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Localization and Translation in the European–Arabic Context in the Digital Age: A Comparative Study of English, German, and Arabic

Mahmoud Husienat[1], **Islam Husienat** ✉[2], **Zakaryia Almahasees**[3]

[1] *Department of Modern Languages, Yarmouk University, Irbid, Jordan*

[2] *King Abdullah University Hospital, Irbid, Jordan*

[3] *Department of Translation, Yarmouk University, Irbid, Jordan*

Corresponding Author: Islam Husienat**, E-mail:** motransperth@outlook.com

ABSTRACT

The study focuses on the translation and localization of digital content produced in Europe for Arab regions, by using the German, English, and Arabic versions of the BMW and DHL websites as examples of the localization process, in order to discover the translation strategies used for Arabic localization, as well as to examine the degree of semantic accuracy, naturalness, terminological consistency, cultural appropriateness, and functional adequacy. The methodology of the research is based on the description, analysis, and comparison of ten localization units (five from each website) in the form of headings, technical terms, service descriptions, commands, and interface messages. The framework of the analysis includes the translation strategies suggested by Molina and Hurtado Albir, and the framework for web localization proposed by Jiménez-Crespo. As a result, it was concluded that direct translation and functional translation were the most common strategies used, which usually led to the creation of accurate and natural Arabic counterparts, especially for terminology and procedural language. However, the analysis revealed such problems as literal translation mistakes, terminological ambiguity, lack of consistency, unexplained maintenance of English trade names, and untranslated interface messages. The latter appeared more characteristic of the DHL website; the BMW website was more consistent and natural in its translations.

KEYWORDS

localization, website translation, Arabic, German, English, digital content.

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1. Introduction

In the last few decades, there have been significant changes in the translation industry due to the growth of information and communication technologies, the rise of electronic commerce and the development of multilingual sites, apps and platforms. Translation has undergone a profound transformation due to the rise of information and communication technologies. Digital translation involves not only replacing words and sentences in the source language with their equivalents in the target language but also adapting digital products for target users as part of a more complex process. As Cronin (2013) states, the digital world has changed the production, dissemination and consumption of translations along with the translators' interaction with technology and the target audience.

In such a way, localization has been introduced as a key concept in modern Translation Studies. Localization refers to the adaptationof an electronic product or electronic content to make it linguistically, culturally, and technically suitable for use in a particular target market or local setting. It implies not only the translation of text but also the modification of images, icons, and colors; the conversion of currencies, units of measurement, and date and time formats; the adjustment of forms of address; and the redesign of the user interface according to local standards. In this regard, translation continues to play the leading role in localization, although it no longer covers the whole process because localization goes far beyond translation in terms of culture, technique, and function (Esselink, 2000; Jiménez-Crespo, 2013).

Localization has a strong relationship with concepts such as internationalization and globalization. Internationalization implies the technical and language-related preparations of a product during the design stage in order for it to be adaptable to several languages and markets without requiring complete redesign. On the other hand, globalization implies the general strategy used

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by companies to develop products and services that can be used internationally. All these concepts make up the GILT model that consists of globalization, internationalization, localization, and translation. From this model, it becomes evident that multilingual digital content is highly dependent on the integration of global product planning and the translation of text elements (Dunne & Dunne, 2011).

Since web sites and applications involve sophisticated systems of text because of the way they combine language, images, sounds, movements, hyperlinks and interactive features, Jiménez-Crespo (2013) defines World Wide Web localization as "a cognitive, textual, communicative and technological adaptation process of interactive digital texts in order to enable them to be used in a different linguistic and cultural context." The point is that one cannot judge whether a process of localization is effective or not purely from the standpoint of linguistic accuracy; instead, one should look at whether the localized version does what it was supposed to do communicatively and technically.

This is especially important when translating and localizing content from English, German, and Arabic into each other. English serves as an integral means of international communication and software and website development. It is often used as the source language or intermediary language in localization and translation. German is one of the most significant languages of Europe in the sphere of economics, technologies, and commerce. Germanic culture and language have specific peculiarities influencing the creation of web-content. These peculiarities include an abundance of compound words, distinctive grammatical and morphological structures, and the presence of two different styles of address: formal and informal. In contrast, the Arabic language represents a rather wide linguistic market. However, this language faces special difficulties because of its diversity of grammar and morphology, numerous versions of the language, peculiarities of writing, and the preferences of users in different Arab societies speaking different dialects.

These differences also include the ways in which each language constructs meaning, modes of address, and information structure. In the case of German, the differences between formal address using the pronoun "Sie," implying respect regardless of the social standing of the addressee, and the use of the pronoun "du" ("you") used in cases of familiarity or when there is a friendly relationship with the other party are quite clear. However, in modern English, this difference does not exist since the same pronoun "you" is used in both cases. Meanwhile, Arabic uses pronouns, honorifics, plurals, and other pragmatic elements to express respect or formality, some of which do not have any counterparts in either German or English. Failure to understand these differences can result in producing something that is grammatically correct but is socially or pragmatically incorrect. Therefore, it is essential to determine the nature of the relationship between the platform and its user before choosing the right language.

