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The social buyer: A framework for the dynamic role of social media in organizational buying

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A B S T R A C T

Social media plays a central role in information and knowledge management to support business-to-business (B2B) buying decisions. To date, research has yet to delineate the mechanisms through which social media information relates to B2B buying and subsequent organizational outcomes. To describe this process, we build on social media's ability to facilitate conveyance and convergence processes within the buying unit enabling *knowledge discovery*, *knowledge sharing*, and *knowledge interpretation*. Based on an organizational knowledge framework, we derive propositions about the role of social media in B2B buying and delineate boundary conditions for its influence within the B2B buying unit and the organization. This research sets the foundation for future empirical work at the intersection of B2B and social media.

1. Introduction

Information discovery, sharing, and an overall group knowledge base are essential elements that enable business-to-business (B2B) buying units to contribute to an organization (Grewal et al., 2015; Nonaka, 1994). Accordingly, B2B buyers cite the total cost of ownership, solution-strategic alignment, and ROI gains as having the most substantial influence on purchase decisions (Nanji, 2017). Today's B2B buying is a fully informed, customer-driven process, empowered by digital technology in an interactive marketplace (Zahay, Schultz, & Kumar, 2015). Recent research shows that 83% of B2B executives use social media in their information searches, and 92% report that it influences their decisions (Schimel, 2018), which suggests that B2B buyers have started to rely extensively on social media information during the purchase process, a phenomenon referred to as *social buying* (Grewal et al., 2015). Further, recent research also shows that the composition of the B2B buying units is changing: 73% of personnel involved in firm buying decisions are now millennials (Shea, Samlal-Fadelle, Robertson, & Bullock, 2017), a group that uses social media heavily (Smith & Anderson, 2018).

While digital technology has dramatically altered the landscape and the process of B2B buying, the majority of academic research on its relationship with social media is fragmented and issue-driven, focused on issues such as the role of social media in B2B buying perceptions (e.g., Bianchi & Andrews, 2015), use (e.g., Agnihotri, Dingus, Hu, & Krush, 2016; Agnihotri, Trainor, Itani, & Rodriguez, 2017; Lacka & Chong, 2016), and influence on business performance (e.g., Wang, Pauleen, & Zhang, 2016). To date, academic research has not charted an integrative map of how social media empowers B2B buyers and how it contributes to the social buying process. A conceptual approach to delineate and articulate the domain of social media in B2B buying will articulate factors that affect social media choice, the processes involved in incorporating social media information, and the outcomes of these processes (MacInnis, 2011). To help advance the understanding of the role of social media in B2B, we develop a framework that delineates the dynamic process by which social media information is incorporated into the B2B buying firm and used for organizational performance objectives. Understanding of the social media *information-to-knowledge* conversion process in B2B buying is critical because B2B buying units are tasked with making purchases that align with firm strategic objectives (Nonaka, 1994) and impact the firm's downstream performance (Ohnemus, 2009). By opening this under-explored area of study, our framework may serve as a conceptual foundation of future works related to how social media connects to the broader B2B domain and its vitality. As we incorporate the social media information discovery to the knowledge creation process, we explain how these processes change

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and describe their boundary conditions.

To achieve this aim, we draw from the communication processes of *conveyance* and *convergence* (Dennis, Fuller, & Valacich, 2008; Lind & Zmud, 1991) to create a conceptual framework that depicts the role of social media information in B2B organizational knowledge and outcomes. Conveyance refers to the collection and dissemination of new and relevant information to create an individual situational knowledge base (Dennis et al., 2008), while convergence refers to the group activity of reconciling an individual's interpretation of the information with the goal of deriving a unified knowledge base (Lind & Zmud, 1991). We state propositions that explain the various internal and external organizational factors involved in the process of how social media information helps B2B-buying knowledge convergence and how knowledge convergence leads to marketing and financial performance. We rely on critical aspects that play a role in B2B buying (i.e., purchasing situation and elements of structural buying) to add value to the current marketing thinking.

Our research makes several contributions toward the objective of better understanding the role of social media information in B2B markets. First, we depict the role of social media in the B2B buying process and its effects on organizational performance, thereby helping to address the disproportionate research focus given to the business-to-consumer (B2C) social media domain compared to the B2B social media domain (e.g., Iankova, Davies, Archer-Brown, Marder, & Yau, 2018; Lilien, 2016). In addition, we respond to marketing scholars' calls to address the need for more theoretical treatment of unexplored areas. Such calls have resulted in articles of a conceptual nature (e.g., Yadav, 2010) and in additional research that addresses communication messages in the digital space (e.g., Grewal et al., 2015; Marketing Science Institute, 2018). This research will also benefit B2B practitioners by providing a deeper understanding of how social media information is used in B2B buying and how it connects to performance outcomes. With this knowledge, practitioners will be more effective in developing strategies and allocating resources to social media efforts.

2. Social media information in a B2B environment

Research suggests that B2C and B2B social media interactions and buying process are fundamentally different (e.g., Glynn, 2012; Iankova et al., 2018). While social media information in B2C domains is directed at consumers that have the final purchase decision (e.g., Powers, Advincula, Austin, Graiko, & Snyder, 2012), social media information in B2B does not reach the final purchase authority; instead, it reaches an individual who must share the information with the rest of the buying unit to understand its value (e.g., Anand & Aron, 2003). In general, buying units seek information to understand complex product information, reduce purchase risk, add value downstream, and find potential relationship partners (Shipley & Howard, 1993). Increasingly, B2B buyers are gathering this information via social media. As noted by Lee (2016), 53% of B2B buyers report using social media to make a buying decision, and 34% increase the time they spend on social media when conducting research for a specific solution. Accordingly, research has taken the B2B perspective, seeing social media as "the technological component of the communication, transaction and relationship-building functions of a business which leverages the network of customers and prospects to promote value co-creation" (Andzulis, Panagopoulos, & Rapp, 2012, p. 308).

