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THE USE OF ARTIFICIAL INTELLIGENCE TOOLS IN COMMUNICATION WITH INTERNATIONAL CLIENTS BASED ON SELECTED EXAMPLES

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Purpose: Artificial-intelligence (AI) tools are becoming integral to business communication. This article reports a survey of 84 firms in Poland across diverse sectors, examining AI use in customer communication and near-term development trends.
Design/methodology/approach: A structured online questionnaire captured organizational scope (domestic vs. international), current AI adoption and tool types, application areas, perceived effectiveness, barriers, and investment plans. Analyses covered group comparisons and proportion tests.
Findings: Internationally active firms are significantly more likely to deploy AI in customer communication than purely domestic firms. Among adopters, conversational systems function as the de-facto front line, anchored in customer service. Current users overwhelmingly plan further AI expansion, consistent with organizational learning and the accumulation of complementary assets (data, integrations, skills). Communication effectiveness peaks at moderate levels of personalization, both under- and over-personalization depress outcomes in international contexts, underscoring the value of calibrated, context-aware tailoring.
Research limitations/implications: The targeted, cross-sectional sample limits generalizability and causal inference. Results nevertheless indicate clear adoption patterns and development trajectories relevant to business communication research and practice.
Practical implications: Prioritize high-volume, high-measurability front-office processes, build data governance and systems integration in parallel, design hybrid (AI + human) workflows with explicit escalation, calibrate personalization to moderate levels, localize linguistically and culturally, ensure transparency and ethical safeguards.
Social implications: Well-designed AI can widen access (24/7, multilingual) and reduce wait times, but risks include reduced empathy, privacy concerns, and perceived opacity. Transparent disclosure, human-in-the-loop controls, and inclusive localization help protect vulnerable users and narrow digital-communication gaps.
Originality/value: Provides current, implementation-oriented evidence on AI adoption, tool dominance, and effective personalization thresholds in international customer communication.
Keywords: artificial intelligence, communication, internationalization, management, entrepreneurs.
Category of the paper: Research paper.

Introduction

With the development of technology, recipients can communicate efficiently, maintain interpersonal relationships and express their opinions more than ever before (Carvalho, Fernandes, 2018). Internationalization of an organization can be understood as the expansion of a company's activities into international markets. It takes place between countries, regardless of whether the activities concern countries as a whole, industries, sectors, regions, companies, entrepreneurs or consumers (Gorynia, 2021). "Moreover, if a company has developed unique competencies in its domestic market, the possibilities of spreading unique assets to foreign markets may be very high, because the opportunity costs of using these assets in other markets will be very low" (Hollensen, 2014, p. 56). In today's rapidly changing business environment, the internationalization of companies has become essential for the development of organizations. Companies must quickly adapt to changing environmental conditions to gain a competitive advantage in global markets. Therefore, artificial intelligence (AI) plays an important role in the internationalization process, offering advanced tools and technologies that help organizations manage their communication and business strategies, especially in international relations. Implementing AI in international customer communications is fraught with challenges that require careful planning and strategies tailored to local market conditions. Cultural, regulatory, technical, and ethical differences can impact the effectiveness of AI solutions, making it crucial to consider these aspects in your implementation strategy. Artificial Intelligence involves the development of intelligent machines capable of performing tasks that typically require human intelligence (Ziyad, 2019). The environment of each organization is subject to constant changes that, to a greater or lesser extent, affect its functioning (Żmijowska, 2023). That's why artificial intelligence (AI) in customer communications has enormous potential to transform the way companies interact with users.

AI areas in business communication – information overview

The use of artificial intelligence (AI) tools in communication with international customers has become a key area of research in the field of business communication. Currently, trends shape almost every aspect of business and social life. They are crucial for understanding the future directions in which markets, technologies, as well as consumer behaviors and societies will develop (Kucia, Żmijowska, 2024).

Artificial intelligence plays a significant role in improving communication between companies and their international customers. According to research conducted by Menzies (2024), AI can support international strategies and practices, enabling companies to better adapt

to diverse markets and cultures. AI enables translation automation, sentiment analysis, and communication personalization, which translates into improved efficiency in interactions with customers worldwide. In the customer service field, AI is being applied to various technologies, such as chatbots, voicebots, recommendation systems, and predictive models. Peruchini et al. (2024) conducted a literature review on the interaction between AI and customer experience (CX), indicating a growing interest in this topic in computer science, business, and engineering. These studies highlight the importance of AI in improving customer service quality through faster and more personalized responses. AI enables the creation of highly personalized marketing content and advertising based on the analysis of customer behavioral data. This approach is particularly important in an international context, where cultural and linguistic differences may influence the perception of messages. In the context of customer service, however, several paradoxes can be observed, as identified by Ferraro (2024):

- "connected but isolated",
- "lower cost but higher price",
- "higher quality but less empathy".

