

RESEARCH ARTICLE

Digital Media as a Game-Changer in B2B Buyer-Vendor Relationships

Werner Krings¹  Roger Palmer² Michael J Harrison¹ Alessandro Inversini³

1. Department of Marketing, College of Business, Framingham State University, Framingham, MA 01701, USA

2. Henley Business School, University of Reading, Greenlands, Advising Faculty of the Doctoral Program Marketing & Reputation, Henley-on-Thames, Oxfordshire RG9 3AU, UK

3. Ecole hôtelière de Lausanne, HES-SO, University of Applied Sciences and Arts Western Switzerland, Route de Cojonnex 18, 1000 Lausanne 25, Switzerland

Received: 27 June 2022; **Received in revised form:** 9 August 2022; **Accepted:** 11 August 2022; **Published:** 23 August 2022

Citation: Krings, W., Palmer, R., Harrison, M.J., Inversini, A., 2022. Digital Media as a Game-Changer in B2B Buyer-Vendor Relationships. *Journal of Sustainable Business and Economics*. 5(3), 17. <https://doi.org/10.30564/jsbe.v5i3.17>

Abstract: Purpose: The article examines the role of digital and, in particular, social media in business-to-business marketing in the international software industry. The authors responded to calls for empirical research on how these media impact buyer-vendor relationships and the conjunction of the marketing and sales processes, particularly the distribution of complex software solutions. This paper develops a digital framework and discusses the managerial consequences. **Design/methodology/approach:** The model arises by merging themes derived from literature, experts, and job descriptions. Mixed Methods included conducting semi-structured interviews across marketing, business development, and sales executives from buyers, vendors, and third parties of various industries, supplemented by a survey of 530+ executives. **Findings:** Multinational companies secure competitive advantage through agile business processes to improve buyer-vendor relationships in the digital era. Digital media enable vendors to interact continuously with buyers, gather intelligence, and foster mutually beneficial, trustworthy, long-term relationships. The objective is to prompt transactions and secure revenue streams. **Research limitations/implications:** The outcomes of this research center on North America, Western Europe (including the UK), and DACH (Germany-Austria-Switzerland), affecting the generalizability. **Originality/value:** The research is novel and bridges several gaps concerning industrial relationships in digitalization: it merges buyer, vendor, and third-party's perspectives on an international scale. It provides deeper insights into existing and new relationships by identifying relevant digital/social media platforms, the underlying usage motivation, and fundamental B2B processes. Finally, it equips practitioners with metrics to improve performance.

Keywords: Digital/social media, Business-to-Business, Buyer-Vendor relationships, Marketing & Sales alignment, Business performance

*Corresponding Author:

Werner Krings,

Department of Marketing, College of Business, Framingham State University, Framingham, MA 01701, USA;

Email: wkrings@framingham.edu

DOI: <https://doi.org/10.30564/jsbe.v5i3.17>

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1. Introduction

Markets are fast-changing and highly competitive in a declining global economy^[1], and companies are challenged with cultural and generational differences when conducting business. In addition, digitalization challenges traditional ways business-to-business companies cultivate viable relationships as they seek to better position themselves in distributing complex solutions^[2]. To strengthen their leadership in a volatile, uncertain, complex, and ambiguous (VUCA) environment^[3], vendors are increasingly forced to rethink how to target and serve prospective and existing customers. As a result, it may be necessary to restructure their often-siloed marketing-related functions characterized by outdated processes and cultural clashes^[4].

Despite the availability of digital technologies to streamline processes, a comprehensive framework for identifying, leveraging, and integrating digital media to optimize Performance has yet to be established^[5,6]. Frequently, a digital roadmap that identifies the media particularly suitable for the specific business processes is missing for practitioners. As a result, the dynamic development of buyer-vendor relationships is paralyzed by functional interests and missing cooperation, leading to frustration and potential loss of customers. Krings *et al.*^[7] suggested clarifying the Business Development (BD) function that has not been adequately researched. Disruptive technologies^[8] can bridge the different cultures and optimize the underlying processes without compromising the fundamental values of mutually beneficial, empowered buyer-vendor relationships^[9].

Practitioners and scholars increasingly realize the importance of digital media, especially Social Networking Sites, as state-of-the-art technologies to shape effective buyer-vendor relationships^[9]. This is particularly true for industries facing fierce competition and limited resources^[10,11]. However, for various reasons, business-to-business practitioners delay digital media adoption^[12] in day-to-day activities. First, severe reservations towards innovative technologies^[13]; second, doubts about their performance impact^[14]; third, concealing unawareness by C-level executives^[6]; fourth, perceiving digital media as of primary importance to individuals instead of organizations^[15]. In addition, there is uncertainty about the definition of business development, the nature of underlying process phases of this often-disregarded cross-functional role, and the most efficient media combinations to develop long-lasting buyer-vendor relationships^[16,17].

In the digital era, responsiveness and flexibility are business-critical. Consequently, efforts to raise awareness and understanding are essential to reshaping business

relationships with suitable media combinations. Though authors regularly discuss digital media applications in B2B relationships, their studies are conducted in isolation of business development or fail to combine buyer, vendor, and third-party perspectives. Schultz *et al.*^[17] mention digital/social media to identify potential buyers, while Rodriguez *et al.*^[11] accentuate long-term relationships. Brennan and Croft^[19] consider digital media suitable for branding and soft relationship marketing in high-tech companies. Agnihotri *et al.*^[20] realize their impact on hard-sales performance. However, their performance impact remains undetermined. Therefore, questions arise as to what constitutes high-quality buyer-vendor relationships^[21], how these relationships are fashioned^[22], and when digital media are significant in global software firms^[7]. Another question surrounds how and to what extent digital and traditional media are applied within organizations to render business processes more agile and effective. Purpose-specific^[16], usage preferences of *digital leaders* and *laggards*^[19] across generations^[23], for specific platforms, and media contributions to corporate metrics become viable^[2]. This research is novel as it bridges several gaps in the literature^[5,17]. First, it clarifies the liaison role of business development to bridge the siloed marketing-related functions^[4]. Second, it merges the originally isolated study areas of business development and digital media^[25], including the views of vendors, buyers, and third parties in one multinational study^[18]. Third, it develops indices to anticipate and propose different media combinations^[12,26] to address the confusion about which digital media are conducive to buyer-vendor relationships^[14,20]. Fourth, it suggests the extent to which digital and traditional media are applied^[27].