Social media is valuable to B2B buyers, as it enables them to conduct much of their pre-purchase search activities independently of the seller. According to research, as much as 90% of the sales cycle is already complete by the time a seller's representative is contacted (Zahay et al., 2015), as buyers use social media in the acquisition of new partners, information gathering, and insight development, supplementing or replacing traditional sales force activities altogether. Social media enables buyers to reach an accelerated and inexpensive understanding of their own needs and product requirements. Although

information processing in organizations is shaped by uncertainty and equivocality of the meaning conveyed by information (Daft & Lengel, 1986), the social buying process can provide timely and accurate information that other buying information forms cannot. Social media information is built on multiple user contacts and different levels of information richness, facilitating user interactions and a wide range of opportunities to engage. Thus, social media usage empowers B2B buying unit members to identify needs and solutions accurately, through the provision of multiple information cues simultaneously. As online information sources such as firm websites, white papers, and industry websites do not provide immediate feedback, information interpretation cannot be checked, as with social media information.

Buying units use social media to reduce uncertainty about product/service attributes and firm characteristics. Inasmuch as social media provides validation from co-workers within the firm, it can also provide validation from members of similar firms. Although search engines are heavily used in B2B, such usage poses other problems. Searching outside of social media, for example, it can take buyers a long time to retrieve specific information, information may not be readily available, and it may be irrelevant if the right keywords are not used or if the search is not updated (Morris, Teevan, & Panovich, 2010). The relevance of information gained from social media can thus lead to more buyer confidence than web search results (Morris & Teevan, 2012). Social media can also reduce uncertainty regarding a number of buying units questions through the amount and personalization of responses generated (Paul, Hong, & Chi, 2011). It can prove, for example, to be an informative source when a buying unit is seeking to compare itself against its competitors (e.g., "what software platform do our competitors use?"), seek support ("Oracle uses Twitter for customer service," for example; Iankova et al., 2018), recommendations, new ideas, or to reinforce and find evidence to support decisions.

In sum, the ability to leverage the influence of others is one of the main attractions of social media and a distinguishing feature from other forms of information for B2B buyers (Siamagka, Christodoulides, Michaelidou, & Valvi, 2015; Wang et al., 2016). While important forms of information, including industry-related reports, business case studies, or direct communication with potential vendors provide valid information for B2B unit knowledge, these forms are asynchronous. By design, many social media integrate synchronous or real-time messaging capabilities, allowing B2B buyers to integrate the questions and opinions from others in their specific field or industry. Social media information can therefore enable better knowledge of the solution-problem fit within the B2B buying process.

3. Theoretical framework

In this section, we describe how knowledge generated from social media information is transmitted through the buying unit, ultimately leading to organizational knowledge and outcomes. In line with previous research, we define knowledge as an evolving mix of experiences, values, contextual social media information, and expertise that provides the foundation to incorporate new information (Davenport & Prusak, 1998; Jennex & Olfman, 2006). We explain (B2B) buying unit-level knowledge in terms of the theory of organizational-level knowledge, defined as "an upward spiral process, starting at the individual level moving up to the collective (group) level, and then to the organizational level" (Nonaka, 1994, p. 20) (see Fig. 1). Within buying unit-level knowledge, we specify discovery, sharing, and interpretation as the processes that the buying unit undertakes to achieve unit-level knowledge; we call this the unit-level knowledge conversion process.

