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Digital Noise and AI-Supported Social Capital Formation: A Theoretical Framework for Cross-Functional Synergy in Global B2B Platform Ecosystems

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Abstract: B2B platform ecosystems increase connectivity among companies, customers, suppliers, and internal functions. However, greater connectivity does not automatically produce stronger social capital. This conceptual article develops digital noise as a theoretical constraint on the formation of social capital in global B2B platform ecosystems. Digital noise is defined as repeated, fragmented, weakly relevant, poorly governed, or ambiguously interpreted digital signals that reduce managers' ability to identify valuable relationships, interpret trust signals, and coordinate shared meaning across functions.

Drawing on social capital theory, platform ecosystem research, information quality literature, and AI governance debates, the authors argue that digital noise may weaken the three dimensions, namely structural, relational and cognitive, of social capital in different ways. Structurally, digital noise obscures central actors, boundary spanners, and strategically relevant weak ties. Relationally, it hides or distorts trust-related signals. Cognitively, it fragments interpretation across marketing, sales, supply chain, customer-facing teams, and ecosystem partners. The authors develop a conceptual framework that explains how AI-enabled filtering, relationship prioritisation, sentiment interpretation, and cross-functional data integration may mitigate digital noise. Their argument remains theoretical and does not claim that AI directly creates social capital or performance. Instead, AI is positioned as a managerial support mechanism that may make relationship signals more visible, interpretable, and actionable. The article contributes to social capital theory by clarifying how digitally mediated signal environments shape social capital formation and by identifying conditions under which AI may support cross-functional alignment in B2B platform ecosystems.

Keywords: Social Capital; Digital Noise; B2B Platform Ecosystems; Cross-Functional Alignment; Platform Governance; Information Quality

1. Introduction

In the digital era, business-to-business (B2B) growth has transformed, with platform ecosystems becoming key arenas for innovation, collaboration and competitive advantage. In these settings, social capital – the network of relationships that underpins trust, collaboration, and resource exchange – has been recognised as a decisive asset for companies navigating volatile, uncertain markets (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998).

Digital platforms offer extraordinary connectivity but also create challenges. More data, more contacts, and more digital interactions do not automatically create stronger relationships. When too much information is circulated through digital media, CRM systems, platform interactions and internal dashboards, it can become digital noise. In this paper, digital noise refers to repeated, fragmented, weakly relevant, poorly governed, or ambiguously interpreted signals that make it harder for

managers to identify which relationships matter, where trust is weakening, and how different functions should act together. Although digital noise is related to information overload, data fragmentation, low-quality signals, and platform governance problems, it is conceptually distinct. Information overload concerns excessive volume; data fragmentation concerns dispersion across systems; low-quality signals concern accuracy and relevance; and platform governance problems concern rules, incentives, standards, and accountability. Digital noise refers more specifically to the relational and interpretive condition in which digital signals obscure network visibility, trust interpretation, and shared meaning.

This becomes a management challenge in the international context. Collaboration must occur across organisational, functional, and cultural boundaries (Gawer & Cusumano, 2014). Although a company may appear highly connected, it may still struggle to identify valuable relationships, read trust signals, and align internal interpretations across departments. This matters because connectivity alone does not create social capital. Only when relationships are visible, trusted, meaningfully interpreted, and connected to coordinated action does social capital become valuable.

The strategic application of Artificial Intelligence (AI) may help companies address this challenge, but its role must be defined carefully. AI is treated here as a managerial support mechanism, not as a replacement for managerial judgement or as an autonomous source of social capital. More specifically, AI may support four mechanisms that are central to the framework: filtering low-value signals, prioritising strategically relevant relationships, interpreting sentiment and trust-related cues, and integrating information across functions. These mechanisms may reduce digital noise by helping managers distinguish meaningful relationship signals from repeated, fragmented, weakly relevant, or ambiguously interpreted information. Beyond managing networks, AI may also help bridge traditionally siloed functions such as marketing, sales, and supply chain, enabling companies to coordinate interpretation and action more effectively (Kapoor & Agarwal, 2017). However, this effect remains contingent on data quality, platform governance, human oversight, and the ability of managers to translate AI-supported signals into coordinated action.

Previous work points out the strategic value of social capital in B2B contexts (Krings, 2022; Krings et al., 2021). This research demonstrates how social capital supports business development by building trust, facilitating knowledge exchange, and enabling reciprocal value creation across networks. However, less attention has been paid to how digital noise can limit the formation of social capital, even when companies appear digitally connected. This gap is important because high levels of platform interaction may increase visibility and access, while still weakening the structural, relational, and cognitive foundations through which social capital is formed. Based on this foundation, this study develops a conceptual framework linking AI, digital noise, and social capital theory. The framework starts with a practical question: how can companies deal with digital noise without losing sight of the relationships that matter? The paper argues that AI may help companies make social capital more visible, interpretable, actionable, and useful for cross-functional synergy. The argument remains theoretical. The paper does not claim to prove that AI improves social capital. Instead, it develops an indirect conceptual pathway: digital connectivity may generate digital noise; digital noise may weaken structural, relational, and cognitive social capital; AI-enabled filtering, relationship prioritisation, sentiment interpretation, and cross-functional data integration may mitigate this noise; and stronger social capital may then support cross-functional synergy, collaboration, innovation, resilience, and performance.

The study focuses on three core questions:

- *How does digital noise affect the structural, relational, and cognitive dimensions of social capital in B2B platform ecosystems?*
- *How may companies use AI-enabled filtering, relationship prioritisation, sentiment interpretation, and cross-functional data integration to mitigate digital noise?*
- *How may AI-supported social capital contribute to cross-functional synergy, collaboration, innovation, resilience, and performance in B2B platform ecosystems?*

The contribution of this study is fourfold. First, it extends social capital theory by explaining why digital connectivity alone is insufficient for the formation of social capital in B2B platform ecosystems. Second, it develops digital noise as a distinct theoretical construct and differentiates it from information overload, data fragmentation, low-quality signals, and platform governance problems. Third, it explains how digital noise may weaken structural, relational, and cognitive social capital through obscured network visibility, distorted trust interpretation, and fragmented shared meaning. Finally, it develops an AI-enabled conceptual model that includes filtering, relationship prioritisation, sentiment interpretation, and cross-functional data integration and may mitigate digital noise and support cross-functional alignment. The contribution is primarily conceptual; the paper develops propositions for future testing rather than claiming direct evidence of AI-driven performance improvement.

This article moves from theory to the development of a framework. It starts with the conceptual basis of social capital, then develops digital noise as a constraint on social capital formation, and distinguishes it from related constructs. It then presents the AI-enabled model and research propositions. The final sections present illustrative scenarios, theoretical implications, managerial implications, and future research directions.

2. Theoretical Analysis

Social capital is a central element in business-to-business (B2B) platform ecosystems. It helps companies remain connected, trusted, and relevant across networks that are often fragmented by geography, function, organisation, and digital systems. This section links social capital theory, platform ecosystem research, information quality literature, platform governance, and AI governance debates in the B2B context (Eppler & Mengis, 2004; Wang & Strong, 1996; Jacobides et al., 2018; Tiwana, 2014; Raisch & Krakowski, 2021).

It develops the concept of digital noise as a theoretical constraint on social capital formation and clarifies how this construct differs from information overload, data fragmentation, low-quality signals, and platform governance problems. This distinction is important because the central problem in this paper is not connectivity itself. The problem is whether companies can interpret digital signals in ways that support network visibility, trust interpretation, shared meaning, coordination, and value creation.

