rahman & Thelen, 2019).

While a top-down perspective provides the legal, regulatory, and institutional levers to improve platform accountability, it falls short with respect to its effectiveness in *enforcing* platform accountability in practice for several reasons. First, since platforms operate globally, the differences in local laws pertaining to labor relations, employment, and

competition render legal-regulatory frameworks largely ineffective. Second, platform owners' accrued power enables them to engage in regulatory capture (Adler, 2021; Rilinger, 2023c) and enact nonmarket strategies at the local level (e.g., lobbying, astroturfing, coopting regulators, PR campaigns) to proactively shape the legal-regulatory regime in their favor (Culpepper & Thelen, 2020; Ozalp et al., 2022; Uzunca, Rigtering, & Ozcan, 2018). In 2016, Uber employed more lobbyists than Amazon, Google, or Microsoft (Borkholder, Montgomery, Chen, & Smith, 2018). In 2021, ride-hailing and other labor market platforms spent more than 200 million USD—the largest amount in state history—in lobbying the public to support California's Proposition 22, which left gig workers as independent contractors with minimal protections and benefits (Dubal, 2022). Even the enactment of such strict regulations did not durably reduce the number of short-term Airbnb listings (Cansoy & Schor, 2023). Such actions weaken or even preempt the legal and regulatory changes aimed at improving platform accountability. Even if such changes are passed, scholars have documented the gap between law-on-the-books and law-on-the-ground (Silbey, 2019; Rilinger, 2023c), which makes enacted regulations off-target in creating the desired accountability outcomes.

Third, these enacted regulations are often reactive, as opposed to proactive, in nature. Therefore, by the time the new law or regulation is passed and implemented in practice, the platform owner has already adapted their practices in a manner that circumvents such regulations or renders their effects weak (Burrell & Fourcade, 2021; Stark & Pais, 2021). Fourth, platform companies often claim a monopoly of truth about their industries, marginalizing accountability partners and external researchers (e.g., Maffie, 2023). These narratives can become so entrenched that they may avoid opposing evidence, such that classifying workers as employees, instead of independent contractors, may actually improve operational efficiency (Johnston, Ergun, Schor, & Chen, 2023). Fifth, while self-regulation and top-down governance proposed by platform owners can play an important role, they are also often used for regulatory capture or to preempt potential government oversight and independent oversight bodies (Karunakaran & Van Angeren, 2023). Moreover, regulators are susceptible not only to influence and cooptation (Funk & Hirschman, 2014; Gao & McDonald, 2022; see also Edelman, Uggen, & Erlanger, 1999; Gray & Silbey, 2014) by platform owners but also to cognitive misperceptions and misunderstandings that shape their "worldview" (Rilinger, 2023c) in fundamental ways, which could potentially undermine the content, force, and direction of the regulation. Finally, as mentioned earlier, nascent organizational forms, such as platforms, are characterized by weak norms, a lack of standards and professional or industrial associations, and limited—if not absent—legal-regulatory precedents (Rahman, 2024). Therefore, government regulators themselves are unclear about what the focus of their regulations should be and how they should be deployed in practice, thus allowing high-powered platform owners to shape and cocreate these regulatory processes (for a similar example, see Gao & McDonald, 2022). This, in turn, enables platform owners to gradually coopt regulatory actors, gatekeepers, and other professionals who perform important due diligence and governance functions (Botelho, 2018; Karunakaran, 2022), effectively diluting the content and direction of top-down acts of platform accountability (Fourcade, 2021).

Integrative Framework of Multisided Accountability for Platforms

Our integrative review of the bottom-up and top-down perspectives on accountability suggests that while these perspectives are individually useful, it is difficult to enforce accountability in the platform context using these approaches in isolation. As we described regarding the limitations of each perspective, the bottom-up approach to platform accountability is often transient and lacks the critical mass to implement sustainable changes to improve rule adequacy, while the top-down approach suffers from a regulation–implementation gap that limits its ability to create a more equitable level playing field and prevent extractive opportunism. Moreover, though the overarching focus of the bottom-up perspective is on improving procedural fairness through improving rule adequacy, it overlooks the importance of distributive fairness, such as maintaining a level playing field or preventing extractive opportunism. Similarly, though the top-down perspective largely focuses on improving distributive fairness through accountability mechanisms aimed at maintaining a level playing field and preventing extractive opportunism, it overlooks the importance of procedural fairness through improving rule adequacy. In addition, procedural fairness can shape perceptions of distributive fairness (and vice versa) (Brockner & Wiesenfeld, 1996). Thus, both procedural and distributive fairness are important to achieve platform accountability in an ongoing manner because they both address day-to-day

practices and processes that directly impact outcomes between platform actors.

Taking a broad look at these perspectives, we note that both the bottom-up and top-down perspectives take a more reactive view of accountability, focused on addressing how platform owners operate in the past or, at best, in the moment. However, platforms are constantly evolving their rules, policies, and algorithmic management practices. As a result, synthesizing the prevailing literature contributes to our core argument: *multisided platforms require multisided accountability systems that reinforce accountability processes among platform owners, providers, and customers*. A multisided accountability framework helps move from a localized to a distributive view of accountability by emphasizing how each actor must take responsibility to implement *multisided checks and balances*.

