Burger-Helmchen, Thierry

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Article

Crowdsourcing of Inventive Activities, AI, and the NIH Syndrome

Thierry Burger-Helmchen

Faculty of Economics and Management, BETA, CNRS, University of Strasbourg, 67000 Strasbourg, France; burger@unistra.fr

Abstract: This study examines how crowdsourcing can support innovation in companies. It focuses on the *Not Invented Here* (NIH) syndrome—a reluctance to adopt external ideas—that varies depending on which organizational boundaries are considered, such as power, competence, and culture. By analyzing how these boundaries influence resistance to crowdsourced solutions, this study finds that although crowdsourcing brings valuable diversity and insights, many organizations struggle to leverage these effectively. Moreover, with the rise of generative AI, many organizations are increasingly focused on internal data and AI-driven innovation, which further intensifies NIH syndrome by deprioritizing external insights. We discuss why and how companies that have managed NIH syndrome effectively may be better positioned to overcome resistance to AI.

Keywords: crowdsourcing; NIH syndrome; organizational culture; inventive activities; innovation management; open innovation; artificial intelligence

1. Introduction

In the early 2010s, the crowd, through the practice of crowdsourcing, was heralded as a strategic resource for organizations, generating significant interest for its potential to drive innovation—from basic information gathering to complex inventive activities (Estelles-Arolas and Gonzalez-Ladron-de-Guevara 2012). Some organizations have successfully used crowdsourcing, while others remain reluctant, often due to cultural and structural boundaries. As many organizations now turn to generative AI for ideas, it is useful to reconsider these initial crowdsourcing challenges to see if similar issues might limit AI adoption. This paper aims to explore links between how crowdsourcing activities are designed and the characteristics of the organizations implementing them. We examine organizational boundaries to accepting external solutions, focusing especially on elements of culture and identity and how they interact with crowdsourcing of inventive activities (CIA).

There is a large body of work studying the design of crowdsourcing activities and its efficiency (Bayus 2013; Poetz and Schreier 2012). These works particularly highlight the need for diversity within the community of solvers (the individuals trying to solve the proposed problem) (Jeppesen and Lakhani 2010), the role of communication between solvers (Hutter et al. 2011), and cooperation (Bullinger et al. 2010). These studies emphasize accessing a crowd with the most suitable characteristics for solving a given problem. However, they overlook the critical question of adapting proposed solutions to fit the organization's specific context. As a result, organizations may struggle to implement these solutions effectively and, at times, may lose ownership of the value generated by the crowd's contributions (Afuah and Tucci 2013; Bloodgood 2013).

Our focus lies specifically on the identity, culture, and internal boundaries of organizations tasked with implementing the outcomes of crowdsourcing initiatives. The use of crowdsourcing can sometimes be perceived as a challenge to the competence of internal researchers or as an implicit acknowledgment of their limitations in finding adequate

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solutions. Consequently, top management may reasonably anticipate resistance to crowdsourced solutions from within the organization (Burcharth et al. 2014; Lichtenthaler et al. 2010; Lichtenthaler and Ernst 2006).

Not all technically viable solutions are necessarily implementable; they must also align with the organization's unique characteristics, identity, and culture. Appropriation capacity, as a subset of absorptive capacity, encompasses an organization's ability to acquire and adapt external ideas effectively for internal use (Hotho et al. 2012; Vasudeva and Anand 2011).

The Not Invented Here (NIH) syndrome is deeply rooted in past social interactions, path dependencies, and the organization's culture and climate. As a result, many organizations are now turning to generative AI to streamline internal creative processes, ideation, and the early stages of innovation (or the "fuzzy front end") without seeking external input (Arias-Pérez and Vélez-Jaramillo 2022). However, the underlying reasons for rejecting externally developed solutions—characteristic of the NIH syndrome—may similarly lead to resistance toward generative AI. This research aims to identify the connections between NIH and the crowdsourcing of inventive activities, ultimately examining what these insights could suggest for the adoption of AI in organizational contexts.

As a method, we do not offer a systematic literature review but rather a narrative review, focusing on the most frequently cited articles and cross-referencing the key points highlighted in each (Moutinho and Sokele 2017). Following the guidelines proposed by (Smith 2014) for work in the field of control, we integrate these individual studies within an explicit analytical framework (see Table 1). This approach allows us to provide a balanced representation of the situations encountered by researchers.

Table 1. CIA and organizational boundaries. Source: Santos and Eisenhardt (2005), Penin and Burger-Helmchen (2012), partial reproduction.

	Boundaries of Power	**Boundaries of Competences**	**Boundaries of Culture**
Answering the following question:	How to recruit and retain contributors, how to manage stakeholders	How to combine and integrate contributors' outputs	How to assess the impact on the future development of the organization
Main concepts:	- Resource dependencies - Stakeholders	- Knowledge - Dynamic capabilities - Modularity	- Common vision - Rationale - Culture
Objectives:	Maximizing strategic control of external forces	Maximizing the value of resources/Minimizing integration costs	Minimize internal tensions, differences in appreciation and vision
CIA is important because of the following:	The network of influence and the value network	A dynamic environment	The level of ambiguity about future developments

The article is organized as follows: The next section examines the role of organizational boundaries in the use of crowdsourcing of inventive activities (CIA), identifying key boundaries that significantly influence the acceptance and integration of external inputs within the organization. The subsequent section discusses the effects of NIH in the case of CIA, and we then turn to managerial implications, linking insights from crowdsourcing to the broader adoption of generative AI and other innovative practices within organizational processes.