These paradoxes point to the potential difficulties in integrating AI with human interaction, emphasizing the need to maintain a balance between automation and a personal approach to the customer.

AI's cross-cultural connections also remain crucial, particularly in communication with international customers. An ethical stance remains crucial in this regard. Hohenstein et al. (2023) conducted research on the impact of AI on language and social relationships, indicating that algorithmic responses can change communication by increasing the speed of interaction and the use of positive language. However, if customers suspect that communication is supported by AI, they may evaluate it negatively, which highlights the importance of transparency and an ethical approach in the use of AI in customer communication. Given the rapid development of AI technologies, the future of communication with international customers will depend on companies' ability to integrate AI in a way that takes into account cultural, linguistic, and ethical diversity. Monitoring and evaluating the effectiveness of implemented AI solutions will also be crucial to ensure their effectiveness and compliance with customer expectations. The importance of AI in communicating with international customers is crucial for the development of companies in diverse markets, and its potential allows for streamlining customer service processes, personalizing communication, and adapting marketing activities to audience needs. At the same time, the challenges associated with integrating AI with human interaction and the need to consider ethical aspects remain important.

The impact of AI on enterprise development

AI has significant potential to improve business communication and support enterprise development by increasing efficiency, personalization, and scalability. However, full utilization requires integrating technology with organizational processes, considering cultural and ethical aspects, and systematically measuring its effects.

a) Increased innovation and financial performance

Babina (2024) analyzed data from companies investing in AI and found that such companies experienced higher growth in sales, employment, and market valuations, primarily due to increased product innovation. Song, Qiu, and Liu (2025), using the Technology Acceptance Model (TAM), demonstrated that employee acceptance of AI positively impacts decision-making effectiveness and overall organizational performance.

b) Increased productivity and operational efficiency

McElheran (2024) studied the early adoption of AI technologies in American companies and found that companies that implemented AI achieved higher levels of productivity, especially in the area of process automation. Kikuchi (2025) presents other data from the eastern side of the world. Analyzing data from over 500 Japanese companies, he noted that AI investments lead to a 2.4% increase in overall productivity, primarily through cost reduction, revenue growth, and accelerated innovation.

c) Increased organizational resilience

Wahab (2024) found that companies that have adopted AI demonstrate improved resilience to economic crises thanks to better data management and faster decision-making.

d) Sustainability and social responsibility

Cui (2025) demonstrated that AI-supported digital transformation in Chinese industrial companies leads to improved sustainable innovation performance and increased ESG (environmental, social, and governance) performance. This is important from the perspective of the development of corporate social responsibility, which is increasingly being emphasized not only by customers but also by business partners in business relationships.

Analyzing the above data, it can be concluded that companies should invest in AI to increase innovation, productivity, and organizational resilience. It is important that employees are properly trained in the use of AI technologies, which can increase acceptance and effectiveness of their implementation. AI tools should be integrated with existing business processes to maximize the benefits of their implementation and streamline existing processes without abandoning earlier implementations (minimizing losses).

Materials and Methods

Primary research was conducted at the turn of 2024-2025 on a sample of 84 firms from Poland, of which 58.3% reported international operations and 41.7% operated solely domestically. Respondents predominantly held specialist (34.3%) and operational (25.7%) roles, managerial positions accounted for 17.1%, with a smaller creative/media segment (8.6%). Tenure skewed toward early career: 1-3 years (36.9%), less than 1 year (35.7%), 4-6 years (17.9%), and more than 6 years (9.5%). The online questionnaire comprised modules on organizational scope (domestic/international), AI adoption status in customer communication (regular/occasional use vs. no use), types of tools employed (e.g., chatbots, automated e-mail replies, sentiment analysis), areas of application (customer service, marketing and personalization, CRM, sales), perceived effectiveness (five-point scale), and reported barriers and investment plans. Items were factual and behavior-based (actual use), measured via single indicators or multiple-choice lists. Given this design, classical reliability indices for latent constructs (e.g., Cronbach's α, CR) are not directly applicable and are therefore not reported.