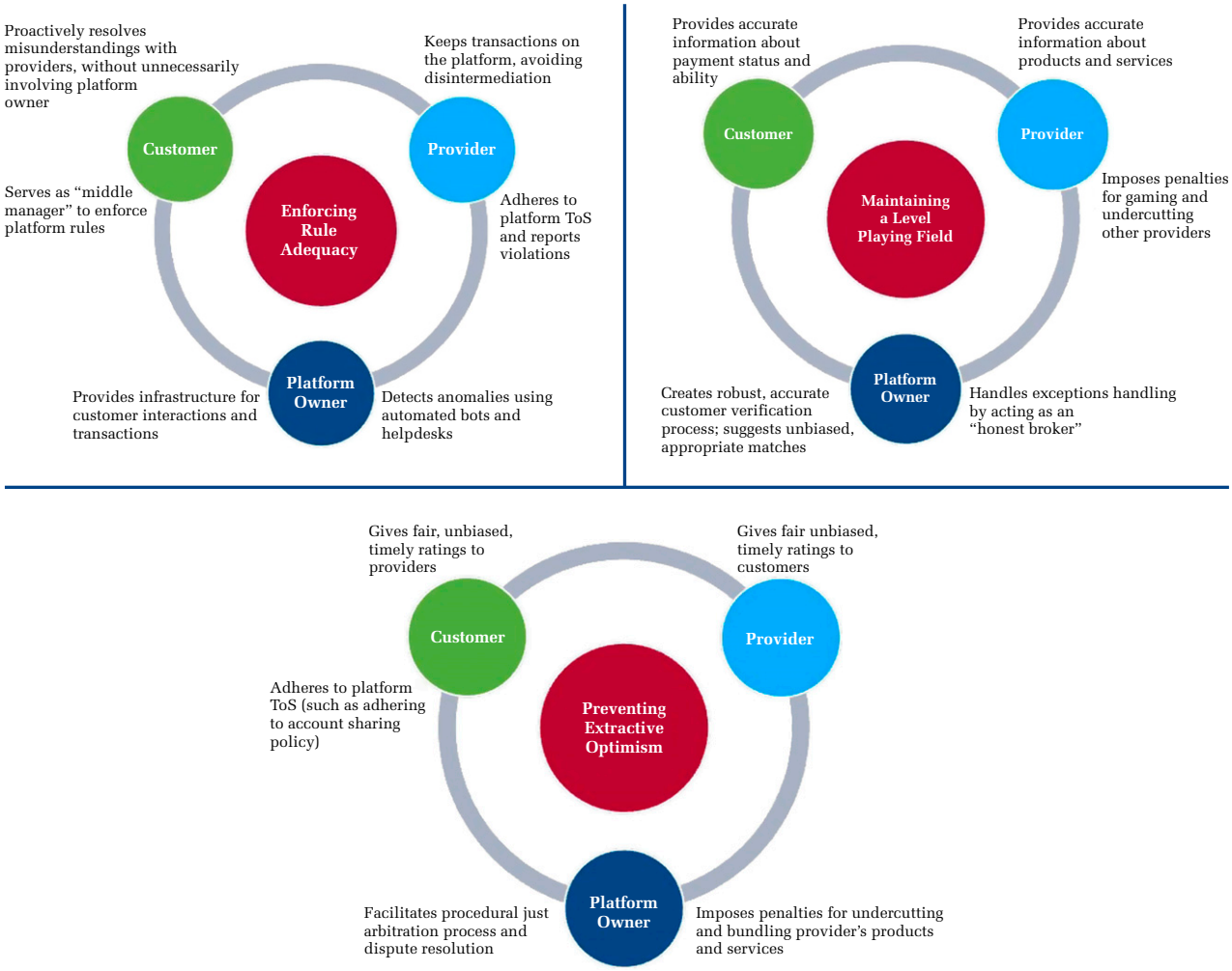
To accomplish multisided accountability, we apply well-established fairness criteria (Colquitt & Zipay, 2015) to the bottom-up and top-down perspectives. To achieve increased rule adequacy, we highlight how each actor, not just bottom-up actors, must focus on enhancing procedural fairness—ensuring that the underlying procedures on the platform are perceived as transparent, consistent, and nonarbitrary. To elaborate, procedural fairness in multisided platforms involves setting clear, consistent, and transparent rules for all actors and ensuring these rules are applied uniformly, without any favoritism. This could include clear policies for conflict resolution between different parties or rules about how goods or services are listed and priced on the platform. To improve procedural fairness, platform owners must make unbiased decisions, especially in cases involving disputes within (e.g., between providers) and between (e.g., between providers and customers) platform actors. This requires platforms to use accurate information and not show favoritism. However, procedural fairness can be challenging to maintain in a multisided platform context due to the diversity and complexity of the actors involved. Each group may have differing perspectives on what constitutes a "fair" process, leading to potential conflicts. Moreover, the sheer scale of these platforms and the number of transactions they facilitate can make it difficult to ensure consistent and accurate decision-making.