2. Crowdsourcing of Inventive Activities and Organizational Boundaries

Crowdsourcing involves a clear business strategy and strategic intent. However, organizations must be able to integrate crowdsourcing practices into their overall strategy effectively. The many organizational boundaries that exist can reduce the value of the crowdsourced solution, or even lead to a rejection to use it. Santos and Eisenhardt (2005) propose a representation of organizational boundaries, and Penin and Burger-Helmchen (2012) highlight the implications that these boundaries have on the optimal conduct of

crowdsourcing activities (Table 1). We observe that the power boundary plays a central role in determining the type of crowd an organization can engage. This boundary shapes the organization's capacity to recruit, motivate, and retain contributors and other external stakeholders, rooted in its historical reliance on specific resources. In the context of crowdsourcing of inventive activities (CIA), the power boundary influences the composition of the crowd that the organization can directly access without intermediaries. Key characteristics shaped by this boundary include the crowd's size, diversity, and the extent to which members can collaborate effectively.

The competence boundary defines the integration of external solutions and the compatibility of the necessary technical knowledge. It refers directly to how organizations exploit and renew their knowledge and skills and how they can combine these skills to maximize overall value. This boundary emphasizes the notion of dynamic capability that allows for changes in the resources of the organization (Teece and Pisano 1994).

The cultural boundary affects how well an organization can adopt an external solution in line with its own culture. This boundary's openness depends on the organization's culture, purpose, and actual or desired history. Studying this boundary addresses the question "Who are we?" and seeks the right long-term alignment between the company's internal characteristics and its strategic choices in relation to the environment. This boundary ultimately determines whether a company can effectively adopt crowdsourcing of inventive activities (CIA). Building an organizational development path that relies on CIA may not align with the existing culture, as it can conflict with established practices, employee values, and the organization's core identity. CIA has the potential to disrupt organizational norms, particularly in complex or ambiguous situations where traditional approaches may prevail. However, CIA also presents an opportunity to reshape organizational identity by introducing new ideas and perspectives without necessitating increased turnover or additional hiring.

Individuals and organizations adapt to and establish cultural norms and identities that shape their economic behavior. The literature on cultural adoption and change suggests that individuals interpret the intentions of those around them, a skill essential for replicating behaviors and strategies within an organization. Beyond mere behavior, cultural imitation aligns individuals' strategic goals, coordinates their focus and learning, influences the use of tools and equipment, modifies routines, and fosters the development of complex social structures within organizations (Ocasio and Joseph 2005). Social learning enables the diffusion of information and behavior among members of a population (Bandura 1986).

The majority of inter- and intra-organizational variations are of an identity and cultural nature. Thus, within the same environment, individuals adopt different behaviors on the basis of cultural factors. These factors, these cultural traits, are transmitted through different learning mechanisms. At the micro level, for Richerson and Boyd (2005), it is the appropriation of rules for searching, selecting, and acquiring information. These rules form a heuristic that leads individuals towards a certain cultural identity without having to examine all the available information. The emergence of a culture is a macro phenomenon based on social learning at the micro level.

Cultural change can also be represented in terms of the degree of conformity of individuals (Henrich 2004). Conformity bias drives individuals to adopt the cultural norms upheld by the majority within an organization, a tendency that intensifies with frequent interactions. In cases where strong conformity leads to the rejection of new ideas, top management can encourage adoption by restructuring the organization to create smaller groups with reduced inter-group interaction.

In complex organizations, individuals' bounded rationality often leads them to adopt culturally transmitted behaviors and routines without evaluating their personal interests. At the micro level, this bounded rationality can explain behavior imitation driven by conformity. At the macro level, population characteristics influence the likelihood of individuals adopting new ideas or imitating behaviors. Imitation at the individual level saves the cost of learning (Heraud et al. 2019). Imitation models formalize the triggering of

imitation based on an observable characteristic, for example, the prestige of an individual or group (Jacob and Rouzies 2014; Washington and Zajac 2005). Thus, the more prestigious an individual or group is within an organization, the more others will imitate its behavior.

Individuals are generally inclined to adopt new routines or cultural shifts when the cost–benefit ratio is favorable. Some may experiment with new behaviors temporarily to assess these costs and benefits. When benefits are evident and quickly realized, change is more likely. In a standard evolutionary framework, however, natural selection fosters cooperation among large groups only when there is significant proximity or alignment among individuals (Bolton and Ockenfels 2000).

Thus, crowdsourcing is not merely a transactional activity; it engages the organization's competencies, power structures, and cultural dynamics. These elements are closely tied to the organization's historical development and can lead to two polarized responses: a strong rejection of externally developed ideas or, conversely, an idealization of external inputs.

3. Crowdsourcing and NIH

The rejection of ideas and practices from outside the organization is neither a new phenomenon nor restricted to crowdsourcing. Thus, the expression NIH syndrome—Not Invented Here—describes a negative attitude towards knowledge coming from outside the company's boundaries. The use of this syndrome marks the negative connotation of rejecting ideas from outside the company, the non-use or under-use of acquired knowledge and the consequences, also negative, on the company's performance (Katz and Allen 1982; Lichtenthaler and Ernst 2006). However, some authors consider the opposite situation represented by an excessive attraction for knowledge produced elsewhere, which is also not without consequences for the company (Laden 1996; Menon and Pfeffer 2003).