There are various technical and visual problems associated with translating from English and German to Arabic. Arabic is written from right to left in contrast to English and German that are written from left to right. German also differs from English in that the order of verbalizing numbers is similar to that of Arabic. The implications of these differences go beyond the direction of writing and affect the organization of menus, buttons, icons, arrows, input boxes and other navigation tools on a web page. W3C standards stress the importance of proper handling of right-to-left text especially when it comes to Arabic written together with numbers, web addresses or Latin parts within one element (W3C, 2021). This means that the translated Arabic content might be correct but the user interface will still be insufficiently localized because of problems with the direction, alignment, and ordering of elements].

Several studies on the design of Arabic websites have shown considerable variations in terms of font usage and font sizes as well as the usage of images and cultural aspects. It is also found that some websites lack uniform guidelines to make sure that the information available on those websites is clear and legible. Namoun and Alkhodre (2020), while analyzing some Arabic websites, found significant differences in terms of font types and sizes as well as image usage. This shows that these things can affect readability as well as the loading time of pages.

Further difficulties arise in the handling of the terminology of digital content, since a single English or German word could have several corresponding Arabic words. Translation can be made by borrowing, Arabization, functional translation, or explanation of the terms. Moreover, their translations will differ from one platform to another. For example, this problem occurs with such terms as "account" (حساب), "privacy" (الخصوصية), "settings" (الإعدادات), "checkout" (إتمام الشراء), and "cookies" (ملفات تعريف الارتباط). Terminological inconsistency prevents users from using the interface and comprehending the necessary actions, especially when different translations of the same term are used in one and the same application or website. Thus, terminology management , translation memories, and linguistic databases become an indispensable part of the localization process.

As far as culture is concerned, the adaptation of European material into Arabic could require changes to examples, images, symbols, colors, and social and religious allusions. Things that may seem appropriate in the European cultural context may not be as effective in the Arab cultural context because of the differences between their cultures. In other words, localization can involve changing imagery, slogans in advertisements, the kind of humor, or even explaining some concepts in case there is no equivalent to them in the Arab culture. Thus, what is important in terms of localization is how well the Arabic text meets the same communicative purpose as its English/German counterpart.

The above statement agrees with the paradigm of functionalism in Translation Studies, especially the theory of skopos, where the function that the target text is supposed to serve forms one of the main parameters for decision making by the translator. According to Vermeer (1989), the intended function of the target text would determine the method of translation employed, even if it deviates from the linguistic structure of the source text. In the same way, Nord (2018) highlights the need to consider the

audience, the purpose, and the context in which the translated text is intended to function. The above perspective is relevant in the study of localization, where a localized digital text is not just made for the sake of resemblance to the source text but to achieve a certain function.

2. Literature Review

Translation and localization studies have expanded considerably as a substantial proportion of institutional, commercial, and educational communication has shifted to digital environments. Recent research increasingly conceptualizes localization as a multifaceted process that extends beyond the translation of verbal content to encompass cultural, technical, and visual adaptation, thereby ensuring its appropriateness for users in the target context. The literature relevant to the present study can be classified into four principal areas: theoretical studies of digital localization, research on Arabic website localization, studies of localization quality and user experience, and research addressing technology and artificial intelligence in the translation industry.

One of the prominent theories developed for exploring website localization is that proposed by Jiménez-Crespo (2013). According to him, World Wide Web localization is a process that involves cognition, communication, technology, and text and that includes the transformation of interactive texts in a new linguistic and cultural environment. Jiménez-Crespo's theory goes beyond understanding website localization as linguistic translation and stresses that websites consist of many interrelated verbal and visual features and that any changes in texts can influence website navigation and functionality. Jiménez-Crespo also stated that web pages should not be considered in the same way as printed pages because the interaction with them is performed via buttons, menus, pictures, and hyperlinks.

Moreover, Jiménez-Crespo (2024) continued elaborating this theory in his recent book, Localization in Translation, where he treated localization as an integral part of Translation Studies and not as a separate technical process. Jiménez-Crespo (2024) considered the localization of software, websites, games, applications and social media sites, giving much attention to the connection between localization, translation, internationalization and globalization. What is important about this approach is that it puts translation into the cycle of digital production from design to testing in the target market. Moreover, Jiménez-Crespo (2024) showed that translators dealing with localization face small, incomplete text fragments taken out of context, which inevitably results in ambiguities and improper terminology. This approach can serve as an appropriate theoretical framework for this study because it allows treating the English, German, and Arabic translations as functional digital products and not just parallel texts.

Similarly, The Routledge Handbook of Translation and Technology, edited by O'Hagan (2020), examined the impact of digital technologies on translation and localization practices. It explained that contemporary translation environments increasingly rely on translation memories, terminology databases, content-management systems, machine translation, and cloud-based work platforms. The chapters included in the volume emphasize that technology is no longer merely a supporting tool; rather, it has become a major factor shaping how texts are segmented, managed, reviewed, and evaluated. However, this reliance on technology may fragment texts and separate linguistic units from their visual and functional contexts. This problem is particularly evident in the translation of buttons, menus, notifications, and short messages within user interfaces.