Our objective is to understand digital technologies in the context of a novel conceptualization of business development^[49]. We accomplish this by aligning the buyer-centric siloed marketing and sales functions and leveraging technology to affect performance^[9,12].

2. Literature Review

2.1 Digital Technologies in Buyer-vendor Relationships

Digital technologies are vital for vendors in business development^[24] to realize opportunities^[28] and achieve strategic competitiveness^[29]. Advanced technologies are expected to improve capabilities like developing trustworthy relationships, gathering critical intelligence, and generating leads^[30,31]. Though digital media are prioritized on everyone's agenda^[32], their effect is still doubted^[26]. Digital media usage draws mainly on technology usage or technology-task-fit theory^[13,16,33]. Nevertheless, no study

examines which platform is most effective for particular buyer-vendor processes^[34].

2.2 The Unique Role of Business Development in Buyer-Vendor Relationships

Business development is critical since its processes can increase the agility and effectiveness of buyer-vendor relationships as a component of strategic account management^[37]. However, academics and practitioners find business development a buzzword^[38]. The theoretical underpinnings draw on the literature on Relationship Management, Sales Performance, and Entrepreneurship to develop the definition of Business Development^[22,38,47]. Buyer-vendor relationships have been intensively discussed in business-to-consumer (B2C), characterized by vendor-centric relationships with fast turnaround transactions. In contrast, in business-to-business (B2B), buyer-vendors relationships require an approach on an equal footing. Consequently, software companies solve business problems through highly complex, individualized solutions geared towards recurring instead of one-off transactions^[35,36].

Market globalization, innovative processes/technologies, non-standardized solutions, and unique business relationships with value-added exchanges initiated the paradigm shift towards relationship marketing^[39]. In contrast, this concept includes the constituents of satisfying and strong buyer-vendor relationships synthesized in various schools of thought^[40]. Notably, the Nordic School of Services highlighted collaboration and long-term business orientation.

In contrast, the Industrial Marketing and Purchasing (IMP) group stressed commitment and interaction to mitigate uncertainty risks and legitimate repeated business^[41]. Mutually profitable relationships are fostered through communication, value creation, and enhancing the buyer's operational efficiency and business effectiveness^[30,36]. Service-Dominant Logic emphasizes value co-creation with digital technologies as drivers for relationships and performance through interactive, two-way communication^[42,43]. It appears suitable for shaping buyer-vendor relationships in marketing complex and individualized B2B software solutions to multiple decision-makers^[35,44].

Research shows these relationships can be precarious due to technological changes and switching costs^[45]. Though abundant relationship marketing^[45,46] and sales^[18,21] literature exists, business development articles are scarce^[47] that we consider critical to effective buyer-vendor relationships. Furthermore, current research lacks a clear definition^[38] and overlooks the liaison role^[48]. Kind and Knyphausen-Aufseß^[49] try to clarify the concept of business development in developing and maintaining business relationships

besides identifying opportunities, unlike most studies with no clearly defined boundaries at the intersection of relationship marketing and sales. For instance, Brennan^[50] and Giglierano *et al.*^[38] assign *existing business customers* to key account managers and *new business customers* to marketing/sales. This ambiguity seems counterproductive to creating collective customer experiences^[4].

Consequently, business development becomes our focus. Initially, to develop guidelines to align marketing and sales by continuously managing purchase processes^[38] towards unique buyer experiences^[37]. Then, to identify, define, and redesign core activities to expedite business processes^[51]. Finally, to detect the media set for up-to-date vendor-buyer interactions^[14]. This must be understood from studies about the constituents of profitable businesses. In particular, building and nurturing ongoing qualitative B2B relationships encompassing “trust, commitment, satisfaction, communication, adaption, collaboration” (Jiang *et al.*, p. 305^[52]).

2.3 The Digitalization of the Business Development Function

In the digital era, vendors get to know their buyers^[53] through cutting-edge technologies^[54] to get access to gatekeepers, decision-makers, and data^[55]. Highly-competitive vendors deal with decision-makers and opportunity/risk profiles^[56], taking intergenerational preferences towards values, best practices, disruptive innovations, and availability^[2]. Digital technologies are quite a new phenomenon in B2B with unclear outcomes^[12,57]. In light of these research gaps, our study adds to current research by creating a comprehensive framework integrating digital media in buyer-vendor relationships under the guidance of business development. Our study intends to identify fundamental processes to bridge the siloed marketing and sales functions from a buyer-centric viewpoint. Then, enhance these processes with the most effective digital technologies^[18]. We pay particular attention to scrutinizing how digital media affect faster-than-expected business processes and performance^[58].

3. Research Approach

Our multi-disciplinary research beginning with qualitative, followed by quantitative methods, evolved to relativism ontology linking to (post)-positivism epistemology. This approach allowed for flexibility in defining, e.g., the business development process and determining a relevant set of digital media. We developed our conceptual model by drawing on concepts and theories of relationship marketing^[59,61]; sales^[18,31]; entrepreneurship^[62,63], and infor-

mation technology literature ^[64,65], supplemented by twelve semi-structured interviews with high-tech experts, i.e., gatekeepers and decision-makers from Europe and the US working for international software vendors, buyers, and third-party providers. The informants had a minimum of three years of B2B marketing and sales experience and were of various career levels and industries. The resulting qualitative data set was recorded, coded, and analyzed with Thematic Analysis. This method identifies, analyzes, and reports prevalent themes and patterns ^[66] to define, for example, the process phases in buyer-vendor relations.

We ensured that operative, technological and strategic aspects coincided with critical touchpoints in comprehensive relationships ^[33]. We selected leading global software enterprises for several reasons. The software industry is one of the fastest-growing industries with disruptive ERP, Cloud, and digitalization innovations. This industry has taken center stage in recent digital media studies ^[19].

Moreover, the software industry provides examples of liaison and critical capabilities, replicating large-sized B2B transactions in other sectors ^[67]. Ultimately, software companies simulate real-world, global competition and crowded local markets with price-undercutting ^[68]. We expect to support vendors in the fierce battle for B2B buyers through the following measures: (i) render existing processes more efficient and effective ^[69], (ii) align traditionally siloed marketing-related functions, and (iii) incorporate digital technologies in daily routines ^[70]. As a

result, vendors and buyers will enhance collaboration and understanding ^[71], deepen relationships, and accelerate business cycles ^[22]. Therefore, we propose digital media as mission-critical within the business development function.