According to the theory of organizational knowledge creation, for an individual's knowledge to reach the organizational level, the individual *must* share that knowledge with other members of the organization (i.e., the buying unit, in our case) (Nonaka, 1994). Thus, in our conceptual model, we specify *social media knowledge discovery* as the process an individual undertakes to gather relevant buying information
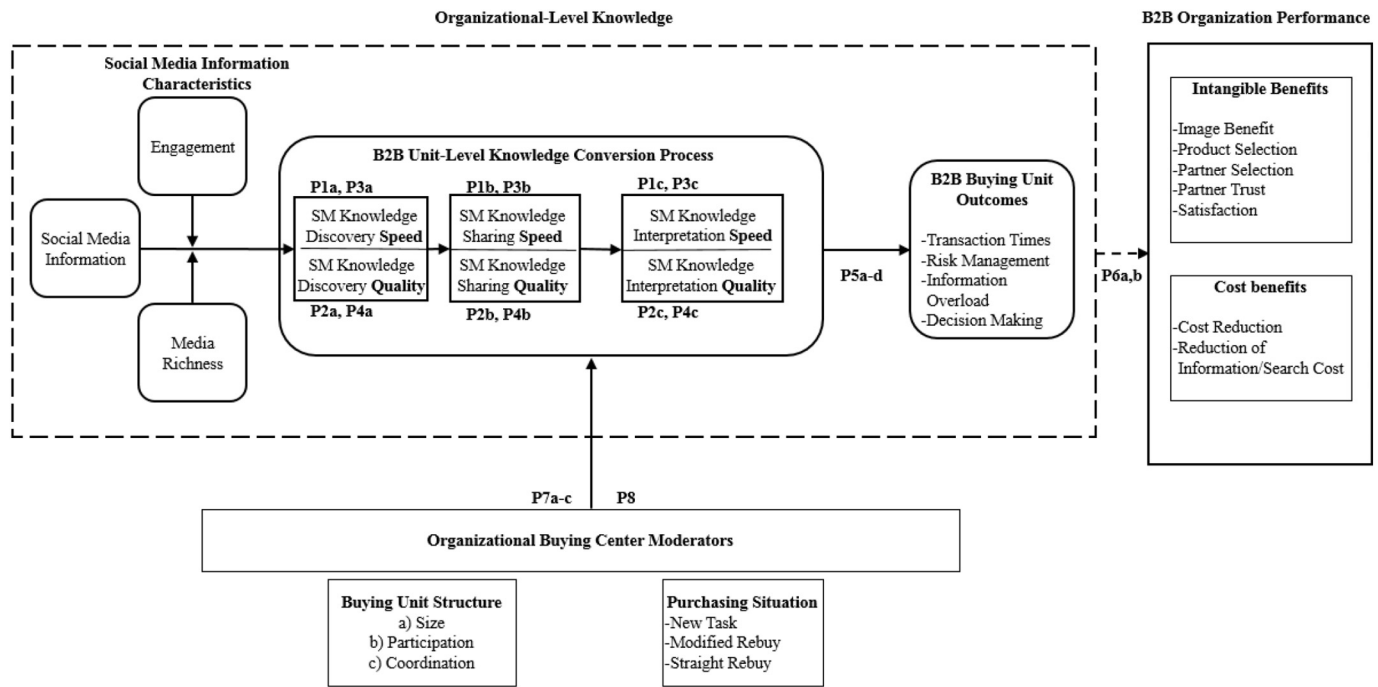
Fig. 1. Dynamic process of B2B buying unit social media information search and knowledge information.

via social media to integrate with their preexisting understanding, in order to develop a new knowledge base. We further specify *social media knowledge sharing* as the process of buying-unit members exchanging their improved understanding of their market with the goal of enhancing each member's knowledge about the market. Finally, *social media shared knowledge interpretation* is the process the buying unit goes through to determine how the knowledge they have acquired and assessed relates to the buying objective and how it can be used to reach buying unit and organizational outcomes. In the next sections, we discuss the integration of social media in buying-unit knowledge and the role of conveyance and convergence.

3.1. Conveyance processes in B2B social buying

Social media information enables *conveyance* communication processes within B2B buying (Wang et al., 2016). *Conveyance processes* are "the transmission of a diversity of new information—as much new, relevant information as needed—to enable the receiver to create and revise a mental model of the situation" (Dennis et al., 2008, p. 580). Conveyance is important in B2B buying, given the complexity of the products and the overall buying process, which causes B2B customers to have extensive information requirements (Ohnemus, 2009; Toman, Adamson, & Gomez, 2017). Previous research shows that B2B buyers take a *solution* perspective and need to evaluate both the intangible and functional benefits of an offering to assess total value as opposed strictly to price (e.g., Glynn, 2012; Selnes, 1998). Thus, when searching for information, individual buyers will use social media outlets as a means of gathering large quantities of information related to the vendor landscape and available solutions.

Social media sites (e.g., Linkedin, which, as Cooper, 2019 reports, is used by 94% of B2B social media marketers) facilitate social media conveyance processes by offering groups (e.g., SAP Community) for B2B buyers to learn from and connect with different vendors. Other forms of content across the social media platforms range from information highlighting a specific employee accomplishment or a new ad to a new partnership, all of which convey different yet relevant information to a B2B buyer. For example, Caterpillar, Volvo, CNH Global, Komatsu, and Hitachi Construction, all compete in the heavy

manufacturing industry and have a social media presence, allowing buyers to gather abundant social media information about each vendor. Caterpillar, in particular, is very active on LinkedIn, regularly posting content related to its products and overall company culture for its more than 500,000 followers. From Caterpillar's LinkedIn page, a buyer of heavy manufacturing equipment can gather information regarding Caterpillar's technology, product advancements, history, and related product solutions from posts such a recent one about "Helping to Eliminate Ergonomic Risks." This firm-specific and industry-relevant content can help inform elements of the buying process, including problem recognition, problem formulation, and vendor list development. By way of example, a B2B buyer, after reading "Helping to Eliminate Ergonomic Risks," may have a better idea of how to formulate a problem for their firm and share or repost the content to the public, intranet, and extranet firm communication outlets. This information may continue to be shared throughout the buying unit and with the rest of the firm and firm partners through these various outlets.

While searching and discovering information via social media, individual B2B buyers spend an extensive amount of time processing the information and preparing to share it with the rest of the members of the buying unit (Bharati, Zhang, & Chaudhury, 2015; Dennis et al., 2008). This is a critical stage for building buying-unit-level knowledge, because upwards of 90% of the knowledge in any organization is embedded in individuals (Lee, 2000; Wah, 2000) and sharing individual knowledge among team members helps refine and justify the information as knowledge for the organization (Nonaka, 1994). Large buying units, however—those with an average of 6.8 people—consist of members with different buying roles (e.g., initiator, user, influencer, etc.) and functions, each of whom may place a greater emphasis on different pieces of information such as features, support, usability, and ROI (Toman et al., 2017). Buying units must therefore make extensive efforts to process and analyze the various kinds of information obtained by the members, and share the information so each member can develop their own understanding of the market environment. Social media information is beneficial in this respect because social media is an "always-on" form of communication (Marshall, Moncrief, Rudd, & Lee, 2012), allowing buying members 24/7 access to various forms of information (e.g., product-related posts) and enabling them to access

information easily and share it across the buying unit.

