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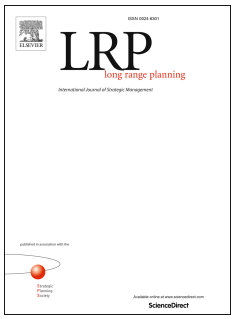

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CONCEPTUALIZING THE 'DE'–MATERIALIZING CHARACTERISTICS OF INTERNAL INCLUSION IN CROWDSOURCED OPEN STRATEGY

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Abstract

The increasing ubiquity of interactive technologies such as crowdsourcing is one of the major forces underpinning the emerging concept of open strategy. The large-scale interactive functionality afforded by such technologies offers unparalleled possibilities for including actors across the entire organization in co-creative efforts to respond to strategic issues or shape the organization's strategy. However, the ability of all organizational actors to engage in the production and co-development of strategy ideas, which together constitute inclusion in open strategy, is hindered by the highly politicized, often secretive and organizationally complex arena through which strategy unfolds. In this conceptual paper, we address this issue by drawing on the strategy tools-in-use framework to explore the material characteristics of crowdsourcing that de-materialize the material barriers to inclusion in open strategy. Drawing on the information systems literature, we argue that characteristics of anonymity, parallelism, group memory, process structuring and information processing are important material enablers of inclusion in open strategy.

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INTRODUCTION

To what extent is strategy formulation being opened-up to a wider cohort of internal actors? This question has been a central issue in strategy process and practice research over the last few decades (Mantere and Vaara, 2008; Westley, 1990) and is a defining feature of the emerging concept of "open strategy" (Whittington et al., 2011). Open strategy refers to strategizing practices that are deliberately inclusive, transparent and involving of a wider cross-section of internal and external actors than traditional, closed practices of strategy formulation constrained to a top management team (TMT) (Hautz et al., 2017; Seidl et al., 2019; Whittington et al., 2011). Studies have shown that increased internal inclusion in strategy processes and practices can stimulate new knowledge creation, commitment and convergence during implementation (Mintzberg, 1994) and higher quality decision-making (Guth and MacMillan, 1986). Yet, involving all organizational actors in open strategy is a difficult task.

Scholars have shown that structural elements of hierarchy and division of labor (Child, 2019), as well as social elements of discourse, politicking and issue-selling (Clegg, Pitelis, Schweitzer and Whittle, 2020), are the material factors framing internal inclusion in strategy-making (Eisenhardt and Zbaracki, 1992). Thus, actors located in the organization's periphery who lack access to such material resource are generally excluded. Ensuring the inclusion of actors in the organization's periphery is important, as studies have shown that being structurally distant from the corporate center and immersed in action leads to a heightened ability to sense emerging signals in the environment that are critical for the development of new capabilities (Gavetti, 2005; Regnér, 2003; Tripsas and Gavetti, 2000). This poses an

interesting inclusivity conundrum for open strategy as, despite their importance, actors in the organization's periphery lack the material agency to make meaningful and impactful contributions since their roles are deliberately designed to limit autonomy and access to material resources. Thus, in light of this conundrum, we focus explicitly in this paper on the internal aspect of inclusion in open strategy and review the arguments of open strategy in the context of considerations that effect material impediments to openness and encourage exclusivity rather than inclusiveness in the strategy process.

Recent studies have identified interactive technologies such as crowdsourcing as a potential tool for affording agency to the internally excluded and enabling the "massification" of employee inclusion (e.g., Baptista et al., 2017; Dobusch and Kapeller, 2017; Haefliger et al., 2011; Malhotra et al., 2017; Stieger et al., 2012). Crowdsourcing is defined as the act of an organization taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call" (Howe, 2006: 1). Organizations such as IBM and Barclays Bank, for example, have used crowdsourcing technology to engage thousands of employees in strategy work (Whittington, 2014). Yet, while crowdsourcing technologies offer unprecedented potential for including "large numbers of employees in strategizing activity, their relative effectiveness is unclear" (Whittington et al., 2015: S15). Merely adopting crowdsourcing as a tool for open strategy does not afford agency to peripheral actors and enable inclusion. Indeed, middle and lower-level managers leverage the material characteristics of strategy tools "for rhetorical purposes to justify positions that support their political interests" (Jarzabkowski and Kaplan, 2015: 538), often to the deliberate exclusion of others (Kaplan, 2008; 2011). These insights raise an intriguing '*openness paradox,*' as the inclusivity afforded by crowdsourcing to 'open' strategy can simultaneously constrain inclusivity and 'close' strategy. Thus, while crowdsourcing technologies may enable the mass inclusion of peripheral organizational

actors in open strategy, our understanding of *how* remains limited. Based on this paradox, we posed the following guiding research question: *how can the internal inclusion of peripheral organizational actors in open strategy be materially enabled through crowdsourcing?*