Organizational culture can intensify or diminish NIH syndrome. Each agent has developed a cognitive framework, a set of beliefs and assumptions according to which he or she approaches the search for a solution to a problem or the evaluation and acceptance of a solution (Antonczak 2020). Similarly, each agent has developed an absorptive frame, i.e., a capacity to recognize the interest of new information, to assimilate it, and to use it (Zahra and George 2002). This framework plays an important role in the acceptance of external solutions.

The reasons given in the literature for why members of a company would reject a solution that they have not found themselves can be grouped into two categories: those related to the organizational practices in place, and those related to the type of knowledge employed.

3.1. Reasons Related to Organizational and Managerial Practices

Different actors within organizations have varied motivations for rejecting external solutions. Managers, for example, may be skeptical of external knowledge due to a belief in their own expertise and concerns that outside input could harm company performance. Likewise, R&D team members may resist external ideas for similar reasons (Lichtenthaler and Ernst 2006). These factors center on the perceived risks to both organizational performance and individual career progression. Specifically, adopting internally developed technologies or knowledge—particularly those that a scientist has personally contributed to—can serve as a career catalyst, facilitating upward mobility within the hierarchy. This pathway to advancement, however, diminishes when solutions are sourced externally. Additionally, R&D team members may fear that widespread adoption of external solutions could ultimately reduce the demand for in-house research staff.

The potential negative impact on career exists both when an external solution is successfully implemented and when it is adapted yet underperforms. Creative solutions, in particular, often demand testing, iterative trials, and adjustments, which can make employees responsible for their implementation wary of being held accountable for operational failures. Additionally, challenges in utilizing external knowledge may arise from a lack of

managerial preparedness or an underestimation of the complexities involved in its integration. This reluctance to accept external knowledge can ultimately hinder an organization's ability to recognize and capitalize on new opportunities.

3.2. Knowledge-Related Reasons

Research rarely addresses employee involvement and motivation in knowledge sharing. This perspective is neither recent nor limited to crowdsourcing or open innovation. Studies on knowledge creation, such as those of Nonaka and Takeuchi (1995), also assume that employees are naturally inclined to learn and share knowledge. However, Burcharth et al. (2014, p. 150) raise a critical question: how can managers reduce employees' reluctance toward knowledge from outside the company's boundaries?

If a crowdsourced solution is original, it likely involves knowledge unfamiliar to the organization. This can create a gap between the knowledge needed to implement the solution and the expertise that produced it. Learning new knowledge and establishing suitable routines can be costly—both financially for the company and cognitively for the individual (Kogut and Zander 1996).

Fear of incorporating external knowledge adds complexity (Menon and Pfeffer 2003). The solution appears more ambiguous and requires more decisions for effective implementation. Inexperience in such activities often leads to rejection, as do past failures (for example, whether unsuccessful alliances or open innovation efforts are seen as similar to crowdsourcing or if employees view crowdsourcing differently).

In each of these cases, employees need specific support to aid their understanding. The company must clarify its current and future expectations if it intends to use this approach. To reduce NIH, everyone involved in integrating external knowledge should participate in decision making. Having a "*Gatekeeper*" is crucial, especially if they can demonstrate the clear advantages of the external solution (Menon and Pfeffer 2003).

Conversely, it is conceivable to cut all links between users and knowledge producers so as not to know the real origin of the new knowledge or to mix the external solution with internal knowledge to "*muddy the waters*" and make the solution acceptable and exploitable. This approach is particularly easy in cases where research centers are distant from operational centers.

The attitude of individuals is always linked to the social context and to group dynamics. In the context of a company, this implies that attitude is shaped by the culture, norms, values, and routines of the organization. Attitude towards new knowledge is a fundamental element of the innovation culture of the company (Herzog and Leker 2010). Attitude is a judgment, an evaluation with a tendency to favor or disfavor the subject (Spithoven et al. 2010, p. 135). Attitude is a central concern for managers as it shapes how individuals process information and knowledge and influences their behavior. Generally, individuals seek and approve information that aligns with their existing attitudes, assigning it greater importance and credibility. The findings of Burcharth et al. (2014) indicate that training, workgroups, and focus groups positively affect employee attitudes, significantly reducing the likelihood of rejecting external knowledge. However, the impact of leadership seminars is less consistent. These seminars can reassure employees about their competence, potentially reducing their suspicion of external work. Yet, they may also reinforce an internal bias, leading employees to dismiss outside knowledge, as leadership training often emphasizes internal expertise. Overall, training sessions and workgroups foster skill development, teach new tools, and communicate the company's values and strategy, ultimately shifting employee attitudes (Ehrhardt et al. 2011).

Finally, crowdsourcing requires organizations to rethink how they structure work. As explained by Burger-Helmchen and Pénin (2011, p. 256), crowdsourcing is based on an explicit business model typically developed by a company. This is not merely a community of individuals exchanging information; rather, it is a deliberate strategic reliance on a crowd to accomplish tasks within a framework aimed at production and wealth creation.

However, the activity often excludes financial compensation, positioning it as neither traditional employment nor pure volunteerism.