3.2. Convergence processes in social B2B buying

As social media information is shared among the buying unit, members can work toward their ultimate goal of developing an understanding of how the information can benefit the firm, referred to as the *convergence process* of communication. Dennis et al. (2008) define convergence processes as "the discussion of preprocessed information about each individual's interpretation of a situation, not the raw information itself. The objective is to agree on the meaning of the information, which requires individuals to reach a common understating *and* to mutually agree that they have achieved this understanding (or to agree that it is not possible). Convergence typically needs rapid, back and forth information transmission of small quantities of preprocessed information" (p. 580). Social media information can support convergence processes in buying units because the information is readily available, easily shareable, up-to-date, and more "digestible" for the group to discuss and reach some form of agreement (i.e., converge).

Convergence processes in B2B buying helps to create unit-level knowledge and thus organizational knowledge. Previous research identifies the importance of organized groups of interaction (e.g., B2B-buying units) as a means to generate new knowledge at the group level and eventually at the organizational level (Nonaka, 1994). Additionally, the literature on organizational knowledge creation specifies individual knowledge as its main antecedent: in order for organizational knowledge creation to occur, an individual's knowledge must be articulated through some form of *social interaction* (Nonaka, 1994). As social interaction is embedded within the B2B-buying process through multiple members coming together to reach a buying conclusion, social media information helps facilitate the group's convergence processes.

Because B2B buying is a multi-step process that often requires higher levels of commitment and investment and includes the customizability of products and services and multifaceted product specifications (Ohnemus, 2009; Pfoertsch, Linder, Beuk, Bartikowski, & Luczak, 2007), B2B buying is of vital importance to a firm (Spender & Grant, 1996). Previous research finds that B2B buyers using social media have improved confidence and comfort with decisions and tend to use social media frequently (Schaub, 2014). Consequently, understanding the entire process of the conversion of social media information to B2B-buying knowledge is essential to developing an understanding of how B2B buying connects to firm outcomes (Grewal et al., 2015; Nonaka, 1994). This theoretical framework is depicted in Fig. 1.

4. The role of social media information in buying-unit-level knowledge

To understand how the different forms of social media integrate into B2B buying, we focus on two important factors: engagement and media richness. For the purposes of our manuscript, we adapt different perspectives on social media engagement (i.e., Guesalaga, 2016; McCay-Peet & Quan-Haase, 2016; Sashi, 2012) to define *the B2B buyer's social media engagement* as the intensity with which a B2B buyer interacts with, creates, and shares content on social media during the buying process. In line with the engagement literature, we categorize buyer social media engagement on a continuum ranging from low to high, irrespective of social media platform (Malthouse, Haenlein, Skiera, Wege, & Zhang, 2013). Examples of lower forms of engagement include "liking" a post on Facebook, Twitter, or LinkedIn, while higher forms of social media engagement include the co-creation of social media information (e.g., providing a video recommendation for a supplier's YouTube channel) (Malthouse et al., 2013). Next, we account for the richness of social media information. Media richness theory (Daft & Lengel, 1986) states that media differ in the amount of information they allow to be transmitted within a given *time* interval, and hence some media may be more effective and richer in that they can resolve

ambiguity and uncertainty better than others. According to Kaplan and Haenlein (2010), information from blogs tend to score lowest on media richness compared to, in general, information on networking sites (e.g., Facebook and LinkedIn).

Social media information engagement and richness can influence the entire unit-level knowledge creation process by affecting the *speed* to which a unit achieves knowledge and *quality* of the knowledge achieved by the unit. We refer to speed as the time between the B2B unit's provision of social media information and the achievement of buying-unit-level knowledge. We refer to quality as the strength of B2B buying-unit knowledge. As previously noted, convergence processes are associated with B2B buying units mutually agreeing about a common understanding or agreeing it is not possible (Lind & Zmud, 1991). A strong agreement reflects higher quality of unit-level knowledge. In the next section, we discuss how social media engagement and richness influence the speed and quality of knowledge creation in buying units.

4.1. Social media engagement in buying unit-level knowledge processes

The speed through which information is transformed into buying-unit knowledge is important for B2B buying units. Research notes that 65% of B2B customers waited to speak to a sales representative for a period as long as the period that they had imagined it would take for the entire purchase (Toman et al., 2017). Social media information can prove particularly beneficial in speeding up the process, due to its qualities of engagement, which allow faster responses compared to other media. The simultaneity of the two-way communication allowed by social media is one of the key properties of facilitating buying-unit knowledge discovery, sharing, and interpretation. When social media engagement is lower in buyer-seller social media interactions (e.g., liking a tweet), information discovery is likely to be quicker, because this form of engagement is associated with finding "real-time" information, and offers the ability to share the information (e.g., retweet) quickly. Additionally, low engagement can achieve temporary buy-in of members of the buying unit, as the focus is more on consuming a large number of smaller bits of information quickly (e.g., browsing a vendor's LinkedIn page).

In contrast, social media information related to high engagement will result in extended stages of knowledge discovery, sharing, and interpretation. High engagement (e.g., participating in an interview on social media) is an active process (Malthouse et al., 2013) that can involve taking a great deal of time to complete. While this type of engagement can add to buyer expertise, it requires more effort to discover the importance of the information for the goals of buying. It also slows the sharing process because its relevance to the goals of buying may not be clear, thereby slowing the buying unit from reaching shared knowledge interpretation. The type of engagement will thus affect the speed with which a unit discovers, shares, and interprets knowledge.