To maintain a level playing field and prevent extractive opportunism, each actor must focus on enhancing distributive fairness—ensuring the distribution of outcomes between each actor is perceived as "deserved." More specifically, in the context of multisided platforms, distributive fairness refers to how revenues are shared between the platform owner and the (service) providers, or how services or goods are distributed among customers (Rietveld, Ploog, & Nieborg, 2020). A platform owner like Uber, for instance, would need to ensure that drivers are receiving a fair share of the revenues generated from their services and that customers have equitable access to drivers' services, such as by ensuring that pricing algorithms do not discriminate against specific groups. Balancing distributive fairness can be difficult on multisided platforms, as adjustments aimed at improving fairness for one platform actor or group may adversely affect another. For example, increasing the share of revenues given to providers could lead to higher prices for consumers, which may be perceived as unfair. Furthermore, the dynamic nature of supply and demand on these platforms can lead to outcomes that are perceived as unfair, such as surge pricing during peak times like natural disasters. Nonetheless, both procedural and distributive fairness provide specific and tangible criteria by which multisided accountability can be achieved.

The *multisided framework for platform accountability* we delineate below focuses on explaining the locus and dimensions of responsibility between the different platform actors (Figure 1) and how the enforcement of platform accountability (Figure 2) through rule adequacy, maintaining a level playing field, and preventing extractive opportunism requires centering both procedural and distributive fairness.

Synthesizing the insights from bottom-up and top-down perspectives in the following sections enables us to describe the locus and dimensions of responsibility between platform actors, as well as the mechanisms of enforcing platform accountability (Jacobides et al., 2022). One of our main arguments is that to overcome the limitations of these individual perspectives, we need to bring all the platform actors—platform owners, providers, and customers—into the locus of accountability, making checks and balances against other actors ongoing, as opposed to being done in a one-shot or time-bound manner, or being isolated to a single issue. Therefore, we organize the sections below based on the locus and dimensions of responsibility that each platform actor has toward the others, and elaborate on the sociotechnical mechanisms and processes for enforcing platform accountability and enhancing procedural and distributive justice.

FIGURE 2
A Framework for Multisided Accountability: Mechanisms for Enforcing Platform Accountability



Note: ToS: Terms of Service.

Multisided Accountability for Providers and Platform

Maintaining a level playing field. To achieve multisided accountability, a platform owner is primarily responsible for *providing and maintaining a level playing field* for the providers in its ecosystem to ensure that they have equal access to customers and that no single provider is unfairly advantaged or penalized (Karunakaran & Van Angeren, 2023). In accordance with establishing procedural fairness (i.e., consistency in applying rules), platforms should provide equal access to their services for all providers, regardless of their size, location, or demographic background. Moreover, a platform owner should prioritize distributive fairness by not using the platform's position to unfairly advantage its own products or services (e.g., Amazon's own products) over those of its providers (e.g., sellers' products on Amazon).

Furthermore, to ensure the robust fulfillment of transactions flowing through the platform, a platform owner is responsible for ensuring that providers are compensated for their work (e.g., time and effort, product or app delivered) in a timely manner. While ensuring that transactions are reliably executed is important, handling exceptions is also an important responsibility of the platform owner to maintain a level playing field and ensure procedural fairness. For example, if a customer delays payment, or refuses to pay a provider for the work done, or if specifications are incorrectly provided, or if the nature and scope of work are constantly changed

by the customer, then the platform owner has the responsibility to step in, investigate, and institute remedial actions. Likewise, if a customer provides inaccurate or false reviews about the provider's quality with no substantiating evidence, then the platform owner has the responsibility to act as an "honest broker" to assess the veracity of the claims and take corrective actions. Finally, if a customer seeks to disintermediate the platform or attempts to enage in arbitrage by acting as a reseller or subcontractor (e.g., a customer on Upwork who resells the gig worker's service to a third party), then the platform owner has the responsibility to detect and block those actors (Hurni, et al., 2020; Iansiti & Levien, 2004; Van Alstyne, Parker, & Choudary, 2016). Moreover, platform owners must specify the penalties for gaming and undercutting other providers. Such steps enhance procedural fairness between each actor and ultimately contribute to distributive fairness because each actor can better understand how outcomes are achieved (Karunakaran, 2013).

Enforcing rule adequacy. To achieve multisided accountability, a platform owner is also responsible for *enforcing rule adequacy* so that its actions do not solely secure its own interests but instead maximize the growth and well-being of the providers in its ecosystem at large (Hurni et al., 2020). Consequently, a platform owner should be transparent in its rules and decision-making processes (i.e., procedural fairness) so that providers can understand how they will be affected. Toward these ends, some platforms have established practices to detect exceptions and anomalies to platform rules, although the degree and efficacy of such practices vary. Some labor platforms, such as Upwork, use automated bots and anomaly-detection systems to ensure transaction fulfillment and exception handling (e.g., missed or late payments by customers) so that providers are paid on time. Other platforms, such as TripAdvisor and Yelp, have algorithmic detection software as well as human reporting and feedback tools that enable providers to flag suspicious activities (e.g., fake reviews). Yelp also has a "consolidate ratings" policy (overall average ratings or stars are only made visible after the provider receives five ratings) for new providers (e.g., restaurants) who enter their platform, to avoid herding and bandwagon effects. Other platforms, such as Uber and Lyft, have helpdesks and support lines. However, it is important to note that none of these practices in isolation are sufficient in safeguarding the interests and well-being of providers. Instead, a combination of such sociotechnical practices must be instituted by platform owners to fulfill their responsibilities to their providers and be accountable to them.

In addition to these responsibilities, platform owners have the responsibility to augment accountability through improved procedural fairness by protecting and not misusing provider data and to not appropriate provider ideas (e.g., an existing popular app). At the same time, the platform owner should provide appropriate data about customers to providers, so that providers can effectively compete and provide value to the end customers.