All these studies concur that localization is not synonymous with translation, but the majority of them provide general views or models based on languages of Europe that are highly prevalent in the localization industry. There is thus a constant necessity to review these views against other linguistically distant systems such as English, German, and Arabic. This is very necessary considering that the Arabic language is different from the two European languages concerning writing direction and morphological structure, as well as gender, number, and formality.

2.1 Studies of Localization and Cultural Adaptation into Arabic

Transcreation was analyzed in relation to localization of corporate websites into Arabic by Kassawat (2020). The research was based on the assumption that texts used for advertisement and promotion are not supposed to deliver the message alone; they are supposed to persuade, create corporate identity, and affect the customers. The comparison of the promotional texts posted on the websites of international firms and their translations into Arabic revealed that localized texts do not necessarily reflect the structure or meaning of the original texts. Instead, the use of omission, addition, reformulation and cultural adaptation helps to keep the marketing effect. The results showed that transcreation can make texts more acceptable for Arab consumers, but at the same time may decrease consistency in international versions of the website, if not regulated by the specific function or editorial policy. In another study conducted by Kassawat (2024), fifteen corporate websites localized into Arabic were analyzed, and once again, the importance of transcreation in making sure that marketing messages are consistent and have the maximum impact on consumers was emphasized. This research is important for the current study, since it proves that the comparisons of different language versions of the same texts should differentiate between the differences caused by errors in translation and those caused by the functional adaptations.

Namoun and Alkhodre (2020) conducted a studyaimed at examining the aspects of design and usability on 73 frequently used websites in Saudi Arabia. According to the study, there was great variability in terms of fonts and font sizes within each website and in the sample of sites in general. In some cases, Arabic font sizes varied between 12 and 16 pixels, affecting readability. Additionally, the authors discovered the high frequency of images on some websites, which can cause page load problems. Local culture is also seen in the selection of images and design elements. Therefore, the authors argue that more specific instructions

should be developed for Arabic website development. By integrating readability, efficiency, and cultural relevance into localization, the study showed that localization cannot be considered simply as linguistic equivalence since typography, layout, imagery, and page-load speed are all elements of the localized user experience. The research's detailed analysis of 73 websites provides significant practical value in studying Arabic digital design.

Though significant, the study by Namoun and Alkhodre was limited to Arabic websites and failed to provide any comparison between the analyzed sites and their English and German counterparts. Also, the study had no comparative analysis of translation procedures, pragmatics, or terminology. Thus, this study intends to conduct a comparative analysis of both usability and linguistic and cultural features.

2.2 Arabic Localization Quality and User Experience

In another study conducted by Omar (2021), the quality of some learning management systems (Blackboard Learn and Microsoft Teams) in their Arabic translation was analyzed. An online survey was used in order to learn about the experience of using these systems and the problems encountered while working with them. Inconsistency in translation was identified as one of the major problems in addition to vague instructions and failure to take the linguistic peculiarities of Arabic into account in content development. Users were of the opinion that the above-mentioned problems influenced the effectiveness and reliability of these systems at school, university, and training levels. It was concluded that translation and localization should go hand in hand and that translation technology and localization software should be included in translator-training programs. In addition, the development of a matrix was suggested] for assessing the quality of Arabic translations, taking into account its linguistic and technical peculiarities. The study is especially important due to the connection between translation errors and the perceived effectiveness of products. Nevertheless, the study carried out by Omar mainly focused on the perception of users without comparing the source text and the Arabic text. In addition, the study was limited to only learning management systems and did not focus on other types of websites or applications. This means that the study can be extended through the combination of user evaluation and comparative analysis.

Regarding the effects of localization on e-commerce, Omar et al. (2022) researched how the localization quality influenced the reliability of Arabic e-commerce applications. It was postulated that users do not differentiate between language and technical features of the program; any error in terminology, instructions, or interface design can negatively affect the trustworthiness of the application despite its correct functioning. As shown by the results, linguistic accuracy, term consistency, clarity of instructions, cultural acceptability, and navigability of an application depend on each other. The authors suggested a localization quality assessment model which includes linguistic, cultural, and functional parameters of the application rather than the traditional measures of translation errors. This work proves the hypothesis of the current paper that the localization quality must be measured by the effect of the translation decisions on the user and his/her ability to accomplish digital tasks effectively.

The above results corroborate those of the study by Zhyvotovska (2021) on the effects of translation on multilingual user experience. The research revealed that users do not assess translations in isolation from the designs but based on factors such as language consistency, navigability, ease of locating information, and linguistic naturalness. It was also revealed that just offering a choice of languages does not automatically mean that multilingual user experience will be successful. This is because even when websites have undergone formal translations, their effectiveness can be compromised by failure to translate certain aspects of the content, use of inconsistent terminology in the interface, or lack of design adaptation to features of the target language.

2.3 Translation and Localization in the Context of Technological Development

Al-Batineh et al. (2024) examined how the technological changes and the demands of the translation market in the Arab world have been addressed by translator training programs. Al-Batineh et al. (2024) found out that computer-aided translation and software localization have become more necessary for the Arab labor market. Furthermore, some educational institutions face a lack of compatibility with the demands from the employers when it comes to the use of translation tools and the post-editing of machine translation. The authors suggested updating the translation program to include training in the use of localization software and real digital projects. The results of the study prove that localization is not an optional field anymore; it is an integral part of the competence of a professional translator.

