

**GLOBAL DIGITAL MARKETING COMMUNICATION: AN IN-DEPTH ANALYSIS OF STRATEGIES AND CHALLENGES****Mr. Shyam Kishor Mishra**Research Scholar, Kalinga University, Raipur  
Skm23081981@gmail.com**ABSTRACT**

Digital marketing communication, referring to communication through digital or electronic media between businesses and consumers, is undergoing rapid growth, particularly in the context of the COVID-19 era. We propose a framework for evaluating digital marketing communication across four primary areas: business-to-consumer (B2C), business-to-business (B2B), consumer-to-consumer (C2C), and consumer-to-business (C2B). Our research encompasses literature published from 2003 to 2023, focusing on these areas along with four major components: objective; channels, media, and platforms; content; and responses. Despite the permeability of national boundaries in digital marketing, existing research focus on specific national levels rather than adopting a global perspective. Critical insights are derived, revealing key research gaps and questions within each areas along these dimensions. To address these gaps, we propose three overarching components: substantive issues, data, and methods. Implementing these approaches can provide valuable insights, equipping managers with the necessary information to formulate effective digital marketing strategies both locally and globally.

**Keywords:** Digital Marketing communication, B2C, B2B, C2C, C2B.

**1. INTRODUCTION**

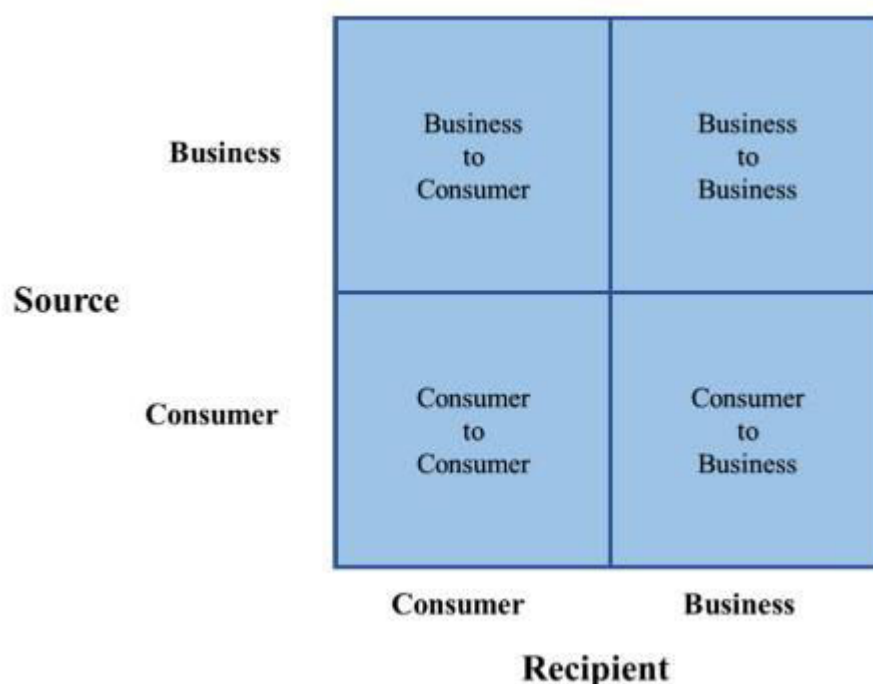
A diverse array of digital media and devices endow both businesses and consumers to produce, distribute, and assess a wide spectrum of content, serving various digital communication objectives. These aims encompass furnishing and seeking information (such as Apple revealing the latest iPhone launch; a consumer exploring Apple's website for additional details and subsequently sharing a selfie featuring a recently acquired iPhone), reviewing products, addressing concerns about unsatisfactory services for resolution by the company, and alerting fellow consumers about product-related issues.

We formally describe digital marketing communication as the process of communication through digital or electronic media between businesses and consumers. In contrast to traditional marketing communication, digital marketing communication facilitates increased interactions or dialogues between the source and the recipient (Shankar & Malhotra, 2007). Examples of digital communication encompass online display advertising, search advertising (both organic and paid), mobile communication, and word of mouth (WOM) communication through social media.

The influence of digital communication, relative to traditional communication, continues to expand, especially in the context of the COVID-19 era. The significant disruptions caused by the pandemic have heightened the significance of digital communication. According to a CMO Survey, over 80% of consumers are now more receptive to digital offerings from firms, valuing digital experiences more highly due to the pandemic.

**2. A FRAMEWORK FOR RESEARCH ON DIGITAL COMMUNICATION**

Previous studies have widely explored the applications of digital communication (Kannan et al., 2017). To structure these applications, we use two key dimensions, source, and recipient, which correspond to the x- and y-axes in Fig. 1. We opted for these dimensions as they align with the sender and receiver elements in the sender-message-channel-receiver-noise-feedback model of communications (Weaver & Shannon, 1963). Digital marketing communication encompasses four dyads: business-to-consumer (B2C), business-to-business (B2B), consumer-to-consumer (C2C), and consumer-to-business (C2B). We selected these four dyads as they represent the most commonly used sender-receiver pairs in digital marketing communications.



**Fig. 1:** Digital Communication Source-Recipient Dyads.

Within each dyad, we present a summary of previous research's key findings, emphasizing managerial insights and identifying research gaps, particularly within the global context. Building on these gaps, we outline some crucial research questions and directions. In extending prior conceptual and review papers, our contribution lies in providing a more comprehensive review of previous research (published in all leading marketing journals in the last 20 years) and prioritizing relevant research questions within each dyad.<sup>4</sup>

**Dyad 1:** What is the prime objective of digital communication (e.g., to inform customers [business or consumers] or persuade them)?

**Dyad 2:** Which digital communication vehicles – communication channels, media, and platforms – are and should be utilized?

**Dyad 3:** What is the type of digital content and what should be conveyed through the digital campaign, message, or post?

**Dyad 4:** How does the recipient (business or end consumer) respond to the digital communication (e.g., engagement, WOM, purchases)?

Our selection of these relevant marketing questions is based on the Shannon-Weaver model of communication (Weaver & Shannon, 1963). Specifically, communication goals, communication vehicles, content, and recipient response align with the Shannon-Weaver model's sender component, channel component, message component, and receiver and feedback components, respectively. We analyse articles primarily from the leading marketing journals that focus on digital communication, including the Journal of Marketing, Journal of Marketing Research, Marketing Science, Management Science, Journal of Consumer Research, Journal of Consumer Psychology, Journal of the Academy of Marketing Science, Journal of Interactive Marketing, Journal of Retailing, and International Journal of Research in Marketing, spanning the years 2003 to 2023.

From our comprehensive review, we derive and synthesize original insights and recommendations for researchers and managers in specific and global marketing contexts for each dyad in Fig. 1. In particular, we provide

suggestions for businesses to enhance digital communication by: (1) carefully formulating objectives; (2) optimizing across communication channels, media, and platforms; (3) designing and delivering the content; and (4) measuring the responses to these efforts to gain relevant and actionable insights.

Prior to investigating into the review, we undertake two preliminary steps: (1) we discuss major themes identified in previous research on digital marketing communications, and (2) we acknowledge key trends steering changes in such communications. These preliminary contemplations guide our examination of past work and inform our directions for future research. We identify five major themes in prior research: (1) website and static communication, (2) proliferation of social media, platforms, and devices, (3) the emergence of fast-growing mobile media, (4) the utilization of analytics and new tools, and (5) the evolving roles of trust, privacy, and regulation.