Preventing extractive opportunism. To achieve multisided accountability, a platform's main responsibility to providers is to prevent *extractive opportunism*: governance actions that solely advance the interests and rent-seeking of the platform owner at the expense of other actors, such as providers, in the platform ecosystem. Platforms should proactively prevent such behavior to foster distributive fairness, including avoiding the perception of *ad hoc favoritism*: governance actions that unfairly favor one provider over another (Karunakaran & Van Angeren, 2023). One example of a platform governance action associated with ad hoc favoritism is selective promotion, in which a platform owner prominently features some providers or their products in the ecosystem, which decreases distributive fairness between providers. Rietveld, Schilling, and Bellavitis (2019) documented how selective promotion of complementary products is not based on objective product quality or performance criteria (e.g., cumulative sales, downloads, or ratings); rather, it is done solely for the benefit of the platform owner (e.g., for tapping unrealized sales potential, rounding out the platform's portfolio of the providers' products, or rewarding products that are exclusive to the platform). Such endorsements by the platform owner have been shown to substantially boost the performance of select providers and their products (Elfenbein, Fisman, & McManus, 2015). These actions distort both procedural and distributive fairness because they decrease the ability to maintain a level playing field in the platform ecosystem and disproportionately benefit a small number of providers at the direct expense of other providers (Karunakaran, 2013).

Another prominent example of this type of negative platform governance action is vertical integration, in which platform owners directly enter product categories in the platform ecosystem either by introducing their own products (Gawer & Henderson, 2007; Zhu & Liu, 2018) or by acquiring an existing provider and integrating that provider's product(s) into the ecosystem (Foerderer, Kude, Mithas, &

Heinzl, 2018; Li & Agarwal, 2017; Thatchenkery & Katila, 2023). Zhu and Liu (2018) described how Amazon's introduction of its own products discouraged providers in the affected product categories from pursuing subsequent growth and investing in the platform, despite Amazon's entry increasing overall product demand. In a subsequent study, Wen and Zhu (2019) showed that providers' commitment to affected product categories deteriorates under the mere threat of platform owner entry, even when the status quo in the product category has not yet changed, as providers anticipate that the competition will increase once the platform owner enters. Thatchenkery and Katila (2023) examined the impact of unblocking competition against the platform owner through antitrust intervention, and its impact on the platform ecosystem, focusing on the trade-offs between facilitating complementor innovation and the impact on profitability.

To mitigate threats to distributive fairness, providers should enhance procedural fairness by consolidating and directly reporting instances of such acts of selective promotion, vertical integration, undercutting, idea theft, and bundling or envelopment by the platform owner to regulatory authorities to enforce the "separation of platform and commerce" (Khan, 2019: 973). Collating the results of such collective reporting by providers, and monitoring them via regulatory dashboards, will enable authorities to keep track of, specify, and enforce penalties for platform owners that engage in acts that undermine distributive fairness (see Figure 2). To enhance distributive fairness, platform owners should institute governance actions that are oriented toward *mutual commitment*. These actions facilitate the long-term growth and sustenance of the platform ecosystem and provide benefits to providers, while at the same time encouraging providers to commit their efforts to the platform ecosystem (Van Angeren & Karunakaran, 2023; see also O'Mahony & Ferraro, 2007; O'Mahony & Karp, 2022). These types of governance actions are viewed by providers as ecosystem-focused, as opposed to platform-owner-focused, because they do not violate providers' baseline expectations—for instance, platforms enforce rules in a consistent manner and maintain a level playing field among providers (Karunakaran & Van Angeren, 2023).

Providers' responsibility to platform owners. Compared to a platform's responsibilities to its providers, a provider's responsibilities to a platform are more ambiguous. Providers are primarily responsible for maintaining procedural fairness by adhering to the platform's rules and guidelines regarding appropriate usage of the platform, but what is defined as "appropriate" is circumscribed by the platform's ever-changing "terms of service" (Rahman, 2024). This includes, but is not limited to, terms ensuring data protection, privacy, and security; maintaining appropriate content; avoiding excessive usage of the platform's resources (e.g., application programming interface [API] calls, server space); and maintaining the compatibility of the provider's products and services with the platform. Providers are also expected to respect the platform's intellectual property rights, such as patents, trademarks, and copyrights. In addition, perhaps most importantly, providers are required to provide high-quality products and services that enhance the value of the platform for customers. Therefore, adhering to, as well as reporting violations of, platforms' rules and terms of service is one of the key responsibilities that providers have toward the platform owner. Providers that violate procedural fairness expectations through gaming and undercutting other providers should be penalized in ways that are prespecified in the terms of service (e.g., downgraded ratings, "shadow" banning).

For example, Uber's platform policy and community guidelines outline the responsibilities drivers have toward Uber, such as maintaining their vehicles; paying all taxes and fees on their earnings; and providing safe, reliable, and high-quality rides. When drivers fail to perform the latter, as measured by telemetrics, star ratings, and other forms of customer feedback, drivers may not be assigned the most lucrative rides or may be banned from the app. Likewise, an Apple app developer is responsible for complying with Apple's strict App Review Guidelines and Terms of Service, which cover areas such as user privacy, user interface design, app content, and functionality. Providers are also responsible for providing accurate and complete information about their app (products) through screenshots and descriptions in the App Store listing; keeping their app up to date; ensuring that the app continues to meet Apple's guidelines and standards; and complying with legal requirements, such as data protection and privacy laws. When providers fail to remain accountable to these conditions, they are prevented from uploading their apps to the platform.