Recent studies in machine translation show that the use of neural models and artificial intelligence can generate more fluent translations than those produced by previous generations of translation systems. Yet the appearance of fluency does not mean accuracy or cultural appropriacy. This situation becomes more relevant to the localization process as short text strings become ambiguous in terms of interface. Words such as home, back, checkout, and save can have different meanings, but the automated system will not be able to choose the right one without knowledge about what kind of button it is. Thus, O'Hagan (2020) points out the necessity of human involvement in translation checking, terminology management, and the analysis of text-to-interface relations.

The research on Arabic digital content brings yet another aspect to this issue, which is the internal diversity of Arabic. According to the results of the study by Alzamzami and El Saddik (2023), the process of localization involves more than merely transferring meaning; it also takes cultural and semantic diversity, as well as regional preferences, into account. A system for adaptation of the content was suggested in a low-resource Arabic environment, and the choice of Modern Standard Arabic or a particular dialect

depended not only on linguistic aspects but also on the target audience and the purpose of the content. Though the scope of the research under consideration differs from the one on European website localization, the results support the idea that Arab users cannot be considered a linguistically homogeneous community.

It has been found out in the review of the existing literature that there is a common understanding of the multidimensionality of localization, which comprises translation, cultural adaptation, design, and usability. At the same time, it has been noted that contemporary research into Arabic has concentrated on three main issues: localization of marketing materials, quality of Arabic adaptations of educational and commercial systems, and interface design in Arabic. These studies have proved that terminology inconsistency, literal translation, ambiguous directions, lack of consideration of writing direction, as well as culture-specific images and design are frequent errors of localization into Arabic. Still, there are several research gaps that can be indicated. First of all, almost all studies have considered the English-Arabic language pair; the German-Arabic dimension, however, received little attention. Secondly, there were certain studies that used user questionnaires, but did not provide textual analysis. Besides, there were certain studies that analyzed either language or design features without considering their effect on user experience. Thirdly, almost all studies have been devoted to single types of digital products, such as learning management systems or e-commerce websites; multilingual comparison was not conducted.

Hence, the present study stands out due to its three-fold comparison of English, German, and Arabic languages as well as its incorporation of the linguistic and cultural perspectives into the assessment of technical and functional aspects. At the same time, it attempts to reveal the strategies utilized in the transfer of content from European to Arab contexts and to estimate the degree to which Arabic translation keeps the communicative intent and user experience inherent to the English and German versions. Such an approach is likely to fill a considerable gap in the European-Arab localization studies.

3. Methodology

The study employs a descriptive, analytical, and comparative methodology to explore the issues of translation and localization in the European-Arab context. \Information has been gathered\ from the official versions \of the BMW and DHL websites\ in English, German, and Arabic as German enterprises create content for both European and Arab audiences. The sample is \a convenience sample\of 150 units of localization with fifty units taken from each website. They comprise such units as menus, buttons, \advertising headings\, product and service descriptions, instructions, notifications, and cultural and visual components. All units should be translated into all three languages under consideration.

A unit of analysis is the smallest digital component that serves communicative or procedural functions, which can be a button, menu item, heading, service description or error message. The unit of analysis is \included in a table\ along with the German, English and Arabic texts, content type, communicative function, localization strategy used and a problem that is revealed. Each example is \accompanied by a hyperlink\ to the webpage, an access date and a screenshot showing the visual and functional context\ of the analyzed unit of analysis. Data collection is carried out during a specific period of time to reduce possible impacts of website updates on the results.

Arabic translations are analyzed through comparison with English and German texts to reveal localization strategies used, such as direct translation, functional translation, borrowing, Arabization, explicitation, addition, omission, reduction, cultural adaptation and transcreation (Pedersen, 2011). The quality of Arabic translations is also evaluated on the basis of meaning transfer, communicative function maintenance and linguistic, terminological, and cultural appropriateness and writing direction, as well as compatibility between text and interface elements.

Data analysis is based on a combination of qualitative and quantitative methods. Detailed analysis of chosen examples is given in terms of similarities and differences between the three languages and the effects of localization strategies on meaning and user experience. Frequencies and percentages of localization strategies and linguistic, cultural and technical problems are calculated. Results are compared among three websites and various types of content. Openly accessible digital sources are used in the study. Websites, webpages and access dates are documented. Collected data are used only for academic purposes.

4. Analysis and Discussion

In this section, the author offers a comparative analysis of a set of ten localization units taken from the official German, English, and Arabic versions of the BMW and DHL websites, with five units from each. These two websites have been chosen because they belong to German companies that work in Europe and Arab markets and offer diverse digital content in these three languages. The analysis is intended to find out the methods used for localization of the content from the European context into the Arab one, as well as the efficiency of communication of the Arabic version in terms of successful transmission of its meaning.