In this paper, we seek to answer this question by mobilizing the strategy tools-in-use framework proposed by Jarzabkowski and Kaplan (2015) as it provides a parsimonious approach to integrate insights drawn from the strategy-as-practice literature regarding the material (structural and social) barriers to inclusion, with insights from the information systems literature regarding the material characteristics of technology that may "de–materialize" strategy to enable inclusion. By examining the interactions between the two aforementioned literature streams, we advance a conceptual approach that specifies the de-materializing characteristics of crowdsourcing that alleviate the materials barriers to inclusion and stimulate contributions from peripheral organizational actors in open strategy. While some recent studies have highlighted the potential technological enablers of inclusion in crowdsourced open strategy (e.g., Amrollahi and Rowlands, 2017, 2018; Aten and Thomas, 2016), these studies fail to conceptualize or empirically demonstrate how specific enablers materially-mediate (de-materialize) the material factors typically framing inclusion and exclusion in open strategy. Through our conceptual model we offer new insights into the material mechanisms that constitute inclusivity in crowdsourced open strategy. In doing so, we respond to recent calls for research at the intersection of strategy and material technologies (e.g., Vaara and Whittington, 2012; Whittington, 2014) and provide an important contribution to the literature. Our conceptualization advances the idea of '*de-materializing material'* that is essential for enabling the massification of inclusion in crowdsourced open strategy.

Our paper proceeds in three sections. We first introduce the theoretical background on open strategy and position the concept within the wider participation debate in strategic

management research that led us to our guiding question. Next, we introduce the strategy tools-in-use framework as our conceptual lens to discuss how the inclusion of peripheral actors may be materially enabled through crowdsourcing. Specifically, we focus on how the material barriers highlighted in the theory background section are mitigated through the material characteristics of anonymity, parallelism, group memory, process structuring and information processing that constitute our crowdsourced approach to inclusion in open strategy. From this discussion, we develop a series of issues to stimulate future research and conclude with a summary of the study's theoretical and managerial contributions.

THEORY BACKGROUND

Open strategy

Building on the notion of open innovation, open strategy is an umbrella term used to describe the processes and practices by which organizations increase the inclusivity and transparency of strategy work to a wider cohort of internal and external actors (Hautz et al., 2017; Whittington et al., 2011). Inclusivity is defined as the degree of participation extended by the organization in the production and co-development of strategy ideas that are intended to shape strategy content; whereas transparency is defined as the degree of visibility afforded in understanding the content of the firms' strategy (Dobusch et al., 2019). It is worth noting, however, that while such openness implies a sharing of views, information and knowledge, it usually does not extend to a devolution of decision rights outside of the TMT (Whittington et al., 2011: 535).

From an internal perspective, strategic openness involves the engagement and inclusion of multiple actors distributed across hierarchical levels and functional departments (Chesbrough and Appleyard, 2007; Mack and Szulanski, 2016). Increasingly, firms are beginning to move away from internally closed processes of strategy centered on the TMT. The underlying rationale is that opening-up strategy to the organizational masses "will widen

the search for ideas and improve commitment and understanding during implementation" (Whittington et al., 2011: 535). Prior research has long acknowledged the importance of increased internal inclusion for driving organizational commitment (Guth and MacMillan, 1986), strategic convergence among subunits (Ketokivi and Castañer, 2004) and enhancing joint sensemaking (Gioia and Chittipeddi, 1991; Gioia et al., 1994). Scholars suggest that the lack of these features in strategy processes and practices will likely lead to poorly developed strategies (Floyd and Wooldridge, 2000), greater dissatisfaction among the excluded (Westley, 1990) and concomitant difficulties in building collective understanding during implementation (Mintzberg, 1994).

A major factor underpinning inclusivity in open strategy from an internal perspective, therefore, is the ability of all organizational actors to participate in the organization's strategic conversation and contribute in the production and co-development of strategy ideas. Triggering the inclusion of employees outside of the exclusive 'inner-circle' of corporate elites and middle management levels is difficult, however, as these actors are typically ignored or excluded as they lack the material agency to contribute (Nechanska, Hughes and Dundon, 2020) . In the following sub-section, we explore in more detail the material barriers to inclusion experienced by peripheral actors, which are both structurally and socially manifest.