Multisided Accountability for Platforms and Customers

To achieve multisided accountability, a platform owner's primary responsibility to customers is to accurately vet providers who sign up to use the

platform, suggest appropriate matches between customers and providers, provide a reliable infrastructure for interacting and transacting, and provide unbiased intervention if there are disagreements between providers and customers. Each of these responsibilities is intimately tied to enhancing procedural and distributive fairness through maintaining a level playing field, enforcing rule adequacy, and preventing extractive opportunism.

Maintaining a level playing field. Vetting providers is one of platform owners' key responsibilities to maintain a level playing field. Customers turn to platforms to find trusted providers (Gawer & Cusumano, 2002) and, in turn, platform owners must take various steps to ensure that the providers they allow on the platform are trustworthy. If platform owners do not adequately uphold this responsibility, both providers (Rahman & Valentine, 2021) and customers (Grohmann et al., 2022) can get scammed. There are several ways platform owners can fulfill this responsibility of vetting providers on behalf of customers to facilitate procedural and distributive fairness. For example, over the years, many platforms have mandated that providers upload government-issued identification to verify their identities and bank accounts. Similarly, to ensure that a provider's representation of their skills or services is accurate, some platforms require providers to take platform-provided skill tests or submit additional skill verification (Rahman, 2024).

The second responsibility platform owners have to customers is to suggest appropriate matches between them and providers (Möhlmann, Zalmanson, Henfridsson, & Gregory, 2021). Platform owners have the most knowledge about both providers and customers, and often use this information to suggest matches between them. As a result, customers may have an expectation of and preference for the platform's suggestions; however, the platform should provide customers with equal access to providers, regardless of their location or background. If platforms create special tiers of providers, customers have the right to know how these providers were selected and how they can interact with them (Karunakaran & Wang, 2023).

Another way platforms fulfill their matching responsibility is by seeking feedback from customers about the quality of their suggested provider matches and using this data to inform future matches. It is imperative that platforms ensure accuracy in the feedback they receive from customers and update their algorithms to provide appropriate matches, especially since accurate ratings help level the playing field between African-American and European-American providers (Botelho & Decelles, 2023). Several studies have exposed how vulnerable platform algorithms and rating systems are to customer manipulation and scams (Cameron & Rahman, 2022; Garg & Johari, 2021; Ticona, 2022b). The failure to attend to such manipulations can contribute to both providers' and customers' negative perceptions of a platform's ability to achieve accountability procedures.

Enforcing rule adequacy. To enforce rule adequacy and facilitate multisided accountability, platform owners must provide an appropriate infrastructure for customers to interact and transact with providers. On product platforms (e.g., Amazon, eBay), platform owners provide an infrastructure that allows customers to search products on the platforms, send messages to providers, securely pay providers, and monitor the status of their order. As platforms scale globally, a robust platform infrastructure is critical because it becomes more difficult for platforms to oversee interactions between customers and providers (Shestakofsky, 2017). Several platform owners encounter challenges when scaling procedural and distributive fairness practices as they expand globally, in part because they lack knowledge about customers' local preferences and the institutional environment within which they are embedded. Cameron et al. (2023) highlighted how ride-hailing platform owners struggled to adapt in the Global South, in which customers preferred using cash to pay providers. The difference in preferences prompted platform owners to adjust their infrastructure to allow for cash payments, which, in turn, raised distributive fairness concerns when customers stiffed providers. Finally, in the event that the platform experiences glitches, errors, or breakdowns in its infrastructure, the platform is responsible for ameliorating any damages platform actors incur. Amazon, for example, offers discounts, free returns, and credit to its customers when there is a delay or failed delivery due to errors in their infrastructure (Bloodworth, 2018). Such practices augment distributive fairness by ensuring providers' and customers' profitability is not hurt.

Preventing extractive opportunism. In the event that interactions between customers and providers do not go as expected, platforms have a responsibility to provide customers (and providers, as covered earlier) with recourse to prevent extractive opportunism. Because customers use platforms to find providers and interact with them on platforms, they also have an expectation that platforms will troubleshoot any issues that occur on the platform or between providers (Moon, Wei, & Miao, 2019). For example, customers (guests) on Airbnb who have

difficulty accessing a provider's (host's) property turn to Airbnb to help them troubleshoot (Jhaver et al., 2018). Airbnb must intervene in a way that addresses the customer's concern (e.g., inability to make a reservation or to access the property) while also investigating whether this was an isolated issue, a provider issue (e.g., malfunctioning locks), or a more systemic issue (e.g., providers discriminating against customers from certain demographic backgrounds). In cases of systemic breakdown in accountability, platform owners must institute changes to platform rules and policies to enhance procedural fairness addressing such situations. Continuing with the Airbnb example, given widespread evidence that hosts were discriminating against specific providers, Airbnb stepped in and instituted an "instant booking" feature that allowed preverified guests to book a place without the host reviewing the request. This feature showed some evidence of addressing the problem, thereby enhancing distributive fairness by reducing the likelihood customers faced discrimination on the platform when booking a listing (Yu & Margolin, 2022).