Research hypotheses

In view of established economic and organizational perspectives, the authors advance four testable hypotheses concerning the adoption and use of AI in customer communication. Therefore, the hypotheses were formulated as follows:

- H1. **International scope increases the likelihood of adopting AI in customer communication.** Transaction Cost Economics (Williamson, 1985) and the theory of organizational complexity (Galbraith, 1973) imply that operating across borders amplifies linguistic, cultural, and temporal variety, raising coordination costs and informational demands. Under such conditions, technologies that standardize and automate communication processes become comparatively more attractive. Accordingly, the expectation is that firms engaged in international activities are more likely to deploy AI tools in customer-facing communication than firms serving only domestic markets.
- H2. **Among firms that use AI in customer communication, conversational tools (chatbots) dominate as a source of advantage in customer service.** Media Richness Theory (Daft, Lengel, 1986) holds that communication media should be matched to task ambiguity. While face-to-face interaction remains the richest medium for equivocal tasks, routine customer inquiries typically require clarity, scale, and speed rather than rich, synchronous exchange. Conversational agents therefore offer

an effective richness–cost compromise: they deliver consistent responses at scale, enable 24/7 availability, and reduce response times. In Resource-Based View terms, such capabilities can be configured into hard-to-imitate service routines that strengthen customer experience and, in turn, competitive positioning (see also Pine & Gilmore, 1998). Hence the expectation that chatbot-led solutions will be the modal AI application in customer service contexts.

- H3. **Current AI users are more likely to plan further AI development and expansion than non-users.** Organizations already using AI are presumed to have developed absorptive capacity—the ability to recognize the value of new technologies, assimilate them, and apply them more effectively due to accumulated knowledge and complementary assets (Cohen, Levinthal, 1990). In parallel, theories of organizational learning (Argyris, Schön, 1978) suggest that iterative implementation and reflection reinforce process improvements and lower marginal costs of subsequent deployments. The combined logic predicts a higher propensity among current users to announce additional AI investments than among non-users.
- H4. **Moderate AI-driven personalization yields higher communication effectiveness in international interactions than minimal or intensive personalization.** Emerging work on AI personalization points to an inverted U-shaped relationship between personalization intensity and perceived effectiveness: insufficient tailoring fails to create relevance, whereas excessive tailoring risks intrusiveness, cognitive overload, or cultural and linguistic misalignment (Sun et al., 2025). This pattern resonates with the personalization–privacy paradox in digital environments, whereby perceived benefits are offset when privacy concerns become salient (Cloarec, 2024). The expectation, therefore, is that moderate levels of AI personalization will outperform both minimal and highly intensive approaches in international customer communication.

Research results – verification of hypotheses

Hypothesis H1 was tested on a complete-case sample of 84 enterprises (100% data completeness). The independent variable was business scope (international vs. domestic), the dependent variable captured adoption of AI tools in customer communication, operationalized dichotomously (uses vs. does not use AI). Given the nominal, binary structure, Pearson's chi-square and Fisher's exact tests were used, with effect sizes reported as the odds ratio (OR), relative risk (RR), and Cramer's V. Minimum expected cell counts were satisfied (all > 16.2). Results indicate a statistically significant association ($\chi^2 = 6.511$, df = 1, p = 0.0107, Fisher p = 0.0077). The estimated OR = 3.62 (95% CI: 1.43-9.18) implies that international

firms have 3.62 times higher odds of adopting AI than domestic firms, RR = 2.07 points to more than double the probability of adoption among international enterprises.

The effect size is moderate but practically meaningful (Cramer's V = 0.278). These findings are consistent with recent evidence documenting rising AI uptake in global enterprises: the McKinsey Global Survey (2025) reports that 78% of organizations use AI in at least one business function, with particularly dynamic growth in customer service, Netguru (2025) notes that 71% of firms regularly use generative AI, confirming rapid adoption of conversational solutions. Convergent support comes from Cui (2025), whose meta-analysis for Southeast Asia shows AI adoption significantly increases cross-border trade volumes, with stronger effects in regions with advanced technological infrastructure—consistent with the inference that international orientation stimulates AI investment. At the same time, a resource-based view (Barney, 1991) cautions that the observed relationship may be partially mediated by firm size and IT budgets rather than internationalization per se, reverse causality is also plausible if AI capabilities enable international expansion (Brynjolfsson, McAfee, 2017).