4. Managers Navigating Crowdsourcing and Emerging AI Practices

The research on crowdsourcing we described highlights that different types of problems require tailored approaches in task presentation to the crowd and in managing interactions among crowd participants (Nickerson and Zenger 2004). In this work, we find that not all solutions to a problem are equally valuable to businesses, and some are easier to implement than others (Section 4.1). Based on these observations, we can anticipate certain trends in the near future regarding the use of generative AI, particularly as managers and their teams increasingly focus on this emerging method for idea generation (Section 4.2).

4.1. Managerial Strategies for Mitigating NIH Syndrome in Crowdsourcing of Inventive Activities

Managers must ensure that crowdsourcing initiatives are structured to maximize problem-solving potential. As with much crowdsourcing work, the number of participants is crucial. A larger participant pool increases the chances of obtaining scientifically valid solutions and finding options that fit the company's specific boundaries (a subset of scientifically acceptable solutions). Conversely, a small participant pool raises the risk of producing few or unusable solutions for the organization.

One of the solutions proposed in the literature that could be applicable to crowdsourcing is the implementation of more interactions with the company during the research process and a division of the research process into different stages. Indeed, these interactions allow the company to "pre-select" solution concepts that would be compatible with its organizational boundaries. This would also allow the number of participants to decrease at a time when the precise study and monitoring of solutions leads to an increase in crowdsourcing costs. This proposal is in line with recent studies in innovation management that argue against linear selection processes and recognize the importance of trial-and-error interactions (Levardy and Browning 2009).

However, these recommendations are now incompatible with many crowdsourcing platforms where anonymity, manifested by the absence of interaction between the company and the crowd, is a rule. This rule, though justified in some cases, also allows the intermediary to charge a fee for the work provided (division into several sub-problems, etc.)

It may seem beneficial for a company to allow the best solutions to emerge, even if some are initially incompatible with its organizational structure. Many organizations currently adopt a wait-and-see approach, selecting only solutions from the crowdsourcing platform that align with their existing framework. This approach relies on the hope of finding a compatible solution but overlooks the critical implementation phase. Yet, this phase is essential, as it is here that the practical applicability of these solutions is thoroughly tested.

According to Vuculescu and Bergenholtz (2014, p. 132), the type of problem set is fundamental. A difficult problem, very different from those usually encountered, does not benefit from the crowd size effect. On the contrary, in this case, it is the intensity of interactions between a small number of solvers that is important. The more original the problem (which requires a lot of creativity), the more unique the solution is likely to be and the more important it is to set up interactions with the company. Indeed, the solution to this type of problem is usually more creative. The aim of the company–solver interaction is no longer to guide the solvers but to make the company understand the extent of the organizational changes that need to be put in place in order to use the solution.

Conversely, the more similar the problem to be solved is to existing problems, the less interaction seems necessary. The solutions should be of the same degree of originality as the problem, allowing for easy integration by the company. To facilitate operation in this type of case, the company could include in the presentation text of the call to the crowd similar problems (and answers to them in the past) to guide the solvers towards solutions in the same vein. However, if this is the case, if the solution takes a trivial

form, crowdsourcing may not be recommended because the reaction of the company's researchers could be very negative if the company does not even call on them to find solutions to elementary problems anymore. The complexity of the problem influences the conditions for publishing the problem (Felin and Zenger 2014), its resolution, and the use of the solutions by the company.

To reduce the risk of rejection of an external solution, Simula and Ahola (2014, p. 401) propose organizational solutions. Indeed, several forms of crowdsourcing organizations exist, each with its qualities and defects. It is up to companies to make a good match between their problem and the type of crowdsourcing practiced. One solution is internal to the company. These authors consider that when the company is large enough, internal competitions are a kind of crowdsourcing. The three other forms are community (or ecosystem) crowdsourcing, open crowdsourcing (the company itself manages the crowdsourcing process) and finally the use of an intermediary. These three approaches have very different impacts in terms of organizational boundaries.

Internal crowdsourcing naturally limits NIH syndrome and encourages ideas that contributors might hesitate to share otherwise (Benbya and Van Alstyne 2010). This approach allows many contributors to engage within a set timeframe. With experts or facilitators guiding discussions, the company can effectively steer the conversations.

Crowdsourcing within a community or ecosystem involves a densely connected network of experts. This type of crowdsourcing often works by selection within a community (von Krogh et al. 2003) and has much in common with open innovation within a community (Pénin et al. 2013). In this type of community, the reciprocal commitment of the participants is usually high. Individuals trust each other and are able to interact frequently within the ecosystem (Kosonen et al. 2013). This approach often foreshadows an alliance in the exploitation of the results of the innovation process.

Open crowdsourcing, whose objective is to obtain as many participants as possible, is, as its name indicates, open to all without pre-selection. The other specificity is that the company itself manages the whole process (e.g., the case of Procter & Gamble, Huston and Sakkab 2006). Managing the crowdsourcing process, while requiring special resources and expertise, is applicable in some situations. For example, Goldcorp, a Canadian mining company, released geological data and asked the crowd to help find new gold mines. Using this system, Goldcorp located USD 3 billion worth of mines and spent only USD 0.5 billion to pay participants. It was necessary for the company to manage the project itself so that it would not lose important information or enrich a middleman (Marjanovic et al. 2012).