### **3. BUSINESS-TO-CONSUMER (B2C) DIGITAL INTERACTIONS**

#### **3.1. B2C Digital Communication Strategy**

**3.1.1. Objective:** The objectives of digital B2C communication are dependent upon the stage in the shopper's shopping funnel and commonly involve enhancing awareness, engagement, experience, acquisition, or retention (Shankar & Hollinger, 2007). The B2C literature extensively covers the roles of various goals for digital communication (refer to Table 1). However, there is a research gap concerning engagement (e.g., Body Shop, Puma, Patagonia, REI), which is emerging as a digital communication goal.

**3.1.2. Communication Channels, Media, and Platforms:** B2C digital communications include various channels, media, and platforms, including display advertising, email advertising, search engine advertising, mobile advertising, and social and other earned media advertising.

**3.1.2.1. Display Advertising:** Display ads have the potential to enrich brand recognition and trustworthiness (e.g., Aribarg & Schwartz, 2020); (Bruce et al., 2012) and contribute to improved purchase funnel outcomes from awareness to interest to purchase intent (e.g., Goldfarb & Tucker, 2011). Their impact is more pronounced on offline sales than online sales (e.g., Lobschat et al., 2017), particularly in retargeting (e.g., Sahni et al., 2019). However, the proficiency of display ads diminishes quickly (e.g., Sahni et al., 2019), particularly with higher ad frequency and regency. Möller and Eisend (2010) find that attitudes toward display ads and click intentions vary across Hofstede's cultural dimensions, being less favourable in individualist countries. In the international context, some studies investigate digital communication through platforms such as websites (Steenkamp & Geyskens, 2006), emails (Kwak et al., 2006), social media ads (Johnston et al., 2018), and online car configuration sites (Bellis et al., 2019). However, research on the mechanisms through which display ads influence shopper attitudes and behaviour in various stages of the customer journey is still at an early stage.

**3.1.2.2. Email Advertising:** Email marketing stands out as a lucrative tactic used by marketers, yet it has received limited research attention (e.g., Zhang, Kumar, & Cosguner, 2017; Zhang, Moe, & Schweidel, 2017). Although email marketing enhances customer lifetime value (CLV, Kumar et al., 2008), the impact on customer experience, engagement, or other outcomes in the customer journey remains unclear.

**3.1.2.3. Search Engine Communication:** Digital communication over search engines comprises search engine optimization (SEO) and search engine advertising (SEA). SEO follows its own logic and proprietary funnel structure, progressing from search engine result page impressions to click-through to landing page visits to conversions to revenue (e.g., Ghose & Yang, 2009). Concerning funnel stages, Rutz et al. (2017) shows how SEA generates awareness and interest. Consumers typically search at the consideration stage, and search aids in driving sales and conversions (e.g., Ghose & Yang, 2009; Li et al., 2016). SEA also significantly influences customer acquisition and CLV (Chan et al., 2011). However, there are no studies focusing the performance of SEA on branding goals or on the hierarchy of effect.

**3.1.2.4. Mobile communication:** Shankar and Balasubramanian (2009) presented a comprehensive purchase funnel framework to elucidate the dynamics of mobile communication, a model further extended to mobile shopper marketing (Shankar et al., 2010; Shankar et al., 2016) and mobile advertising (Grewal et al., 2016). Notably, mobile coupons, as explored by Hui et al. (2013), induce increased unplanned spending, with geo-targeting strategies, as demonstrated by Dubé et al. (2017), augmenting coupon efficacy. Bart et al. (2014) disclose the differential effectiveness of mobile display ads based on product involvement, with higher involvement and utilitarian products exhibiting superior performance. Raefieian & Yoganarasimhan (2021) bring machine learning into the fold, showcasing that behaviourally targeted mobile ads significantly enhance a mobile ad network's revenues.

**3.1.2.5. Social media advertising:** This facet includes banner ads within social media platforms and firm-generated content. Rapp et al. (2013) emphasize the significance of firm-generated content in shaping retailers' brand reputation, subsequently driving sales and customer loyalty. Noteworthy contributions, such as those from Colicev et al. (2019) and Kumar et al. (2016), shed light on how consumer exposure to firm-generated posts affects various funnel stages.

**3.1.2.6. Media synergies:** The dynamics of digital communication explain in a complex interplay—working synergistically, antagonistically, or catalytically (Naik & Raman, 2003). For instance, Kireyev et al. (2016) elucidate how display ads synergistically improve clicks and conversions post-consumer searches. Conversely, Dost et al. (2019) highlight antagonistic interactions between seed marketing campaigns and other forms of digital media.

**3.1.3. Content:** The crucial role of content in shaping the efficacy of digital marketing communication is undeniable. A growing area of research delves into the nuanced roles of interactive and diverse media modalities. Existing studies often categorize content based on informative vs. non informative, static vs. dynamic/interactive, cognitive vs. high-arousal, and story-development dimensions. Within the framework of purchase funnel stages, it is observed that static banner formats prove more effective for price-oriented and retargeting ads, while dynamic formats excel in enhancing carryover rates (Bruce et al., 2017). In the realm of emails, Sahni et al. (2018) reveal that non-informative content expressively boosts opening rates by 20%, sales leads by 31%, and concurrently reduces unsubscribing behaviour by 17%. SEA content is another domain of exploration, with studies like those by Rutz et al. (2017) and Rutz & Trusov (2011) inspecting contextual content metrics along the search engine funnel stages and linking SEA content to awareness, interest, desire, and action. Social media posts also come under scrutiny, with Kanuri et al. (2018) suggesting a targeted ad content algorithm that factors in time-of-day effects, highlighting, for example, that high-arousal content generates more click-through in the afternoon. The impact of content on engagement behaviours is multifaceted. While informative content inclines to reduce engagement and sharing (Lee et al., 2018), content infused with humour, timeliness, amusement, anticipation, excitement, inspiration, and warmth tends to promote sharing (Borah et al., 2020; Tellis et al., 2019). The valence of comments on firm-generated content is more significantly prejudiced by informational content than emotional content (Meire et al., 2019). Villarroel Ordenes et al. (2019) find that both rhetorical styles and cross-messaging strategies can improve message sharing. For video ads, adherence to a closed full-story development, rooted in Freytag's pyramid, is deemed essential, with high likability, particularly at the video ad's beginning and end, being crucial for driving sharing (Shehu et al., 2016). However, the current body of research lacks comprehensive insights into the influence of digital media content on branding goals, customer experience, and content performance across the customer life cycle metrics. This underscores the need for further investigations to unravel the intricate dynamics of content in the realm of digital marketing communication.

**Table 1:** Review of Selected Research on B2C Digital Communication

<b>Paper</b>	<b>Focus</b>	<b>Approach/ Method</b>	<b>Main Findings</b>
Kwak et al. (2006)	Consumer ethnocentrism with marketing efforts and personality traits	Survey	Ethnocentrism in emails aggravates negative attitudes toward foreign advertisements and foreign products and lowers activities on foreign websites.
Steenkamp and Geyskens (2006)	How country characteristics affect perceived value of websites	Hierarchical linear modeling	The effect of privacy protection on perceived value differs with country characteristics and culture.
Möller and Eisend (2010)	Role of culture and sociodemographic in the effectiveness of display ads	Hierarchical linear modeling	Cultural dimensions impact attitudes toward displays ads and customer intentions to click.
Goldfarb and Tucker (2011)	Drivers of the effectiveness of online advertising	Linear probability model	The fit of ad and website content and an increase in the ad's obtrusiveness can improve customer purchase intention. However, together they can have a detrimental effect due to elevated levels of privacy concerns.
Tucker (2014)	Relationship between internet users' perceptions of control over their personal information and intention to click on online advertising	Randomized field experiment	Higher levels of control can be helpful for higher CTR for personalized display ads. This influence is stronger for ads with higher levels of personalization and for customers who are more wary of their privacy.
De Haan et al. (2016)	Impact of different types of advertising on traffic, conversion, and revenue	Structural vector autoregression model	Content-integrated advertising is more operative than content-separated and firm-initiated advertising in driving traffic, conversion, and revenue.
Kireyev et al. (2016)	Synergy between paid search and display ads	Persistence time series analysis	A synergistic influence exists between paid search and display ads. Together, they improve overall effectiveness and ROI related to advertising.
Kumar et al. (2016)	Firm-generated content (FGC) and its influence on customer purchase metrics	Difference in differences model	FGC has a strong positive influence on customer purchase behavior, which differs based on customer experience, attitude toward technology, and social media usage. FGC also enhances the impact of email.
Bruce et al. (2017)	Role of ad format, message content, and targeting in digital ad performance over time	Zero-inflated count model	Dynamic formats of display ads continue for a longer time than ads with a static format. Static format can still be effective for ads focusing on price incentives.



