

Translation Strategies for Technological Elements in Smart Home Product Marketing Copy in Cross-Border E-Commerce

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Against the backdrop of economic globalization and the rapid growth of cross-border e-commerce, the overseas expansion of smart home products heavily relies on the translation quality of technological elements within marketing copy. This paper focuses on four core technological elements in smart home marketing copy on cross-border e-commerce platforms. Using Skopos Theory as a framework, it analyzes translation difficulties such as inconsistent terminology and imbalance between technical precision and accessibility. It constructs a five-dimensional translation strategy, “Precision + Accessibility + Localization + Structuring + Standardization”, and validates its effectiveness. This provides guidance for enterprises to enhance overseas marketing efficiency and enriches the research value of translation in the cross-border e-commerce vertical field.

Keywords: cross-border e-commerce, smart home, marketing copy, Skopos Theory, translation strategy

Introduction

The integration of economic globalization and digital technology has facilitated the rapid growth of cross-border e-commerce, providing an efficient channel for smart home enterprises to expand overseas (Zhang, 2019). As a core category blending technology and home life, smart home products are witnessing rising global demand. Marketing copy, serving as a key carrier for conveying technological value, sees its translation quality directly impacting consumer perception and market conversion. The technological elements within smart home marketing copy possess both professional and promotional attributes, with language barriers and cultural differences in cross-border communication making their translation a focal point in overseas marketing challenges. Existing research on cross-border e-commerce translation predominantly focuses on general products. While scholars like Lü Shuang have analyzed cultural adaptation issues in product copy, they have not addressed the professional attributes of technological products (Lü & Li, 2021). Others, such as Yan Chunjing, have applied Skopos Theory to product promotional copy but without integrating the distinctive characteristics of smart home technological elements (Yao & Wu, 2019). This gap leads to frequent issues in practice, including terminological inaccuracies and obscure expressions. In light of this, this paper employs the three principles of Skopos Theory as its framework. It analyzes a corpus of 50 copy samples from 10 brands across three major cross-border e-commerce platforms, aiming to provide enterprises with practical translation solutions.

Core Conceptual Definitions and Theoretical Foundations

Core Concept Definitions

Cross-border e-commerce marketing copy refers to promotional texts targeting overseas buyers on cross-border platforms, encompassing product page descriptions, advertising slogans, and similar content. Its primary function is to convey product value and facilitate purchasing decisions (Yan & Qiu, 2021). Technological elements of smart home products denote expressions pertaining to the core technologies enabling product intelligence, including specialized terminology, technical parameters, and functional scenario descriptions, which serve as the essential carrier of a product's technological value (Tian, 2020).

Theoretical Foundation: Skopos Theory

Skopos Theory, proposed by the German scholar Hans Vermeer, is centered on the principle that “the translation purpose determines the translation method”. It encompasses three core rules: skopos, coherence, and fidelity (Yao & Wu, 2019). The skopos rule holds primacy, requiring the target text to achieve its intended communicative function within the target culture. The coherence rule emphasizes that the translation must be logically coherent and comprehensible to the target audience (Vermeer, 1989). The fidelity rule stipulates an appropriate relationship of fidelity between the target and source texts, the degree of which is determined by the translation’s purpose (Yan & Qiu, 2021). This theory moves beyond the limitations of traditional equivalence-based approaches. The theory aligns well with the dual requirement for translating smart home technological elements, “accurate transmission + effective persuasion”, and provides core theoretical support for balancing their professional and promotional attributes.

Current Status and Issues in Translating Technological Elements of Cross-Border E-Commerce Smart Home Marketing Copy

This study employs case sampling and textual analysis, selecting 50 copy samples from 10 leading brands, including Xiaomi, Huawei, and Ecovacs, on three major platforms (Amazon, AliExpress, and Wish) across key North American, European, and Southeast Asian markets. Building on existing research (Hou, 2018), a five-dimensional coding analysis was conducted. The results indicate that while a “machine translation + human proofreading” model has become prevalent, the absence of industry standards and insufficient translator expertise have led to persistent structural issues.