2.1 Social Capital Theory

Social capital theory explains how companies and ecosystems generate value through networks of trust, reciprocity, and shared understanding (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). In B2B platform ecosystems, this is especially important because companies rarely create value on their own. They depend on customers, suppliers, partners, sales teams, marketing teams, and supply chain actors who must coordinate their actions across organisational boundaries.

Adler and Kwon (2002) distinguish three dimensions of social capital: structural, relational, and cognitive. These dimensions are used in this paper to explain how social capital is formed, weakened, and potentially supported by AI in B2B platform ecosystems. Ordering is important to the argument developed here. Structural social capital concerns the visibility of network positions, relational social capital concerns the interpretation of trust, and cognitive social capital concerns shared meaning across actors. Digital noise may weaken each dimension through distinct mechanisms.

The structural dimension refers to the shape of the network, including who is connected to whom, where influence sits, and which actors occupy important positions. In large B2B networks, companies may have many contacts but still fail to identify the relationships that matter most. Digital noise can weaken this dimension when central actors, boundary spanners, relevant weak ties, or high-value connections are obscured by repeated, fragmented, or weakly relevant interactions. AI-supported network analysis may help managers recognise strategically important actors and network gaps. However, the value of AI depends on whether it helps managers interpret relationships, not merely map them.

The relational dimension refers to trust, commitment, reciprocity, and the quality of relationships. In B2B markets, trust is more than a soft factor. It affects whether companies share knowledge, respond quickly, keep promises, and continue working together when conditions become uncertain. Digital noise can weaken this dimension when trust-related signals are hidden or distorted within large volumes of messages, platform interactions, CRM notes, delayed responses, or ambiguous communication. Sentiment interpretation may help managers notice changes in tone, responsiveness, or commitment, but it cannot replace the social process through which trust is built.

The cognitive dimension refers to shared goals, shared interpretation, and a common understanding of what matters. In platform ecosystems, this becomes difficult because different teams may look at the same information and draw different conclusions. Sales may see a customer interaction as an opportunity, while supply chain teams may view it as a delivery risk. Marketing may see engagement, while customer service may see dissatisfaction. Digital noise becomes a cognitive problem when it prevents functions from developing shared meaning. AI-supported data integration may help connect signals across functions, but shared understanding still depends on dialogue, managerial judgement, and organisational learning.

Table 1 Social Capital Dimensions, Digital Noise and AI Support in B2B Platform Ecosystems

Social Capital Dimension	Traditional Role in B2B Relationships	How Digital Noise May Weaken It	How AI May Support It
Structural	Shows who is connected to whom, where influence sits,	High-value actors, boundary spanners, and useful weak ties	AI-supported network analysis may help managers recognise

	and which actors hold important network positions.	may be obscured by low-value contacts, fragmented signals, and repeated digital interactions.	central actors, relevant relationships, and important network gaps.
Relational	Builds trust, commitment, and confidence between customers, suppliers, partners and internal teams.	Trust signals can be hidden or distorted in large volumes of messages, delayed responses, fragmented CRM notes, or weakly interpreted interaction data.	AI may help managers notice changes in sentiment, responsiveness, commitment, and engagement quality, making possible relationship risks easier to see.
Cognitive	Creates shared goals, shared language, and common interpretation across functions and organisations.	Marketing, sales, supply chain, and customer-facing teams may interpret the same platform data differently, creating misalignment, and fragmented shared meaning.	AI may help connect data across functions and support a more shared interpretation of customer, supplier, and partner signals.

AI can support this process, but it is most useful when managers know how to interpret and act on AI-generated signals. In B2B ecosystems, resilience and value creation rarely come from having more contacts. They come from knowing which relationships are worth time and investment, which signs of trust need attention, and where shared goals are becoming unclear across functions (Athey, 2018; Barrutia & Echebarria, 2022; Krings, 2022). By using these three dimensions, this paper treats social capital as more than a general relationship asset. It is understood as a practical and strategic resource that can be strengthened or weakened depending on how companies manage digital signals, trust, and shared interpretation.

2.2 Conceptual Model

Fig. 1 presents the conceptual model developed in this paper. The model positions digital noise between platform connectivity and social capital formation. This positioning is important because digital connectivity does not automatically produce valuable relationships, trust, or shared meaning. In many B2B platform ecosystems, strategically relevant signals are mixed with low-value contacts, repeated information, fragmented data, weak governance, and ambiguous interpretations. Under these conditions, connectivity may increase interaction while still making relationship value harder to interpret (Eppler & Mengis, 2004; Wang & Strong, 1996; Jacobides et al., 2018; Tiwana, 2014).

The model links digital noise to the three dimensions of social capital: structural, relational, and cognitive. Digital noise may weaken structural social capital when central actors, boundary spanners, relevant weak ties, and important network positions become difficult to identify. It may weaken relational social capital when trust-related signals, such as responsiveness, commitment, reciprocity, and sentiment, are hidden or distorted. It may weaken cognitive social capital when marketing, sales, supply chain, customer-facing teams, and ecosystem partners interpret the same platform signals differently (Nahapiet & Ghoshal, 1998; Adler & Kwon, 2002; Tsai & Ghoshal, 1998).

Artificial Intelligence (AI) is presented as a contingent support mechanism rather than as a direct source of social capital. The model identifies four AI-enabled mechanisms: filtering, relationship prioritisation, sentiment interpretation, and cross-functional data integration. Filtering may reduce repeated or weakly relevant signals. Relationship prioritisation may help managers identify strategically important actors and network gaps. Sentiment interpretation may support the detection of changes in tone, responsiveness, and commitment.

Cross-functional data integration may help teams compare and align interpretations across departments and ecosystem partners (Athey, 2018; Benbya et al., 2021; Raisch & Krakowski, 2021).

The framework should not be read as a claim that AI directly improves performance outcomes. The theoretical pathway is indirect. Platform connectivity may generate digital noise; digital noise may constrain the formation of social capital; AI-enabled mechanisms may mitigate some forms of digital noise; reduced digital noise may make structural, relational, and cognitive social capital more visible and actionable; and stronger social capital may then support cross-functional synergy, collaboration, innovation, resilience, and performance. These relationships remain conceptual and require future empirical testing (Cohen & Levinthal, 1990; Nonaka, 1994; Teece, 2007).