For the analysis, the translation techniques proposed by Molina and Hurtado Albir (2002) are used. Namely, the following ones are utilized: direct translation, borrowing, description, adaptation, amplification and reduction. In addition, the author makes use of Jiménez-Crespo's (2013, 2024) concept of localization of websites in the digital environment. As a result, the analyzed examples are assessed in terms of not only the linguistic correctness of the translation but also the naturalness of the Arabic wording, terminological unity, cultural suitability, clarity of the required action and correspondence of the translation to the digital function of the unit.

The analysis of each website starts from the table containing the original German, English and Arabic texts, as well as the strategy of translation and general evaluation of the translation quality. After this, each example is analyzed qualitatively in order to clarify the type of translation procedure applied, the degree of preservation of the original meaning and the influence of the Arabic wording on users' perception. Finally, the author compares the results received for the two websites in order to reveal similarities and differences in their localization methods, the most widely used strategies and main linguistic, cultural, and functional difficulties.

4.1 Analysis of Localization on the BMW Website

This part analyzes five localization strings that have been selected from the official websites of BMW in German, English, and Arabic. Terms, headings, and digital commands connected with electric cars and services for users have been chosen as samples. Three texts will be compared to understand which translation methods are used and how accurately the translation into Arabic is done. The samples were taken from the official websites of BMW.

Table 1. Localization of Terms on the BMW Website

German	English	Arabic	Strategy	Evaluation
Elektrofahrzeuge	Electric cars	السيارات الكهربائية	Direct translation	Accurate and natural
BMW Plug-in-Hybrid	BMW plug-in hybrid	سيارات BMW الهجينة القابلة للشحن (Plug-in Hybrid)	Description with retention	Clear but lengthy
Zuhause Laden	Home Charging	الشحن المنزلي	Functional translation	Concise and appropriate
BMW Digital Key	BMW Digital Key	BMW Digital Key	Complete borrowing	Requires an Arabic explanation
Probefahrt vereinbaren	Book a Test Drive	احجز موعداً لتجربة القيادة	Functional translation with amplification	Accurate and clear

Example 1: Elektrofahrzeuge – Electric Cars – السيارات الكهربائية

Elektrofahrzeuge, which means "vehicles driven by electricity," is translated as "Electric Cars" in the English language and " السيارات الكهربائية" in Arabic. In the Arabic version, the method of direct translation has been utilized for the given term according to the classification offered by Molina and Hurtado Albir (2002). This technique was chosen due to the transfer of semantic constituents of the term into its Arabic version, which is commonly used. In addition, the term retains its classifying nature, since it is the title is correct and appropriate and does» السيارات الكهربائية« of the part that speaks about BMW's electric cars. The Arabic translation not need to be changed. Even though Fahrzeuge in German is broader in meaning, and literally means "vehicles," the use of «السيارات المركبات. «in the current context is justified since it is used to describe a website that mostly presents passenger cars» الكهربائية .would have been a more technical term, but it would have gone against the marketing-oriented style of the website»

Example 2: BMW Plug-in-Hybrid – BMW Plug-in Hybrid – سيارات BMW الهجينة القابلة للشحن (Plug-in Hybrid)

Both the German and English versions use the technical term "Plug-in Hybrid." The Arabic version, on the other hand, translates it using the phrase "سيارات BMW الهجينة القابلة للشحن" ("Plug-in hybrid BMW cars"), adding the English technical term in parentheses. This translation is both descriptive and a loan translation since it not only describes the type of car but also retains the internationally known technical term. This type of translation is good to use when localizing technical texts. In spite of all this, the phrase «القابلة للشحن» is not quite accurate because it does not provide information that this kind of hybrid vehicle can be charged from an external source of electric power, whereas other hybrids do not get their batteries charged externally, but do this while driving. The fact that we should give an explanation in addition to the translation of the word makes the phrase longer than the English and German phrases, but this length is reasonable in this case.

Example 3: Zuhause Laden – Home Charging – الشحن المنزلي

The German phrase Zuhause Laden includes two terms Zuhause, which means «the home», and Laden, «charging». It can be literally translated as «الشحن في المنزل» ("charging at home"). The English language reformulates the phrase into the concise nominal phrase Home Charging, which, in turn, is rendered in Arabic as «الشحن المنزلي». Though the Arabic translation does not replicate the grammatical structure of the German phrase, it reflects its meaning and function on the website. Thus, the translation can be viewed as a functional translation or an established equivalent according to Molina and Hurtado Albir (2002). In order to render the phrase concisely, the translator chooses an established expression rather than a more descriptive one.

«الشحن المنزلي» is a brief phrase that meets the requirements of the website headings which should comprise short, easily accessible linguistic units. The use of the adjective «المنزلي» instead of the preposition «في المنزل» allows reducing the text volume without compromising the message. In addition, the general context of the electric-vehicle section allows omitting the term «السيارة», as users can understand that the phrase relates to charging a car or its battery in the home. There is no culture-specific or terminology-related challenge, as the concept of home charging has become popular in Arabic content related to electric vehicles.