P1. *Social media information with a lower engagement form compared to a higher engagement form is associated with a higher speed of a) discovery, b) sharing and c) interpretation of social media knowledge for the B2B buying unit.*

Inversely, higher engagement in social media information can further develop the expertise of buyers, as it makes them more active in various types of social media content (e.g., participating in videos with current vendors), which can significantly benefit the quality of knowledge discovery at the level of the individual buyer. Large amounts of information can be carried by higher-engagement social media, helping B2B buyers understand the integration of different communications and provide buyers, as an example, with "one voice" of a potential vendor (Keller & Kotler, 2012). This information, once shared, allows the rest of the buying unit to develop a higher quality understanding of the information's role in the buying objective. Through the substantive, in-depth information facilitated by higher engagement media, buying units can develop a high-quality knowledge

interpretation. In contrast, low engagement with social media information tends to be in shorter bursts rather than larger amounts, and limits the overall quality of knowledge discovery, thereby reducing the quality of knowledge sharing and interpretation.

P2. *Social media information with a higher engagement form compared to a lower engagement form is associated with a higher quality of a) discovery, b) sharing and c) interpretation of social media knowledge for the B2B buying unit.*

4.2. Social media richness in buying unit-level knowledge process

According to media richness theory (Daft & Lengel, 1986), media that can clarify ambiguous issues are considered to be richer, while media that require more time to convey understanding are deemed less rich. Media richness focuses on the evaluation of how communication channels can overcome organizational challenges such as confusion (Daft & Lengel, 1986). In general, "the more learning that can be pumped through a medium, the richer the medium" (Lengel & Daft, 1988, p. 226). Media richness is a function of characteristics including multiple, simultaneous information cues, rapid feedback, and the ability to establish a personal focus (Lengel & Daft, 1988). Information through audio and/or video modes can enable B2B buyers to expedite the knowledge discovery process because information is organized into a variety of communication formats (e.g., LinkedIn posts, videos, comments). This also makes the information easier to share, because it can be transmitted in multiple formats (e.g., posts, interview recordings) to other members of the buying unit, allowing them to assess the information quicker. The speed of knowledge discovery and sharing enabled by media-rich social media spills over to knowledge interpretation.

On the other hand, social media information that is low in richness (e.g., blogs) may require greater effort for knowledge discovery and sharing, because it is often text-based (Kaplan & Haenlein, 2010), limiting the buying unit's discovery and sharing of information to only one format. The limited format of information transmission can reduce the speed of knowledge interpretation. We therefore expect that the level of media richness will have an effect on the speed of knowledge interpretation for the buying unit. Based on the above, we propose the following:

P3. *Social media information that has a higher level of media richness compared to a lower level of media richness is associated with a higher speed of a) discovery, b) sharing and c) interpretation of social media knowledge for the B2B buying unit.*

In addition, high social media richness can provide greater elaboration, allowing for the processing of more information and a reduction of ambiguity (Daft & Lengel, 1986). High-rich media thus leads to higher quality knowledge discovery because buyers are provided a clear sense of how the information relates to the buying objective. As unambiguous information is easier to share (Anand, Ward, & Tatikonda, 2010), the quality of knowledge shared improves as well, resulting in higher quality knowledge interpretation. On the other hand, low-rich social media information lacks the richness-enabled technology that is required to present similar information in a variety of formats, making it, potentially, more ambiguous in its relation to the buying objective, resulting in reduced quality of knowledge discovery, sharing, and interpretation. We therefore expect high social media richness to help achieve a greater quality of buying-unit knowledge interpretation compared to low social media richness. Based on this analysis, we propose:

P4. *Social media information that has a higher level of media richness compared to a lower level of media richness is associated with a higher quality of a) discovery, b) sharing and c) interpretation of social media knowledge for the B2B buying unit.*

5. Social buying outcomes: propositions

The rationale for the increased use of social media by the buying unit is the potential benefit for buyers. While the goals of B2B buyers and sellers may be at odds, several measures of success can be described from the B2B buyers' perspective.

We distinguish between two types of outcomes, manifested at two levels. The first level, at the individual and buying unit, comprises outcomes derived from a buying unit's ability to discover, transfer, and manage shared knowledge at the buying-unit level. The second type of outcome is derived from a firm's ability to embed the buying-unit knowledge of the buying process and the results of the buying process upward into organizational-level knowledge. Extant literature acknowledges that effective communication and knowledge management play a vital role in operational improvement and subsequent organizational performance (e.g., Kirca, Jayachandran, & Bearden, 2005; Moorman, 1995; Nonaka & Takeuchi, 1995). Social media helps improve overall organizational performance by increasing efficiencies and reducing costs associated with buying-unit purchase decisions, as parties are motivated to achieve a common, shared understanding of communicated information, to improve decision making, and pursue unified actions. We discuss these aspects in further detail in the following sections.

5.1. B2B buying-unit outcomes

B2B buying unit outcomes result from actions taken by the unit following the integration of knowledge acquired through social media information. Buying units can utilize social media information to access relevant insights, including competitor or industry opinions about B2B sellers, products, and services. Performance outcomes are driven by the efficiency and effectiveness provided by social media information.