The material barriers to inclusion in open strategy

Several material barriers exist that inhibit the ability of all organizational actors to participate in open strategy. Prior studies suggest that one's ability to engage in the production and co-development of strategy ideas is contingent on a number of structural and social drivers that serve as material triggers. These drivers, in turn, create barriers to inclusion among those that are not afforded such agential opportunities owing to their peripheral position. Many organizational members lack the structural and social wherewithal to contribute; they lack the

social capital (Adler and Kwon, 2002) that enables the building of further social capital. The existence of such material barriers raises important questions regarding inclusivity in open strategy that we address by developing our crowdsourced approach. In Table 1, we present a distillation of the material barriers–*structural* and *social*–to inclusion in idea production and idea co-development during open strategy, gleaned from the strategy-as-practice literature. The Table also captures the de-materializing characteristics of crowdsourcing that form the basis of our crowdsourced approach, which we develop below.

[Insert Table 1 here]

Structural barriers

In terms of structural barriers, the ability to engage in the production and co-development of strategy ideas is determined by one's vertical and horizontal positioning in the organization's formal structure. First, from the perspective of vertical position, early bureaucratic theories emphasized legitimate authority, embedded within an actor's hierarchical position (Weber, 1978), as a critical enabler of inclusion. Those actors who occupy a managerial position in the organization's hierarchy possess a legitimate mandate and as such have an in-principle role to formulate strategy (Astley and Sachdeva, 1984). Actors outside of such hierarchical positions, however, are assumed to adopt a position of subordination to the authority of those directing them. Their subordination, the obverse of legitimate domination, typically constrains their ability to contribute to idea production; it does not bestow strategic legitimacy in doing strategy talk. Thus, the ability to contribute in the production of ideas during open strategy is typically determined by virtue of one's position within the organization's formal hierarchy of relations. Similarly, for idea co-development, studies have shown that middle managers, owing to their intermediary position between frontline operations and top management (Wooldridge et al., 2008), are the central shapers of strategy and custodians of information flow between the upper and lower levels of

the organization (Buchanan and Badham, 2008). From this perspective, peripheral actors are frequently the 'recipients' of strategies formed and co-developed between top and mid-level managers to which they are unable to contribute.

It is also widely accepted among strategy scholars that horizontal relations determined by the structural division of labor and embodied by the control of key resources and workflow dependencies can constrain inclusion in idea production. The seminal studies of Pfeffer and Salancik, for example, demonstrated how powerful actors from university departments that had access to grant funds and student enrollment resource were able to obtain a higher allocation of the university's budget (e.g., Pfeffer and Salancik, 1974; Salancik and Pfeffer, 1974). Thus, peripheral actors outside of powerful departments that control critical resources or occupy a centralized position in the organization's workflow also find it difficult to contribute to the production of strategic ideas. This is because the assumption of and access to, relations of power among organizational actors lead to the exclusion of those that fall outside of such relations (Hickson et al., 1971).

Social barriers

In terms of social barriers to inclusion, the ability to engage in the production and co-development of strategy ideas is determined by the socialized role expectations associated with actors' structural position, as well as the discourse and language of strategy (Mantere and Vaara, 2008) which take on a material form as organizational actors engage in social interactions during strategy formulation and implementation. From the perspective of role expectations, scholars have suggested that employees tend to identify with the socialized expectations of their formal role in the organization's structure and exhibit a position bias which shapes their action and frames the criteria through which their action is enacted (Floyd and Lane, 2000; Tsoukas, 1996; Vaara and Whittington, 2008). Thus, peripheral actors who fall outside of vertical and horizontal relations of power may find it difficult to deviate from

the auspices of their socialized subordinate or non-central role, which subsequently constrains their inclusion in open strategy.

Strategy discourses are also socially conditioned by structure (Fairclough, 2003; Mantere and Vaara, 2008). Studies have shown, for example, that the position bias stemming from structural hierarchy, which constrain peripheral actors from contributing to idea production, is also generally reinforced in managerialist discourses and rhetoric embedded in the language of strategy (e.g., Kornberger and Clegg, 2011; Laine and Vaara, 2007; Paroutis and Heracleous, 2013; Samra-Fredericks, 2005). Mantere and Vaara (2008), for example, provide exploratory evidence that shows how different discourses can either impede or impel inclusion in strategy across organizational levels depending on the types of discourses used.