In sum, H1 is strongly supported (p = 0.0107 / 0.0077, OR = 3.62, Cramer's V = 0.278), while noting potential selection bias that could inflate the effect if respondents are disproportionately prone to technological experimentation.

Verification of Hypothesis H2 assessed the distribution of AI tools and their application areas among firms already using AI via proportion tests with normal approximation and a multi-criteria dominance check. Four tool categories (chatbots, automated e-mail response systems, sentiment-analysis tools, other solutions) and four application areas (customer service, marketing and personalization, customer relationship management, sales/orders) were examined to determine whether conversational tools constitute the dominant paradigm. The data show a clear predominance of chatbots: 38 mentions, or 50.7% of all tool citations (95% CI: 0.394-0.620), versus 30.7% for automated e-mail response systems, 12.0% for sentiment analysis, and 6.7% for other solutions. Chatbot uptake exceeds the 50% threshold (Z = 3.042, p = 0.001), while the proportion test for absolute tool dominance is marginal (Z = 0.115, p = 0.454). A joint tool–area view indicates that 64.1% of firms pair chatbots with customer service (95% CI: 0.490-0.792), an association that reaches significance (Z = 1.761, p = 0.039), supporting the interpretation that conversational systems anchor front-line customer communication. These results align with international market data: Grand View Research (2024) values the global chatbot market at $7.76 billion and projects $27.29 billion by 2030 (23.3% CAGR), Desk365 (2025) reports chatbots handle 67% of queries end-to-end with 87% customer satisfaction, Mordor Intelligence (2025) links a 23.8% CAGR to advances in large-language-model NLP and 24/7 support cost pressures. Methodological caveats apply: the cross-sectional design precludes causal inference between chatbot adoption and competitive outcomes, and a Resource-Based View critique suggests that sustainable advantage derives from implementation sophistication and complementary assets rather than tool selection alone (Climent et al., 2025). Overall, H2 receives strong empirical support, with significance for the

combined chatbot–customer service use case ($p = 0.039$), while strategic differentiation hinges on execution and integration.

Hypothesis H3 compares future AI development intentions between current adopters and non-users. Among 84 enterprises, 39 (46.4%) currently employ AI tools, of these, 94.9% (37/39) plan to expand AI usage, versus 0% (0/45) among non-adopters. Pearson's chi-square yields $\chi^2 = 72.500$ ($df = 1$, $p < 0.001$), and Fisher's exact test corroborates significance ($p < 0.001$). The association is exceptionally strong (Cramer's $V = 0.929$), far exceeding thresholds for practical relevance. These findings accord with work on organizational ambidexterity, which shows that firms capable of simultaneously exploiting existing capabilities and exploring new technologies sustain successive waves of AI development (O'Reilly, Tushman, 2020). Absorptive capacity further explains why accumulated expertise and infrastructure reduce the marginal cost of subsequent investments (Cohen, Levinthal, 1990). Evidence on digital transformation maturity indicates that firms high on maturity indices allocate more resources to multi-year AI roadmaps (Westerman, Bonnet, McAfee, 2014, Kane et al., 2019). Nevertheless, diffusion theory warns against overinterpreting intentions: early adopters may exhibit expansion bias (Rogers, 2003), "digital optimism" can outpace operational capacity (Brynjolfsson, McAfee, 2017), and external incentives may inflate declared plans without commensurate internal capabilities (OECD, 2025). Moreover, behavioral intentions require governance, skills, and data management to translate into realized adoption (Venkatesh, Thong, Xu, 2003). Accordingly, while H3 is statistically and substantively confirmed, longitudinal evidence is needed to track execution against stated plans.

Finally Hypothesis H4 was tested on the subset of 39 AI-using firms, stratified by a composite personalization index reflecting current applications, reported challenges, and future personalization plans. Firms with moderate personalization (index 2.5-3.5) achieved the highest communication effectiveness (67-100%), whereas minimal (0-1.5) and intensive (4.0+) personalization corresponded to lower effectiveness (20-57%). A grouped-proportions chi-square test (moderate vs. non-moderate) yields $\chi^2 = 4.872$, $df = 1$, $p = 0.027$ (Cohen's $h = 0.36$, medium), confirming the inverted-U pattern.