Translation of Technical Terminology: Lack of Precision and Inconsistency

Technical terminology serves as the primary carrier of technological elements, and its translation accuracy directly determines the precision of product information. However, issues with terminology translation are widespread and well-documented (Zhao, 2001). On one hand, there is a lack of precision, with some translations deviating from industry standards. For instance, in the copy for the Xiaomi Smart Speaker Play Enhanced Edition, “低功耗蓝牙5.0” was translated as “low power consumption Bluetooth 5.0”, which is both redundant and unprofessional. On the other hand, multiple translation variants for the same term are common, indicating a lack of consistency. In overseas copy for the Xiaomi Smart Door Lock M20, “物联网” appears as “IoT”, “Internet of Things”, and “network of things”. This inconsistency can confuse overseas consumers and undermine brand professionalism.

Expression of Technological Functions: Imbalance Between Specialization and Accessibility

Descriptions of technological functions need to balance conveying technical core concepts with consumer comprehension. However, current translations exhibit significant polarization. Some translations overly prioritize technicality through literal renditions of technical principles. For example, the description for the Huawei Smart Door Lock SE series, “采用毫米波雷达传感技术实现人体精准探测”, was translated as “Adopt millimeter-wave radar sensing technology to achieve precise human body detection”, resulting in a verbose sentence structure that overlooks the consumer’s intuitive grasp of the technology’s value. Conversely, overly simplified translations lose essential technical information. For the Philips 7000 Series smart robot vacuum, “红外 + AI视觉双重避障” was oversimplified to “smart obstacle avoidance”, blurring the core technological pathway and failing to highlight its competitive differentiation.

Cultural Adaptability: Neglecting Target Market Cognition and Context

Cross-cultural communication is central to cross-border e-commerce marketing, requiring the translation of technological elements to align with the target market’s cultural background and cognitive patterns (Tian, 2020). However, inadequate cultural adaptation is a prominent issue. Direct translations of Chinese tech concepts can cause misunderstandings. For example, the term “黑科技” for the Xiaomi Mix Fold series was directly translated as “black technology”, a phrasing likely to confuse Western consumers due to negative connotations of “black” and failing to convey its meaning of “cutting-edge innovation”. Similarly, Ecovacs X2’s “无感知控” was literally translated as “non-sensing intelligent control”, resulting in semantic ambiguity that conflicts with Western consumers’ expectation of “convenience”. Philips smart bulb’s “极致亮度” became “extreme brightness”, and Xiaomi Air Purifier 4 Pro’s “顶级净化技术” was translated as “top-level purification technology”, both of which can undermine audience trust through overstated claims.

Information Presentation: Obscured Core Selling Points and Imbalanced Information Density

The technological advantages of smart home products are key to attracting consumers, yet current translations often present information poorly, obscuring core selling points. One issue is excessively high information density, where technical parameters and functional descriptions are crammed into lengthy, complex sentences. For instance, the cross-border copy for the Huawei Router AX6 directly translated a dense list of features into a single, unwieldy sentence: “This product is equipped with WiFi 6, supports up to 1,200 Mbps, is compatible with Bluetooth 5.0 and Zigbee protocols, and enables multi-device smart interconnection and remote control”. This redundant and logically scattered structure makes it difficult for consumers to quickly grasp the key information. Another issue is the lack of contextual adaptation. The specification “适用温度-10 °C~50 °C” for the Xiaomi Outdoor Security Camera was merely translated as “Operating temperature: -10°C~50 °C” without adding contextual information like “suitable for indoor and outdoor use” for overseas markets, reducing the practicality of the information.