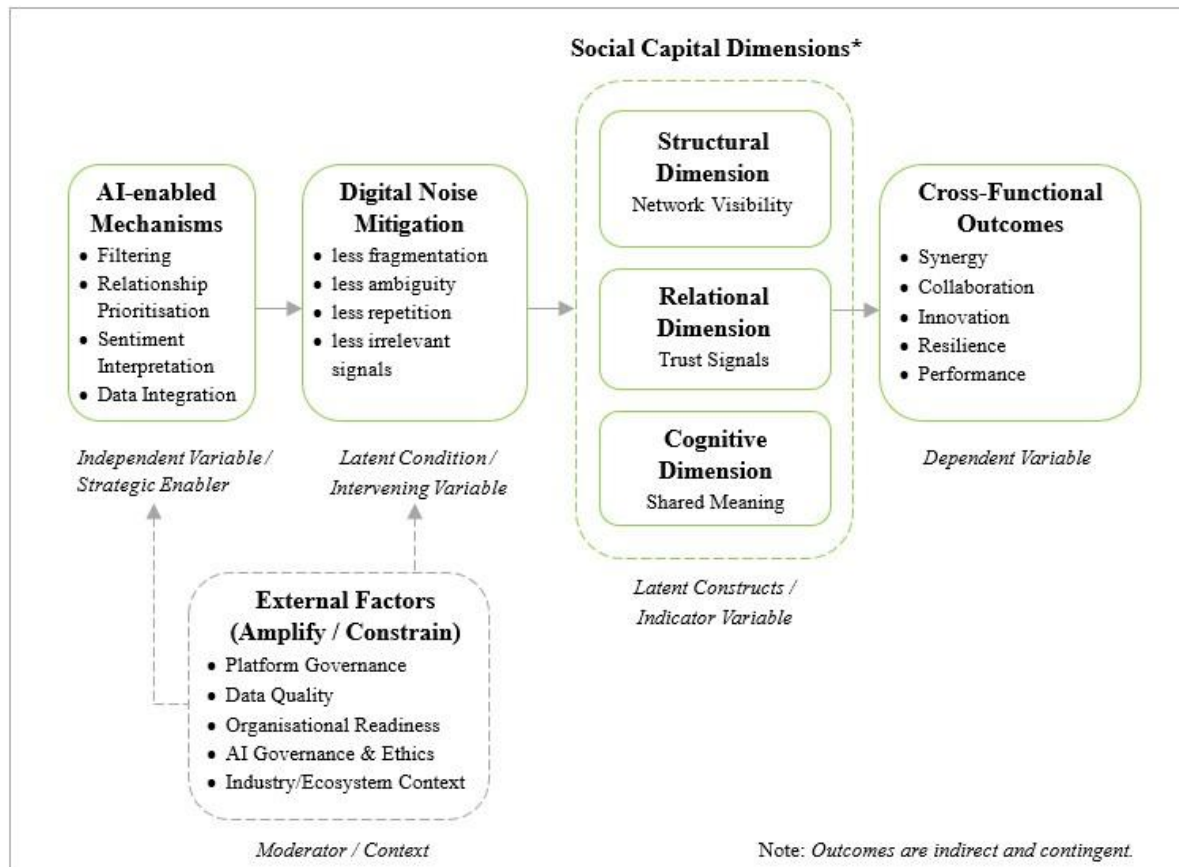


Fig. 1 Conceptual Model of AI-Enabled Digital Noise Mitigation and Social Capital Formation in B2B Platform Ecosystems

Based on this logic, the model leads to the following propositions:

Proposition 1: In B2B platform ecosystems, digital connectivity may generate digital noise when interaction volume, data fragmentation, signal ambiguity, and weak governance reduce managers' ability to interpret relationship-relevant information.

Proposition 2: Digital noise may weaken structural social capital by obscuring central actors, boundary spanners, relevant weak ties, and strategically important network positions.

Proposition 3: Digital noise may weaken relational social capital by making trust-related signals, including responsiveness, commitment, reciprocity, and sentiment, harder to detect and interpret.

Proposition 4: Digital noise may weaken cognitive social capital by fragmenting shared interpretation across marketing, sales, supply chain, customer-facing teams, and ecosystem partners.

Proposition 5: AI-enabled filtering, relationship prioritisation, sentiment interpretation, and cross-functional data integration may mitigate digital noise when these tools improve managerial interpretation rather than replace managerial judgement.

Proposition 6: Reduced digital noise may strengthen structural, relational, and cognitive social capital by making valuable relationships, trust signals, and shared meanings more visible and actionable.

Proposition 7: Stronger AI-supported social capital may enhance cross-functional synergy, collaboration, innovation, resilience, and performance, but these outcomes are indirect and contingent on data quality, platform governance, human oversight, and organisational learning.

2.3 Platform Ecosystem Strategies

Platform ecosystems connect customers, suppliers, distributors, technology partners, and internal teams in ways that change how traditional value chains operate (Gawer & Cusumano, 2014; Jacobides et al., 2018; Gawer, 2022). In B2B markets, this is important because value is rarely created by an individual company. It is created through coordinated interaction among multiple actors whose interests, information, and responsibilities are interdependent. A platform is therefore more than a digital structure. It is a governed business setting in which

participants need to coordinate relationships, information flows, and shared expectations in order to create value (Eisenmann et al., 2006; Tiwana, 2014; Parker et al., 2016).

Cross-Functional and Inter-organisational Synergies are central to this process. Platforms may help companies collaborate across departments, functions, and ecosystem partners (Kapoor & Agarwal, 2017). However, platform participation does not automatically produce alignment. Marketing, sales, supply chain, customer-facing teams, and external partners may work with similar data while interpreting it differently. This is where digital noise becomes a strategic problem rather than only an information problem. Repeated signals, fragmented data, weak relevance, ambiguous interpretation, and weak governance can make it difficult for actors to identify which relationships matter, which trust signals require attention, and which priorities should guide coordinated action (Eppler & Mengis, 2004; Wang & Strong, 1996).

AI-supported social capital models may help address these gaps by improving managerial interpretation. They may help managers identify relationships that create value, recognise trust-related signals, and detect where shared goals require more attention. However, AI is not collaboration itself. It can provide clearer signals, but companies still need governance, dialogue, and managerial judgement to convert those signals into coordinated action. When AI-supported signals are interpreted responsibly, cross-functional and inter-organisational synergies may become more realistic, and platforms may deliver more consistent value (Krings et al., 2021; Raisch & Krakowski, 2021).

Network Effects and Value Co-Creation also depend on the quality of social capital. In platform ecosystems, network effects are significant because platform value can increase as more actors interact and co-create value (Eisenmann et al., 2006; Parker et al., 2016). In B2B environments, however, participation alone is insufficient. Platforms must also support trust, meaningful exchange, shared interpretation, and the quality of relationships among participants (Barrutia & Echebarria, 2022). Without these conditions, network expansion may lead to more activity without stronger collaboration.

Digital noise, therefore, creates a specific risk for B2B platform ecosystems. Low-value contacts, fragmented messages, repeated interactions, and weakly interpreted signals may increase the appearance of platform engagement while reducing the clarity needed for value creation. Network effects may increase reach and participation, while social capital helps convert participation into collaboration, innovation, and resilience. Platforms that manage both network effects and social capital are better positioned to adapt to market changes and sustain competitive advantage (Gawer & Cusumano, 2014; Kapoor & Agarwal, 2017; Teece, 2007).

2.4 The Role of AI in Supporting Social Capital within Platform Ecosystems

AI may support social capital in platform ecosystems by helping companies interpret complex digital signals more clearly. Its value does not lie in replacing relationship work or automatically generating trust. Rather, AI may support managers by filtering low-value information, prioritising relevant relationships, interpreting trust-related signals, and integrating data across functions. These mechanisms can make social capital more visible and actionable, but only when they are supported by data quality, platform governance, human oversight, and managerial judgement (Athey, 2018; Barrutia & Echebarria, 2022; Wang & Strong, 1996; Benbya et al., 2021; Raisch & Krakowski, 2021).

Filtering and prioritising connections are especially relevant in large B2B networks. Digital platforms, CRM systems, and professional networks such as LinkedIn can produce substantial digital noise when high-value relationships are mixed with weak contacts, repeated signals, and fragmented information. AI-supported analysis may help companies distinguish strategically relevant connections from low-value interactions. For example, analysing LinkedIn or Salesforce data may help managers identify sales-relevant contacts, central actors, boundary spanners, and relationship gaps. This supports the structural dimension of social capital by improving network visibility rather than simply increasing the number of contacts (Gawer & Cusumano, 2014; Krings et al., 2021).

Sentiment interpretation may support the relational dimension of social capital. Lasting and reciprocal relationships in uncertain environments depend on trust, responsiveness, commitment, and reciprocity. AI-supported sentiment analysis may help managers notice changes in tone, delayed responses, vague commitments, or declining engagement. These signals should not be treated as proof of trust or distrust. They are indicators that may prompt closer managerial attention. In this sense, AI may help companies recognise possible trust gaps while preserving the human and social process through which trust is built (Barrutia & Echebarria, 2022; Nahapiet & Ghoshal, 1998; Raisch & Krakowski, 2021).