These results resonate with recent studies demonstrating optimal outcomes at moderate personalization levels (Sun, Xie, Sun, 2025) and documenting the personalization–privacy paradox across cultures (Xu, Luo, 2024). Organizational ambidexterity helps explain firms' ability to calibrate personalization effectively (O'Reilly, Tushman, 2020). Cultural sensitivity research warns that thresholds vary across markets (Herzog et al., 2025), and algorithmic transparency can shift the perceived optimum (Cloarec, 2024). Thus, while H4 is supported, future work should incorporate cultural moderators and transparency practices to refine deployment strategies.

The study confirmed that enterprises operating internationally are significantly more likely to use artificial-intelligence tools in customer communication than firms serving only domestic markets (Tab. 1).

Table 1.
Summary statistics and findings for H1-H4

Hypothesis	Focus	Tests & Estimates	Effect Size	Key Finding
H1	International scope → AI adoption	$\chi^2 = 6.511$, df = 1, p = 0.0107, Fisher p = 0.0077, OR = 3.62 (95% CI: 1.43-9.18), RR = 2.07	Cramer's V = 0.278 (moderate)	International firms show >3× higher odds of adoption vs. domestic.
H2	Conversational tools dominate (users only)	Chatbots = 50.7% (n = 38, 95% CI: 0.394-0.620), Auto e-mail = 30.7%, Sentiment = 12.0%, Other = 6.7%, Z(>50%) = 3.042, p = 0.001, Tool dominance Z = 0.115, p = 0.454, Chatbots×CS = 64.1% (95% CI: 0.490-0.792), Z = 1.761, p = 0.039	—	Chatbots anchor front-line customer communication.
H3	Adopters' intentions to expand AI	Adopters: 37/39 = 94.9% plan expansion, Non-adopters: 0/45 = 0%, $\chi^2 = 72.500$, df = 1, p < 0.001, Fisher p < 0.001	Cramer's V = 0.929 (very large)	Plans to expand overwhelmingly concentrated among current adopters.
H4	Personalization intensity (inverted-U)	Moderate (2.5-3.5) → 67-100% effectiveness, Minimal/Intensive → 20-57%, $\chi^2 = 4.872$, df = 1, p = 0.027	Cohen's h = 0.36 (medium)	Moderate personalization outperforms low and high intensity.

Source: own research.

Among AI users, chatbots predominate and have become the primary customer-service channel, helping organizations build competitive advantage by automating routine interactions. Moreover, nearly all current AI adopters declare plans to further develop these solutions, indicating confidence in the technology's value and the benefits of subsequent deployments. Finally, the analysis of personalization intensity identified an optimal level: moderate tailoring of messages yields superior outcomes, whereas both under- and over-personalization can reduce communication effectiveness in international settings. Taken together, these findings align with theories of organizational learning, absorptive capacity, and the personalization paradox, underscoring the strategic importance of thoughtfully designed, context-aware AI solutions.

Conclusions

The study confirmed that internationally active organizations are more likely to implement AI solutions in customer communication, with conversational tools in the front line of service remaining the dominant application. In practice, this means that automating routine interactions, ensuring 24/7 availability, and delivering consistent responses form the backbone of competitive advantage—especially in multilingual and culturally diverse environments. At the same time, current AI users display a strong propensity to further develop these solutions, suggesting the operation of organizational learning mechanisms and the accumulation of

complementary assets (data, integrations, capabilities). The analysis of personalization intensity points to the superiority of a moderate approach: both under- and over-personalization weaken outcomes in international interactions, whereas "just-right" calibration helps achieve consistent results across markets.

Practical implications include prioritizing deployments in high-measurability areas (front office), building data governance and system integrations in parallel, and designing hybrid processes (AI + human agent) with clear escalation rules. Equally important are managing cultural-linguistic risk and maintaining transparency toward customers to mitigate concerns about automation and the loss of a "human" touch.

Study limitations should be stated explicitly. First, the sample was small, which limits generalizability and makes results sensitive to the sample's structural composition. Second, convenience sampling was used, increasing the risk of selection bias—particularly the overrepresentation of organizations more open to technology. Third, the cross-sectional design precludes causal inference, observed co-occurrences may be driven by third variables (e.g., firm size, IT intensity, industry). Fourth, measurement relied on declarative, behavior-based items with single indicators or multiple-choice lists, which constrains assessment of construct reliability and validity and raises susceptibility to common-method variance. Fifth, the absence of methodological triangulation (e.g., operational data, process audits) and the lack of sectoral and size controls hinder precise separation of contextual effects from the effects of the technology itself.

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