Not all problems are suitable for crowdsourcing, and Garcia Martinez and Walton (2014, p. 212) show this in the case of the analytical processing company Dunnhumby. The use of crowdsourcing to deal with some big data problems had an impact on the morale of employees who were afraid of giving the image of not being able to do the required work themselves. They feared that it would prevent them from recruiting the best analysts in the future, as they would not want to work in a company whose expertise was deteriorating. Finally, it created internal tensions as those who were in charge of data analysis feared for their jobs, while other departments (those not using crowdsourcing) did not share these fears. As in this company, an 'over-reliance' on crowdsourcing could lead, in the long run, to a dependence on external solvers. Neglecting internal inventive activities would lead to a reduction in the internal knowledge portfolio, which can have a negative effect on the company's commercial capacity (Rivette and Kline 2000).

This last example clearly shows the organizational limits of crowd-sourced solutions. A lack of organizational ownership, identity, a corporate culture of rejecting external solutions and a lack of appropriate knowledge to use a complex technical solution are all reasons for rejecting crowdsourcing. Solvers (the individuals who participate in CIA) are attributed with many motivations, both intrinsic and extrinsic (Renault 2013). Motivations largely exploited by the gamification of crowdsourcing platforms.

4.2. Parallels Between NIH Syndrome in Crowdsourcing and the Use of Generative AI

Managers strive to build organizations that emphasize transparency and open dialog, creating an environment where employees feel secure and are more receptive to external ideas (Ortner et al. 2024, p. 16). Open innovation, crowdsourcing, and other human-centered interaction techniques have long been challenged by the Not Invented Here (NIH) syndrome. Recently, novel computer-aided approaches have emerged with the development of generative AI, such as ChatGPT (Roberts and Candi 2024; Bilgram and Laarmann 2023). Gradually, various company activities are beginning to incorporate these technologies. Inventive activities—including R&D, ideation, and early-stage innovation (the "fuzzy front end")—are increasingly adopting these tools alongside other organizational functions (Mariani and Dwivedi 2024). However, these tools are not universally accepted across all organizations, departments, or individuals. At every level of analysis, reasons for both enthusiasm and resistance emerge.

Following this discussion on the challenges of NIH syndrome in crowdsourcing and the gradual integration of generative AI, it is useful to draw a comparative analysis. Table 2 outlines key similarities and differences in how NIH syndrome affects the acceptance of crowdsourced solutions and generative AI across organizations.

Table 2. NIH syndrome in crowdsourcing and rejection risks in generative AI.

Aspect	NIH Syndrome in Crowdsourcing of Inventive Activities (CIA)	Risk of Rejection in Generative AI (GenAI)
Source of Innovation	External crowd contributions, often perceived as incompatible with internal expertise	AI-generated insights and solutions, often viewed as less reliable than human-generated input
Resistance Factors	Internal belief in the superiority of in-house skills; cultural bias toward internal solutions	Concerns over GenAI reliability, job displacement, and potential erosion of human expertise
Organizational Culture	Crowdsourcing can conflict with established values, roles, and traditional innovation processes	GenAI may challenge existing workflows and the collaborative culture, leading to resistance in knowledge-intensive domains
Career Impact	Adoption of external ideas can hinder personal career advancement if internal R&D is deprioritized	Fear of AI replacing human roles, limiting career progression opportunities and influencing job security
Managerial Responsibility	Managers must foster openness to external ideas to counter NIH tendencies	Managers need to promote GenAI as a complementary tool rather than a replacement, aligning its use with strategic goals
Organizational Boundaries	The "power boundary" influences the crowd's composition and the level of access to diverse perspectives; crowd integration depends on boundary flexibility	GenAI's acceptance may depend on the organization's flexibility in adjusting boundaries that traditionally support human-centric processes
Risk of Innovation Loss	Failure to embrace external ideas may limit exposure to valuable insights, reducing innovation potential	Over-reliance on AI or complete rejection of it can create knowledge silos, undermining competitive advantage in knowledge management

As illustrated, the NIH syndrome presents a deep-rooted resistance to ideas sourced outside the organization, creating parallels with the challenges of integrating GenAI. According to Ramaul et al. (2024), the affordances of generative AI tools such as ChatGPT offer new possibilities in creative and knowledge-intensive domains but face skepticism due to perceived risks, such as the potential for biased outputs and lack of contextual understanding. This aligns with the "organizational boundaries" row, where flexible boundaries are required for integrating both crowdsourced and AI-generated insights effectively within existing workflows.

Similarly, Robertson et al. (2024) emphasize that constructive human–AI interaction depends on clear managerial guidance and an organizational environment open to iterative learning. Their findings underscore the necessity for "managerial responsibility" in promoting GenAI as a collaborative partner rather than a replacement for human ingenuity. Without this framework, organizations may encounter pushback similar to NIH syndrome, where concerns over expertise replacement inhibit GenAI adoption. Urbani et al. (2024) point out that AI adoption, like crowdsourcing, depends heavily on aligning technology with organizational readiness, particularly regarding data management and regulatory compliance. This supports the need for careful management of "organizational boundaries," where rigid structures can limit GenAI's value, much as they do with external crowdsourced solutions. Urbani et al. advocate for a structured readiness assessment to ensure that AI aligns with organizational goals, thus reinforcing the importance of addressing cultural resistance and boundary flexibility to mitigate the risk of innovation loss and enhance receptivity to external solutions.