Cross-functional data integration may support the cognitive dimension of social capital. Marketing, sales, supply chain, customer service, and partner-facing teams often interpret similar signals differently because their data, incentives, and responsibilities are separated. AI may help connect customer, supplier, operational, and relationship data so that teams can compare interpretations and develop a more shared understanding of

platform signals. This may reduce siloed interpretation and support more coordinated action, but it does not remove the need for dialogue, governance, and organisational learning (Krings et al., 2021; Eisenmann et al., 2006; Nonaka, 1994; Tsai & Ghoshal, 1998).

Previous research suggests that machine learning, sentiment analysis, and related analytical tools may help companies respond to fast-changing markets by improving collaboration, adaptability, and managerial interpretation of relationship signals (Barrutia & Echebarria, 2022; Bharadwaj et al., 2013; Benbya et al., 2021). In this paper, AI is therefore conceptualised as a contingent support mechanism. It may mitigate digital noise and support social capital formation, but its contribution depends on whether companies use AI-supported signals responsibly and translate them into informed relationship action, rather than relying on automated outputs without managerial and governance oversight (Faraj et al., 2018; Kellogg et al., 2020).

2.5 Advancing an AI-Supported Social Capital Framework

This section advances an AI-supported social capital framework for B2B platform ecosystems. The framework does not treat AI as an autonomous creator of social capital. Instead, it positions AI as a contingent support mechanism that may help companies interpret relationship-relevant signals under conditions of digital noise. The central purpose is to explain how AI-enabled filtering, relationship prioritisation, sentiment interpretation, and cross-functional data integration may support the structural, relational, and cognitive dimensions of social capital (Raisch & Krakowski, 2021; Benbya et al., 2021).

The framework prioritises meaningful relationship interpretation rather than the expansion of digital contacts. In large platform ecosystems, companies may have many connections while still struggling to identify central actors, relevant weak ties, emerging trust concerns, or cross-functional misalignments. AI may support this process by helping managers distinguish strategically relevant signals from repeated, fragmented, weakly relevant, or ambiguously interpreted information. This may allow managers to spend less time processing noise and more time interpreting relationships, coordinating action, and developing social capital (Athey, 2018; Gawer & Cusumano, 2014; Eppler & Mengis, 2004; Wang & Strong, 1996).

The framework follows the three dimensions of social capital. At the structural level, AI-supported analysis may improve network visibility by showing where influence, information flows, and relationship gaps are located. At the relational level, sentiment interpretation may help managers notice changes in responsiveness, commitment, reciprocity, or tone that could indicate emerging trust concerns. At the cognitive level, cross-functional data integration may help teams compare customer, supplier, operational, and partner-facing signals in order to develop a more shared interpretation of ecosystem priorities. These mechanisms may support social capital formation, but they remain dependent on managerial judgement, data quality, platform governance, algorithmic transparency, and organisational learning (Tiwana, 2014; Faraj et al., 2018; Kellogg et al., 2020; Nonaka, 1994). This framework builds on prior work on AI and social capital in global B2B development, but it develops a more specific theoretical argument by placing digital noise at the centre of social capital formation in platform ecosystems (Krings & Rincon, 2026). Its contribution is in clarifying the indirect pathway through which AI may support social capital: AI-enabled mechanisms may mitigate digital noise; reduced digital noise may make the three dimensions of social capital more visible and actionable; and stronger social capital may support cross-functional synergy, collaboration, innovation, resilience, and performance. The framework, therefore, provides a basis for future empirical testing rather than claiming direct evidence of AI-driven social capital formation (Cohen & Levinthal, 1990; Teece, 2007).

3. AI and Digital Transformation in B2B Platforms

AI has changed how companies work with B2B platforms, but its role needs to be carefully defined. It is too simple to argue that AI transforms relationships or automatically builds social capital. The more precise question is: what does AI help managers interpret when they face excessive digital information, weak signals, fragmented data, and disconnected relationship traces?

On B2B platforms, AI may support relationship management, resource allocation, and process coordination. It may also help companies make sense of data that sits across departments, customer systems, supplier exchanges, CRM platforms, and digital channels. This matters because digital transformation is not only a technological process. It also changes how people communicate, how teams interpret information, and how companies create value from relationships (Bharadwaj et al., 2013; Benbya et al., 2021).

This section examines four AI-enabled mechanisms that may mitigate digital noise in B2B platform ecosystems: filtering, relationship prioritisation, sentiment interpretation, and cross-functional data integration. These mechanisms are discussed as managerial support mechanisms rather than as direct causes of social capital or performance. The section, therefore, clarifies how AI can make the three dimensions of social capital more

visible and actionable, while still depending on data quality, platform governance, human judgement, and organisational learning (Wang & Strong, 1996; Tiwana, 2014; Nonaka, 1994).

3.1 AI-Supported Network Prioritisation

B2B platform ecosystems create opportunities because they connect companies, partners, customers, suppliers, and internal teams. At the same time, these networks can become difficult to interpret when digital noise makes relationship value harder to see (Krings, 2025). AI does not solve this problem on its own. It may, however, help managers identify strategically relevant relationships, central actors, boundary spanners, and important network positions.

This matters for the structural dimension of social capital. In large B2B networks, not every contact carries the same value. Some relationships create access, trust, knowledge, influence, or coordination capacity. Others mainly increase volume without improving collaboration. AI-supported network prioritisation may help managers distinguish meaningful relationships from low-value interactions. This can support more careful allocation of time, attention, and resources, while also helping companies build partnerships with stronger long-term potential (Barrutia & Echebarria, 2022).

The key issue is therefore not the size of the network, but the interpretability of the network. AI may support structural social capital when it helps managers recognise which relationships matter, where network gaps exist, and how influence or information moves across the platform ecosystem (Adler & Kwon, 2002; Tsai & Ghoshal, 1998).

Table 2 outlines selected AI-supported techniques that may improve network visibility and support the structural dimension of social capital.

Table 2 Traditional and AI-Supported Platform Strategies in B2B Ecosystems

Strategic Focus	Traditional Platform Strategy	AI-Supported Platform Strategy	Possible Contribution to Social Capital
Relationship Management	Customer and supplier relationships are often managed through broad segments or standard account approaches.	AI may help managers interpret customer, supplier, and engagement data more selectively.	Relationship work may become more focused when managers can identify relevant contacts, trust signals, and relationship risks.
Network Prioritisation	Companies often struggle to separate strategically relevant relationships from low-value interactions.	AI may help filter repeated or weakly relevant signals and identify central actors, boundary spanners, and important network gaps.	Managers may allocate time, attention, and resources to relationships with stronger strategic relevance.
Cross-Functional Alignment	Silos and communication barriers often remain between marketing, sales, supply chain, and customer-facing teams.	AI may connect shared data sources and make cross-functional signals easier to compare.	Teams may develop a more common interpretation of customer, supplier, and partner situations.
Process Coordination	Processes are often sequential, manual and slow to adjust when new relationship or operational information appears.	AI may support faster updating of relationship, customer, supplier, and operational information.	Social capital may become easier to use in daily coordination and decision-making.

Machine learning and predictive analytics may help companies in analysing large professional and customer relationship networks, including LinkedIn data, CRM systems, and Salesforce records, to identify connections more closely aligned with strategic goals. This matters because social capital is built through relevant and trusted relationships, not through the largest number of contacts. Previous research shows that social capital supports access to relevant actors and helps companies collaborate across functions (Kapoor & Agarwal, 2017; Krings et al., 2021). AI-supported network prioritisation may therefore reduce wasted attention, improve the visibility of strategically relevant relationships, and support more focused collaboration across platform ecosystems (Krings et al., 2021; Raisch & Krakowski, 2021).