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Lobschat et al. (2017)	How display ads influence online and offline behaviour	Bayesian multivariate probit model	Customers with no recent interaction with the firm's website show an enhanced level of website visits after exposure to display advertising, which also has a spill over effect on offline sales. Customers with recent online interaction with the firm also exhibit positive effects of display advertising in brand-building and offline purchase.
Zubcsek et al. (2017)	Effectiveness of colocation network neighbours on engagement in mobile promotions	Logistic regression	Customers' likelihood of participation in a marketing promotion activity is positively related not only to her history of engagement in such an activity but also with the history of her colocation network neighbours in such an activity.
Försch and De Haan (2018)	Effect of frequency and spacing of online display advertising on CTR	Random intercept model	The CTR of an ad is low when its exposure frequency is high and spacing is low. This result is especially true for large advertisers and campaigns that are less diverse.
Lee et al. (2018)	Effect of social media display ad content on Facebook engagement (likes, comments, shares) and CTR	Two-stage semiparametric model	Content related to brand personality is associated with increased consumer engagement, while directly informative content is generally associated with decreased engagement but can increase the CTR.
Johnston et al. (2018)	Behavioural implications of international social media advertising	Survey	Results confirm mediating effects of value and attitude on the relationship between social media advertising infotainment and credibility on message and social interaction behaviour.
Sahni et al. (2018)	Role of personalization in email marketing and advertising outcomes	Randomized field experiments	Using non informative advertising content such as customer-specific details in the email campaign can result in a higher level of clicks, sales conversion, and a lower level of request for unsubscribing from the email campaign.
Osinga et al. (2019)	How mobile display ads influence offline and online sales	Quasi-experiment (DID model)	Mobile display advertising increases offline sales by 2%, but its effect on online sales is insignificant.
Sahni et al. (2019)	Effects of retargeted display advertising	Randomized field experiments	Retargeting customers causes a 14.6% rise in returning users. The effect of retargeting declines over time. Advertising in different weeks can complement one another.
Tellis et al. (2019)	Drivers of video ad sharing	Regression model	The content of videos has a critical effect on subsequent video sharing. Information-focused content and

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			conspicuous brand placement on sharing have a significantly negative effect. In contrast, ads with positive emotional content positively affect sharing. Ad length has a nonlinear relationship with subsequent sharing, with the highest rate occurring when the ad is between 1.2 to 1.7 minutes long.
Danaher et al. (2020)	Relative importance of various media in multimedia advertising	Tobit Model with Variational Bayes approach	Communication from the focal firm through email and sometimes through catalogues can negatively impact competitor firms, but paid search does not have the same influence. On the contrary, catalogues from competitors have a positive impact on the focal firm's sales.
Raefieian and Yoganarasimhan (2021)	Targeting and privacy in mobile advertising	Machine learning model	A machine learning-driven targeting policy boosts CTR by 66.8%. The ad network has an incentive to promote consumer privacy because its revenues are highest when it does not allow advertisers to behaviourally target.
Sreenivasan, A., & Suresh, (2023).	Agility adaptability and alignment in start-ups.	Randomized field experiments	Digital transformation's competitive advantage lies in offering relevant, personalized products, fostering innovation, and delivering exceptional customer experiences.

**3.1.4. Responses:** The evaluation of consumer responses in the digital marketing landscape is complicatedly shaped by a combination of communication goals, the unique digital media environment, and, to a lesser extent, the content being conveyed. A fundamental distinction is observed between attitudinal goals and behavioural goals. While digital media offer a wealth of Key Performance Indicators (KPIs) derivative from logged consumer actions to measure behavioural goals, the assessment of attitudinal goals still relies heavily on consumer surveys. Customer life cycle goals typically depend on a firm's customer database in conjunction with the specific digital media utilized. Display advertising, for instance, employs metrics like impressions, click-throughs, and conversions that correspond to the classic funnel structure (e.g., Goldfarb and Tucker, 2011). Email campaigns are evaluated based on reception, opening, click-throughs, and conversions (e.g., Bonfrer & Drèze, 2009). Search engines utilize metrics such as search volume, impressions, ranks, Click-Through Rate (CTR), and conversions (e.g., Ghose & Yang, 2009), while social media metrics cover beyond display advertising funnel measures to include likes and comments. In the case of emerging media like Augmented Reality (AR), the establishment of Key Performance Indicator (KPI) systems is an developing area of exploration (e.g., Hilken et al., 2020). An essential aspect requiring further understanding is the role of attributions in digital multimedia environments (e.g., Li & Kannan, 2014), the cross-media effects across offline and online channels (e.g., Naik & Peters, 2009; Osinga et al., 2019), and the profound influence of consumer privacy concerns on shaping responses (e.g., Johnson et al., 2020; Wedel & Kannan, 2016).

### **3.2. Research Directions:**

In the dynamic landscape of global digital evolution, including digital devices, media, platforms, and evolving consumer behaviour, there is a surge in real-time, personalized, and frequently automated Business-to-Consumer

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(B2C) communications. These essential trends underscore the potential for probing into several future research questions, particularly within the international context.

**3.2.1. Objective:** Exploration into brand activism beckons with inquiries into how firms can proficiently embrace digital brand activism and effectively navigate related risks to their brands on both a global and local scale. The realm of global customer lifecycle management prompts investigations into the varying digital goals aligned with distinct customer life cycle stages across diverse countries and cultures.

**3.2.2. Channels, Media, and Platforms:** The contribution of various media, such as mobile, in the consumer decision hierarchy becomes a focal point, leading to queries about how digital media drive the purchase funnel and the hierarchy of effects across countries and cultures. Delving into the impact of digital media, like email, on customer experience and engagement across diverse global landscapes raises questions about the unique dynamics at play.

**3.2.3. Content:** The international context of ad content reveals inquiries into how different types of ad content, encompassing informative vs. non-informative, static vs. dynamic, and emotional vs. cognitive vs. conative dimensions, drive branding, customer experience, and customer engagement across diverse countries and cultures. Understanding the interaction of ad content with different devices on a global scale emerges as a significant research area.

**3.2.4. Responses:** Exploring the varying impact of digital media on attitudes versus behaviours, particularly across countries and cultures, surfaces as a vital research avenue. Enhancing the understanding of attributions across countries is considered critical, probing into how improved international attribution practices can positively shape international budgeting practices and outcomes.

### **3.3. Summary:**

While the body of research on B2C digital communication is extensive, encapsulating various major themes, a notable trend is its mostly local focus, often underestimating the expansive global reach intrinsic to digital communication. The existence of disparities in cultures, digital media landscapes, and developmental stages underscores the untapped potential for further research in the realm of global digital communication (Shankar & Narang, 2020).

## **4. BUSINESS-TO-BUSINESS (B2B) DIGITAL INTERACTIONS**

Digital marketing strategy holds specific importance in the B2B context, given the emphasis on customer metrics (Lam et al., 2004). Existing studies on B2B digital communication have primarily concentrated on the dynamics of communication between suppliers and buyers, B2B auctions, and the structural changes arising from communication intermediaries or platforms. An overview of selected studies is summarized in Table 2.