Figure 1 shows the refined conceptual model derived from the literature and pilot study.

For the *antecedent*, digital media business usage, we examined the Task-Technology (Media) Fit, Media Richness, and Technology Usage theories ^[16,30,72].

For the *independent variable*, business development, we studied commitment and trust, relationship marketing, and entrepreneurship theories ^[46,62].

For the *dependent variable*, business performance, we looked into performance concepts, e.g., efficiency and effectiveness ^[27,73].

Viable buyer-vendor relationships depend on the *commitment and trust* theory ^[74] to mitigate high risks in B2B procurement ^[41]. Vendors are often uncertain about suitable platforms to achieve this. Though aware of the cost advantages, interactivity, information velocity, and digital media immediacy ^[75], they disagree to what degree they should replace traditional media ^[8]. Advocates of digitalization point to relationship improvement through communication, collaboration, and exchanging information ^[14]. Opponents view excess information and privacy issues as counterproductive ^[55]. Consequently, we look at how digital media promote relationships.

At the heart of our proposed research model is the

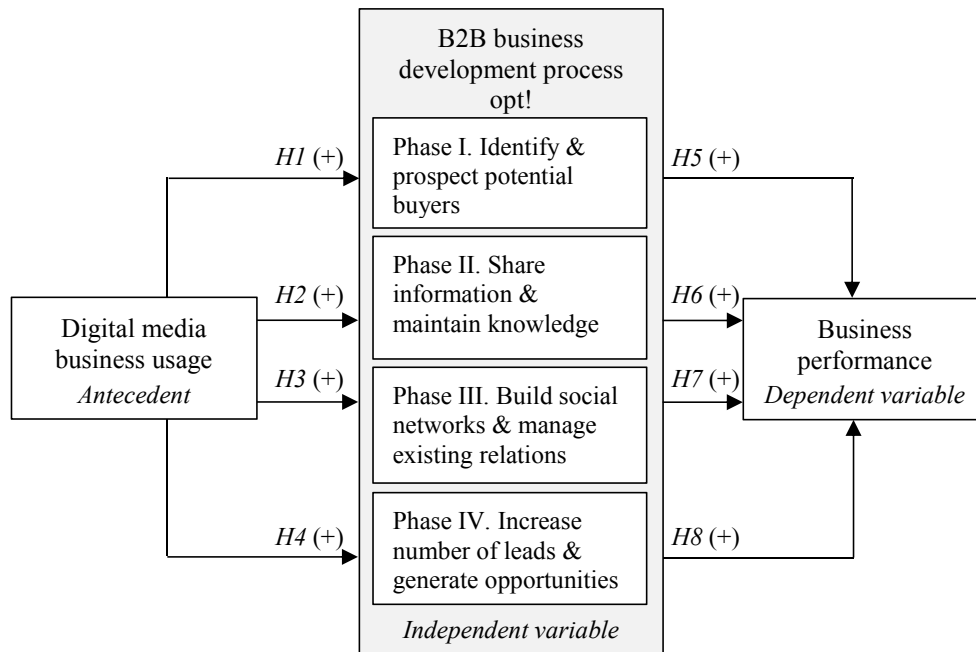


Figure 1. Proposed research model and hypotheses

overarching research question:

How does digital media business usage impact buyer-vendor processes expressed through business development and contribute to business performance?

We discuss our model parsimoniously. Research questions *RQ1 – RQ4* respond to gaps and calls in the literature and our pilot study.

RQ1: What are the critical phases in B2B buyer-vendor relationships?

RQ2: How do digital media impact these relationships through business development?

RQ3: What are the most efficient media in the individual phases and the entire process of business development?

RQ4: What is the ultimate effect of digital media on business performance?

We touch upon the ambiguous definition of business development^[38], its overlooked liaison role^[48], the disjoint between the studies of digital media and business development^[5], and the missing guidance about what type of media to apply^[76] and face the reality that digital media usage is still in its infancy with unknown benefits^[57]. We considered the digital platforms critical to the evolving B2B buyer-vendor journey^[44]. We identified the relevant set, i.e., the most frequently applied media related to buyer-vendor relationships^[14,20]. We acknowledged the significance of professional or social networking sites, blogs, and microblogs for buyer-vendor activities (e.g., prospecting, researching, and producing digital content) suggested by Brennan and Croft^[24].

We recognized that including Facebook is debatable for business-to-business purposes. However, it seems evident that LinkedIn and Facebook content has become increasingly indistinguishable, and the boundaries between professional and social networking sites may disappear. We draw on the Social Presence theory assuming that face-to-face interactions are more intimate than phone conversations and micro-blogging is more immediate than emails^[32], and refer to the Technology-Acceptance model for attitudes and intentions toward user-friendliness of digital media^[34].

Most high-tech experts acknowledged the importance of professional networking sites to generate new business compared to other platforms^[77]. It is expected that digital media as *antecedents* improve processes manifoldly (e.g., securing purchase-relevant information^[20], developing loyal relationships^[65], generating qualified leads^[9], and improving performance^[64]).

Research questions, *RQ1* and *RQ2*, examining the relationship between the *antecedent* (digital media business usage) and the *independent variable* (business development), lead us to hypothesize:

H1. Digital media business usage positively affects the

first BD process phase, identifying & prospect potential buyers.

H2. Digital media business usage positively affects the second BD process phase, sharing information & maintain knowledge.

We justify both hypotheses using Social Presence and Self-disclosure theory. We assume that marketing leaders widely use digital media to exchange relevant profile information with key decision-makers^[55] to be perceived as trustworthy experts in the initial prospecting phase through meaningful conversations based on business-critical intelligence^[78]. In contrast, mainstream marketers utilize scripted cold-calling and obsolete databases^[79]. Our expectation lies in process acceleration by business acumen. Consequently, digital leaders increase their chances of being short-listed and win business faster due to their decency and informational advantage^[80]. The pilot study revealed that the second phase of business development was perceived as a sequel to the first phase because of *building rapport and trust while educating and listening*. Both hypotheses were supported by Davis and Sun^[47] and Rodriguez *et al.*^[1]. These and the following two hypotheses that address *RQ1* and *RQ2* were supported.

H3. Digital media business usage positively affects the third BD process phase build social networks & manage existing relations.