3.2 Sentiment Analysis and Trust Signals

Trust and commitment can influence social capital, especially when choices are risky or information is incomplete (Bharadwaj et al., 2013; Krings, 2022). In B2B platform ecosystems, trust often does not become

evident in a single major event. Instead, trust appears in smaller signals, such as how quickly people respond, how clearly they commit, the tone of their communication, and whether they follow through on their promises. However, these signals can easily get lost or become distorted when communication is spread across emails, calls, CRM entries, supplier exchanges, and platform interactions. This is one way in which digital noise may weaken the relational dimension of social capital by making trust-related signals harder to detect and interpret. This is where sentiment analysis becomes relevant. In particular, companies may use natural language processing (NLP) to review their day-to-day communication and identify patterns in tone, responsiveness, and follow-through (Barrutia & Echebarria, 2022). Early signs of weakening cooperation may include shorter replies, delayed responses, more defensive wording, or vague commitments. However, these signals do not prove that trust has actually collapsed. Instead, they suggest that management should take a closer look before the relationship deteriorates further. It is worth noting that scoring personal contacts or allowing AI to judge relationships is not the primary approach regarding the relational dimension of social capital. This would be too narrow and misleading. The purpose is to be more attentive. When teams are aware of where communication may be weakening, they can clarify expectations, adjust timelines, and address small tensions before they become larger coordination problems.

In addition, sentiment analysis plays a cross-functional role. Marketing, sales, operations, and procurement often see different sides of the same customer or supplier relationship. One team may notice engagement, another may notice hesitation, and another may see operational risk. When these signals are brought together, teams can discuss goals, language, and expectations more clearly (Kapoor & Agarwal, 2017). In this sense, sentiment analysis may support social capital by making trust signals easier to notice and easier to use in everyday B2B collaboration, while still requiring managerial judgement and careful interpretation (Raisch & Krakowski, 2021; Kellogg et al., 2020).

3.3 AI-Supported B2B Process Coordination

Barrutia and Echebarria (2022) add to Krings' (2022) findings that AI may support social capital and process coordination on B2B platforms. Still, it is important to be clear that AI alone does not improve performance. It becomes valuable when it helps companies reduce digital noise, share information across teams, and make routine tasks easier to interpret and coordinate (Bharadwaj et al., 2013; Benbya et al., 2021).

This matters because many B2B processes involve marketing, sales, customer service, supply chain, and partner teams. If these groups work separately, information can become scattered across systems and functions. This slows down decisions and makes it harder for managers to focus on key relationships. AI may help by reviewing routine data, updating relevant information more quickly, and pointing out where managerial attention may be needed. This may help companies respond more flexibly to market changes, as long as managers use the information carefully and within clear governance structures (Wang & Strong, 1996; Tiwana, 2014).

In this way, AI may support process coordination by reducing unnecessary friction and helping companies use social capital more effectively throughout the business cycle (Barrutia & Echebarria, 2022). The main value lies in making relationship-relevant information more visible, comparable, and actionable across functions. Table 3 shows selected AI tool strategies and explains how they may support collaboration, resource management, and process coordination without treating AI as a direct source of performance improvement.

Table 3 Selected AI Tools and Their Possible Contribution to Social Capital

AI Tool	Application Area	Possible Contribution to Social Capital	Possible Outcome
Sentiment Analysis	Relationship Management	May help managers notice changes in tone, responsiveness, and engagement quality.	Earlier recognition of possible trust issues in customer-supplier relationships.
Network Analysis	Structural Social Capital	May help identify relevant actors, high-value relationships, boundary spanners, and important network positions.	More focused relationship investment and clearer network priorities.
Predictive Analysis	Cognitive Social Capital	May help compare patterns across customer, supplier, operational, and internal data.	Better visibility of shared goals, misalignment, and possible coordination gaps.
Machine Learning	Process Coordination	May help review routine process data and support faster updates where managerial attention is needed.	Reduced lead qualification time and more responsive process management, where supported by data quality and managerial judgement.

Krings (2022) and Krings et al. (2021) show that alignment across functions is important in platform ecosystems. It may help processes move faster, but it should not be treated as an automatic route to higher performance. The underlying value lies in how well teams use shared information, coordinate decisions, and focus on the relationships that matter.

For example, teams may use AI algorithms to screen prospects in the lead-generation process and compare them with clear business goals. This may help business development professionals spend less time on low-value contacts and more time on relationships with stronger potential. In this sense, AI may reduce digital noise in the sales process by making relationship priorities easier to see.

AI may support platform growth by helping companies accelerate revenue-related activities, improve customer engagement, and allocate resources more carefully (Eisenmann et al., 2006; Parker et al., 2016). However, these outcomes remain indirect and depend on data quality, managerial judgement, and cross-functional use of the AI-supported signals (Wang & Strong, 1996; Raisch & Krakowski, 2021). Fig. 2 illustrates an AI-supported lead-generation process for a UK-based cloud computing provider.

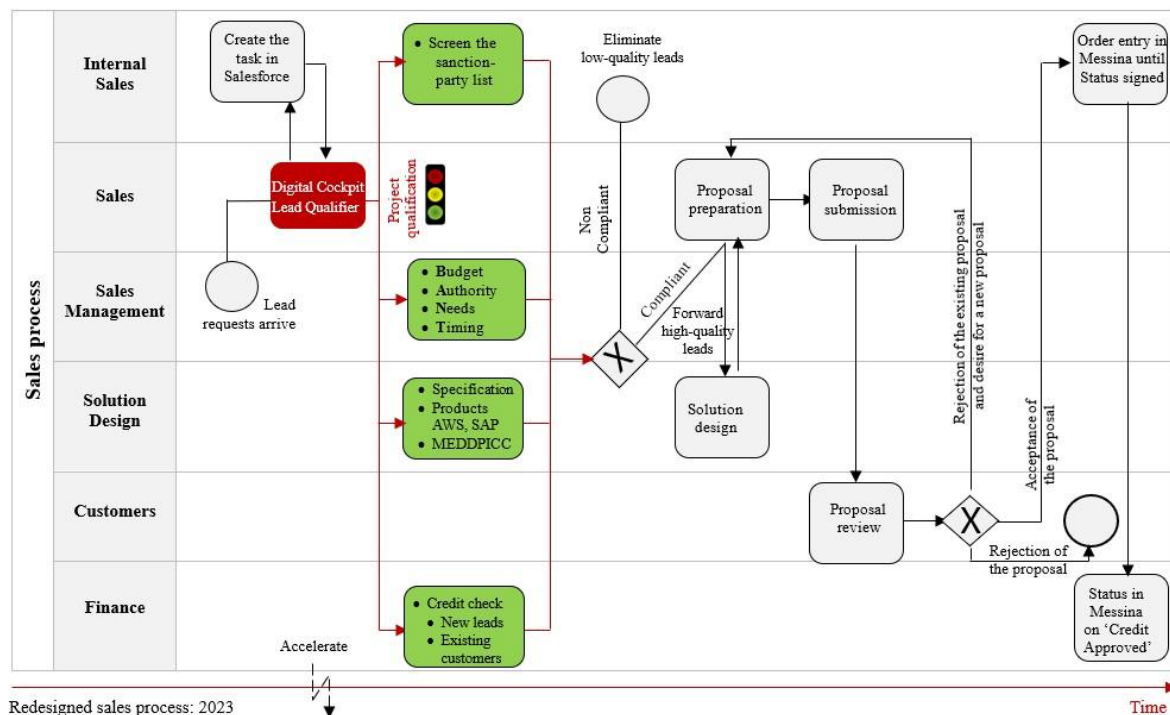


Fig. 2 Illustrative AI-Supported Lead Qualification Process for Digital Noise Mitigation in B2B Sales

3.4 AI-Supported Inter-organisational Collaboration

Inter-organisational cooperation is essential in platform ecosystems because value is created across company borders. Suppliers, customers, distributors, technology partners, and internal teams need to exchange knowledge and coordinate their work. Without this cooperation, platform ecosystems may still generate activity, but this activity does not necessarily become value (Jacobides et al., 2018; Gawer, 2022).