Customers' responsibility to platform owners. Platform owners place an enormous amount of trust in customers since they are the actors who ultimately pay for the work of providers. As a result, customers have critical responsibilities toward platforms in achieving multisided accountability through enhancing procedural and distributive fairness procedures and outcomes. Customers are "middle managers" (Cameron, 2024; Lee et al., 2015) between providers and platform owners in that they monitor other providers' behavior, reporting them if they do not adhere to the platform's terms of service or attempt to game the platform system. On Apple's App Store, customers are responsible for reporting any provider's attempts to divert their payment off-platform, which is a violation of the terms of service.

More broadly, customers, like providers, are responsible for adhering to platform owners' terms of service. Customers are not permitted to use the platform or to interact and transact with providers in ways that violate the terms of service, which would subvert procedural fairness protocols. Prominently, most platforms prohibit their customers from sharing their accounts with others. Not only can this practice be dangerous to providers but it can also hurt the overall platform ecosystem. In ride-hailing, if customers allow someone else to use the app this puts the provider at greater risk, since they are now transporting an unvetted customer. In another example, Netflix has reportedly lost billions of dollars in revenue because customers share their accounts. When customers engage in such actions on Netflix, it not only denies Netflix revenue but also has downstream consequences for providers because platforms differentiate between unique and repeat customer engagement to determine a provider's status on the platform (Kweskin, 2017).

Multisided Accountability for Providers and Customers

Though providers and customers are typically unknown to each other until they are matched by the platform owner, together they play a critical role in enforcing and sustaining multisided accountability. Their actions directly contribute to enhancing procedural and distributive fairness through maintaining a level playing field, enforcing rule adequacy, and preventing extractive opportunism.

Maintaining a level playing field. Given the scale at which platforms operate, research has highlighted how platform owners trust both providers and customers to adhere to and enforce accountability in maintaining a level playing field (Cameron & Rahman, 2022; Sundararajan, 2016). First, both providers and customers are entrusted with providing accurate, updated information about the services, products, or goods they are seeking or exchanging (Bellesia et al., 2023). On labor market platforms, customers must provide accurate descriptions of their availability, payment status, project requirements, and project timeline. In the same vein, providers are responsible for providing accurate, updated information about their skills, capacity to complete a project, and work style preferences. The failure to adhere to these provisions creates a breakdown in accountability because it threatens distributive fairness, such as when customers are misled because providers post inaccurate information about their products or services (Grohmann et al., 2022). When the inaccuracy of this information is not discovered until later, it creates several inefficiencies, including lost time, distrust in the platform, intervention from the platform owner, and lost revenue.

Research has shown that both customers and providers can take steps on their own to enforce accountability through improving distributive fairness (Shapiro, 2017). Customers can ask providers for additional verification of their services, products, or goods before agreeing to the transaction (Rahman, 2021), or even meet synchronously (Valentine et al., 2017). Customers can also carefully review previous customer ratings and public feedback to assess provider quality, although the reliability of ratings and

public feedback systems has come under increased scrutiny (Garg & Johari, 2021; Rahman, 2024). Nonetheless, carefully reviewing previous feedback to identify consistent trends can help customers avoid situations in which they are taken advantage of by providers. Providers can take similar steps to enforce customer accountability and augment distributive fairness. On labor platforms, studies have shown that providers will ask to complete a small project to gauge whether a customer is responsive, willing to pay, and has provided accurate project specifications (Sutherland & Jarrahi, 2018). Ultimately, both providers and customers have a responsibility to report any breaches in the accuracy of the information shared on the platform. Failure to do so can cause a deterioration in distributive fairness because it increases platform-wide hazards for all actors.

Enforcing rule adequacy. Providers and customers have a key role in enforcing accountability through rule adequacy during their interactions and transactions (Rahman & Valentine, 2021). This is especially the case when an unexpected event occurs and a platform cannot (or does not) intervene. In such situations, providers often shoulder the responsibility for giving customers timely updates about their progress, especially if any potential setbacks or failures manifest. This allows customers to properly adjust their expectations, potentially reallocating their resources to other providers (Bellesia et al., 2023).

To better achieve accountability, providers and customers must keep their transactions, especially payments, on the platform. A platform owner's primary revenue stream relies on taking a percentage fee of the money customers pay to providers. When providers and customers attempt to disintermediate and take their transactions off-platform, this constitutes a violation of the terms of service that each party agrees to when registering (Gu & Zhu, 2021). In addition to ensuring the platform owner's financial solvency, there are other benefits to providers and customers for keeping their transactions on the platform. Most prominently, if a dispute arises that a provider and customer cannot handle independently, a platform owner's ability to effectively intervene relies on having access to data exchanged between actors on the platform. As a result, when providers and customers disintermediate, they expose themselves to increased risk, harming distributive and procedural fairness practices and outcomes. Moreover, while taking an interaction off-platform may be economically attractive in the short term to providers, the entire platform ecosystem is negatively affected because others are unaware of the (un)successful nature of transaction. The overall success of platform ecosystems and distributive fairness relies on the accurate recording of transactions between providers and customers. In other words, if disintermediation becomes widespread, it can create a "tragedy of commons" (Feeny, Berkes, McCay, & Acheson, 1990).