In terms of the co-development barriers that inhibit the ability of organizational actors to participate in the co-shaping of strategy ideas with other actors from across the organization, we identified politicking and issue-selling. Political models of strategy depict collaborative endeavors during strategy formulation as a process in which actors with conflicting interests and preferences seek to promulgate a preferred strategic orientation through the formation of covert coalitions, cooptation and strategic use of information (Buchanan and Badham, 2008; Eisenhardt and Bourgeois, 1988; Eisenhardt and Zbaracki, 1992). Dutton and Ashford (1993: 398) argue that the effective social competence of actors that become engaged in the strategy process is to be able to "issue-sell" to top management issues they perceive as strategically important, which, if effective, are then allocated resource and attention by top managers. Close acquaintance with these powerful actors and their agendas therefore facilitates having the ability to participate in the co-development of strategy. Middle managers are acknowledged to play a critical role as strategic 'sensemakers' and 'sensegivers,' as they use upward influence tactics to stimulate impetus from top management (e.g., Dutton et al., 1997; Floyd and Wooldridge, 1994) and discursive activities

to connect different levels of the organization (Rouleau and Balogun, 2011). Extending this view, more recent studies have also shown how actors engage in such political behavior through a process of interactive framing in order to mobilize wider support (Kaplan, 2011; Kaplan and Orlikowski, 2013; Mirabeau and Maguire, 2014). Kaplan (2008), for example, demonstrated how skillful actors are able to establish legitimacy for their preferred strategic frames through iterative realignments that bridge or extend interpretations to encompass others' points of view.

The material enablers of inclusion in open strategy

When it comes to the enablers of inclusion in open strategy, studies have alluded to the general importance of technology as a mediating artefact (Vaara and Whittington, 2012; Whittington, 2014). Strategy work is intimately linked to material artefacts and technologies that serve as important 'tools' of strategy formulation. Strategy tools are broadly defined as the "frameworks, concepts, models, or methods" of strategy-making (Jarzabkowski and Kaplan, 2015: 538) and include artefacts such as the SWOT (strengths, weaknesses, opportunities and threats) framework, Porter's Five Forces (Porter, 1980), strategy plans (Giraudeau, 2008; Spee and Jarzabkowski, 2011), toys (Heracleous and Jacobs, 2008) and PowerPoint slides (Kaplan, 2008; 2011). Such tools are acknowledged to contribute to strategy formulation by facilitating discursive practices of strategic knowledge production. Spee and Jarzabkowski (2011) demonstrate how actors use written strategy documents to facilitate iterative "talk to text cycles" as strategic planning unfolds as a communication process. Similarly, Kaplan (2011) demonstrated how the text-based functionality and modularity of PowerPoint can be used to engage in collaborative practices across hierarchical and departmental boundaries by enabling actors to co-create slides and negotiate meaning as slide decks evolve over time.

A common thread amongst these aforementioned studies is the primacy of discursive practices through which the process of 'knowing' strategy unfolds among distributed actors. Extending these insights, Knight, Paroutis and Heracleous (2018) more recently demonstrated how PowerPoint is not only used as a discursive tool to accomplish strategy but also as a visual tool through which strategy evolves and is opened-up to others in a semiotic process of meaning making that involves both visual and discursive practices.

Traditionally, the actors using strategy tools are those with a hierarchical advantage and proximity to the center, such as top and mid-level managers, which privileges or mandates their access. Tools are used by these actors to frame categories and issues of relevance, through visual and/or discursive practices. Positionally, they are able to leverage specific material characteristics of strategy tools, as they formulate strategy and make strategic decisions in spaces that they constitute, dominate and legitimate. They are able to do so through the affordances of technology: just as technology may be an enabler, it may also be a constraint. In her study of PowerPoint, for example, Kaplan (2011) also showed that actors may engage in "cartographic" instead of collaborative practices by leveraging the modularity of PowerPoint as a means to draw boundaries around the scope of strategy and deliberately exclude other actors' slides and perspectives in order to promulgate a strategic preference. Similarly, Knight and colleagues (2018) show that the visual characteristics of PowerPoint can be used to make particular aspects of strategy visible and other aspects invisible to organizational actors as a means to stimulate resonance. In this sense the material characteristics of tools are used as rhetoric devices by privileged actors to justify positions, support political interests and shape actions and outcomes.

Top managers, for example, often use SWOT and Porter's Five Forces frameworks to assist them in making seemingly 'rational' choices justifying and communicating a strategic course of action to peers and subordinates (Jarzabkowski and Kaplan, 2015; March, 2006).

Middle managers, on the other hand, as the intermediary link between the top and bottom levels of the organization, are likely to use strategy tools to engage in strategic dialogue and upwardly sell issues to top managers in the hope of gaining support for particular views (Floyd and Lane, 2000; Kaplan, 2008), as well as downwardly propagating them to operational managers and frontline employees to execute (Balogun and Johnson, 2004).

More recently, there has been increasing recognition that deploying crowdsourcing technology as a tool enables the massification of employee inclusion in open strategy (e.g., Malhotra et al., 2017; Stieger et al., 2012). As Whittington and colleagues (2011) argue, the proliferation of such technologies in society are driving a shift towards increased openness in strategy-making. Yet, given that strategy tools are used as rhetorical devices by top and mid-level managers for whom their material properties are used purposely to frame strategy and political interests, simply adopting crowdsourcing as a tool for open strategy does not necessarily endow actors in the organization's periphery with the agency to participate, as several material barriers exist that preclude their inclusion in the production and co-development of strategic ideas.