**Table 2:** Review of Selected Research on B2B Digital Communication

<b>Paper</b>	<b>Focus</b>	<b>Approach/ Method</b>	<b>Main Findings</b>
Tucker and Zhang (2010)	Impact of display advertising on platform popularity	Randomized field experiment	The success of a two-sided platform rest on on how information about the number of buyers and sellers is displayed.
Rapp et al. (2013)	Social media contagion effects and their impact on performance	Hierarchical linear model	Social media use enhances brand, retailer performance, and consumer loyalty. Brand reputation and service ambidexterity moderate the supplier social media effect on the retailer.
Kim and Kumar (2018)	Dynamic effects of marketing communication content on future customer	State space model (Dynamic Tobit-I	Economic and relationship marketing content in email marketing can have different and dynamic effects on customer behaviour.



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	behaviour	framework)	
Vieira et al. (2019)	Influence of the digital 'echoverse' on firm performance	Vector auto regression model	In emerging markets, firm-initiated media impacts customer acquisition. Earned social media creates synergies with owned media but not with paid media.
Bill et al. (2020)	Effect of salesperson's social media use on customer loyalty	Hierarchical linear model	The B2B salesperson's social media has a more positive effect on customer loyalty for higher-status customers and smaller buy center customers.
Ludwig et al. (2021)	Effects of communication for gigs by buyers and sellers	Variety of models and experiments	Various communication elements in a call for bids influence the number of bids, and communication elements in the bids influence bid success.
Vuchkovski., Zalaznik, M., Mitreğa., & Pfajfar, G. (2023)	A look at the future of work: The digital transformation of teams from conventional to virtual.	Randomized field experiment	Human resource capability within organization is essential for digital transformation. Employees must adapt, acquire digital skills, and drive change within the organization. Skilled, adaptable teams are pivotal for successful digital transformation

### 4.1. B2B Digital Communication Strategy

4.1.1. Objectives: Unlike most B2C communication contexts, a B2B firm must modify its digital communications for buying center members – the various stakeholders involved in the organizational buying process. B2B firms utilize digital communication to promptly reach more customers and prospects with greater impact, aiming to reduce communication costs (Shankar, 2021). These digital communication systems facilitate information sharing among firms (e.g., vendors, suppliers, intermediaries) without significant temporal or geographic constraints. For instance, digital communication systems empower firms to communicate with buying center members in real-time, allowing partners to establish negotiation parameters beforehand and permitting buying organizations to execute buying tasks without human involvement. Despite previous research treating the customer as a singular entity, it is important to comprehend the heterogeneity among members involved in the buying process, particularly within the complex and global supply chain. The impact of planning horizons and supply chain shocks on goals in the global context remains an underexplored area.

4.1.2. **Communication Channels, Media, and Platforms:** A significant structural shift in B2B markets is the rise of “infomediaries” that offer real-time comparative information about sellers’ offerings and earn revenue by directing web traffic to firms (Chen et al., 2002; Iyer & Pazgal, 2003). The power of an infomediary in a digital B2B marketplace may either backing collusion among firms due to information asymmetry favouring the infomediary (Gal-Or & Gal-Or, 2005) or enhance information transparency, potentially increasing channel profits (Shaffer & Zettelmeyer, 2002). Although most studies on infomediaries rely on analytical/theoretical models, the accessible empirical insights are notable. Tucker & Zhang (2010) evaluate the effectiveness of displaying specific types of information on infomediary platforms, finding that sellers prefer intermediary markets with numerous sellers, as these markets tend to attract potential customers. Comparatively less is known about the role of social and digital media in B2B digital communication. Rapp et al. (2013), through a series of survey-based studies, offer indication for the contagion of social media usage across suppliers, retailers, and consumers (a business-to-business-to-consumer effect). Consequently, a B2B supplier’s social media usage can influence the buyer’s social media usage, positively impacting consumers’ social media usage. For both suppliers and buyers, social media usage correlates positively with performance. Rapp et al. (2013) also emphasize the moderating effects of brand reputation and service ambidexterity on these contagion effects. B2B digital marketplaces rely on owned media (e.g., websites) and social media to make communication decisions.

**4.1.3. Content:** Content in B2B digital communication shows notable distinctions from B2C content. A study by Swani et al. (2014) highlights these differences in social media content, indicating that B2B marketers often employ emotional appeals and emphasize corporate branding more than their B2C counterparts who lean toward functional appeals. In a case study, Järvinen & Taiminen (2016) illustrate how organizational processes for developing digital content and seamlessly integrating it into the B2B selling process can significantly enhance lead qualification. Dynamic perspectives on the timing and content effectiveness of marketing communication in B2B selling are provided by Luo & Kumar (2013) and Kim & Kumar (2018).

**4.1.4. Responses:** From an operational and customer-facing standpoint, digitization facilitates efficient data capture, facilitating empirical studies that explore various B2B digital communication strategies yielding measurable customer responses (Kim & Kumar, 2018; Kumar et al., 2011; Luo & Kumar, 2013; Rapp et al., 2013). Kumar et al. (2011) introduce a dynamic optimization framework for resource allocation in marketing communication, highlighting the need to account for the long-term effects of marketing efforts. Consistent findings in other empirical domains (Luo & Kumar, 2013) underscore the importance of understanding the dynamics, including hidden relationship states, of customer lifecycles to optimally allocate B2B marketing communication budgets. While several studies, such as Kim & Kumar (2018), empirically test the implications of direct marketing communication, digital media's inclusion is limited, and those that do often scrutinize marketing communication holistically without a specific focus on its digital aspects or one-to-one relationships.

**4.2. Research Directions:** B2B digital communications are experiencing swift transformations with the ascendancy of digital sales pitches, social selling, and the integration of sales automation through artificial intelligence (AI) tools. The COVID-19 pandemic has augmented the adoption of these practices as firms turn to digital interactions for survival. As a substantial number of buyers transition from on-site to remote work, the significance of virtual and social B2B selling is escalating. Additionally, owing to recent strides in AI, B2B firms are automating aspects of the selling and post-sale processes, particularly lead qualification and customer support, allowing salespersons to concentrate on relationship-building in B2B sales.

#### **4.2.1. Objective:**

- Digital communication goals in global markets (e.g., How should planning prospects adapt across geographical and cultural boundaries? How should a B2B firm reshape its digital communication goals across diverse global markets?).
- Digital communication goals amidst swiftly changing global supply chains (e.g., How do shocks, such as regulatory mechanisms like tariffs or disruptions activated by global crises, impact a B2B firm's digital communication objectives?).

#### **4.2.2. Channels, Media, and Platforms:**

- Global technology adoption and its influence on B2B communication strategy (e.g., What role does global technology diffusion produce in selecting B2B communication channels, media, and platforms?).
- Platform design's impact on communication facilitation (e.g., How can communication platforms or infomediaries shape buyer-seller communication? What is the optimal design for an infomediary platform to improve interorganizational communication?).
- Costs associated with AI-driven communication (e.g., What are the direct and indirect costs of integrating AI into B2B platforms, especially in emerging markets?).

**4.2.3. Content:** Given the substantial differences in B2B business practices amid emerging and developed markets, owing to legal, regulatory, governmental, and political distinctions, innovative approaches to emerging markets are imperative (Shankar & Narang, 2020). The unique challenges attached with the accelerated digitization in emerging economies necessitate novel strategies.

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The role of virtual selling in B2B communication: Examining the distinctions amid virtual selling and in-person selling in complex selling environments. Exploring the future trajectory of virtual selling.

### 4.2.4. Responses:

- Formulating empirical generalizations about digital communication responsiveness in the B2B context.
- Investigating the consequences of global B2B digital communication failures on firm outcomes.