Functionally, the Arabic phrase serves the same purpose as the German and English phrases, directing users to a page where there is information about home charging options. In addition, the translation is consistent with the spatial limitations of the interface and excludes excessive textual expansion which can influence the menu structure. Alternative solutions include the phrases « شحن السيارة في المنزل» ("charging the car at home") and «حلول الشحن المنزلي» ("home-charging solutions"). The former is too lengthy, while the latter introduces the notion of «solutions», which is stated in neither the German nor the English text. Hence, the translation needs no revision, and «الشحن المنزلي» is the most appropriate rendering.

Example 4: BMW Digital Key – BMW Digital Key – BMW Digital Key

Complete retention of the trade name (BMW Digital Key) occurs in all three versions of the term under consideration – German, English, and Arabic. Therefore, the term in question is neither paraphrased nor modified but simply translated into a target language through direct borrowing. Moreover, the same name remains even in the German version, which could have been translated as digitaler Schlüssel in the absence of direct borrowing. The adoption of such a strategy ensures a certain standardization of the name of the digital service and allows users to find the same name in the BMW application, phone settings, and relevant instructions.

However, the efficacy of the above strategy varies between German and Arab users. Firstly, the words in the English term, being close to German and deriving from similar linguistic roots, may seem more recognizable to German speakers than to Arab ones. In turn, Arabs who do not know the English language may not associate the service in question with the opportunity to use their smartphones and other devices as car keys. In this way, complete retention preserves the brand name but does not provide a full linguistic localization.

Secondly, the ambiguity of the term may lead some users not to see the connection or open the term without knowing the essence of the service in advance. This challenge can be overcome through the provision of additional information instead of the full replacement of the trade name. In this way, the most suitable version is "BMW (BMW Digital Key) المفتاح الرقمي من", where the Arabic equivalent is provided first, and the official trade name is retained in parentheses. When the term has been defined, the name of the service may be used alone in further usage.

Example 5: Probefahrt vereinbaren – Book a Test Drive – احجز موعداً لتجربة القيادة

In the German expression "Probefahrt vereinbaren", the word "Probefahrt" is used to denote driving a car before buying it, while the verb "vereinbaren" means making an arrangement or setting an appointment. In the English version, "Book a Test Drive" is formulated as an imperative that invites users to make a reservation and a noun phrase that indicates the act of driving a car. The Arabic version "«احجز موعداً لتجربة القيادة»" retains the procedural character of the English expression and adds the word «موعداً» that reflects more clearly the idea of setting an appointment expressed in the German version.

Such a rendering can be considered a functional translation supplemented by linguistic amplification. The word «موعداً» ("an appointment") does not exist independently as a lexeme in the English version but is implicit in the verb "book". Moreover, it is contained in the German word vereinbaren. Adding the mentioned word in the Arabic version eliminates any possible ambiguity as far as the character of the procedure is concerned, i.e., the client will set an appointment for driving the car, but will not purchase the experience or reserve the car itself. This addition is not inconsistent with the source meaning of the text; instead, it makes implicit information explicit.

Moreover, it facilitates the process of completing the digital procedure. The imperative "احجز" is a typical feature of the Arabic user interface that guides users toward taking a necessary action. Besides, the phrase "تجربة القيادة" is more appropriate for marketing language as compared to the phrase "اختبار القيادة". The word "اختبار" may convey the idea of a formal examination or assessment of the driver's skills, while the word "تجربة" suggests the possibility of exploring the vehicle's capabilities before purchasing it. In such a way, the Arabic formulation renders both the persuasive and service-oriented functions of the text.

However, the Arabic BMW website contains the expression "احجز لاختبار القيادة" in other places, thus demonstrating some inconsistency in translating the same term within the site. Although users will probably understand the text regardless of the variations in translation, this might decrease terminological consistency in the translation. Terminology consistency is an integral part of localization projects that determines content quality and corporate identity. At present, the text needs no amendments with respect to the meaning but only a consistent application throughout the website instead of alternating between "تجربة القيادة" and "اختبار القيادة".

4.2 Analysis of Localization on the DHL Website

In this part, five localization phrases have been analyzed from the official website of DHL in German, English, and Arabic. These phrases have been chosen from the headings, instructions, and service descriptions on the homepage. Comparison is made in respect of accuracy of meaning, fluency of phraseology, translation strategy, and function of these units within the user interface. These phrases have been extracted from the official German, English, and Arabic webpages of DHL.

Table 2. Localization of Terms on the DHL Website

Evaluation	Strategy	Arabic	English	German
Accurate and clear	Direct translation	السيارات الكهربائية	Track Your Shipment	Verfolgen Sie Ihre Sendung
Requires revision	Partial literal translation	سيارات BMW الهجينة القابلة للشحن (Plug-in Hybrid)	Navigating Latest Tariff Developments	Umgang mit den kürzlich eingeführten Zöllen
Accurate, with a change in sequence	Direct translation	الشحن المنزلي	Document and Parcel Shipping	Dokumenten- und Paketversand
Requires retranslation	Mistranslation	BMW Digital Key	Next Possible Business Day	Am nächstmöglichen Werktag
Accurate and appropriate	Direct translation	احجز موعداً لتجربة القيادة	Cargo Shipping	Frachtversand

Example 1: Verfolgen Sie Ihre Sendung – Track Your Shipment – تتبع شحنتك

In the German translation, the expression Verfolgen Sie Ihre Sendung is employed. It comprises the verb verfolgen ("to track," "to follow"), the formal pronoun Sie, and the noun Sendung ("shipment"). The German expression follows the pattern of the formal mode of address typical of German websites. The English expression is translated as Track Your Shipment. In this case, the imperative form track and the possessive adjective your are employed in order to name the service and link it to the user. The Arabic expression looks as follows – "تتبع شحنتك".