These collective insights led us to our guiding research question of: *how can the internal inclusion of peripheral organizational actors in open strategy be materially enabled through crowdsourcing?*

CROWDSOURCING AS A TOOL FOR OPEN STRATEGY

In this section, we draw on the strategy tools-in-use framework proposed by Jarzabkowski and Kaplan (2015) to answer our research question and discuss the de-materializing characteristics of crowdsourcing that are required to overcome the material barriers constraining the inclusion of peripheral organizational actors in open strategy. Building on the technologies-in-use perspective, which distinguishes between technology as an artefact, imbued with specific material characteristics on the one hand, from technology as

used by human actors with a specific goal orientation on the other; the strategy tools-in-use framework applies the same principles to distinguish between the *tools* of strategy and the *actors* who use them.

The material characteristics of strategy tools both afford and constrain certain uses for goal-oriented actors (Orlikowski and Scott, 2008; Paroutis et al., 2015; Werle and Seidl, 2015). A plain cardboard box, for example, is usually intended for packaging or storing goods and materials but can also be used against its intended purpose as a doll's house, fort, table and a plethora of other deviated uses. It is, however, unlikely to be used as a laptop or refrigerator, as a cardboard box lacks the material characteristics to afford such uses. Affordances are therefore an emergent property of an interaction between the specific material characteristics of a tool and human actors who perceive a particular use potential from them (Markus and Silver, 2008). Implicit in this definition of affordances are multiple materially and socially constructed possibilities for action. This is evident in the duality of "collaboration" and "cartography" highlighted earlier in Kaplan's (2011) study of PowerPoint, in which actors with a particular goal-orientation were able to differentially leverage the text-based characteristics and modularity of the technology in order both to open and close actors' contributions to strategy. More recent studies of PowerPoint have demonstrated how actors can also leverage visual as well as textual characteristics to afford strategic visibility and resonance during strategy-making (cf. Knight et al., 2018). Consequently, the perceptions of a tool's affordances that actors form from specific material characteristics can lead to different uses and outcomes shaped by their goals and preferences (Orlikowski, 2000; 2010; Orlikowski and Scott, 2008).

In accordance with this view, we contend that in order to mitigate the material barriers to inclusion that preclude peripheral actors' contributions in the production and co-development of strategy ideas during open strategy, distinct de-materializing characteristics

of crowdsourcing must be present. Leveraging insights from the wider information systems literature, we identify the specific material characteristics of crowdsourcing technology that are required to de-materialize the material barriers to inclusion–structural and social–experienced among peripheral organizational actors identified in Table 1. In the following sub-sections, we draw from this literature to advance our crowdsourced approach to open strategy and highlight the specific de-materializing characteristics that afford inclusion in open strategy as indicated in the third column of Table 1.

Material enablers of idea production

Studies on technology-enabled communications from the information systems domain have identified three core material properties of interactive technologies that provide increased possibilities for distributed participation in the production of ideas during open strategy; these are anonymity, parallelism and group memory. Anonymity is defined as "the degree to which a communicator perceives the message source as unknown or unspecified" (Scott, 2004: 129). A large body of literature on this topic has been subject to a series of meta-analyses (e.g., Baltes et al., 2002; Postmes and Lea, 2000; Rains, 2005). A common conclusion among these studies is that while the effect of anonymity is not simple, one effect that has received repeated support is the positive influence of anonymity on the willingness and volume of participation observed in technology-enabled group discussions (e.g., Dennis et al., 2001). Whether anonymity is complete or based on a pen name (pseudo-anonymity) does not appear to alter this positive effect (Tsikerdekis, 2013).

Anonymity, therefore, affords possibilities for counteracting the barriers to inclusion that flow from structurally and socially embedded organizational role assumptions, which may lead to peripheral actors' engagement in open strategy (e.g., Floyd and Lane, 2000; Tsoukas, 1996). Increased inclusion owing to anonymity is attributed to the reduced evaluation apprehension actors experience when fears of negative assessment from powerful

others are removed (Gallupe et al., 1991). Anonymity has been shown to reduce actors' self-focus, awareness and accountability (Connolly et al., 1990). By de-individuating actors' contributions through the removal of all social cues in relation to their identity, hierarchical position and departmental affiliation within the organization, studies have shown that actors are less inhibited and more willing to contribute (Nunamaker et al., 1991; Rains, 2007).