Preventing extractive opportunism. Despite their limitations, the feedback and ratings providers and customers give each other at the end of their interaction represents their most prominent responsibility (Tadelis, 2016). Research has highlighted how quickly and widely rating systems have been adopted (Masum & Tovey, 2011), particularly by platform owners, to enforce accountability and promote distributive fairness. Theoretically, ratings and feedback represent the "shadow of the past" that signals the quality of providers and customers for future platform interactions (Nosko & Tadelis, 2015). Ratings constitute the last and most impactful opportunity for providers and customers to enforce accountability, because platform owners use this information to make consequential decisions about who to prioritize in search results and who should be matched. They also give providers and customers an opportunity to more concretely deliver feedback that helps both actors improve going forward. As a result, it is imperative that customers and providers give each other timely, accurate feedback, especially to prevent opportunities for extractive opportunism.

To achieve multisided accountability, customers and providers also have a responsibility to provide feedback to platform owners on how to enforce and improve their accountability mechanisms. Because platform owners have limited capacity and resources, providers and customers frequently have the most timely information about how to improve procedural and distributive fairness practices and outcomes. Many scholars have shown how the "wisdom of the crowd" leads to more innovative ideas and policies (King & Lakhani, 2013). While providers and customers are not obligated to provide such feedback to platforms, doing so has the potential to enhance procedural and distributive fairness. YouTube providers and customers, for example, were the first to alert the platform that their gender classification algorithm was inaccurate, leading YouTube to alter its algorithm (Alkhatib & Bernstein, 2019). Thus, this accountability practice benefited the entire ecosystem by creating more accurate categorizations and search results, thereby improving both procedural and distributive fairness.

Additional Directions for Future Research

Our integrative review highlights how, in a relatively short period of time, the research on platform accountability has burgeoned across several disciplines. The continued and growing interest in the intersection of platforms and accountability underscores the theoretical and practical importance of integrating this research. Our multisided accountability framework identifies several potential avenues for future research, which we believe are essential to creating more equitable outcomes for each platform actor as well as for the wider economy and society. Below, we provide four examples of promising areas for future research related to platform accountability.

Deepening our understanding of the evolution of accountability practices. Our review found limited research examining how platform accountability practices evolve over time (i.e., early-stage versus mature stage) and how this evolution is influenced by both the type of platform (e.g., product, service, or labor platforms) and the regulatory environment it is embedded in (e.g., strong versus weak regulatory environments) (Cusumano, Gawer, & Yoffie, 2021; Rahman & Thelen, 2019). Given how quickly platforms evolve, future research should explore how accountability practices change based on a platform company's life cycle and type, its user base, and the sophistication of its regulatory environment. In a platform's early stages, for example, platform owners are more focused on customer acquisition and growing their user base, which provides an opportune time for lower-powered providers and customers to advocate for internal accountability practices. However, such practices might be retracted or rendered ineffective by the platform owner as their focus shifts from customer acquisition to increasing profits. Therefore, setting time-bound platform "relational contracts" (cf. Baker, Gibbons, & Murphy, 2002) via oversight from platform communities (e.g., community of providers and customers) can help improve platform accountability in the long term.

Future research could explore the sociotechnical mechanisms that enable ongoing relational contracting between various platform actors and specify the auto-invocation of penalties for contract breaches. Moreover, while instituting specific top-down accountability measures early on in a platform's life cycle can be difficult given the desire to avoid stifling innovation, as platforms grow it is important for top-down measures to provide clear boundaries to ensure platforms do not undercut providers or engage in anticompetitive behaviors. If, for example, regulators signal to labor platforms that they will be held accountable for ensuring providers earn at least the minimum wage while engaged on the platform, it would encourage platforms to set their pay rates at a fair market wage.

On the other hand, as later-stage platform companies come under increased public scrutiny, future research could examine the conditions under which third-party oversight is more likely to occur and when this oversight would be more effective. Nonprofits such as the Better Business Bureau and Consumer Reports help to enforce accountability between businesses and consumers by serving as a repository for consumer reviews and providing a rating of businesses' services. Research could explore the role of similar organizations in the platform space that help enforce accountability between actors.

Further, we encourage scholars to develop theory about how accountability practices may change depending on platform type. Apple's App Store presents conditions that vary greatly from Upwork's labor market platform and Airbnb's platform for short-term rentals. Each type of platform will require different types of accountability practices to ensure fair rule adequacy, preventing extractive opportunism, and maintaining a level playing field. For example, as compared to Apple and Upwork, which primarily offer digital services, Airbnb primarily offers physical property for short-term rental. Neighborhoods, cities, and states, however, are increasingly instituting rules to determine whether, and the conditions under which, people can offer their property on Airbnb. Airbnb's accountability practices, as a result, must ensure providers' offerings are in adherence with local rules and regulations. Because of the nature of property rental platforms, this is a distinct challenge that other innovation and labor platforms do not encounter.