The mentioned expression can be considered to be the direct translation of the given English term with the use of an established equivalent of tracking. However, there is a certain necessary grammatical adaptation since the distinction between the formal and informal modes expressed with the help of the German pronoun Sie does not exist in Arabic. Instead of a longer phrase such as "يرجى تتبع شحنتكم" ("Please track your shipment"), the shorter expression in the singular form is employed in the Arabic version. This decision is correct from the point of view of functionality since the heading must be concise and comprehensible at once.

Moreover, the mentioned expression is directly connected with the input field where the user must write his or her tracking number and the button with the name "Track." However, the message of the validation beneath the mentioned field stays in English, namely "Please enter your tracking number(s)." This is a technical defect connected with the incompleteness of the Arabic localization of the page in question. This message should be translated into Arabic as "يرجى إدخال رقم التتبع".

Example 2: Umgang mit den kürzlich eingeführten Zöllen – Navigating Latest Tariff Developments – تصفح أحدث تطورات التعريفات

The phrase Umgang mit den kürzlich eingeführten Zöllen may be roughly translated as "dealing with recently introduced customs duties." The word Umgang focuses on handling a certain issue or situation, while Zölle specifically means customs duties. The English version of this phrase, Navigating Latest Tariff Developments, uses navigating in a metaphorical way to mean understanding complicated situations and handling their implications, but not visiting various sites or places. The expression characterizes the content, as it describes how DHL helps customers cope with changes in the customs regulations worldwide.

In Arabic, the phrase is translated as «تصفح أحدث تطورات التعريفات» ("browse the latest tariff developments"). Apparently, the translator has perceived the word navigating as browsing the Internet resources. However, in the context of economics and customs regulation, such a translation is inappropriate, as it does not convey the idea of understanding the developments and handling them. Moreover, the word tariffs is translated as «التعريفات», which may cause confusion, as this word means explanation, definition, or description of something, while the proper translation would be الرسوم الجمركية.

Thus, the translation of this heading weakens its information and instructional characteristics. People will think that the information presented in this part is just general browsing information, although it gives instructions on how to deal with recent customs procedures. It would have been better to translate the whole context instead of separate words. There are two versions which may be used in this case: «التعامل مع أحدث تطورات الرسوم الجمركية» ("dealing with the latest developments in customs duties") and «مواكبة أحدث التغيرات في الرسوم الجمركية» ("keeping pace with the latest changes in customs duties"). The latter version is more stylish, while the former is closer to the German version of the phrase.

Example 3: Dokumenten- und Paketversand – Document and Parcel Shipping – شحن الطرود والمستندات

First, let us analyze the structure of the German term Dokumenten- und Paketversand, which comprises three semantic components: documents, parcels, and shipping. The English version contains both the same components and the same word order as the source version – Document and Parcel Shipping. As for the Arabic version, it translates the term as follows: « شحن الطرود والمستندات» ("Parcel and Document Shipping") while changing the word order. In spite of the word order change, however, the version does not lose any semantic component and conveys all the information provided by the German or English versions of the term.

The strategy used in this case may be called direct translation with the change in word order. Such a change cannot be considered an error since the coordination of the two items does not imply any obligatory order affecting their semantic relation. Maybe, the reason why «الطرود» was positioned first in the Arabic version was that parcels are much more related to the shipping services in users' perception. Besides, the expression «شحن الطرود والمستندات» sounds quite natural and is not very literal.

However, the problem arises with the subheading accompanying the heading in question, which is translated as « التسليم الدولي لجميع شركات الشحن» ("international delivery for all shipping companies"). This translation changes the sense of the phrase in an unjustified way since it introduces the word "international" and interprets "shippers" as "shipping companies" instead of individuals or organizations sending parcels. As a result, the sense of the phrase becomes "the service for all competitors in the shipping industry" instead of its real meaning: the service for all those who wish to send something. In this case, the main heading available for all» ("متاح لجميع المرسلين« should be left without any changes, but the subheading must be revised into either shippers") or «خدمات لجميع العملاء الراغبين في الشحن» ("services for all customers wishing to send shipments").

Example 4: Am nächstmöglichen Werktag – Next Possible Business Day – الأعمال المحتملة التالية

The German phrase Am nächstmöglichen Werktag means that the service will be performed or the delivery will take place on the next possible business day. Werktag means "business day" and nächstmöglichen means the earliest time allowed according to operational conditions. Next Possible Business Day is the equivalent of this phrase in English, where "business day" is a fixed combination that implies the official working day and does not allow interpretation based on its components' translation.