When B2B buying unit team members are united in planning and acting upon a response that reduces redundancies, conflict, and confusion in the decision process, efficiency increases. Given that the B2B buying process is inherently risky, given its high expenditures and highly technical nature, social media information can offer the signals and brand information that can help reduce risks (Mudambi, 2002). B2B buyers' choice of a B2B brand is thought to reflect the customer's emphasis on risk-reduction rather than emotional benefits, and the choice of a well-known brand is a risk-reduction strategy (e.g., Cretu & Brodie, 2007; Lambkin & Muzellec, 2010; Mudambi, 2002).

The shared understanding achieved from social media information within the buying unit shortens the time needed to reach decisions (Baehr & Alex-Brown, 2010), lowers the amount of additional information required from sellers, and reduces the information overload and its' negative effects, ultimately resulting in increased efficiency for the unit. As the time required to plan and reach a decision is diminished, the overall effort required within the buying unit is reduced, which increases the efficiency of decision making. Social media information can provide answers to questions regarding how the market sees the prospective partners and the quality of considered products, improving product and partner selection (Brown, Zablah, Bellenger, & Donthu, 2012). Additionally, social media information can provide instant measures of buying unit success; for example, if an established seller makes the outcomes public, or if public sentiment can be gauged, this situation can become a 'feel-good' factor for the buyers (Mudambi, 2002) and increase confidence in decision making. Effectiveness, on the other hand, should also be improved because faster buying-unit decision making results in faster implementation within the organization. The likelihood of meeting organizational goals thus increases. We therefore propose:

P5. *Unit-level knowledge from social media information is associated with a) shorter transaction times, b) risk reduction in the buying process, c) management of information overload, and d) increased confidence in*

Table 1
A comparison of buying situations by social media influence.

Buying situation	New buy	Modified buy	Straight re-buy
Communication task	Ambiguous	Ambiguous/clear	Clear
Primary communication goal	Convergence	Convergence Conveyance	Conveyance
Emphasis	Faster transmission More feedback Verification	Faster transmission	Slower Introspective process
Type of communication	Implicit, but more interpersonal	Combination	Explicit knowledge transfer
Social media characteristic (engagement)	High engagement media	Combination	Low engagement media
Social media characteristic (richness)	High richness	High richness Low richness	Low richness
Media synchronicity	High synchronicity	High synchronicity	Low synchronicity
Brand role	Brand awareness Recognition	Brand awareness	Loyalty

Notes: Convergence describes processes dedicated to developing shared understanding and interpretations of established information; conveyance is characterized by the "transmission of large amounts of raw information" requiring "subsequent retrospective analysis" (Dennis et al., 2008).

decision making.

5.2. B2B organization performance outcomes

Research suggests that social media improves B2B business performance (Wang et al., 2016). Specifically, an organization can benefit from acting upon organizational knowledge, in the form of intangible and cost benefits. As a buying unit reaches decisions faster, and presents a unified front regarding their decision making (based on shared knowledge among unit members), such knowledge of the process, as well as the outcomes of the process, will become part of the organizational knowledge (Nonaka, 1994). The more the buying unit's decision and outcomes are based on knowledge of the business environment as reflected in social media and the faster the purchase is implemented and used throughout the organization, the more likely that greater value will be delivered relative to competitors, helping organization strategy and overall performance.

Among the intangible benefits accrued to the organization's performance, image benefit is the one most related to social media. For example, as corporate brand names appear more frequently in B2B tweets than in B2C tweets (Swani, Brown, & Milne, 2014), business buyers will benefit from an association with prestigious suppliers (Leek & Christodoulides, 2011, 2012; Mudambi, 2002). In addition, suppliers must manage cooperation and communication and build trust with their buyers. This, in turn, leads to greater buyer satisfaction (Cambra-Fierro & Polo-Redondo, 2008), since evidence shows that information communicated accurately and clearly over social media is linked to buyer satisfaction (Agnihotri et al., 2016). As only valid and verified buying-unit knowledge becomes part of organizational knowledge, the in-depth interaction over social media over multiple instances can create or break profitable opportunities for the organization. As a result, the consideration set of products and partners will become more refined and accurate, leading to more organizational effectiveness.

In addition, given repeated and verified knowledge of B2B unit successes, an organization can benefit from developing a 'favorable buyer purchase behavior' orientation toward partners (Bonner & Calantone, 2005; Stanko, Bonner, & Calantone, 2007), which encompasses both emotional and behavioral ties toward partners. This orientation, which resides in the organizational knowledge, leads the buyer organization to develop steady, frequent, large, and even pricier purchases and to develop an efficient buying process for the seller. It has been argued that the longer-term view of the buyer-seller relationship, which can be maintained over social media as well, can minimize costs, avoid disruptions in operations, and overall, improve performance (Stanko et al., 2007). Moreover, as a product of buyer and seller interact over social media, they form social capital, a beneficial resource, that is linked to less costly collaborative transactions between

parties (Van Deth, 2003). Finally, extant research shows that information search messages on social media are more effective for B2B (Swani, Milne, Brown, Assaf, & Donthu, 2017). As the information on social media is in general freely accessible and the B2B social media sellers are present on multiple platforms, the cost of searching for information to better inform buying-unit decisions is likely to be lower. We therefore propose:

P6. *Organizational-level knowledge from social media information is associated with a) intangible benefits, including organizational image benefits, better product and partner selection, trust and satisfaction and b) cost benefits including cost reduction and reduction of information and search costs.*

5.3. Moderating influence: buying situation

Previous research delineates three distinct B2B-buying situations: straight rebuy, modified rebuy, and new task (e.g., Robinson, Faris, & Wind, 1967), but the characteristics of these processes can be described differently in relation to social media, as summarized in Table 1. These buying situations are an important feature of the buying process, as the specific situation establishes the level of problem-solving required.