AI may support social capital in such ecosystems, but it should not be presented as a tool that increases it in and of itself. Its value lies in helping managers work with large amounts of data and identify where collaboration may need attention (Barrutia & Echebarria, 2022; Gawer & Cusumano, 2014; Benbya et al., 2021). Predictive modelling and data analysis may make cross-functional and inter-organisational patterns more visible. This may help companies see where relationships are strong, where communication is weakening, and where digital noise is blocking coordination.

AI may also support knowledge sharing between organisations. It can help identify common priorities, repeated problems, and areas where partners depend on each other. This matters because social capital depends not only on contacts but also on trust, shared understanding, and practical cooperation (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998; Nonaka, 1994).

In B2B supplier-customer relationships, AI can analyse interaction data to identify opportunities to improve processes across the supply value chain. This, by itself, does not make AI the driving force behind platform success. Rather, AI may support cross-functional and inter-organisational alignment when managers use it to

reduce digital noise, interpret relationship signals, and coordinate action more carefully (Barrutia & Echebarria, 2022; Kapoor & Agarwal, 2017; Raisch & Krakowski, 2021).

3.5 AI and Innovation in Platform Strategies

AI can influence how B2B platforms innovate, but the argument should be made carefully. It does not determine innovation on its own. Its value lies in helping companies notice market changes earlier, identify possible opportunities, and understand customer or partner behaviour more clearly through data analysis (Athey, 2018; Benbya et al., 2021).

When AI is connected to the social capital approach, it may support innovation. For example, it can help managers identify which relationships contain relevant knowledge, which network signals warrant attention, and where cross-functional cooperation may lead to new ideas. This is critical since innovation in B2B platform ecosystems often depends not only on technology but also on relationships. Companies need to build trust, shared understanding, and access to the right actors before they can move new ideas into practice (Nahapiet & Ghoshal, 1998; Cohen & Levinthal, 1990).

AI may also support more adaptable platforms. By reducing digital noise and making it easier to interpret relationship signals, it may support faster learning and better coordination. This may help companies respond more effectively to changing market conditions (Bharadwaj et al., 2013; Teece, 2007). However, this effect depends heavily on knowledge sharing, managerial judgement, and the use of AI-supported signals across teams. In this sense, AI may support platform resilience by helping companies work more intelligently with data, relationships, networks, and performance signals. Platforms become stronger when these insights are shared, discussed, and connected to action rather than kept in separate functions. This may support more flexible ecosystems in fast-moving markets, while still depending on data quality, platform governance, and organisational learning (Gawer & Cusumano, 2014; Kapoor & Agarwal, 2017; Wang & Strong, 1996; Tiwana, 2014; Nonaka, 1994).

4. Illustrative Scenarios in Platform Ecosystems

This section provides illustrative scenarios of how the framework may be used in practice. These scenarios are not presented as full case studies or as evidence that artificial intelligence improves social capital. Rather, they show how digital noise may appear in platform ecosystems and how AI-enabled filtering, relationship prioritisation, sentiment interpretation, and cross-functional data integration may help managers notice important relationships, trust signals, and coordination issues (Raisch & Krakowski, 2021; Benbya et al., 2021). While the main focus is practical illustration, the discussion remains theory-based. The scenarios connect the conceptual model to common business-to-business situations such as supplier coordination, customer engagement, and inter-organisational collaboration. They also show that social capital is more than a general relationship concept. It becomes visible when actors coordinate action, repair communication problems, interpret trust signals, and rebuild shared understanding across networks (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998).

4.1 Scenario 1: Supplier Coordination in a Global Automotive Context

Global automotive manufacturers often struggle with communication, both inside the company and with external partners. For example, supply chain and marketing teams may be poorly aligned, share key information too late, or make decisions without fully considering their impact on suppliers, customers, or production schedules.

Digital noise can appear in daily tasks in these situations. Scattered updates, unclear roles, late messages, and different interpretations may confuse teams. Within the company, this can lead to disagreements over schedules and priorities. Externally, suppliers may face sudden changes, mixed messages, and limited transparency. Over time, trust may weaken, and operational issues may occur more frequently (Eppler & Mengis, 2004; Wang & Strong, 1996).

This scenario shows that technology is not the first step. Before using AI tools to support coordination, managers need to repair communication and identify where relationship problems exist. Even simple face-to-face discussions between departments and suppliers can show where trust is low and where information is not being shared effectively. This matters because social capital comes from relationships, not only from systems (Nahapiet & Ghoshal, 1998).

Once communication improves, AI tools may help teams work together and share information more clearly. These tools may reduce digital noise by making important updates easier to identify, showing where coordination is missing, and supporting faster information flow between supply chain, marketing, and supplier

teams. This kind of support is important for the internal and inter-organisational coordination that platform ecosystems require (Gawer & Cusumano, 2014; Kapoor & Agarwal, 2017; Tiwana, 2014).

The role of AI in this scenario is therefore indirect. It cannot rebuild trust on its own. Instead, it may help managers by providing clearer signals, better timing, and a more shared understanding of what is happening. If used carefully, AI may improve internal communication and make supplier relationships more stable. The company does not only need more supplier data. It needs better relationship quality, clearer expectations, and more reliable coordination. When these conditions improve, companies may reduce friction, improve delivery reliability, and support stronger collaboration with key suppliers. Lasting gains come from the combination of trust, shared goals, managerial judgement, and better use of information, not from AI tools alone (Barrutia & Echebarria, 2022; Kapoor & Agarwal, 2017; Raisch & Krakowski, 2021).

4.2 Scenario 2: Customer Engagement in an E-Commerce Platform

A global e-commerce platform can face similar problems, although the setting is different. Customer service, marketing, dealer management, and operations may all receive customer signals, but these signals are often scattered across different systems. Feedback, complaints, product questions, delivery updates, and dealer communication can easily turn into digital noise when they are not interpreted together (Eppler & Mengis, 2004; Wang & Strong, 1996).

In this situation, AI tools may help the platform organise customer and dealer interactions more clearly. Faster routing of queries, clearer status updates, and better follow-ups may make communication easier to manage. This does not mean that AI automatically builds trust. Rather, it may help managers see where customers or dealers need attention and where communication has started to weaken (Barrutia & Echebarria, 2022; Raisch & Krakowski, 2021).

Customer feedback is especially important. Natural language processing (NLP) may help the platform review comments, complaints, and recurring issues, so managers can understand what customers are experiencing more clearly. This may support better responses to customer concerns and may strengthen the relational side of social capital over time, if managers use these signals carefully and responsibly (Athey, 2018; Kellogg et al., 2020).

AI may also support coordination between customer service and marketing. Customer service may see repeated complaints, while marketing may focus on engagement and campaign response. If these signals remain separate, customers may experience delays and inconsistent communication. When AI helps connect these signals, teams may coordinate handoffs more clearly, respond faster, and reduce unnecessary bottlenecks. This may support a smoother customer experience and make social capital more visible in day-to-day platform work (Eisenmann et al., 2006; Gawer & Cusumano, 2014; Parker et al., 2016).