### 4.3. Summary:

In summary, the body of research on B2B digital marketing looks notably limited, especially when compared to its B2C counterpart, despite the fact that nearly 90% of the value in e-commerce transactions involves B2B transactions. Existing studies predominantly explore into two themes, namely website effectiveness and social media, with rare consideration for global issues, overlooking the escalating impact of globalization on digital marketing strategies. The role of digital communication is now more crucial than ever in navigating the highly dynamic and global marketplace.

## 5. Consumer-to-consumer (C2C) Digital Interactions

Recent technological advancements enable consumers to transform into digital content creators, disseminating valuable data through varied channels and social media platforms. Through this user-generated content (UGC), consumers share experiences with products and services, vividly expressing facets of their personalities for consumption by fellow consumers (refer to Table 3).

### 5.1. C2C Digital Communication Strategy

**5.1.1. Objective:** Consumers engage in digital communication with diverse objective, including informing, entertaining, consuming, and expressing themselves (e.g., Peters et al., 2013). The expansive scope of C2C communication goals sets it apart from the more marketing-centric goals of B2C and B2B dyads. Consumer-to-consumer communications can be product-oriented, such as posting product reviews, or non-product-oriented, as seen in participation within online communities dedicated to diverse interests and hobbies. Across these forms of C2C communication, consumers actively and passively impact each other (Appel et al., 2020). While prior research delves into the motivations driving C2C communications, emerging concerns over online privacy (Bleier et al., 2020), the burgeoning role of influencer marketing (Zhang, Kumar, & Cosguner, 2017; Zhang, Moe, & Schweidel, 2017), and the imperative for a global understanding of C2C communications raise pertinent new questions about UGC generation and dissemination. These questions inform the proposed research directions below.

**Table 3:** Review of Selected Research on C2C Digital Communication

Paper	Focus	Approach/ Method	Main Findings
Lam et al. (2009)	Influence of consumers' cultural values on WOM behaviour	Structural equation model	For effective brand communication strategies, marketers should cogitate the underlying cultural values in different markets as cultural values influence consumers' WOM creation and dissemination behaviour.
Kumar et al. (2013)	Success of social media campaigns	CLV model	Using proposed measures for customer social influence (CIE) and social influence value (CIV), marketing managers can efficiently evaluate the success of a social media campaign.

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Tirunillai and Tellis (2014)	Reliable dimensions of customer satisfaction and quality from product reviews	Unsupervised LDA model	Using an unsupervised LDA model, one can reliably capture a number of objective and subjective dimensions related to customer satisfaction with quality. Objective dimensions dominate in vertically differentiated markets, while subjective dimensions dominate in horizontally differentiated markets.
Homburg et al. (2015)	Role of active firm participation in C2C conversations in an online community	Logistic regression model	Through active engagement in customer conversations linked with functional needs or product-support, firms can positively impact customer sentiment, but such engagement has diminishing returns and can even be detrimental for customer sentiment.
Pauwels et al. (2016)	Influence of eWOM topics on firm performance and role of offline and online marketing communication channels	Vector auto regression (VAR) model	Different types of eWOM (advertising related, brand related, and purchase related) have similar effects on online store traffic lift. Brand-related and purchase-related eWOM are twice as effective as advertising-related eWOM in lifting offline store traffic.
Stephen and Lehmann (2016)	WOM dissemination and diffusion of information	Experiments	Increasing the salience of externalities can improve WOM communication and speed up the diffusion of goods.
Meyners et al. (2017)	How social influence is influenced by geographic proximity	Experiments	In the context of both physical goods and services, both social proximity and perceived homophily can deliver social influence.
Marchand et al. (2017)	Differential impact of microblogs and consumer reviews on product success	Simultaneous equation system model	Volume plays a more prominent role than valence in the context of the influence of microblogs and consumer reviews on product success. The impact of microblogs is more evident prior to launch, while consumer reviews are important both prior to and post-launch.
Zhang et al. (2017)	How social media rebroadcasting behaviour is influenced by content and user factors and their fit	Individual-level split hazard model	A user's decision to share the message in her network is driven not only by the message content but also by its fit with the user.
Kübler et al. (2018)	Influence of price and ratings on an app popularity and how this impact varies in different cultures	Dynamic panel data model and weighted least squares model	Both price and ratings sensitivities are influenced by cultural factors. Price sensitivity is extra prominent in high-masculinity and high-uncertainty avoidance cultures. While higher ratings valence sensitivity is observed in high-individualism and high-uncertainty

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			avoidance cultures, ratings volume sensitivity is extra pronounced in high-power distance and high-uncertainty avoidance cultures.
Fossen and Schweidel (2019)	How eWOM about TV shows – called social TV activity – relates to ad response during the TV shows	Bayesian hierarchical regression	Online shopping is higher when ads are displayed on social TV shows, highlighting the importance of online social chatter. More affective ads saw the largest benefits.
Grewal and Stephen (2019)	Perceptions of reviews on mobile (vs. non-mobile) devices and their impact on purchase intention	NBD regression model and experiments	Reviews generated on mobile devices persuade higher purchase intention due to higher levels of perceived efforts and credibility.
Ransbotham et al. (2019)	Impact of mobile on WOM content creation and consumption patterns	Unstructured data analysis (LIWC), Poisson and Linear mixed models	WOM content generated using a mobile device ranks high on affective demand and concreteness. It is also less extreme but valued lower than non-mobile WOM.
Zhong and Schweidel (2020)	How firms can leverage C2C chatter on social media to monitor when and how the conversation about their brands shift	Multiple latent changepoints through a Dirichlet process hidden Markov model	Proposed model identifies shifts in conversations surrounding brands on social media, overtaking previous approaches. It can be used by firms to monitor C2C conversations about their brands and understand when and how the topic of conversation around their brands has shifted.
Lee and Kronrod (2020)	How the strength of ties influences the propagation of WOM formed based on consensus language	Experiments	When WOM is expressed using words and expressions suggesting general agreement amid a group, weak-ties are more effective than strong-ties as such language evokes perception of the consensus amid a larger and more diverse group.
Woolley and Sharif (2021)	How incentives influence the valence of reviews	Experiments	Both financial and non-financial incentives can improve the review writing process and positively influence reviews. This effect is weaker when incentives are weakly associated with review writing and when the firm providing them is not liked.

**5.1.2. Communication Channels, Media, and Platforms:** Consumer motivations significantly influence the choice of communication channels, media, and platforms in C2C interactions. When consumers aim to update others, they may opt for dedicated review sites or the official website of a specific company for posting reviews. On the other hand, those seeking to exert effect often pursue the role of an "influencer" through social media or dedicated blogs. The emergence of new technologies, such as augmented reality (AR) in smart devices, also plays a role in facilitating C2C communications, although certain tactics like recommender's impression management and persuasion goals may impede the process (Hilken et al., 2020; Hoyer et al., 2021). However, there is a research gap in understanding the interplay between various media and platforms in C2C communications and



investigating the causal impacts of their characteristics on user-generated content (UGC) behaviours. As new platforms continually emerge, there is a need for a comprehensive framework to assess the impact of C2C chatter across these diverse channels.