We posit that peripheral actors will be empowered to enhance their engagement in the production of strategy ideas by the reduced evaluation apprehension and de-individuation enabled by anonymity in crowdsourced open strategy. Peripheral actors' perceptions of being illegitimate participants in strategy formulation owing to their perception of the role assumptions of others are reduced due to the de-individuation of interactions. They have no need to feel vulnerably visible as their contributions will be made because they know that the receivers' frame of expectations cannot be explicitly active. They are free to act outside of the auspices of their assumed subordinate, 'non-strategic' position regardless of hierarchy, department or discourse. Anonymity enables them to participate from invisible margins in the affairs of the powerful, which stimulates their engagement in idea production during open strategy. Under conditions of anonymity, therefore, those 'outside' of managerial positions where ideas and decisions around strategy-making are typically given opportunities for inclusion, while remaining outside the normal systems and structures of power that enable inclusion. We therefore suggest that the panoptical effect that peripheral organizational actors experience because of the structurally and socially embedded role assumptions concerning their inclusion in idea production during crowdsourced open strategy will be facilitated by the material characteristic of anonymity, something to which future research should attend.

While anonymity is essential for stimulating peripheral actors' participation in idea production during open strategy by helping to alleviate the structural and social barriers associated with their peripheral position, studies of team performance have also shown that

powerful actors often seek to verbally dominate conversations to the direct detriment of others, thereby rendering peripheral actors "speechless" (Aime et al., 2014). These dynamics also extend to strategy formulation, as those with access to central resources to shape strategy, as well as discourses and language that empower their contributions (Mantere and Vaara, 2008; Samra-Fredericks, 2005), tend to dominate strategy though a process of "production blocking" (Gallupe et al., 1994; Valacich et al., 1994). Production blocking occurs when only one individual or a limited group of individuals are able to contribute at any one time. Studies suggest that such blocking causes peripheral actors to suppress their ideas as they are unable to contribute them as they occur (e.g., Dennis and Valacich, 1993). Moreover, their marginal position entails occupancy of a subject position in which anxieties about the legitimacy of expressing ideas acts as a brake on their voicing–the rule of anticipated reaction (Schattschneider, 1960). The consequence is that idea production becomes dominated by the structurally and socially powerful who monopolize the 'airtime' at the expense of others making a distinctive individual contribution.

The second characteristic, parallelism, offers a viable means to reduce the exclusive effects of production blocking during idea production, however. Parallelism refers to the ability of actors to exchange information and ideas simultaneously (Dennis, 1996; Tyran et al., 1992). This characteristic mitigates the need to wait for others and eliminates the ability of the powerful to dominate through assumptions on their part of discursive sovereignty or on the part of the marginal participants, of reticence in the face of power. Thus, since crowdsourcing technologies enable parallelism on a large-scale, as anyone can contribute from anywhere at any time synchronously or asynchronously, peripheral actors are afforded more opportunities to contribute to strategy-making (Stieger et al., 2012).

A further negative effect of production blocking stems from the need to keep up with the contributions of others that dominate the strategic conversation, which leaves peripheral

actors with neither room nor time to generate their own ideas, a negative effect that is compounded in the context of crowdsourcing, as the large-scale parallelism it enables simultaneously creates a significant processing burden given the potential volume of ideas that are generated (Piezunka and Dahlander, 2015), causing a form of idea fatigue. These tendencies can be countered, however. Characteristics of group memory, such as the collective ownership, documentation and distribution of ideas submitted by actors in a common memory bank negate this negative effect by providing a means for recalling and examining ideas at any time. The presence of the material characteristics of parallelism and group memory will help counteract the structural and social barriers to idea production by reducing dynamics of control and ownership of the practice, such that they stimulate equal participation (Dennis and Garfield, 2003; Tyran et al., 1992). We therefore suggest that the negative effects of structural and social power relations on the inclusion of peripheral organizational actors in idea production during crowdsourced open strategy will be facilitated by the material characteristics of parallelism and group memory, a topic worthy of further enquiry.

Material enablers of idea co-development

In terms of idea co-development, the group decision support systems literature highlights two possible material characteristics that may mitigate the barriers to inclusion experienced by peripheral actors in the co-shaping of strategic ideas. These are process structuring and information processing. Process structuring refers to any aspect of "technology that supports, enhances, or defines the process by which groups interact, including capabilities for agenda setting, agenda reinforcement, facilitation and creating a complete record of group interaction" (Zigurs and Buckland, 1998: 319). According to Dennis et al. (1997), process structuring can stimulate synergies for new ideas to be discovered at the intersection of other ideas through imposing rules that direct the pattern,

timing and content of communication among participating actors. Doing so enables the cross-fertilization of insights. Information processing, on the other hand, refers to the conditioning effect of technology on task information, such as how information is gathered, shared, aggregated and evaluated (Dennis et al., 1997).