H4. Digital media business usage positively affects the fourth BD process phase increase the number of leads & generate opportunities.

The third hypothesis is critical for subsequent sales processes. The expected outcome is that digital media-shaped strategies create authentic, engaging, and satisfying buyer-vendor relationships based on commitment, trust, and collaboration^[60], resonating with social capital theory^[81]. This relationship quality with value co-creation results in competitive advantages^[58,82]. Some scholars view customer-oriented digital or social technology as essential for strengthening relationships and increasing Performance^[16,23]. This hypothesis was also supported by Rodriguez and Peterson^[1].

The fourth hypothesis originates from the entrepreneurship, sales, and technology theory^[22,37,41]. This phase anticipates individual and functional performance in line with the entrepreneurial process of discovering, evaluating, and exploiting opportunities^[62,63] applicable to B2B software solutions^[18,47]. Digital media is instrumental in optimizing this process phase by improving the lead quality, reducing the acquisition costs of buyers, and abbreviating the business cycle resulting in less risky, swifter, new, and recurring business^[14,18,43].

Therefore, we hypothesize that the remaining hypoth-

eses address RQ4.

H5. – H8. There is a positive relationship between *the digitally impacted four business development process phases* and *business performance* test positively.

Business performance is a *dependent variable* since the utmost objective of process optimization is a performance increase.

We expanded our original research with an emphasis on buyer-vendor processes to consider actionable performance metrics because of the literature and pilot study suggestions that process optimization implies performance increase. Thus, we distilled the measures closely related to digital media usage. Academics and practitioners perceive performance in light of process-oriented *efficiency* and results-oriented *effectiveness*. As a result, tech-savvy digital *leaders* develop better quality leads than their tech-averse peers [70,77,83]. However, very few scholars suggest media-oriented performance measures to highlight the role of digital media in enhancing processes [22] based on the media-task fit [33].

In January 2017, we pre-tested our preliminary online questionnaire to ensure valid and reliable constructs and attributes [84]. We conducted in-depth Skype interviews with ten top-tier executives similar to our target population – one representative, function, and sector at a time. This approach fine-tuned our survey instrument progressively, validating research-relevant content, format, and scales. Our final questionnaire structure included the sections (i) introduction; (ii) processes; (iii) vendor, third-party, and buyer-specific media and performance definitions; (iv) socio-demographics; (v) perceived value and future research; (vi) request of a summary and participation in a raffle.

We operationalized our research by integrating variables reflecting the constructs accurately. We adapted items and scales from similar quantitative studies [23,66], refined a few scales based on pre-test opinions of ten executives, and added original ones. For instance, we expanded the one-item scale “digital/social media business usage” [18,34] to a composite scale and distinguished between *Inclination* and *Hesitation*, with three items on seven-point Likert scales.

We recruited our sample from multipliers at Microsoft/LinkedIn and SAP who shared the survey anonymously, besides 8,755 (904) contacts from LinkedIn (XING). We announced our research regularly in virtual groups in Q1 2017. Our targets/supporters received individualized emails with the 20–25 minutes survey link and frequent status updates. Our data collection in April/

May 2017 with the Qualtrics™ software yielded 543 completed surveys, a high-response rate of 4.55%, 396 (35) LinkedIn (XING), and 112 anonymous respondents. This outcome demonstrated that our engaging approach proved efficient [85].

4. Findings

Our findings address literature gaps, answer research questions, and provide managerial guidance.

4.1 Findings related to Academics

Testing the reliability of the scales

To ensure internal consistency of the scale items, we calculated the Cronbach’s Alpha for the sub-samples whereby most of our scale items for the antecedent *Digital Business Usage*, independent variable (*BD phases I-IV*), and dependent variable *Performance* were within a *good* (≥ 0.80) or *acceptable* (≥ 0.70) range. To condense the set of scale items and detect the underlying structure of scales and measures, we conducted exploratory factor analyses (EFA) with varimax rotation (0.5-factor loading criterion). We conducted confirmatory factor analyses (CFA) for the model structure to test specific hypotheses and examined the convergent validity, indices such as factor loadings, average variance extractions, and construct reliabilities presented in Table 1, e.g., for the independent variable. The CFA resulted in a disappointing original measurement model ($GFI \approx 0.87$; $CFI \approx 0.91$; and $RMSEA \approx 0.03$).

Testing the hypotheses by regression analyses

We conducted simple regression analyses to test the hypotheses after preliminary investigations for normality, linearity, multicollinearity, and homoscedasticity. Table 2 indicated statistically significant relationships of the conceptual model at the 0.000 significance level with projected positive values.

The effect sizes of the explained variance R^2 were sobering and varied within the samples.

The path analysis demonstrated most hypotheses were supported. Digital Business Usage is primarily relevant in BD phases I and II. At the same time, Performance is mainly influenced by BD phases III and IV.

The pleasing results of the finalized Structural Equation Model largely supported our conceptual model and hypotheses ($\chi^2_{(238)} = 19.19$; $RMSEA = 0.036$; $CFI = 0.996$; and normed χ^2 $CMIN/DF = 1.599$) for *leaders of digital media* in the high-tech industry [19].

Table 1. Inter-construct correlations in the final model CFA

	BD Phase IV	BD Phase I	BD Phase II	BD Phase III
BD Phase IV	4.55/1.10 .755/.856	.425	.552	.602
BD Phase I	.652	4.77/1.01 .476/.778	.442	.436
BD Phase II	.743	.665	4.80/1.05 .550/.816	.567
BD Phase III	.776	.660	.753	4.79/1.13 .692/.582

Note: **Below the diagonal:** Inter-Construct Correlations. **On the diagonal:** Means/Standard Deviation (top row) **On the diagonal:** AVE/Construct Reliability (bottom row). **Above the diagonal:** Squared Inter-Construct Correlations (extract). The red-colored AVE value violated the rule of thumb AVE ≥ .50, that 50% or more of the variance of the indicators should be accounted for to support Convergent Validity.