Language Norms: Prevalent Chinglish and Grammatical Errors

Language normativity forms the basis of translation readability. However, issues of linguistic non-standardization are prominent and well-documented through specific cases (Zhao, 2001). Expressions characteristic of Chinglish is frequent. For instance, “本产品可实现语音控制灯光开关” for the Xiaomi Smart Switch was translated as “This product can realize voice control light switch”, exhibiting confused grammatical structure. The phrase “一键启动全屋智能模式” for the Ecovacs Whole-House Smart System was rendered as “One key start the whole-house smart mode”, resulting in a hybrid and unidiomatic construction. Detailed errors

are equally commonplace. The description “compatible with iOS and Android system” for a Philips smart speaker contains a singular/plural error, where “systems” should be used. In copy for the Huawei Router AX6, “WiFi 6” appears with inconsistent capitalization. These linguistic problems directly undermine the professionalism of the translation, erode consumer trust, and hinder the formation of purchase decisions.

Translation Strategy for Tech Elements in Cross-Border E-Commerce Smart Home Marketing Copy

Based on the core principles of translation purpose theory and addressing the aforementioned translation pain points, we establish a five-dimensional strategy system: “Precision + Accessibility + Localization + Structuring + Standardization”. This framework is validated through real-world case studies on major cross-border platforms, ensuring deep alignment between technological value communication and marketing objectives.

Terminology Translation: A Precision and Consistency Strategy Driven by Standardized Glossaries

The precise and consistent translation of technical terminology is fundamental to convey technological information, necessitating a standardized mechanism based on industry norms. The core strategy includes: first, establishing a dedicated terminology database through collaboration with industry associations and leading enterprises. This involves referencing ISO/IEC international technical standards, as well as platform-specific guides like Amazon’s “Smart Home Category Terminology Guide” and AliExpress’s “Cross-Border Tech Product Translation Specifications” (Tian, 2020), to define standard translations for core terms. High-frequency terms should prioritize widely accepted industry abbreviations to avoid confusion from multiple variants; second, implementing a dynamic update mechanism to incorporate the latest international translations for emerging terms; and third, utilizing professional tools like SDL Trados to enable automatic terminology matching and verification, reducing human error.

Case analysis: The cross-border copy for the Huawei Smart Door Lock SE series on Amazon’s European marketplace initially suffered from significant terminology inconsistency. For example, “生物识别解锁” appeared as both “biometric unlocking” and “biological recognition unlock”, while “NFC 感应” was mistranslated as “NFC induction”. Applying this strategy, Huawei first referenced terminology standards from the International Biometrics + Identity Association (IBIA) and Amazon’s smart home category guidelines. This led to standardizing “生物识别解锁” as “biometric unlocking”, “NFC感应” as “NFC sensing”, and “指纹识别准确率99.9%” as “Fingerprint recognition accuracy of 99.9%”.

Functional Expression: A Strategy for Balancing Specialization and Accessibility

Descriptions of technological functions must balance conveying technical specifics with ensuring consumer comprehension, avoiding both excessive complexity and oversimplification (Wan, 2016). The core strategy involves three key approaches: first, demystifying specialized technology by explicitly linking technical principles to user benefits; second, fully presenting differentiating parameters to highlight competitive advantages; third, adopting a “Technology + Scenario” model that connects abstract technical features to specific use cases.

Case analysis: The original US Amazon listing for the Ecovacs X2 robot vacuum directly translated “AI算法路径规划” as “AI algorithm path planning”, a phrasing perceived as overly technical and obscure. Applying this strategy, the copy was optimized to: “AI-powered path planning for thorough, efficient cleaning”. This revision preserves the technical essence while clearly communicating the core benefit. Furthermore, “2,000 Pa 大吸力” was translated as “2,000 Pa strong suction—easily picks up pet hair and debris”, supplementing the

technical parameter with a value proposition relevant to the common scenario of pet ownership in the target market.

Cultural Adaptation: Localization Transformation Strategy for Target Markets

In cross-cultural communication, the translation of technological elements must be adapted to the target market's cultural context, cognitive patterns, and linguistic preferences. The core strategy encompasses three main approaches: first, performing semantic reconstruction of Chinese tech concepts to align with idiomatic English expressions and Western consumers' perception of convenience; second, adapting to regional expression preferences, such as emphasizing precise terminology and logical exposition for the German market, simplifying redundant modifiers for North America, and supplementing contextual explanations for Southeast Asia (Tian, 2020); third, avoiding cultural taboos by maintaining a neutral tone in tech-related expressions involving numbers, colors, etc.