The combined influence of process structuring and information processing characteristics, it is argued, are important enablers for decision tasks characterized by potentially conflicting interests (Zigurs and Buckland, 1998), as is usually the case for strategic decisions and the general process of strategy formulation. The dual presence of such process structuring and information processing capabilities of technology therefore limits the degree of influence that dominant actors have on the strategy process. The conditioning effects of process structuring and information processing on how co-development occurs, negate possibilities for promoting a preferred point of view and the curtailing of alternative perspectives, which is generally the outcome of politicking and issue-selling (Dutton and Ashford, 1993; Eisenhardt and Zbaracki, 1992). In other words, the structuring effects of technology simplify the socially complex, communicative aspects of the strategy formulation process, thereby breaking the interdependency between skillful 'strategy talk' and legitimacy building strategy texts. These texts by the 'gurus' of strategy are a core driver of strategy practice (Rouleau and Balogun, 2011; Spee and Jarzabkowski, 2011).

Breaking the nexus between the legitimated texts of strategy and the emergent practices of strategy reduces the capacity for a priori embedding of subject positions as well as limiting any ideational content developed only to that which is externally legitimated and internally positioned as relevant. Doing this negates impediments stemming from "cartographic" practices that are deployed prefiguratively to intentionally bind a solution space to a specific group of actors and or strategic perspectives through the inclusion or exclusion of ideas (e.g., Kaplan, 2008; 2011). Instead, co-development of strategy ideas among peripheral actors is

enabled irrespective of their legitimated permission to 'speak' strategy and any existing political agenda. Thus, process structuring potentially broadens inclusion. We therefore suggest that the negative effect of politicking and issue-selling on the participation of peripheral organizational actors in the co-development of ideas during crowdsourced open strategy will be facilitated by the material characteristics of process structuring and information processing, suggesting a thematic integration of information systems and organization theory streams for further research.

CONCLUDING DISCUSSION

In this paper, we sought to address the conundrum of how to involve those organizational actors that are typically marginalized or ignored in the organization's strategic conversation, owing to a combination of structural and social barriers that inhibit inclusion in idea production and idea co-development. While several empirical studies have highlighted the role of technologies, such as crowdsourcing, as an enabling force driving what Whittington (2015) terms as the "massification" of employee inclusion in strategy work (e.g., Stieger et al., 2012), these studies tend to assume that such inclusion occurs naturally. Thus, how technology will be an enabling force remains somewhat unknown and our understanding of how new crowd-based technologies are able to negate the material barriers to inclusion that inhibit the internal participation of peripheral organizational actors is still lacking. Our paper's contribution addresses this lacuna by answering the question of how the internal inclusion of peripheral organizational actors in open strategy can be materially enabled through crowdsourcing.

In answering this question, we have conceptualized a number of de-materializing characteristics of crowdsourcing drawn from the information systems literature, namely: anonymity, parallelism, group memory, process structuring and information processing, summarized in the third column of Table 1, which constitute our crowdsourced approach to

open strategy. Application of these ideas in local experiments in strategy work offers potential for enabling inclusion beyond the organizational elites that typically dominate strategy processes and practices. Below we discuss the theoretical and managerial contributions of our study.

Contribution to theory

Our study contributes to the strategy process and practice literature, particularly with regards to the emerging concept of open strategy (Hautz et al., 2017; Siedl et al., 2019; Whittington et al., 2011), by highlighting how crowdsourcing can be used to negate the material barriers inhibiting wider internal inclusion in strategy formulation. Simply 'opening the door' for others inside the organization to participate through crowdsourcing technologies will not naturally trigger the inclusion of peripheral actors. Being inclusive in principle does not render inclusivity in practice. Our conceptualization of a crowdsourced approach to open strategy suggests that the material enablers of inclusion paradoxically serve as material disablers. That is, the material characteristics of anonymity, parallelism, group memory, process structuring and information processing are only enablers in so far as they 'dis-able' the structural and social material that typically frame inclusion and exclusion in strategy formulation. Thus, we advance the idea of '*de-materializing material*' that is essential for enabling the massification of employee inclusion (Whittington, 2015). Contrary to prior studies that emphasize the role of structural and social material in constituting strategy (e.g., Kaplan, 2011; Knight et al., 2018; Mantere and Vaara, 2008), the perspective of material proposed in this paper is de-constitutive of strategy, which becomes the central means of inclusivity. As such, our results suggest that the ontology of inclusion in open strategy formulation potentially stands in stark contrast to the ontology of inclusion in 'normal' (closed) strategy formulation.