Table 2. Simple linear regression analyses

H	Updated *		Vendor (N _v = 188)				Third-Party (N _{TP} = 235)				Buyer (N _B = 107)			
	Criterion	Predictor	R ²	Beta	t	F	R ²	Beta	t	F	R ²	Beta	t	F
H ₁	BDI	DBU	.166	.408	6.09	37.0	.105	.324	5.22	27.3	.138	3.72	4.10	16.8
H ₂	BDII	DBU	.086	.294	4.19	17.5	.074	.271	4.31	18.5	.209	.457	5.26	27.7
H ₃	BDIII	DBU	.096	.310	4.44	19.7	.109	.331	5.35	28.6	.212	.460	5.31	28.2
H ₄	BDIV	DBU	.149	.386	5.70	32.5	.127	.357	5.83	34.0	.206	.454	5.22	27.2
H ₅	PERF	DBDI	.308	.555	9.09	82.7	.295	.543	9.88	97.6	.398	.631	8.34	69.5
H ₆	PERF	DBDII	.345	.588	9.91	98.1	.252	.502	8.86	78.5	.519	.721	10.65	113.5
H ₇	PERF	DBDIII	.454	.674	12.45	154.9	.419	.647	6.65	168.2	.511	.715	10.49	109.9
H ₈	PERF	DBDIV	.484	.696	13.22	174.7	.410	.640	12.71	161.6	.446	.668	9.202	84.7

* After scale refinement by Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA); Level of Significance: .000 ($p < .0005$); DBU = Digital Media Business Usage, BDI – IV = Business Development process phases, DBDI – IV Digital Media Business Usage impacted Business Development process phases, PERF = Performance;
Dark Blue: Highest R² Value, **Light Blue:** Lowest R² Value within a specific sample.

Table 3. Standardized Path Estimates for Structural Equation Model

H	Path	β	p	H Supported?
H ₄	DBU + → BD Phase IV	0.22	***	Yes
H ₁	DBU + → BD Phase I	0.32	***	Yes
H ₂	DBU + → BD Phase II	0.27	***	Yes
H ₃	DBU + → BD Phase III	0.22	***	Yes
H ₈	DBD Phase IV + → PERF	0.34	***	Yes
H ₅	DBD Phase I + → PERF	0.13	**	Yes
H ₆	DBD Phase II + → PERF	0.09	n.s.	No
H ₇	DBD Phase III + → PERF	0.15	**	Yes

DBU = Digital Business Usage, BD = Business Development, PERF = Performance; dark blue: strongest relationship for the Independent Variable, medium blue: strongest relationship for the Antecedent, light blue: No relationship *** $p \leq 0.001$; ** $p \leq 0.05$; n.s. = non-significant; β = Standardised Regression Coefficient, H = Hypothesis, N_T = 530 (Total Sample)

4.2 Findings related to Practitioners

Sample characteristics

Table A1 (Appendix) shows that most companies were headquartered in DACH (34.6%), North America (26.9%), and Western Europe 24.7%. We coded the remaining regions as *Others*. Respondents from multi-national enterprises accounted for 79% compared to medium- and large-sized companies with 21%. Notable industries included consulting, high-tech, real estate, and financial services. The sample comprised 35.7% vendors, 44.2% third-party, and 20.1% buyer professionals; 71.6% of 77.7% male and 22.3% female respondents, with an average of 47 years (Generation X). Two out of five respondents held executive leadership (20.9%), business development (19.0%), operations (18.2%), or (pre-) sales (14.4%) positions. The high number of middle and upper managers (> 80%) expresses our study’s importance.

B2B buyer-vendor relationships

Research question *RQ1* identified the essential business development process phases shaping genuine buyer-vendor relationships. Based on the literature and pilot study, we streamline redundant processes at the intersection of marketing and sales by identifying and assigning four phases to business development.

The velocity of business processes

Research question *RQ2* examined how digital media influence the velocity of business processes from different perspectives. For example, Gronau [86] noticed that processes in the software sector typically range from four months to four years, with an average length of 17 months.

The average of both values $\sum (Dur_{min} + Dur_{max}) / 2$ amounted to *16.2 months* with average time gains of 0.5 (4.9) months for vendors (buyers); see Table 4.

We recommend digital media as a process optimizer because of the acceleration effect.

Digital media efforts

Bernard [6] noted that most Chief Marketing Officers (CMOs) feel under-equipped as enablers for digitalization, and B2B corporations lack the skills to apply practical digital efforts.

Figure 2 demonstrates that digital efforts tend to be either more coordinated or siloed in organizations of vendor and third-party respondents. In contrast, individual digital efforts dominate in organizations of buyer respondents.

In practice, digital media efforts differ depending on the size and strategy of organizations. We expected statistical significance (Chi-square test for independence ($\chi^2(6, n = 530) = 13.02, p = 0.043, Cramer's V = 0.111$)).

Table 4. Average business process cycle time within the literature and partial samples

Partial Sample	Sample Size	Min. time	Max. time	Avg. time	Avg. time gain	ACLTR ranking
		for digital media and traditional media in months				
Vendors	188	7.0	26.0	16.5	0.5	3
Third-parties	235	6.0	22.0	14.0	3.0	2
Buyers	107	6.8	18.3	12.1	4.9	1
Literature	N/A	4.0	48.0	17.0	N/A	N/A

Total Sample: $N_T = 530$

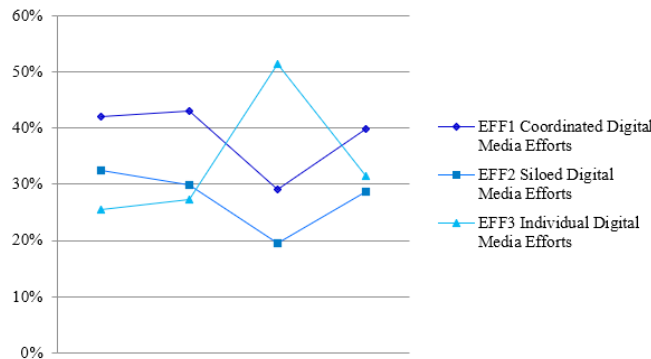


Figure 2. Integration of digital media in organizations

Aligned digital efforts streamline buyer-vendor activities suggesting business development as a liaison function for profitable buyer-vendor relationships.