**5.1.3. Content:** The analysis of UGC remains challenging due to its unstructured format, prompting ongoing research into the synergies of different content types. Advances in machine learning (ML) and artificial intelligence (AI) offer encouraging avenues for faster progress in analysing UGC multimedia content. For instance, Li et al. (2019) utilize ML to extract standard measures of video content, predicting the success of Kickstarter projects efficiently. Understanding meaningful dimensions at the product, brand, or customer levels is crucial for deciphering relevant content and the impact of UGC. Li et al. (2019) applied ML to extract standard measures of video content, which efficiently predicted the success of Kickstarter projects. Tirunillai & Tellis (2014) focus on product reviews from multiple online platforms to identify latent dimensions of customer satisfaction. They discover homogeneous and stable objective dimensions in vertically differentiated markets and the opposite in horizontally differentiated ones. Homburg et al. (2015) aim to derive functional and social needs expressed in conversations on online forums. The content of C2C interactions may also vary based on the product life cycle stage. For instance, pre-launch content might revolve around features and pricing on social media, while post-launch content shifts towards sharing reviews and blogs. In the growth stage, discussions may concentrate on brand comparisons, and in the mature stage, discussions may involve trading and used car buying. Both financial and nonfinancial incentives have a positive influence on the content of online reviews, with the impact being weaker for weaker incentives and less desirable brands (Woolley & Sharif 2021).

**5.1.4. Responses:** User-generated content (UGC) exerts substantial influence on important outcomes for both firms and customers. High-quality images in posts improve social media engagement (Li & Xie, 2020), and the sharing extent is determined by the message content and its alignment with the user (Zhang, Kumar, & Cosguner, 2017; Zhang, Moe, & Schweidel, 2017). Encouraging consumers to share word-of-mouth (WOM) with highly connected friends in their social network accelerates the dissemination of UGC (Stephen & Lehmann, 2016).

The outcome of C2C communications ranges beyond online engagement, affecting various responses. Microblogging, for instance, negatively influences the early adoption of new movies (Hennig-Thurau et al., 2015), while reposts of firm microblogs correlate positively with television show viewership (Liu et al., 2016). Customers with greater influence promise a higher return on investment for social media (Kumar et al., 2013), and although C2C research on influencer marketing is nascent, it holds promise as a productive area for future exploration. The device used for C2C content generation can moderate its impact on different outcomes. Mobile UGC, for example, activates higher immediate purchase intentions and is associated with greater perceived credibility (Grewal & Stephen, 2019). However, positive attitudes toward mobile word-of-mouth (WOM) dissipate over time (Ransbotham et al., 2019). Marchand et al. (2017) explore the combined impact of mobile WOM and electronic WOM (eWOM) on product sales, suggesting that eWOM is more effective. The volume of mobile WOM appears to have a stronger effect before a product launch, while its valence has no discernible impact. Colicev et al. (2019) associate volume and valence with marketing funnel stages, revealing their impact during awareness and satisfaction stages, with valence outweighing volume across all stages. These studies advocate for further examination of the effects of UGC on diverse outcomes at various stages in the product life cycle. Lam et al. (2009) examine the influence of cultural values on WOM behavior in social in- and out-groups, yet the small sample size limits conclusive establishment of the relevance of cultural factors in global C2C contexts. Kübler et al. (2018) demonstrate how cultural dimensions shape the valence and volume of user ratings across 60 countries, indicating that in countries characterized by greater individualism and uncertainty avoidance, app popularity relies more on valence in user ratings, whereas volume is more significant in countries featuring higher power distance and uncertainty avoidance. Meyners et al. (2017) reveal that social proximity affects social influence, particularly for more distant acquaintances, defined as known individuals with whom the focal consumer has had fewer previous interactions.

**5.2. Research Directions:** Several significant trends are pushing rapid transformations in consumer-to-consumer (C2C) digital communications. Evolving consumer perceptions of C2C interactions, the growing impact of influencer marketing, and the pandemic-induced acceleration of these effects are shaping the landscape. Additionally, privacy concerns and negativity on C2C platforms are exerting substantial influences on C2C content generation, with potential variations across countries. Emerging tools like machine learning (ML) and artificial intelligence (AI) are providing new avenues for insights from C2C communications, necessitating further research. To enhance our understanding of C2C dynamics, research should address the following issues:

**5.2.1. Objective:**

- Assessing the impact of privacy concerns on user-generated content (UGC) or C2C goals, inspecting the effects of external privacy shocks like changes to platform privacy guidelines and data breaches, and investigating variations across countries.
- Investigating the causal effects of cultural dimensions on UGC goals.
- Gaining a deeper understanding of network effects (externalities) on UGC goals and finding the most effective influencer types across different countries.

**5.2.2. Channels, Media, and Platforms:**

- Exploring the synergistic impacts of UGC across platforms, using methodological tools to understand these impacts, evaluating variations across countries, and developing frameworks for evaluating new C2C media and platforms.
- Analysing the influence of different digital channels or platform-level factors (type, size, composition, functionality, and diversity) on UGC behaviours and investigating how changes to platform characteristics impact C2C communications globally.
- Applying strategies to monitor C2C interactions for improving user well-being, such as addressing cyberbullying and hate speech on social media platforms without compromising global freedom of speech.

**5.2.3. Content:**

- Examining the synergistic impact of different UGC formats (text/image/video) on outcomes, exploring the effects of static vs. dynamic media in C2C communications, developing tools for efficient analysis of UGC videos, and inspecting variations across international markets.
- Evolving means to extract relevant dimensions and insights from UGC across countries using new ML and AI tools, particularly focusing on improving the coding of emotional language and leveraging these tools for timely managerial insights from C2C communications.
- Inspecting the authenticity of UGC across countries and cultures, with a specific emphasis on influencer marketing.

**5.2.4. Responses:**

- A need for improved understanding regarding the role and impact of different UGC formats during various phases of the product life cycle.
- Investigation of cross-country impacts of consumer-to-consumer (C2C) behaviours, including an exploration of how the persistent characteristics of C2C communications differ globally and how cultural dimensions moderate the effects of UGC behaviour on different outcomes.
- Examination into the broader impacts of influencer marketing, such as its effects on non-engagement outcomes like consumer shopping and purchasing behaviour.

**5.3. Summary:** Research within this domain mainly focuses on User-Generated Content (UGC). The insights derived from relevant studies provide valuable perspectives on the quick proliferation of users across digital

devices, media, and platforms, emphasizing their heightened engagement. These studies highlight the extensive communication among consumers through user groups, networks, and communities, with many consumers evolving into influencers or advocates for brands and firms. However, research within the global context remains limited, with only a few studies exploring cultural differences across countries, indicating substantial opportunities for further investigation.

## **6. CUSTOMER-TO-BUSINESS (C2B) DIGITAL INTERACTIONS:**

C2B digital communication frequently takes an indirect form, utilizing avenues such as reviews, website comments, survey feedback, and click behaviour. This indirect interaction is comparable to C2C communication, as the content is significant to both consumers and businesses. Technological advancements, especially in the sharing economy and review platforms, reshape C2B digital communications, with intermediaries playing a crucial role. Businesses need to actively monitor customer-initiated communications on these platforms to extract valuable insights for strategic adaptation. A summary of notable research contributions is presented in Table 4.

### **6.1. C2B Digital Communication Strategy**

**6.1.1. Objective:** The main goals of C2B digital communication revolve around providing feedback to businesses and seeking resolutions to customer issues. Consumer Word of Mouth (WOM) is a focal point, reflecting the increasing efforts of businesses across the supply chain to encourage consumers to share thoughts through different channels. Efficiently addressing consumer questions, concerns, and complaints promptly and efficiently is a key objective, particularly in cases of customer complaints. While research has extensively explored consumer complaints, understanding how firms can decipher customer goals in C2B communication remains an open area. The emergence of consumer feedback aimed at assisting firms in enhancing products and services presents an intriguing avenue for future research.

**6.1.2. Communication Channels, Media, and Platforms:** The widespread adoption of mobile technology has prompted inquiries into how communication patterns with firms differ across devices. Insights into consumer communication on mobile devices are crucial for devising effective mobile advertising strategies. Customer-initiated communications on mobile devices show characteristics of being more affective, concrete, and less extreme, with higher self-disclosure. Cultural dimensions play a defining role in shaping local buyers' attitudes towards electronic Word of Mouth (eWOM) on mobile devices. Marketers can leverage customer inputs by encouraging co-production and co-creation through various digital channels. Further insights are needed to understand differences and interactions among C2B digital communication media and platforms, including the Internet of Things (IoT).