Examining platform accountability in a global context. Our review highlights how most research on top-down and bottom-up platform accountability has concentrated on single states, countries, or regions, predominantly in the Global North. Platforms, however, have grown in part due to their global scale and reach. Providers from almost anywhere in the world can list their product on Alibaba, Amazon, or eBay, or their mobile application on Apple or Google's app stores. The global nature of platforms presents important challenges and opportunities for researchers. Thus far, researchers have

highlighted how some platforms are willing to bend their rules and principles when governments threaten to ban the platform if they do not comply with their requests. For instance, emerging reports have highlighted how platform owners have complied with requests from governments with centralized platform regulations to ban some providers or limit a platform's accessibility to customers in exchange for being allowed to continue offering the platform to the general population in a country (Bond, 2021). At the same time, these platforms continue to skirt regulations in countries with comparatively decentralized, weak regulations and rules. Likewise, platforms that are considered to be local and home-grown (e.g., Swiggy in India, Grab in Singapore) might be in a better position to engage in regulatory capture and gain competitive advantage over global platforms due to their close ties with the government and regulatory authorities (e.g., Teng & Jacobides, 2022). In Southeast Asia, for example, niche ride-hailing platforms were able to rapidly scale and compete with larger platforms by capitalizing on their proximity to regulators and venture capital funding, and their deep knowledge of local customers (Teng & Schwanen, 2022). The potential of such actions is, in turn, used as a justification device by global platform owners to engage in skirting rules, undercutting providers, and pursuing anticompetitive behavior. All of these elements create a vicious cycle of regulatory capture and anticompetitive behavior by both global and local platform companies. Future research should examine how to implement top-down accountability mechanisms that could break this vicious cycle and hold platforms—both global and local—accountable for their actions.

The limited gains achieved through bottom-up accountability tactics have not scaled. Platforms are not required to honor the concessions they give providers in one country, city, or state to those in other locations. Most prominently, as highlighted in our review, the EU has worked with providers and other interest groups to create some of the most progressive data privacy and transparency laws; however, these protections do not extend to providers in countries outside the EU, enabling platforms to by and large operate without changing their practices at scale. This example highlights how platforms take advantage of inconsistent accountability rules and regulations, often to the detriment of their providers and customers. Future research should thus investigate how providers can coordinate across regions to ensure all providers benefit from the gains secured in a given location. Research on collective action may provide insights that platform scholars can extend to the platform context.

Reconfiguring how accountability is distributed in multisided exchange. Our multisided accountability framework emphasizes how important it is for each platform actor to take responsibility for providing accurate, timely, unbiased evaluations to one another through ratings and reviews. Yet, we found few examples of such systems. As it stands now, most platform owners do not hold customers and providers accountable for the accuracy of their evaluations. This has led to widespread gaming behaviors, undermining the reliability of evaluation systems and the reliability of the entire ecosystem (e.g., Keller, M. H., 2018). As a result, a future area of research could be to examine how platform owners can incentivize quality, consistency, and accuracy of evaluations.

Incorporating fairness into multisided platform accountability. Our review highlights how integrating concepts of fairness provides a theoretical scaffold for enhancing accountability in the context of platforms. However, conceptions of fairness are not always stable. Perceptions of fairness among platform actors may change over time as these actors become more habituated and economically dependent on the platform, which in turn might lead providers to normalize unfair platform practices as "business as usual" (Karunakaran, 2022; Rahman et al., 2023). Longitudinal research exploring how and why providers' perceptions and attributions of fairness change over time can provide valuable insights on improving platform accountability. Future research could also focus on examining how and why different actors define what constitutes fairness in platform-based markets and the impact of various approaches to promoting fairness on outcomes such as customer trust, provider innovation, and long-term platform growth. For example, how do different pricing and revenue-sharing schemes between the platform owner and providers affect perceptions of fairness? Scholars could also explore how alternative business models that are more strongly associated with transparency and fairness, such as cooperatives, might change accountability practices. Moreover, fairness perceptions could also vary across cultures, race, gender, and other demographic variables (e.g., Botelho & Abraham, 2017). With platforms often operating globally, cross-cultural research could examine how fairness perceptions and expectations differ across cultures and subgroups, and how regulators and other platform actors can take these differences into account to improve platform accountability.

While our review touched on the importance of procedural and distributive fairness, a vast body of literature in management and psychology has identified other dimensions of fairness—such as interpersonal or interactional fairness (Colquitt & Zipay, 2015)—that could provide further insight into how to enhance multisided platform accountability. Emerging work, for example, has suggested that horizontal and vertical fairness are useful for understanding how to adequately address accountability concerns between platform actors (Karunakaran & Van Angeren, 2023). We thus see promise in future work investigating how prioritizing types of fairness, such as vertical, horizontal, interactional, and interpersonal fairness, could help with enhancing multisided platform accountability.

Multisided platform accountability and inequality. Few management scholars have examined how the lack of multisided platform accountability contributes to different types (e.g., economic, social, environmental, demographic) and levels (e.g., societal, organizational, individual) of inequality (as one exception examining geographic inequality, see Koo & Eesley, 2021). Yet, many scholars across disciplines, including anthropology, computer science, and sociology, have drawn attention to how platforms perpetuate and exacerbate inequality (e.g., Bender, Gebru, McMillan-Major, & Shmitchell, 2021; Crawford, 2021; McMillan Cottom, 2020; Noble, 2018). Future research should more seriously engage with how enhanced multisided accountability can ameliorate inequality. Insights from past research (e.g., Piketty, 2017) have suggested that both bottom-up and top-down accountability, in conjunction with platform owners, will be necessary to address the serious challenges scholars have raised related to the lack of platform accountability and inequality. Research addressing these issues will thus not only carry theoretical importance but also be relevant for policy-makers.

CONCLUSION

This integrative review presents two perspectives on platform accountability: a bottom-up, emergent perspective focused on lower-powered actors; and a top-down, institutional perspective focused on legal, regulatory, and governance changes. Synthesizing these perspectives, we argue that *multisided platforms require multisided accountability systems,* we provide an integrated framework on platform accountability, and we suggest promising directions for future research.

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