Preferred media to gather critical decision-making information

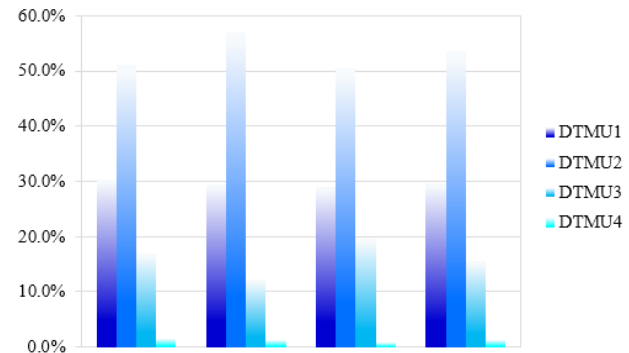
Digital technology points the way to equal, genuine business-to-business relationships. For example, in transactional marketing, vendors control the distribution of standard products with one-way communication via traditional channels. In contrast, relationship marketing and marketing in IT are best suited to B2B software companies because they involve exchanging business-relevant intelligence and collaborating via ‘n-to-n’-way communication and interactions [19,87].

Following the recommendations of leading research [6,20,30], we determined the appropriate media mix in Table 5 by asking to select three out of twelve media concerning decision-relevant intelligence. As a result, 44.9% of 530 respondents were high digital or social media (versus 55.1% of high traditional) users. Face-to-face meetings and word-of-mouth [88] remain the leading conventional channels, yet we recognize that professional networking sites and blogs prevail in digital or social media [89].

Our findings concerning traditional media align with a recent IBM study [6]. Most CMOs obtain decision-relevant information conventionally because they lack familiarity with digital channels. Though digital or social media are essential, they have not yet reached the pinnacle, as a representative study in the US, UK, and Benelux for IT companies shows. These spearhead digital media adoption in B2B (40.8%) vs. their industrial peers (26.7%).

Traditional methods remain paramount in B2B, especially in the final negotiations of significant business trans-

actions. Nevertheless, digital or social technologies initiate buyer-vendor relationships more efficiently, while the lack of face-to-face can adversely affect their quality [90]. Consequently, the results in Figure 3 confirm that both digital and traditional media remain essential in the near future.



- DTMU1: Digital media increasingly replaces traditional media usage in our organization.
- DTMU2: Digital media complements traditional media usage in our organization.
- DTMU3: Digital media continues to increase, yet traditional media usage remains paramount in our organization.
- DTMU4: Digital media usage is negligible; traditional media usage is the only way in our organization.

Figure 3. Interrelationships of digital and traditional media

Our strategic recommendations concerning the digital media set are to focus on these platforms that resemble in their purpose traditional ones [91].

We suggest closing the gaps between LinkedIn/XING and face-to-face (29.8%), word-of-mouth, and corporate websites (32.4%) by adjusting face-to-face features via dynamic digital content to reflect human interactions (eye

Table 5. Media to gather critical decision-making information

Media	Item	Media Type	FRQ N _T = 530	Valid Pct.	Rank N _T	FRQ N _V = 188	Valid Pct.	Rank N _V	FRQ N _{TP} = 235	Valid Pct.	Rank N _{TP}	FRQ N _B = 107	Valid Pct.	Rank N _B
Traditional	Info1	Word-of-Mouth	385	72.6%	2	135	71.8%	2	170	72.3%	2	80	74.8%	2
	Info2	Face-to-Face	409	77.2%	1	144	76.6%	1	184	78.3%	1	81	75.7%	1
	Info3	Tech/BIZ Magazine	68	12.8%	9	26	13.8%	9	27	11.5%	10	15	14.0%	8
	Info5	Email, Newsletter	93	17.5%	8	28	14.9%	8	50	21.3%	6	15	14.0%	9
	Info9	Knowledge Mngmt.	111	20.9%	6	53	28.2%	5	38	16.2%	7	20	18.7%	6
	Info10	Brochure	121	22.8%	5	41	21.8%	7	51	21.7%	5	29	27.1%	5
Digital	Info4	Webinar	95	17.9%	7	44	23.4%	6	35	14.9%	8	16	15.0%	7
	Info6	Blog, Microblog	57	10.8%	10	18	9.6%	11	29	12.3%	9	10	9.3%	10
	Info7	Facebook	34	6.4%	12	10	5.3%	12	16	6.8%	12	8	7.5%	12
	Info8	LinkedIn/Xing	251	47.4%	3	86	45.7%	3	128	54.5%	3	37	34.6%	4
	Info11	Corp. Web site	213	40.2%	4	79	42.0%	4	95	40.4%	4	39	36.4%	3
	Info12	YouTube Channel	52	9.8%	11	24	12.8%	10	18	7.7%	11	10	9.3%	11

Frequency (FRQ) displays the number of the Information source mentioned for the total and the three subsamples (multi-responses)
 N_T = Total Sample, N_V = Vendor Sample, N_{TP} = Third Party Sample, N_B = Buyer Sample. Valid Percent (Pct.)

Recommendation: Focus on the digital media, i.e., Info11 and Info8 that resemble their traditional counterparts, i.e., Info2 and Info1 in terms of their effectiveness in vendor-buyer relationships.

contact, voice, and body language). This approach results in a ‘digital fit’ similar to the ‘chemistry fit’ in personal meetings, customizing corporate websites by replacing general success stories through personalized proposals [4]. Like Salo [55], we regard buyer-engaging content as essential for Performance. Customizing digital content to decision-makers expectations resembles compelling letters of recommendation [45]. Zhu *et al.* [92] suggest adjusting digital content to close competitors for reciprocal referrals.

The relevant set of digital platforms

Research question *RQ3* identifies digital media (DMPs) as suitable for buyer-vendor relationships [18,19]. We differentiate between professional networking sites (*DMP1*), corporate websites and blogs (*DMP2*), CRM systems (*DMP3*), and ‘others’ (*DMP4*). In addition, we developed the Digital Business Relevance Index (DBRI) to justify digital media business usage to expedite processes with performance improvement.

The DBRI allows proposing an efficient digital media mix for individual phases or tracking the digital fit across all stages with a computed utilization factor ranging from

0 to 1.