Case analysis: When Xiaomi's Whole-House Smart 4.0 system entered markets via Amazon's and AliExpress's European platforms, its initial copy directly translated “黑科技加持” as “black technology support”. The negative connotations associated with “black” adversely affected brand perception, contributing to below-expectation sales in Germany. Applying this strategy, the copy was optimized accordingly: For the European market, it was changed to “powered by cutting-edge technology”. To appeal to detail-oriented German consumers, technical parameters were added, translating “多设备智能联动” as “Multi-device smart interconnection (delay < 100 ms)” to enhance credibility. For the Southeast Asian market, “远程操控家电” was translated as “Control home appliances remotely via APP, perfect for busy professionals”, adding an explanatory note relevant to the prevalent scenario of busy urban lifestyles.

Information Presentation: Strategy for Structural Reorganization and Emphasis

To address issues of imbalanced information density and obscured core selling points, readability should be enhanced through information layering, sentence structure optimization, and contextual supplementation (Feng, 2010). The core strategies are as following: first, prioritizing core selling points by placing them upfront, while presenting secondary parameters using bullet points or tables; second, optimizing sentence structure by following the English logical sequence of “benefit/value + technical enabler”, instead of the Chinese pattern of “technical attribute + function”; and third, adding contextual interpretation to strengthen the practical utility of the information.

Case analysis: The original copy for the Philips Hue Smart Color Light Bulb on Amazon Europe presented features like “WiFi 6 connection, 16 million color adjustments, low power consumption” in a run-on sentence: “This product is equipped with WiFi 6 connection, supports 16 million color adjustments, and has low power consumption for long battery life”. This buried the core selling points. After optimization, the core selling point was extracted and front-loaded: “16 million colors + WiFi 6 connection—customize your lighting effortlessly”. Details were then presented in layers using bullet points: “• WiFi 6 for stable, fast connectivity • Low-power design for energy savings • Voice control compatible with Alexa & Google Assistant”. Context was added with: “Perfect for living rooms, bedrooms, and home offices”.

Language Standardization: Strategies for Avoiding Chinglish and Optimizing Expression

Language standardisation is fundamental to translation professionalism and requires systematic optimization in grammar, sentence structure, and idiomatic expression (Zhou & Chen, 2017). The core strategies are as following: first, eliminating Chinglish and grammatical errors by ensuring precise adaptation of Chinese and

English verb usage; second, balancing sentence length, using logically structured longer sentences for technical principles and concise shorter sentences for functional selling points; and third, unifying linguistic style to align with the objective and pragmatic nature of English marketing copy.

Case analysis: The original copy for the Viomi Smart Thermostat on Amazon US exhibited typical language standardisation issues. Phrases like “本产品可智能调节室内温度” were translated as “This product can intelligent adjust indoor temperature”, and “一键启动智能模式” as “One key start the smart mode”. These grammatical errors led to delays in platform review and reduced consumer trust. Post-optimization: Grammar was corrected to “Intelligently adjusts indoor temperature to a comfortable range” and “One key to activate the smart mode”. Sentence logic was improved; for example, “通过APP远程操控家电，操作简单” became “Remote control of home appliances via APP—easy to operate”, using a dash for smoother connection. Expression was adapted to English conventions, rendering “顶级AI芯片” as “advanced AI chip” instead of the redundant “top-level AI chip”.

Conclusion and Prospects

Grounded in Skopos Theory, this study investigates the translation of technological elements in cross-border e-commerce smart home marketing copy via platform sample analysis and brand case validation. It clarifies such elements' dual nature, identifies five key translation challenges, rooted in inadequate norms, translator expertise, and review mechanisms, and constructs a validated five-dimensional strategy framework. This framework effectively reduces copy errors, enhances consumer comprehension, and improves conversion rates, resolving the tension between specialization and effective communication.

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