In straight rebuy situations, the problem solving is routine because the buying unit has experience with the purchase, there is no need to change anything, and purchase risk is minimal (Hill & Hillier, 1977; Nicosia & Wind, 1977; Osmonbekov & Johnston, 2018). In straight rebuy situations, the buying unit has little need to discover new information, the sharing required is minimal, and the buying unit has experience interpreting the relevant social media information. If social media information can be fed into already-generated data structures, templates, processes, then the process can occur instantly. Social media information is used to re-affirm already-existing knowledge, and the unit is likely to reach fast knowledge generation.

In modified rebuy situations, the buying unit requires a greater level of problem-solving than in a straight rebuy situation, as the unit needs to reevaluate the purchase of a product/solution (Grewal et al., 2015; Robinson et al., 1967). The reevaluation process can range from simple, such as upgrading a product with a current supplier, to more complex, for example, switching to a new supplier. In this buying situation, the buying unit will take longer to generate knowledge than in a straight rebuy. In new-task buying situations, extensive problem solving is required because the buying unit has unclear buying criteria and specifications (Robinson et al., 1967). In this buying situation, the buying unit will take the longest amount of time to complete the knowledge generation process, driven primarily by the comprehensive effort required in knowledge discovery, sharing, and interpretation. We therefore propose:

P7. The buying situation moderates the relationship between social media information and B2B buying-unit knowledge speed such that the process is fastest in a straight rebuy, compared to a modified rebuy and a new task buying situation.

5.4. Moderating influence: buying-unit structure

The structure of a buying unit can influence the impact of social media information on the speed and or quality of the knowledge convergence process. Structural elements, including size (i.e., number of members), buyer participation (i.e., level of involvement) and co-ordination (i.e., management of tasks and resources) are some of the key elements driving buyer interactions toward the buying objective (Osmonbekov & Johnston, 2018). We propose that as buying units vary in these structural elements, so will social media's role in the knowledge convergence process. Larger buying units tend to consists of re-presentatives from different departments (Osmonbekov & Johnston, 2018), who are experts in their functional areas and may have less experience in other functional areas. This group, when tasked with working together in a buying unit, can experience conflict. Buying unit conflict can lead to misunderstandings, anxiety, and mistrust (Ding, 1997), all of which can hinder the knowledge conversion process. A key reason for the conflict within a buying unit is the various perspectives of the members from the different departments or "thought worlds" (Barclay, 1991). Driven by these different "thought worlds," the social media information sought may vary, thus confusing the sharing and interpretation processes within the buying unit. Therefore, the buying unit will have to expend extra effort to determine the viability of social media information to the buying objective. We thus propose:

P8a. The size of the buying unit moderates the relationship between social media information and the B2B buying-unit knowledge conversion process such that as the buying unit increases in size the speed of knowledge conversion decreases.

Participation of a buying member refers to the amount of communication an individual has in its interactions with other members of the buying unit (McQuiston, 1989). When buying units have higher levels of individual member participation, there are more opportunities to clarify ambiguities related to social media information. Also, higher levels of member participation can expedite the sharing of the most valuable information within the buying unit, because the interactions between members are prevalent and consistent. These interactions can, in turn, have an amplifying effect on both the speed and quality of the knowledge conversion process. We therefore propose:

P8b. The buying unit participation moderates the relationship between social media information and the B2B buying-unit knowledge conversion process, such that as the level of participation increases, the speed and quality of knowledge conversion increases.

Coordination relates to managing the various resources and activities involved in the B2B buying process (Malone & Crowston, 1994). Hence, coordination within the buying unit can help streamline the various tasks associated with the social media information-to-knowledge conversion process. By assigning different members specific responsibilities (e.g., gathering reviews about a particular product), each member is more focused on discovering certain social media information and assessing the importance of such information. As each member gathers a specific set of information, this information through a co-ordinated structure aligns with other members' specific responsibilities (e.g., investigating a competitor's product launch). This integration of pre-determined activities will likely improve the speed and quality of the knowledge conversion process. We thus propose:

P8c. Buying coordination moderates the relationship between social media information and the B2B buying-unit knowledge conversion process such that as the level of coordination increases, the speed and quality of knowledge conversion increases.

6. Guidelines for empirical testing

As discussed, social media format characteristics play a role in the speed and quality of knowledge interpretation of the B2B buying unit. Therefore, the most appropriate measurement context is a B2B buying unit that uses social media information in their buying processes. This context will allow researchers to study the information-to-knowledge conversion process within the B2B buying unit and consider typical buying center features (e.g., structure and situation) to assess the connection to buying unit and organization outcomes.

To test our model, future research should assess the social media platform's engagement and media richness. To measure social media engagement, we recommend examining the platforms' disposition toward two-way and one-way interactions, whereby platforms that rely on two-way interactions are more interaction-oriented, and platforms that focus on one-way interactions are more information-oriented. To measure a social media's richness, we follow the research of Daft and Lengel (1986) and Kaplan and Haenlein (2010), who assess media based on multiple characteristics (e.g., number of information cues, feedback, personal focus, use of natural language). In addition, to measure knowledge interpretation for the B2B buying unit, researchers could collect the interpretations of social media information among B2B buying individuals and evaluate them for similarity and consistency. We measure the speed of convergence among the B2B buying firm, by first identifying when a member of the B2B buying firm procures a social media message and then calculating the time for the B2B unit to develop an interpretation of the information. Moreover, quality refers to the B2B buying-unit knowledge interpretation; researchers should therefore assess the variability among B2B buying member's interpretations of procured social media information.