**Table 4:** Review of Selected Research on C2B Digital Communication.

<b>Paper</b>	<b>Focus</b>	<b>Approach/ Method</b>	<b>Main Findings</b>
Bart et al. (2005)	Linkages among website and consumer characteristics, online trust, and behavioral intent	Finite mixture structural equation model (SEM)	Online trust drivers differ across website categories. Privacy and order fulfilment are essential for high information risk and involvement sites, while navigation is critical for information-intensive sites. Brand strength is vital for automobile and financial services with high user involvement.
Ma et al. (2015)	Drivers of customer compliments and complaints online and the impact of firm interventions	Dynamic choice model	Customer complaints result from redress seeking. Firm service interventions improve customer relationships but lead to more complaints later, causing firms to underestimate returns on service

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			intervention.
Pauwels et al. (2016)	Influence of eWOM topics on firm performance and the role of different offline and online marketing communication channels in stimulating eWOM topics	Vector auto regression (VAR) model	Advertising-related, brand-related, and purchase-related eWOM have alike effects on online store traffic lift. Brand-related and purchase-related eWOM are twice as effective in lifting offline store traffic compared to advertising-related eWOM.
Wang and Chaudhry (2018)	Firms' responses to online travel reviews and their influence on future review ratings	Difference-in-Differences (DID) model	Firms' responses to negative (positive) reviews have a positive (negative) impression on future review ratings.
Grewal and Stephen (2019)	Perceptions of reviews generated on mobile (vs. non-mobile) devices and their impact on purchase intention	NBD regression model and experiments	Reviews on mobile devices induce higher purchase intention due to apparent effort and credibility.
Timoshenko and Hauser (2019)	Identifying user needs from UGC on customer product needs and desires using machine-learning methods	Convolutional neural network (ML) model	Machine-learning methods for extracting customer needs from UGC are more valuable and efficient compared to conventional methods.
Hollenbeck et al. (2019)	Impact of online reviews on advertising spending	Regression discontinuity design model	Online review ratings can substitute for advertising spending, especially for lesser-known brands and in less differentiated markets. Platform popularity and network externalities influence perceptions of the firm.
Herhausen et al. (2019)	Containing the impact of online firestorms	Multilevel model	Virality of potential firestorms rest on negative eWOM arousal and sender's association with the brand community. Firms can customize responses based on arousal and response timing to contain firestorms.
Sunder et al. (2019)	Herding effect in online rating environments	Regression model	Herding effect positively impacts rater's response, less so for experienced raters. Friends' influence becomes more noticeable, and rater's experience plays a crucial role in the absence of harmony among reference groups. Firms can suppress herding by focusing on product portfolios.
Melumad and Meyer (2020)	Role of smartphones in consumer willingness for self-disclosure	Text mining model and experiments	Consumers show higher willingness for self-disclosure on smartphones across various online communications, including C2B contexts.
Hydock et al. (2020)	Consumer attitudes toward a brand and willingness to engage in C2B communications	Lab and field experiments	Positive brand attitudes upsurge engagement in C2B communications, while negative attitudes do not lead to more sharing. Competing mechanisms influence the behaviour of unhappy customers.

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Grewal et al. (2020)	Impact of handheld scanners on consumer purchase behavior	Field experiments	Handheld scanners trigger unplanned purchases due to cognitive (e.g., sense of control) and affective (e.g., shopping experience) factors, subdued by budget limitations.
Allard et al. (2020)	Conditions under which negative reviews can work in favor of the firm	Experiments	Negative WOM can evoke empathy for the targeted firm based on perceived fairness. Empathy level rest on contextual factors and consideration of the reviewer's viewpoint.
Dzyabura and Peres (2021)	Visual identification of brand perceptions	Image tagging tool & LDA	Brand Visual Elicitation of Perceptions tool identifies prototypical brand visuals, relates to brand associations and personality, and discovers commonalities across brands.
Sreenivasan, A., & Suresh, (2023).	Agility adaptability and alignment in start-ups.	Randomized field experiments	Digital transformation's competitive advantage lies in offering relevant, personalized products, fostering innovation, and delivering exceptional customer experiences.
Vuchkovski,, Zalaznik, M., Mitreĝa,, & Pfajfar, G. (2023)	A look at the future of work: The digital transformation of teams from conventional to virtual.	Randomized field experiment	Human resource capability within organization is essential for digital transformation. Employees must adapt, acquire digital skills, and drive change within the organization. Skilled, adaptable teams are pivotal for successful digital transformation

### 6.1.3. Content

UGC in the form of response and reviews is valuable for firms (Timoshenko & Hauser, 2019). However, monitoring customer-initiated communication is challenging due to the easiness with which consumers can produce content. Social media research (Herhausen et al., 2019; Villarroel Ordenes et al., 2019) focuses the utility of text mining capabilities, derived from linguistic-based dictionaries, to analyse the content in consumers' digital posts and formulate suitable responses. The Brand Visual Elicitation of Perceptions tool, comprising an image classifier and an LDA model, can identify prototypical brand visuals, brand associations, personality, and commonalities across brands (Dzyabura & Peres, 2021).

In essence, C2B communication serves as a essential feedback mechanism for firms to determine their marketing mix strategy (Du et al., 2015). However, not all C2B content is useful, as fake reviews can damage consumers and mislead firms. Distinguishing between real and fake reviews remains a challenge. Moreover, an organized analysis of C2B communication content across different communication avenues is lacking, likely due to the ever-expanding volume of "big data."

### 6.1.4. Responses

Appropriate firm responses are usually desired outcomes of C2B communications. Various attributes of C2B communications, such as tone, topics, poster characteristics, and image use and quality, impact other customers' engagement (Ma et al., 2015; Yazdani et al., 2018; Li & Xie, 2020), prompting firm responses. Beyond engagement, online interfaces enhance customers' flow states (Novak et al., 2000), trust with firms (Bart et al., 2005), and choice processes (Mandel & Johnson, 2002). Customer likes of digital posts affect sales effectiveness and lower returns for digital products (Schulz et al., 2019). Hollenbeck et al. (2019) note firms use good ratings as substitutes for advertisements, but understanding the various drivers of rating behaviour is crucial.



Firms must define ways to impact online opinions, such as through product offerings (Sunder et al., 2019) or timely intervention (Wang & Chaudhry, 2018). Focusing on co-production, Haumann et al. (2015) find that intensity can impact customers' satisfaction with the co-production process, alleviated by value-enhancing and intensity-reducing communication strategies. Authentic creation narratives from customers can help expand adoptions of co-created innovations (Wang et al., 2019). Peters et al. (2013) offer a framework for managing all social media communications, including C2B communications.

However, there is scant research on firm responses and co-creation efforts in response to C2B communication, especially in the framework of mobile and IoT. There is also an absence of a framework for firms' responses to C2B communications organized by communication goals, media, and content. In co-creation initiatives, firms should consider country-of-origin and local market effects; the success of such endeavours depends on active participation, and cultural values can influence willingness to participate in activities with in- and out-group members (Lam et al., 2009). Cultural factors such as power distance may also influence consumers' willingness to participate and purchase co-created products (Paharia & Swaminathan, 2019). Despite their vital role in determining optimal C2B digital media and communication strategies in a global context, very few studies emphasis on local market-specific factors.