Below are the formulae for the usage intensity or rating of specific platforms compared to other channels within a particular phase or the entire process.

$$DBRI_i = \sum_{i=1}^m \sum_{j=1}^n DMP_i BD_j x w_{ij} \rightarrow opt!$$

Digital Media Platform_i, DMP_i; BD Process Phase_j, BD_j; Weight w_{ij}

$$\sum_{i=1}^m BD_j DMP_i x w_{ij}$$

Digital Business Relevance Index (DBRI) across all *i* Digital Media platforms for a specific Business Development process phase *j*; Weight Interval: 0 ≤ w_{ij} ≤ 1

$$\sum_{j=1}^n DMP_i BD_j x w_{ij}$$

Digital Business Relevance Index (DBRI) across all *j* Business Development process phases for a specific Digital Media platform *i*; Weight Interval: 0 ≤ w_{ij} ≤ 1

Table 6 highlights each digital platform’s outcome

Table 6. Relevant media set in the business development process (Answer to *RQ3*)

Platform BD Process Phase	DMP1 SNS: LinkedIn, Xing, Facebook		DMP2 Company Websites, Subscription, Blogs		DMP3 CRM Systems combined with SNS		DMP4 Other platforms: Google, Twitter, Wikipedia, YouTube		DMP9 Not applicable	Total
	Frequencies	Ranking	Frequencies	Ranking	Frequencies	Ranking	Frequencies	Ranking	Frequencies	
BD I. Identify & prospect potential buyers N _T = 530 (100.0%)	249 (47.0%)	A	91 (17.2%)	C	116 (21.9%)	B	34 (6.4%)	D	40 (7.5%)	530 (100%) ABCD
BD II. Share information & maintain knowledge N _T = 530 (100.0%)	138 (26.0%)	B	191 (36.0%)	A	115 (21.7%)	C	42 (7.9%)	D	44 (8.3%)	530 (100%) BACD
BD III. Build social networks & manage existing relationships N _T = 530 (100.0%)	321 (60.6%)	A	37 (7.0%)	C	118 (22.3%)	B	14 (2.6%)	D	40 (7.5%)	530 (100%) ACBD
BD IV. Increase the number of leads & generate opportunities N _T = 530 (100.0%)	201 (37.9%)	A	63 (11.9%)	C	166 (31.3%)	B	23 (4.3%)	D	77 (14.5%)	530 (100%) ACBD
Total	909 (42.9%) 171.5% of Cases	ABAA	382 (18.0%) 72.1% of Cases	CACC	515 (24.3%) 97.2% of Cases	BCBB	113 (5.3%) 21.3% of Cases	DDDD	201 (9.5%) 37.8% of Cases	2120 (100%) 400% of Cases
Assessment	Highly Relevant		Partial Relevant		Moderately Relevant		Less Relevant		Not Applicable	

The Ranking of ‘A’ to ‘D’ was determined by the *frequencies* of mention in the survey with ‘A’ representing the *highest frequency* to ‘D’ the *lowest frequency* of mention.

The weights assigned to the rankings were 0.4 to ‘A’, 0.3 to ‘B’, 0.2 to ‘C’, and 0.1 to ‘D’. The Digital Business Relevance Index (DBRI) for the Digital Media Platforms can be determined by adding the weighted result for each platform separately across the four process phases, i.e., DBR DMP1. The rating of **ABAA** equals the amount of 0.47 x 0.4 + 0.26 x 0.3 + 0.61 x 0.4 + 0.38 x 0.4 (across the *vertical* of the table). The values range from 0.0 ‘no relevance’ to 1.0 ‘high relevance’ with 0.66 indicating ‘moderate relevance’. The computation of the DBR Index for the particular BD Process Phase, i.e., DBR BDP1 (across the *horizontal* of the table) resulted in the rating of **ACDB** and the Index of 0.47 x 0.4 + 0.17 x 0.2 + 0.22 x 0.3 + 0.06 x 0.1 was 0.29. This outcome suggested a *minor relevance*. The DBR Index for DMP1 of 66.0% implied that the usage of this digital media might be still increasable. The DBR Index for the first BD I process phase of 29.0% indicated a higher potential to increase the usage Digital Media Platforms.

across the entire process (vertical view) and the platforms for individual phases (horizontal view) in the total sample $N_T = 530$. The results (e.g., BD_1DMP_1) of 0.29 (minor relevance) and (e.g., DMP_1BD_j) of 0.66 (medium relevance) suggest improvement potential.

These metrics allow practitioners to choose individual or digital platform combinations^[93] to ensure the optimal fit for buyer-vendor relationships^[20]. In addition, they represent innovative tools to operationalize corporate digital strategies^[90], e.g., content requirements, functional cultures, motivational drivers, and usage intensity^[44,94].

Our **Digital Business Motivation Index** indicated ‘networking’ (70%), ‘industrial branding’ (57%), and ‘agility’ (32%) as important drivers for digital media business usage (vendors (65%) vs. third parties (57%) and buyers (37%)). These findings are supported by Brennan and Croft^[19], Lipiäinen and Karjaluo^[95].

$$DBMI_i = \sum_{i=1}^m \sum_{j=1}^n DMD_i N_j x w_{ij} \rightarrow opt!$$

Digital Media Driver, DMP_i ; Subsample N_j ; Weight w_{ij}

$$\sum_{i=1}^m N_j DMD_i x w_{ij}$$

Digital Business Motivation Index (DBMI) across all i Digital Media Drivers for a specific subsample N_j ; Weight Interval: $0 \leq w_{ij} \leq 1$

$$\sum_{j=1}^n DMP_i N_j x w_{ij}$$

Digital Business Motivation Index (DBMI) across all Subsamples N_j for a specific Digital Media Driver DMD_i ; Weight Interval: $0 \leq w_{ij} \leq 1$

Benefits and impact

Research question $RQ4$ confirmed the effectiveness of digital media. 81.9% of vendors recognized deterministic (perceived) and probabilistic (expected) benefits; and the impact of digital media usage (process abbreviation; performance increase) with a median in the bracket (*between 5% and 10%*) versus 83.0% third-parties (*above 10%*) and 59% buyers (*between 5% and 10% more impact*). The notable gap in the buyer sample in Figure 4 suggests building awareness of digital media marketing in this group^[28].