Managers who have previously addressed NIH syndrome and actively worked to mitigate its impact in open innovation and crowdsourcing are better equipped to manage resistance to generative AI. By fostering openness, emphasizing collaboration, and refining organizational boundaries, these managers more effectively reduce boundaries to external knowledge adoption. As generative AI brings new complexities—especially regarding trust in technology and workflow integration—these approaches to NIH offer a strategic advantage. Organizations with managers ready to adapt will likely navigate GenAI adoption more smoothly, reducing rejection and enhancing its potential for innovation.

5. Conclusions

With generative AI's rapid rise, companies now face added challenges in absorptive capacity. This capacity depends on established processes for evaluating, sharing, and integrating new ideas. Yet, few organizations today have the infrastructure to do this seamlessly. Like an information overload, companies often find themselves flooded with "solutions" and excess creativity, which they must strategically manage.

The study of CIA and NIH offers a new perspective on how organizations should handle the acceptance of such innovations. Organizations that have already taken steps to limit NIH, practice open strategy, crowdsourcing, and other collaborative activities may be better prepared for these new challenges. Otherwise, managers should begin fostering these collaborative activities instead of focusing solely within the organization's boundaries.

Some points need further development in the close future. Among others, we could discuss the increasing phenomena of open strategy, the case of remote work, and, of course, the development of the use of AI. In recent years, companies have transitioned from a reluctance towards open innovation to its adoption (Burger-Helmchen et al. 2011), increased their use of crowdsourcing, and, in some cases, begun testing open strategy (Appleyard and Chesbrough 2017; Stadler et al. 2021). We are just starting to understand the implications of NIH syndrome in these contexts. This concern now spans entire companies, as the fear of replacement by external sources, including generative AI, affects all employees. This shift raises questions about the realistic levels of engagement and innovation we can expect from internal teams when this widespread fear limits their openness to new ideas.

More recently, and since the increase in remote work enabled by technological development and routines established due to COVID-19, some authors are intrigued by the impact on the boundaries of companies. These boundaries are becoming increasingly blurry (Antonczak 2020). Does this increase or, on the contrary, decrease the incidence of NIH syndrome? Is the syndrome limited to work on certain types of innovation in teams that meet physically (Neukam and Bollinger 2022), or can it be extended to other work organizations?

Finally, the use of chatbots and large language models will profoundly change our relationship with the notion of what constitutes an idea or an original idea (Antonczak and

Burger-Helmchen 2022; Iansiti and Lakhani 2020; Mariani and Dwivedi 2024). All these domains remain to be explored.

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References

Afuah, Allan, and Christopher L. Tucci. 2013. Value Capture and Crowdsourcing. *Academy of Management Review* 38: 457–60. [CrossRef]
Antonczak, Laurent. 2020. Mobile Technology: A New Ba of Work Organisation? *Journal of Innovation Economics & Management* 31: 11–37.
Antonczak, Laurent, and Thierry Burger-Helmchen. 2022. Creativity on the Move: Nexus of Technology, Slack and Social Complexities. *Journal of Open Innovation: Technology, Market, and Complexity* 8: 64. [CrossRef]
Appleyard, Melissa M., and Henry W. Chesbrough. 2017. The Dynamics of Open Strategy: From Adoption to Reversion. *Long Range Planning* 50: 310–21. [CrossRef]
Arias-Pérez, José, and Juan Vélez-Jaramillo. 2022. Ignoring the Three-Way Interaction of Digital Orientation, Not-Invented-Here Syndrome and Employee's Artificial Intelligence Awareness in Digital Innovation Performance: A Recipe for Failure. *Technological Forecasting and Social Change* 174: 121305. [CrossRef]
Bandura, Albert. 1986. *Social Foundations of Thought and Action*. Englewood Cliffs: Prentice-Hall.
Bayus, Barry L. 2013. Crowdsourcing New Product Ideas over Time: An Analysis of the Dell IdeaStorm Community. *Management Science* 59: 226–44. [CrossRef]
Benbya, Hind, and Marshall W. Van Alstyne. 2010. How to Find Answers within Your Company. *MIT Sloan Management Review* 52: 65–75.
Bilgram, Volker, and Felix Laarmann. 2023. Accelerating Innovation with Generative AI: AI-Augmented Digital Prototyping and Innovation Methods. *IEEE Engineering Management Review* 51: 18–25. [CrossRef]
Bloodgood, James. 2013. Crowdsourcing: Useful for Problem Solving, but What about Value Capture? *Academy of Management Review* 38: 455–57. [CrossRef]
Bolton, Gary E., and Axel Ockenfels. 2000. ERC: A Theory of Equity, Reciprocity and Competition. *American Economic Review* 91: 166–93. [CrossRef]
Bullinger, Angelika C., Anne-Katrin Neyer, Matthias Rass, and Kathrin M. Moeslein. 2010. Community-Based Innovation Contests: Where Competition Meets Cooperation. *Creativity and Innovation Management* 19: 290–303. [CrossRef]
Burcharth, Ana Luiza de Araújo, Mette Praest Knudsen, and Helle Alsted Søndergaard. 2014. Neither Invented nor Shared Here: The Impact and Management of Attitudes for the Adoption of Open Innovation Practices. *Technovation* 34: 149–61. [CrossRef]
Burger-Helmchen, Thierry, and Julien Pénin. 2011. Crowdsourcing: Définition, Enjeux, Typologie. *Management & Avenir* 41: 254–69. [CrossRef]
Burger-Helmchen, Thierry, Caroline Hussler, and Julien Pénin. 2011. Rethinking Boundaries for Innovation: Exploring the Shapes and Stakes of the Open Innovation Phenomenon. *Journal of Innovation Economics & Management* 1: 3–10. [CrossRef]
Ehrhardt, Kyle, Janice S. Miller, Sarah J. Freeman, and Peter W. Hom. 2011. An Examination of the Relationship between Training Comprehensiveness and Organizational Commitment: Further Exploration of Training Perceptions and Employee Attitudes. *Human Resource Development Quarterly* 22: 459–89. [CrossRef]
Estelles-Arolas, Enrique, and Fernando Gonzalez-Ladron-de-Guevara. 2012. Towards an Integrated Crowdsourcing Definition. *Journal of Information Science* 38: 189–200. [CrossRef]
Felin, Teppo, and Todd R. Zenger. 2014. Closed or Open Innovation? Problem Solving and the Governance Choice. *Research Policy* 43: 914–25. [CrossRef]
Garcia Martinez, Marian, and Bryn Walton. 2014. The Wisdom of Crowds: The Potential of Online Communities as a Tool for Data Analysis. *Technovation* 34: 203–14. [CrossRef]
Henrich, Joseph. 2004. Cultural Group Selection, Coevolutionary Processes and Large Scale Cooperation. *Journal of Economic Behavior and Organization* 53: 3–35. [CrossRef]
Heraud, Jean-Alain, Fiona Kerr, and Thierry Burger-Helmchen. 2019. *Creative Management of Complex Systems*. Hoboken: Wiley-ISTE.