4.3 Scenario 3: Cooperation in a Healthcare Platform

A healthcare platform is another example where digital noise may influence social capital. Hospitals, pharmaceutical companies, distributors, and service teams often must collaborate quickly. Usually, the issue is not missing information but the scattering of information across many systems, messages, and updates (Eppler & Mengis, 2004; Wang & Strong, 1996).

In this situation, AI tools may help structure communication and simplify resource sharing. The goal is not to replace professional judgement but to help the right people receive relevant information when they need it. When supply needs, delivery updates, and partner roles are clearer, coordination may become easier (Raisch & Krakowski, 2021).

AI may help teams work together by clarifying priorities. For example, hospitals might need urgent supplies, distributors may face delivery challenges, and pharmaceutical companies may require a clearer view of demand. When these needs are connected, teams can share knowledge, make decisions together, and work toward shared goals. This may support the cognitive and relational dimensions of social capital (Bharadwaj et al., 2013; Krings, 2022; Nonaka, 1994; Tsai & Ghoshal, 1998).

AI-supported supply chain management may also help identify where important resources are needed and where delays might occur. This does not mean that AI directly improves patient outcomes. Rather, it shows how AI may help create better conditions for healthcare platforms to work more reliably when managers use AI-supported signals with professional judgement and appropriate governance (Barrutia & Echebarria, 2022; Bharadwaj et al., 2013; Tiwana, 2014; Kellogg et al., 2020).

Overall, these scenarios show how AI may help organisations address coordination problems without becoming the source of social capital itself. The main idea is not that AI creates social capital on its own, but that it may reduce digital noise, clarify relationship signals, and support practical teamwork across sectors.

5. Framework for AI-Supported Social Capital in Platform Strategies

The framework developed in this paper explains how AI may support social capital formation amid digital noise. It focuses on three challenges that have both practical and theoretical significance: interpreting complex networks, improving cross-functional coordination, and making social capital usable in managerial decision-making. These challenges are closely linked to digital noise. Companies may have many contacts, dashboards, and interaction points, but still struggle to identify which relationships matter, where coordination is weak, and whether teams share the same interpretation of platform signals (Eppler & Mengis, 2004; Wang & Strong, 1996; Nahapiet & Ghoshal, 1998).

Yet, it does not present AI as a simple solution. It treats AI as a contingent support mechanism that may help managers filter weak signals, recognise valuable relationships, interpret trust-related cues, and connect information across departments. If this is done carefully, companies may make clearer decisions, coordinate action more effectively, and build more useful social capital within their platform ecosystems. These effects remain indirect and depend on data quality, platform governance, managerial judgement, and organisational learning (Tiwana, 2014; Raisch & Krakowski, 2021; Nonaka, 1994).

5.1 Network Prioritisation

AI may support companies in identifying suitable contacts in crowded networks. In B2B platform ecosystems, this can be critical because managers cannot give the same time and attention to every business contact. Some relationships create access, trust, knowledge, and influence. Others mainly add volume. When AI is used selectively, it may help companies focus on relationships that deserve more attention and reduce the distraction caused by low-value signals (Athey, 2018; Eisenmann et al., 2006; Raisch & Krakowski, 2021).

Mitigating digital noise: AI may help filter low-value contacts, repeated signals, and weakly relevant interactions. This does not eliminate managerial judgement. It gives managers a clearer starting point for deciding which partnerships may have real value and which interactions are less relevant (Krings, 2025; Eppler & Mengis, 2004).

Building a stronger network: AI may help identify key contacts, boundary spanners, and gaps between them. This allows sales and business development teams to connect with more relevant partners and use time, attention, and budgets more carefully. The result is not automatically a stronger ecosystem. It becomes possible when managers use these signals to build trust, improve coordination, and develop relationships that support structural social capital (Barrutia & Echebarria, 2022; Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998).

5.2 Cross-Functional Alignment

AI may help reduce gaps between marketing, sales, procurement, and other teams, but it does not remove silos on its own. Cross-functional alignment still depends on people sharing information, interpreting it together, and acting on it. AI may support this work by making handoffs clearer, showing where communication slows down, and helping teams work with a more shared view of the situation. This may strengthen social capital inside the company when it supports trust, common goals, and better coordination (Kapoor & Agarwal, 2017; Krings et al., 2021; Nonaka, 1994).

Spotting and reducing friction; restoring trust: AI may help managers see how work actually moves across functions. Tone, response times, delayed handoffs, and repeated misunderstandings can all signal where collaboration may be weakening. When AI is used selectively, it may point to these rough spots so managers can clear blockages, reset expectations, and rebuild trust before small problems become larger coordination failures (Barrutia & Echebarria, 2022; Nahapiet & Ghoshal, 1998; Raisch & Krakowski, 2021).

Unifying data for better decisions: AI may also support the integration of business-relevant information across functions and hierarchical levels. This may help teams see customer, supplier, and performance issues more clearly. Shared understanding does not come from data alone, but clearer data may help teams respond faster and work toward the same objectives (Barrutia & Echebarria, 2022; Krings, 2022; Wang & Strong, 1996). This is particularly important for cognitive social capital, where common interpretation and shared meaning are central to coordination (Nahapiet & Ghoshal, 1998; Nonaka, 1994; Tsai & Ghoshal, 1998).

5.3 Performance Implications

The performance question is more complex than simply stating that AI improves results. In this framework, performance is treated as an indirect and contingent outcome. AI may primarily help companies reduce digital noise by filtering weak signals, clarifying relationship priorities, and supporting cross-functional interpretation. Social capital may then become easier to understand and use. Under these conditions, companies may observe improvements in areas such as speed, responsiveness, customer experience, resource allocation, and coordination quality (Krings et al., 2021; Teece, 2007).

Performance should therefore be observed through indicators rather than assumed. Useful indicators may include lead qualification time, response time, customer satisfaction, supplier reliability, handover quality, team engagement, and the speed with which problems are identified and addressed. These indicators help managers assess whether collaboration is improving in practice.

Process acceleration and measurable performance indicators: AI may help accelerate processes by supporting managers as they remove low-value signals, identify relevant relationships, and act on clearer information. These effects, however, need to be interpreted with care. Faster processes are valuable only when they support better coordination, stronger relationships, and more reliable decisions (Bharadwaj et al., 2013; Eisenmann et al., 2006; Cohen & Levinthal, 1990; Teece, 2007).

This makes the framework more cautious and more useful. Instead of treating AI as a direct performance engine, it positions AI as a support mechanism that may help companies reduce digital noise and make social capital more visible and actionable. Whether this leads to stronger performance remains an empirical question for future research.

6. Implications for B2B Executives and Industry Leaders

The developed framework provides B2B executives with practical guidance on using AI within platform ecosystems. The main takeaway is that AI should help managers reduce digital noise, interpret relationship signals, and coordinate work across functions. It should not be treated as a quick technical fix or as a substitute for managerial judgement (Raisch & Krakowski, 2021).

Make it real: Begin with actual business problems, such as messy handoffs, slow responses, unclear ownership, repeated misunderstandings, or fragmented customer and supplier signals. AI is useful when it helps managers see where these problems occur and which relationships, trust signals, or coordination gaps require attention (Wang & Strong, 1996; Eppler & Mengis, 2004).