As our approach reveals, the structural elements of hierarchy and division of labor, as well as social elements of discourse, politicking, and issue-selling that are positioned in the literature as the underlying source of inclusion in strategy-making, are not constitutive of inclusivity in open strategy-making. Rather, inclusivity in open strategy is characterized by the removal of these structural and social elements and technologically constituted by anonymity, parallelism, group memory, process structuring and information processing.

From this, it follows that there may exist a possible tension to strategic openness between its core elements of inclusivity and transparency (Whittington et al., 2011). According to the argument presented herein, inclusivity (participation) is enabled by reducing elements of transparency in terms of removing social cues through anonymity and reducing opportunities for the embedding of subject positions through process and information structuring. Thus, opening inclusivity may require closing off, or partially closing off, elements of transparency to stimulate wider inclusion. To benefit from the collective intelligence of the organization during open strategy formulation it may be most appropriate to enable the functional equivalent of 'blind' peer review. Ideas that have no ownership signification flow more freely than those that bear evident signs of their origin.

The suggestions for further research that we have developed through our arguments offer opportunities to explore more closely the dynamics of strategic openness enabled by technology. The usefulness of these suggestions is that they elaborate ways of enabling a more open strategy in practice by focusing on technology as a mediating artefact. Further, we respond to recent literature calling for research that bridges insights from strategy-as-practice with information systems (cf. Whittington, 2014). The material barriers to inclusion are unlikely to disappear simply by shifting strategy formulation and selection to a crowd-based technology platform unless ideas float free of their signified subjects. Our study sheds light on the question of how such barriers can be mitigated through a combination of different

material characteristics that afford inclusion. While prior studies of technology-enabled open strategy seem to discount or ignore the highly political and socially complex arena through which strategy work generally unfolds (e.g., Hutter et al., 2017; Stieger et al., 2012), these issues are situated center stage by this contribution, integrating information systems and organization theory.

Contribution to managerial practice

Our study also makes important contributions to managerial practice. Senior managers must recognize that engaging the wider organization in crowdsourced open strategy needs much more thought than simply providing an online opportunity to participate. First, managers must assess the existing barriers to inclusion that are experienced by disempowered, marginal, or peripheral actors that are dispositionally embodied and embrained, and purposely leverage material characteristics that aim to equalize such barriers. They can do so by removing the specific obstacle that currently limits dispositions and thus voice being asserted or heard. Without ensuring the comfort and psychological safety of these relatively voiceless actors, efforts to include actors from across all organizational levels and functional departments using crowdsourcing technology will seem more ceremonial than authentic. Ceremonially, the organization may claim to practice open strategy but in terms of strategy-as-practice it will be hardly more open than under prior protocols.

Managing open strategy therefore entails far more than good intentions; managers must be cognizant of barriers beyond opportunity, which requires acute sensitivities towards competing agendas and preferences as they exist within the organization as well as maldistribution of social capital. Being on top of a hierarchy and highly capitalized in social terms does not assure a contribution's worth, neither does being open in principle, as least not without addressing the subtle and tacit barriers to entry into an open strategy space that we have addressed here.

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Table 1. The material barriers and de-materializing enablers of inclusion in crowdsourced open strategy

Modes of inclusion	Structural barriers	Social barriers	De-materializing enablers
Idea production	Structural barriers to inclusion in idea production are vertically inherent in organizations' hierarchical configuration.	Social barriers to inclusion in idea production are constituted in the predominantly managerialist discourses and language of strategy that affirm role expectations.	Anonymity enables inclusion in idea production by de-individuating organizational actors from their structural position and assumed role in the organization.
	Structural barriers to inclusion in idea production are horizontally inherent in organizations' structural division of labor due to resource and workflow dependencies between organizational actors from different departments/functions.	Social barriers to inclusion in idea production are constituted in the socialized role expectations of organizational actors.	Parallelism enables inclusion in idea production by providing equal opportunities to organizational actors to contribute and suppressing production blocking.
			Group memory enables inclusion in idea production by democratizing organizational actors' access to and control of ideas.
Idea co-development	Structural barriers to inclusion in idea co-development are vertically inherent in organizations' hierarchy due to information flow between organizational actors.	Social barriers to inclusion in idea co-development are constituted in organizational politics that shape coalition formation and frame the development of strategy.	Process structuring enables inclusion in idea co-development by structuring interactions between organizational actors and reducing possibilities for politicking and coalition formation.
		Social barriers to inclusion in idea co-development are constituted in the discursive competence (issue-selling abilities) of individuals to direct the attention of key stakeholders.	Information structuring enables inclusion in idea co-development by structuring the gathering, sharing, and evaluation of information between organizational actors.

AUTHOR DATA STATEMENT

In accordance with open science standards and new guidelines on the open sharing of research data, we can confirm that no data was used in this study to deposit or share for open scholarship owing to its conceptual nature.

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