Herzog, Philipp, and Jens Leker. 2010. Open and Closed Innovation-Different Innovation Cultures for Different Strategies. *International Journal of Technology Management* 52: 322–43. [CrossRef]
Hotho, Jasper J., Florian Becker-Ritterspach, and Ayse Saka-Helmhout. 2012. Enriching Absorptive Capacity through Social Interaction. *British Journal of Management* 23: 383–401. [CrossRef]
Huston, Larry, and Nabil Sakkab. 2006. Connect and Develop: Inside Procter & Gamble's New Model for Innovation. *Harvard Business Review* 84: 58–66.
Hutter, Katja, Julia Hautz, Johann Füller, Julia Mueller, and Kurt Matzler. 2011. Communitition: The Tension between Competition and Collaboration in Community-Based Design Contests. *Creativity and Innovation Management* 20: 3–21. [CrossRef]
Iansiti, Marco, and Karim R. Lakhani. 2020. Competing in the Age of AI. *Harvard Business Review* 98: 60–67.
Jacob, Marie-Rachel, and Audrey Rouzies. 2014. Together but Different: Ambivalence and Mimicry in the Dynamics of Organizational Identification within Composite Teams. *Revue Française de Gestion* 240: 149–67. [CrossRef]
Jeppesen, Lars Bo, and Karim R. Lakhani. 2010. Marginality and Problem-Solving Effectiveness in Broadcast Search. *Organization Science* 21: 1016–33. [CrossRef]
Katz, Ralph, and Thomas J. Allen. 1982. Investigating the Not Invented Here (NIH) Syndrome: A Look at the Performance, Tenure, and Communication Patterns of 50 R & D Project Groups. *R&D Management* 12: 7–20. [CrossRef]
Kogut, Bruce, and Udo Zander. 1996. What Firms Do? Coordination, Identity, and Learning. *Organization Science* 7: 502–18. [CrossRef]
Kosonen, Miia, Chunmei Gan, Heidi Olander, and Kirsimarja Blomqvist. 2013. My Idea Is Our Idea! Supporting User-Driven Innovation Activities in Crowdsourcing Communities. *International Journal of Innovation Management* 17: 1–18. [CrossRef]
Laden, Karl. 1996. Not Invented There, or, the Other Person's Dessert Always Looks Better! *Research Technology Management* 39: 10–12. [CrossRef]
Levardy, Viktor, and Tyson R. Browning. 2009. An Adaptive Process Model to Support Product Development Project Management. *IEEE Transactions on Engineering Management* 56: 600–20. [CrossRef]
Lichtenthaler, Ulrich, and Holger Ernst. 2006. Attitudes to Externally Organising Knowledge Management Tasks: A Review, Reconsideration and Extension of the NIH Syndrome. *R&D Management* 36: 367–86. [CrossRef]
Lichtenthaler, Ulrich, Holger Ernst, and Martin Hoegl. 2010. Not-Sold-Here: How Attitudes Influence External Knowledge Exploitation. *Organization Science* 21: 1054–71. [CrossRef]
Mariani, Marcello, and Yogesh K. Dwivedi. 2024. Generative Artificial Intelligence in Innovation Management: A Preview of Future Research Developments. *Journal of Business Research* 175: 114542. [CrossRef]
Marjanovic, Sonja, Caroline Fry, and Joanna Chataway. 2012. Crowdsourcing Based Business Models: In Search of Evidence for Innovation 2.0. *Science and Public Policy* 39: 318–32. [CrossRef]
Menon, Tanya, and Jeffrey Pfeffer. 2003. Valuing Internal vs.External Knowledge: Explaining the Preference for Outsiders. *Management Science* 49: 497–513. [CrossRef]
Moutinho, Luiz, and Mladen Sokele. 2017. *Innovative Research Methodologies in Management: Volume I: Philosophy, Measurement and Modelling*, 2018th ed. London: Palgrave Macmillan.
Neukam, Marion, and Sophie Bollinger. 2022. Encouraging Creative Teams to Integrate a Sustainable Approach to Technology. *Journal of Business Research* 150: 354–64. [CrossRef]
Nickerson, Jack A., and Todd R. Zenger. 2004. A Knowledge-Based Theory of the Firm—The Problem-Solving Perspective. *Organization Science* 15: 617–32. [CrossRef]
Nonaka, Ikujiro, and Hiro Takeuchi. 1995. *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*. Oxford: Oxford University Press Inc.
Ocasio, William, and John Joseph. 2005. An Attention-Based Theory of Strategy Formulation: Linking Micro and Macro Perspectives in Strategy Processes. *Advances in Strategic Management* 22: 39–62.
Ortner, Thomas, Julia Hautz, Christian Stadler, and Kurt Matzler. 2024. Open Strategy and Digital Transformation: A Framework and Future Research Agenda. *International Journal of Management Reviews*, 1–22. [CrossRef]
Penin, J., and T. Burger-Helmchen. 2012. Crowdsourcing of Inventive Activities and Organizational Boundaries. *Management International* 16: 101–32. [CrossRef]
Pénin, Julien, Thierry Burger-Helmchen, Claude Guittard, Eric Schenk, and Antoine Dintrich. 2013. *L'innovation Ouverte Définition, Pratiques et Perspectives*. Paris: Chambre de commerce et d'industrie de Paris.
Poetz, Marion K., and Martin Schreier. 2012. The Value of Crowdsourcing: Can Users Really Compete with Professionals in Generating New Product Ideas? *Journal of Product Innovation Management* 29: 245–56. [CrossRef]
Ramaul, Laavanya, Paavo Ritala, and Mika Ruokonen. 2024. Creational and Conversational AI Affordances: How the New Breed of Chatbots Is Revolutionizing Knowledge Industries. *Business Horizons* 67: 615–27. [CrossRef]
Renault, S. 2013. Working for Cocoa Beans. Crowdsourcing or Why Organisations Enjoy the Contribution of the "Oompa-Loompas"? *Gestion 2000* 31: 67–85.
Richerson, Peter J., and Robert Boyd. 2005. *Not by Genes Alone: How Culture Transformed Human Evolution*. Chicago: University of Chicago Press.
Rivette, Kevin G., and David Kline. 2000. *Rembrandts in the Attic: Unlocking the Hidden Value of Patents*. Boston: Harvard Business School Press.