## **6.2. Research Directions**

Generalizable research efforts in the following unaddressed areas will be vital to expanding our knowledge of C2B digital communication:

### **6.2.1. Objective:**

1. Firms' understanding of customer objectives (e.g., How can firms cost-effectively interpret the objectives of C2B communications across countries?).
2. Improved offerings (e.g., How does consumer digital feedback for creating better offerings vary from consumer digital complaints? How can firms leverage this feedback across countries?).

### **6.2.2. Channels, Media, and Platforms:**

1. C2B communication through IoT (e.g., How can firms leverage data from consumers' use of IoTs? How does this vary across countries?).
2. C2B interactions among different devices (e.g., How can firms use the integrated data from the use of mobile, wearables, and IoT devices to formulate strategies?).

### **6.2.3. Content:**

1. Integration of content across different content types, media, and interfaces (e.g., How can firms integrate content from owned and earned media, especially across countries?).
2. Detecting fake reviews (e.g., How can firms spot fake reviews and formulate effective strategies to counter them?).

### **6.2.4. Responses:**

1. Firm responses to customer communication through mobile devices (e.g., How do consumers use different types of mobile devices, IoT, and connected home devices to communicate with firms? How can firms learn from and act on such communications?).
2. Co-creation and co-production initiatives (e.g., What are the drivers of the success of C2B-based co-creation initiatives, which include interface designs and tools? What cultural, socioeconomic, and psychological factors affect these outcomes?).
3. Automation of monitoring and response to C2B (e.g., What automation strategies are effective for firms to monitor and respond on social media, mobile, and IoT devices?).

4. Framework of C2B communications (e.g., Can we develop an effective organizing framework for analysing firm responses to C2B communications?).

### **6.3. Summary**

Compared to C2C communication, research on C2B digital communication is pretty limited, with a predominant focus on the social media theme. This gap is surprising given that digital channels, media, and platforms provide many avenues for customers to interact with the firm. C2B communication holds the potential to facilitate numerous aspects, including new product development, modifications of offerings, demand predictions, delivery, customer satisfaction, and loyalty. Despite its significance, research on C2B communication in the global context is sparse, overlooking a cost-effective and direct opportunity for firms to enhance their services worldwide.

## **7. POTENTIAL APPROACHES TO ADDRESS FUTURE RESEARCH QUESTIONS**

A summary of future research directions is presented in this paper. We classify these directions by the four dyads and components of digital marketing communication, offering insights into potential approaches for addressing these questions. The suggested approaches are conferred under three crucial elements: substantive issues, data, and methods and models.

### **7.1. Substantive Issues**

Across the four dyads, future research questions highlight common themes linked with substantive issues. Firstly, there is a noticeable lack of research on the similarities and differences in the utilization and efficacy of digital media across international markets. To advance research in this area, a systematic analysis of data from multiple countries on the same digital communication campaigns across common platforms could be undertaken. Given that different firms may have distinct individuals responsible for digital marketing communication globally, examining standardized and customized global brands separately may provide valuable insights. For standardized global brands like perfumes and smartphones, a centralized global digital communications executive may be most suitable. In contrast, for customized global brands like food and culturally-sensitive products, responsibilities may be decentralized across countries.

Secondly, research on emerging media and platforms such as IoT, wearables, VR, and AR is in its initial stages. Since these platforms are not yet mainstream, addressing key issues related to them can be effectively achieved through experimental data. With the growing prevalence of IoT, a deeper exploration of communication among digital devices becomes imperative. Studying the effectiveness of communication across devices necessitates the integration of fields such as signal processing, network analysis, and marketing. This integration also highlights the importance of understanding the links between IoT communications and their impact on customer outcomes (e.g., value, satisfaction) and firm outcomes (e.g., performance).

Thirdly, as consumers flawlessly navigate various media and platforms for browsing, engagement, or purchases, it becomes imperative to explore synergies or potential cannibalization across these channels. Existing research predominantly concentrates on isolated effects of distinct media and platforms, primarily due to the complication of analysing them collectively in the broad settings typical studies examine. Future endeavours could delve into scrutinizing the combined impact of these channels in a more focused setting that is logistically feasible. Additionally, extending investigations to include devices, particularly exploring the interaction between digital devices and digital media, could offer valuable insights.

Finally, considering the future, Lamberton & Stephen (2016) delineate the developing role of digital, social media, and mobile marketing strategies over three five-year periods from 2010 to 2015, serving as a facilitator of individual expression, a decision support tool, and a marketing intelligence source, respectively. These trends show a shift from passive to active communication in the pursuit of gaining a competitive advantage. Extrapolating from these themes, the emerging theme for digital communication could revolve around analytics-driven strategies in a digitally transformed post-COVID-19 world.

## 7.2. Data

Data holds a crucial role in the digital marketing landscape. The proliferation of data formats and sources, coupled with the escalating complexities in data curation, storage, access, and analysis, necessitates a more adept approach to data challenges. In addressing future research questions, establishing robust data protocols is imperative. Firstly, researchers must prioritize data integrity, recognizing that reliable and accurate data form the substratum of rigorous analysis and effective decision-making. With major tech companies like Google and Facebook accumulating substantial digital data, marketers and researchers should conduct meticulous data audits to ensure sustained data quality. Secondly, fostering collaboration between digital marketing academics and practitioners is essential to devise acceptable metrics and standards. Single source data aids standardization, while syndicated data can offer a feasible approach to standardization and cost-sharing amid the escalating costs of data collection and storage. Thirdly, for a more comprehensive understanding of the effects of digital communication, researchers should employ triangulation using diverse data types, such as desktop clickstream data, mobile clickstream data, transaction data, and attitudinal data. Fourthly, due to the challenges in acquiring data on international digital marketing campaigns, researchers could form partnerships with platform companies, trade associations, and marketing organizations to obtain relevant data. Supplementing this with web or social media scraped data across countries can enhance the comprehensiveness of the dataset.

## 7.3. Methods and Models

To confront imminent substantive issues, researchers must improve existing methods and embrace new methodological tools. Conventional methodologies encompass econometric models, structural equation models, and experimental methods. Given the escalating volume of data, the utilization of Machine Learning (ML) models capable of delving deeper into digital media data is gaining prominence. Advanced ML models such as auto-ML (automated ML application from raw datasets to production level) and deep learning models, including generative adversarial network (GAN) models, hold promise for addressing intricate problems like normative digital communication allocation decisions. Field experiments, enabled by the ease of implementation in digital channels and platforms, are anticipated to grow in popularity. Additionally, experiments may serve as a primary data source for emerging digital communication vehicles like wearables, VR, AR, and IoT devices, where secondary data might not be readily available to marketers. Understanding the drivers and predicting the effects of digital communication necessitates causal modeling of the drivers on outcomes. Causal ML modeling, as exemplified by Narang et al. (2021), enables the amalgamation of ML models with causal models, utilizing panel, quasi-experiment, and field experiment data to gain profound insights into the effects of the drivers. To further cross-country research, researchers can leverage events impacting specific countries (e.g., the introduction of the General Data Protection Regulation [GDPR], social media platform shutdowns), offering compelling contexts and serving as natural experiments for cross-country analyses.

## 8. CONCLUSIONS

Our comprehensive review has scrutinized notable research across the B2C, B2B, C2C, and C2B dyads concerning digital communication in both local and global contexts. Within each dyad, we have refined and outlined key previous findings while pinpointing critical gaps in the realms of goals, channels, content, and responses associated with digital communication. Notably, the majority of research has concentrated on a national scale, neglecting the increasing permeability of national boundaries in the domain of digital marketing. This disparity leaves managers without the necessary insights to standardize their digital marketing strategies on a global scale. By identifying relevant questions requiring further investigation across all dyads, we have shed light on research gaps and proposed potential methodologies for researchers to address these voids. It is our aspiration that these delineated avenues serve as catalysts for robust future research in the dynamic realm of digital communications.

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