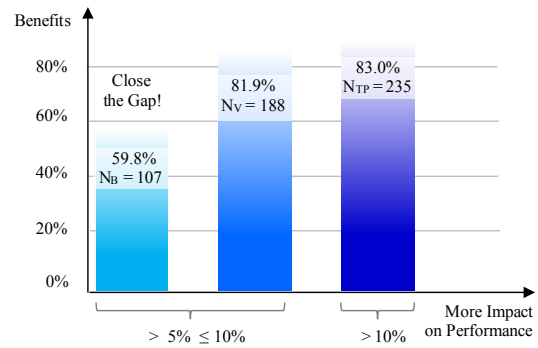


Figure 4. Benefits and impact of digital media on Performance

5. Conclusions

We addressed several research gaps. First, we elucidated the still ambiguous concept of digital media in buyer-vendor relationships^[90]. Second, we contributed to a better understanding of the game-changing digital technology to accelerate B2B processes^[86,96] and enhance Performance^[16,77]. Third, we followed Keinänen *et al.*^[34] and Rodriguez *et al.*^[22] to focus on digital media usage at the intersection of marketing and sales^[4]. Referring to the liaison role of business development, we illuminated the blurred business development concept^[49]. We discovered its central role in integrating unaligned buyer-vendor processes^[2]. Fourth, we addressed potential effects on various phases and Performance in digitalized markets^[97]. Finally, our research innovates by considering the outcomes of the literature review and pilot study as a vantage point and the survey as a reality check.

To create excellent buyer-vendor relationships, we identified four business development stages to harmonize intra-organizationally isolated marketing-related processes ($RQ1$). Our procedures are replicable across multiple industries. Tech-savvy, *cutting-edge advocates*, have a higher digital affinity, conducting their business in a more buyer-centric and effective manner. The *mixed type* and *skeptics* are either unaware of or resist digitalization. Our study demonstrated that most corporate executives are *digital leaders* who are very selective about their media mix. While they leverage professional networking sites, corporate blogs, and microblogs to gather decision-critical data, they rely on traditional media in the closing phase^[98,99]. In contrast to small business owners, corporate executives disregard Facebook for lack of credibility and relevance.

We addressed the challenge of rendering buyer-vendor critical process phases more agile, efficient, and virtual through identifying relevant digital media (RQ2), which are interchangeable at any given point in time (RQ3), ultimately affecting business performance (RQA) ^[10,20]. We increased confidence in recent findings and added relevance to practitioners ^[100]. Our study contains valuable indications from various industries, regions, and perspectives and contributes to academia and practice.

Our research contributes to the topical issue of reviewing existing processes from the inside to the outside of B2B organizations regarding agility, effectiveness, speed, and visibility. We reached our objective to develop a flexible framework, including a set of digital media that fosters engaging buying-vendor relationships and noticeably improves Performance. We reorganized the siloed marketing-related functions ^[101] and perceived the role of Business Development to align the marketing and sales function. In doing so, we reviewed relationships on an intra-/inter-organizational level. Practitioners can shift their focus from cultural clashes, departmental thinking, and uncoordinated efforts toward developing agile, efficient, and unified team capabilities.

Our comprehensive business development definition is transferrable to other industries. For example, we transitioned from digital concepts in buyer-vendor-related functions to managerial realities of mixed media business usage.

In line with Rodriguez *et al.* ^[18] and Marshall *et al.* ^[102], we advanced business processes with digital media ^[37].

For marketing/sales executives (e.g., CMOs) of vendor or third-party organizations, we created the **D**igital **B**usiness **R**elevance/**M**otivation **I**ndices (DBRI/DBMI) to advance digital efforts toward their buyers. Quantifying the relevant digital media set for the four process phases provides a valuable format for digitally improving marketing-related functions ^[101].

Our study closed other gaps, i.e., anchoring our survey in the software industry and merging the viewpoints of vendors, third parties, and buyers into one study ^[19,21]. Finally, we suggest guidelines to address the discrepancy among these groups in recognizing digital media opportunities ^[103].

We recognize that our results are only generalizable to a limited extent. Our survey data mainly originated from the Western hemisphere. This raises the question of whether our results are upheld in other regions.

Emerging platform choices can challenge our digital media set in due course ^[6]. It is presumptuous to generalize that this set, prevalent in most sectors, is reproducible. Moreover, industrial cultures, generations, or unforeseen events (COVID-19) might challenge and disrupt the current media set. Though our digital business/motivation

relevance indices are novel, valid, and reliable, additional scrutiny is necessary to increase the robustness of these measurements. Lastly, our framework and indices are most valuable when they can be related to expected outcomes. Therefore, we deem it essential to extend our framework to more specified outcome variables than Performance (e.g., Customer Experience; Return-on-Digital-Marketing-Investment).

Conflict of Interest

There is no conflict of interest.

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Appendix

Table A1. Characteristics of the total sample $N_T = 530^*$ (13 datasets excluded)

<i>Region of company headquarters</i>		<i>Current or recent hierarchy level</i>	
DACH (Germany, Austria, and Switzerland)	34.6	Board member, C-level	26.7
North America (the USA and Canada)	26.9	Senior management level	23.9
Western Europe (incl. the UK)	24.7	Middle management level	31.1
Others	13.8	Senior-level, assoc account manager	14.4
		Junior-level, assoc account executive	3.9
<i>Company size (number of employees)</i>		<i>Gender</i>	
Enterprises	47.5	Male	77.7
Small-sized businesses	31.5	Female	22.3
Large-sized businesses	10.9		
Medium-sized businesses	10.1	<i>Average Age</i>	46.8
<i>Approximate annual sales revenues</i>		<i>Education</i>	
≤ 250 Mio. £, €, CHF, \$	50.3	Ph.D. degree	10.3
> 250 Mio ≤ 500 Mio. £, €, CHF or \$	5.0	Master degree	66.7
> 500 Mio ≤ 750 Mio. £, €, CHF or \$	4.6	Four-year college degree	17.3
> 750 Mio £, €, CHF or \$	40.1	Two-year college or less	5.7
<i>Top-tier industry classification</i>		<i>Professional background</i>	
Business & pro services, consulting.	16.4	Generalist, multi hats, similar career	48.8
Technology, software	12.6	Diverse, multiple career changes	27.8
Technology, services	9.0	Expert, a specialist with the same career	23.4
<i>Current or recent B2B employer</i>		<i>Roles and responsibilities</i>	
Vendor	35.7	Mixed roles	46.0
Third-party	44.2	Mostly leadership roles	42.8
Buyer	20.1	Mostly team membership roles	11.2
<i>Corporate function in the organization</i>		<i>Years of professional experience</i>	
Executive leadership	20.9	≤ 10 years	14.2
Business development	19.0	> 10 years to ≤ 20 years	32.2
Ops, e.g., procurement, technology	18.2	> 20 years to ≤ 30 years	35.2
Presales and sales	14.4	> 30 years to ≤ 40 years	14.9
Remaining functions	27.5	> 40 years	3.5