We also provide guidelines for operationalizing the proposed outcomes and moderators. For B2B buying outcomes related to social media information, future research could conduct a survey of the B2B buying units' perceptions of risk (Slovic, 1987), transaction time, information overload (Hunter, 2004; Hunter & Goebel, 2008), and confidence in decision making (e.g., Tjosvold, Wu, & Chen, 2010). For organizational outcomes, a survey across organizational departments (e.g., R&D, marketing, finance, procurement, etc.) would help assess the benefits of social media information in image benefits including trust and satisfaction (Garbarino & Johnson, 1999; Gounaris, 2005) and cost benefits including information and search costs (Hoque & Lohse, 1999).

7. Discussion

Social media is becoming an increasingly common outlet for B2B buying firms to gather information regarding the market landscape and solution providers (Grewal et al., 2015). B2B buyers are using this gathered information to guide buying decisions; these decisions can eventually influence firm strategy. Presenting a process that delineates how social media information is converted to knowledge in the buying unit and used in the organization is critical to establishing the value of social media in B2B markets. To date, the literature has paid little attention to this important aspect of the subject, and empirical approaches have been built on untested assumptions.

The goal of this article was to facilitate the role of social media information in B2B buying research. In doing so, we emphasized the theoretical importance of knowledge management through social media. Our theoretical framework shines a light on the social media *information-to-knowledge* conversion process in the B2B buying unit. We presented distinctive assumptions about the nature of change within phases of the process and forwarded how a social media message is captured, shared and interpreted. Through this framework, we hope to

provide B2B researchers with a useful tool for interpreting and understanding the nature of social media information change within B2B buying knowledge management. Our framework lays the foundation for qualitative and quantitative approaches, with data collected from multiple constituents and/or at multiple points in time. In addition, our theory can form the basis for additional research regarding the less addressed topic of buying group interaction in the selling process, as the group dynamic may not remain static in the different phases of B2B unit knowledge. Incorporating considerations of group dynamics is important because it can help offer solutions about managing complexity in the buying process.

Our framework has the potential to aid practitioners in both B2B-selling and B2B buying firms. For the B2B-selling firm, our framework shifts the focus from the input message to the output message and the shared knowledge interpretation, which are out of the control of the selling firm. However, practitioners can influence the speed and quality of the message convergence, by selecting the right message, and the right platform. The mere use of social media is not enough to extract benefits and assess the value of social media investment. Practitioners must shift focus from thinking of customers as targets to thinking of them as resources who actively play a role in shaping the final interpretation. Customers require responsiveness and rely on objective comparison for their decisions. They are accustomed to a competitive and disciplined process (Bain & Company, 2013). In addition to the essential aspects of speed and quality of knowledge interpretation, managers should take into consideration additional metrics that pertain to content on social media, such as content quality and content valence (Peters, Chen, Kaplan, Ognibeni, & Pauwels, 2013). Each element in a buying unit may have unique narrative styles, which may alter the original marketing information in a very distinct but systematic way, depending on the forum, the communal norms and the nature of the original marketing information (Kozinets, De Valck, Wojnicki, & Wilner, 2010). The B2B selling firm should also assess, in addition to knowledge interpretation, the valence, in terms of positivity or negativity, of the interpreted final information. Customers can especially act as critical resources when they have had a positive impression of a B2B firm or association. Practitioners can be more effective by incorporating the role of the customers as resources, thus assisting in B2B knowledge creation.

Our framework can provide a knowledge management tool for B2B buying firms to organize knowledge dissemination, especially in the information-gathering phase of the buying process. For example, managers can make use of individual expertise within the buying unit to involve the right buying person in the team at the right time in the process, thereby affecting the speed and quality of knowledge interpretation. As members of the team are area experts, sharing can become a more focused activity, such that only relevant information is incorporated. A B2B buying firm can create metrics of efficiency specific to the buying unit, and identify roadblocks in the decision process. The buying unit can thus account for various uses and proclivities for social media usage and social media platform preference among the buying unit members. Beyond the internal buying-unit use of information to increase efficiency and effectiveness, B2B buying firms can break the decision cycle into fine-grained dimensions that can allow increased interaction with the B2B selling firm, to increase responsiveness, and essentially to manage the final satisfaction with the purchase. Given the immense presence of social media in individual and business life, operating in a familiar and manageable as opposed to a "black box" environment should be seen as a priority for any entity.

8. Conclusions and future directions

In summary, the internal process of social media information-to-knowledge conversion offers a working example of the organizational knowledge creation process (Nonaka, 1994), in which the buying unit is an active participant in an interactive exercise of knowledge interpretation. As such, our model offers dynamic potential for social media information development, as well as a novel way for both academics and practitioners alike to approach the problem of effective, consumer-oriented social media marketing communications.

The evolution of B2B knowledge management depends not only on the evolution of the sources of information but also new techniques and characteristics to convert information to knowledge quickly and at high quality. Consequently, the evolution may require more than a simple tweak of the B2B buying process. Scholars must help determine the variables that can effectively influence this process to help generate firm information-to-knowledge conversion competencies.

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