Roberts, Deborah L., and Marina Candi. 2024. Artificial Intelligence and Innovation Management: Charting the Evolving Landscape. *Technovation* 136: 103081. [CrossRef]
Robertson, Jeandri, Caitlin Ferreira, Elsamari Botha, and Kim Oosthuizen. 2024. Game Changers: A Generative AI Prompt Protocol to Enhance Human-AI Knowledge Co-Construction. *Business Horizons* 67: 499–510. [CrossRef]
Santos, Filipe M., and Kathleen M. Eisenhardt. 2005. Organizational Boundaries and Theories of Organization. *Organization Science* 16: 491–508.
Simula, Henri, and Tuomas Ahola. 2014. A Network Perspective on Idea and Innovation Crowdsourcing in Industrial Firms. *Industrial Marketing Management* 43: 400–8. [CrossRef]
Smith, Malcolm. 2014. *Research Methods in Accounting*. Thousand Oaks: Sage Publications Ltd.
Spithoven, André, Bart Clarysse, and Mirjam Knockaert. 2010. Building Absorptive Capacity to Organise Inbound Open Innovation in Traditional Industries. *Technovation* 30: 130–41. [CrossRef]
Stadler, Christian, Julia Hautz, Kurt Matzler, Stephan Friedrich von den Eichen, and Gary Hamel. 2021. *Open Strategy: Mastering Disruption from Outside the C-Suite*. Cambridge: The MIT Press.
Teece, David J., and Gary Pisano. 1994. The Dynamic Capabilities of Firms: An Introduction. *Industrial & Corporate Change* 3: 537–56. [CrossRef]
Urbani, Roberto, Caitlin Ferreira, and Joey Lam. 2024. Managerial Framework for Evaluating AI Chatbot Integration: Bridging Organizational Readiness and Technological Challenges. *Business Horizons* 67: 595–606. [CrossRef]
Vasudeva, Gurneeta, and Jaideep Anand. 2011. Unpacking Absorptive Capacity: A Study of Knowledge Utilization from Alliance Portfolios. *Academy of Management Journal* 54: 611–23. [CrossRef]
von Krogh, Georg, Sebastian Spaeth, and Karim R. Lakhani. 2003. Community, Joining, and Specialization in Open Source Software Innovation: A Case Study. *Research Policy* 32: 1217–41. [CrossRef]
Vuculescu, Oana, and Carsten Bergenholtz. 2014. How to Solve Problems with Crowds: A Computer-Based Simulation Model. *Creativity and Innovation Management* 23: 121–36. [CrossRef]
Washington, Marvin, and Edward J. Zajac. 2005. Status Evolution and Competition: Theory and Evidence. *Academy of Management Journal* 48: 282–96. [CrossRef]
Zahra, Shaker A., and Gerard George. 2002. Absorptive Capacity: A Review, Reconceptualization, and Extension. *Academy of Management Review* 27: 185–203. [CrossRef]