Build trust intentionally: Use signals from daily interactions to identify where relationships may be losing momentum. Delayed replies, vague commitments, repeated escalations, or defensive communication may indicate where leaders should refocus on trust building. The aim is to support early managerial intervention, not to automate trust (Nahapiet & Ghoshal, 1998; Kellogg et al., 2020).

Build adaptability: Share relevant indicators across functions so teams can respond faster when markets change. Clearer relationship signals and better coordination may help companies adjust early without losing sight of business-critical relationships. This requires data quality, responsible governance, and teams that are willing to interpret AI-supported signals together (Wang & Strong, 1996; Tiwana, 2014; Teece, 2007).

6.1 Leveraging AI to Strengthen Social Capital

Companies should use AI selectively to support social capital, especially network structure, relationship quality, and shared purpose. AI may help managers spot business-critical connections, interpret relationship signals, and keep platform participants more closely aligned around common goals (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998).

- **Prioritise relevant networks:** AI tools may help identify important connections within professional and social networks. This allows companies to focus on relationships that are more likely to provide access, reciprocity, knowledge exchange, and collaboration, rather than spending attention on contacts with limited strategic value (Gawer & Cusumano, 2014; Krings et al., 2021).

- **Strengthen trust signals:** Companies may use light-touch sentiment cues to notice where relationships are becoming strained. Examples include missed replies, a sharper tone, or mixed messages. Instead of automating trust, AI should help leaders recognise early gaps and respond in ways that strengthen relationships before they decline further (Barrutia & Echebarria, 2022; Kapoor & Agarwal, 2017; Raisch & Krakowski, 2021).

6.2 Reducing Barriers Between Departments

Collaboration between departments may be supported by AI. However, AI alone is not a remedy for removing silos. Functional teams along the supply chain often work with different data sets, priorities, and interpretations. AI is useful when it helps these functions perceive the business problem more clearly and coordinate their response more carefully (Barrutia & Echebarria, 2022; Krings et al., 2021).

- **Foster agility:** When departments harmonise processes, timing, and responsibilities, decisions may be made faster. AI-supported coordination may reduce delays caused by unclear handoffs, duplicated work, or missing information (Eisenmann et al., 2006; Teece, 2007).

- **Share cross-functional insight:** Data from marketing, sales, operations, and finance should be brought into a shared view where possible. This does not mean that one dashboard solves the problem. It means that teams may have a stronger basis for discussing priorities, comparing interpretations, and acting on common objectives

(Athey, 2018; Krings, 2022; Wang & Strong, 1996; Nonaka, 1994). This is especially important for cognitive social capital, where shared meaning is central to coordinated action (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998).

6.3 Building Resilience in Challenging Environments

In volatile B2B markets, resilience relies on identifying critical relationships during disruptions. AI may help companies pinpoint the partners, teams, and network ties that require attention as conditions shift. The goal is to enhance network effectiveness under pressure, not simply to expand it (Bharadwaj et al., 2013; Gawer & Cusumano, 2014; Teece, 2007).

- **Prioritising the right relationships:** AI may help managers direct time and budget toward relationships that support continuity, trust, and coordinated action. This may help companies respond more carefully to shocks and market changes (Adler & Kwon, 2002; Barrutia & Echebarria, 2022; Krings et al., 2021).

- **Promoting learning and innovation:** AI may also make recurring issues, emerging patterns, and useful ideas easier to notice. Learning still depends on people discussing and applying these insights. When this happens, innovation may become more grounded in the network and less dependent on isolated functional interpretation (Athey, 2018; Kapoor & Agarwal, 2017; Cohen & Levinthal, 1990; Nonaka, 1994).

6.4 Future Research Directions

Further research should examine how AI may support social capital in B2B platform ecosystems. As the framework presented here is conceptual, future studies should provide stronger empirical evidence, particularly in live platform settings where digital noise, trust, and cross-functional coordination can be observed over time (Gawer & Cusumano, 2014; Kapoor & Agarwal, 2017; Jacobides et al., 2018). Research should also examine how AI may influence structural, relational, and cognitive social capital, including network visibility, trust, shared goals, common language, and teams' ability to interpret signals consistently (Bharadwaj et al., 2013; Tsai & Ghoshal, 1998).

Field evidence is needed. Longitudinal case studies, comparative case research, field experiments, and platform-based observations could examine whether AI-supported practices change collaboration, coordination, and relationship quality over time. Such studies would help move the framework from conceptual development to empirical testing.

Future work should also develop clear and comparable indicators for digital noise, network health, trust signals, information quality, platform governance, and cross-functional alignment. These indicators would help researchers and managers assess whether social capital is becoming more visible and usable, while also distinguishing digital noise from related problems such as information overload and poor data quality (Eppler & Mengis, 2004; Wang & Strong, 1996; Tiwana, 2014).

Research should also address governance and ethics. Important issues include privacy, fairness, data quality, algorithmic transparency, and the risks of over-relying on automated relationship signals. While AI may support managerial attention, it should not replace judgement, dialogue, or responsible governance (Faraj et al., 2018; Kellogg et al., 2020; Raisch & Krakowski, 2021).

Future studies should test the framework's applicability across sectors such as healthcare, manufacturing, finance, and digital services. Approaches that work in one platform setting may require adjustment in another. Interdisciplinary research that combines organisational behaviour, digital strategy, information systems, platform governance, and business systems may further explain how AI, digital noise, and social capital interact in platform ecosystems (Eisenmann et al., 2006; Gawer & Cusumano, 2014; Benbya et al., 2021; Gawer, 2022). These research directions may help clarify when AI supports social capital, when it introduces new risks, and how B2B leaders can use it responsibly in complex platform environments.

7. Conclusion

This paper developed digital noise as a theoretical constraint on social capital formation in B2B platform ecosystems. The central argument is that digital connectivity alone does not create social capital (Nahapiet & Ghoshal, 1998; Adler & Kwon, 2002). More contacts, more data, and more platform interaction may increase access to information, but they may also produce repeated, fragmented, weakly relevant, poorly governed, or ambiguously interpreted signals. These signals may weaken managers' ability to identify valuable relationships, interpret trust, and coordinate shared meaning across functions.

The paper contributes to social capital theory by explaining how digital noise may affect the structural, relational, and cognitive dimensions of social capital (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). Structurally, digital noise may obscure central actors, boundary spanners, relevant weak ties, and important network positions. Relationally, it may hide or distort trust-related signals such as responsiveness, commitment,

reciprocity, and sentiment. Cognitively, it may fragment interpretation across marketing, sales, supply chain, customer-facing teams, and ecosystem partners. This argument extends social capital theory by showing that digitally mediated relationships depend not only on connectivity, but also on signal clarity, interpretability, governance, and shared meaning.

The paper also contributes to research on B2B platform ecosystems by positioning AI as a contingent support mechanism (Gawer & Cusumano, 2014; Tiwana, 2014; Raisch & Krakowski, 2021). AI-enabled filtering, relationship prioritisation, sentiment interpretation, and cross-functional data integration may help companies mitigate digital noise and make social capital more visible and actionable. However, AI does not create trust, collaboration, or performance on its own. Its value depends on data quality, platform governance, human judgement, and organisational learning.

For B2B leaders, the implication is clear: AI should be used to support relationship interpretation, reduce low-value signals, and improve cross-functional coordination. It should not be viewed as a stand-alone solution. The goal is to use AI-supported signals to strengthen trust, shared understanding, and the quality of collaboration.

Future research should test the propositions developed in this paper across sectors such as healthcare, manufacturing, finance, and digital services. Longitudinal studies, field experiments, comparative case research, and platform-based evidence can help clarify when AI supports social capital, when it introduces new risks, and how companies can use it responsibly in complex B2B ecosystems.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest.

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