The Arabic equivalent says «الأعمال المحتملة التالية» (which can be translated as "the next possible businesses"), but does not convey the meaning correctly. In this case, it looks like the phrase has been made by translating each word separately: «الأعمال» for business, «المحتملة» for possible, and «التالية» for next. Here, the word business does not mean any commercial activity; it makes up the word combination "business day" with the word day. In addition to this, the word "day" is not present at all in the Arabic version; thus, this time-based characteristic of the service becomes unclear and meaningless.

It is a serious problem in terms of semantics and functionality, since it denies the user access to one of the key characteristics of the service – delivery speed. People might think that the phrase refers to some business opportunities, while in reality, it describes the delivery time. Thus, the example proves the danger of isolated lexical processing or the use of machine translation without regard to compound words and shipping context. «التسليم في أقرب يوم عمل ممكن» ("Delivery on the earliest possible business day") is recommended here. If the company provides a guarantee of next day delivery, one may use the phrase «التسليم في يوم العمل التالي» ("Delivery on the next business day"); however, the first alternative seems to be safer.

Example 5: Frachtversand – Cargo Shipping – شحن البضائع

The German compound word Frachtversand is made up of the German word Fracht which means goods, freight, or commercial cargo and Versand which means shipping or dispatch. In English, this word is translated as Cargo Shipping, while in Arabic it is translated as «شحن البضائع» (Goods shipping). This word uses an existing Arabic equivalent in the field of transport and logistics and hence may be considered either a direct translation or the use of an established equivalent.

The translation clearly distinguishes between «شحن البضائع» (Cargo shipping) and «شحن الطرود والمستندات» (Parcel/document shipping). While the first one is usually used for larger commercial shipments like pallets, containers and other freight, the second one is used for individual parcels or documents. The content that appears below the heading also makes the distinction as it talks about air, road, sea and rail freight. In this respect, the word «البضائع» is more comprehensive and clear than alternative terms like «الطرود» (parcels) and «الشحنات» (shipments).

Alternative translations like «شحن الحمولات» (freight-load shipping) or «الشحن التجاري» (commercial shipping) might have been considered, but they would have certainly narrowed down the intended meaning. While the first one might be mostly related to trucks or road transportation, the second one might not include some types of goods that are not involved in any commercial transaction. In this regard, the translation «شحن البضائع» is quite a generic one that can apply to various modes of transportation. The translation needs no revision as it is correct, precise and appropriate for classification purposes.

5. Discussion

During the analysis of the websites of BMW and DHL, it became clear that direct and functional translation were the most widely used strategies of localization into Arabic. Direct translation proved to be effective in the case of well-established and clear terms, such as Electric Cars, which can be translated as «السيارات الكهربائية», and Cargo Shipping, which is «شحن البضائع». Similarly, functional translation worked fine when translating procedural expressions into natural phrases, such as Book a Test Drive « احجز موعداً لتجربة القيادة» and Home Charging «الشحن المنزلي». Thus, the evidence proves that website localization into Arabic is not determined by formal correspondence between the source text and the target one but relies on the ability to produce clear and understandable Arabic wording while keeping the functions of all elements intact. The result of the research coincides with Jiménez-Crespo's definition of localization as a linguistic, communicative, and technological process (2013; 2024).

Meanwhile, many problems have been discovered that occurred due to literal translation and a lack of attention to the context of terminological units. It has become obvious on the DHL website, since the term Next Possible Business Day was translated literally

as «الأعمال المحتملة التالية», as it has been translated without taking into consideration the combination of business and day that has a certain temporal meaning connected with delivery. Similarly, the expression Navigating Latest Tariff Developments has been translated as «تصفح أحدث تطورات التعريفات», failing to transmit the metaphorical meaning of the term navigating and using «التعريفات» instead of the more correct «الرسوم الجمركية». Incomplete localization has also taken place: an English validation message for a tracking number appeared on the Arabic page, as well as the complete borrowing of BMW Digital Key without any explanations in Arabic. The example demonstrates that the accuracy of individual words cannot guarantee high-quality translation if the terms, technical context, and needs of the users are not considered carefully.

Comparing the two websites, it has become clear that BMW managed to provide a higher level of consistency and naturalness in the localization of headings and services, although the clarification of trade names, as well as unification of terms «تجربة القيادة» and «اختبار القيادة», are necessary. On the contrary, DHL provided accurate translations together with more visible semantic and functional errors, which means that different elements of the website have not been revised equally. Thus, the study suggests paying attention to the full digital context of translations, the creation of a unified terminology base, providing Arabic explanations for trade names on their first appearance, and examining the buttons, error messages, and support texts together with the main headings. The results of the research show that it is essential to work with translators who have both linguistic and technical knowledge about the user interface.

6. Conclusion

In this study, translation and localization in the European-Arab context in the digital age have been analyzed via a comparative analysis of ten textual and digital units chosen from German, English, and Arabic versions of the BMW and DHL websites. The emphasis has been placed on the techniques used in the transfer of information into Arabic and the degree to which the localized versions preserved meaning, communicative function and the appropriate use of user interface elements. According to the results, direct and functional translation have been found to be the most common techniques and have proven to be accurate enough when used with well-established terms and procedures: «السيارات الكهربائية» ("electric cars"), «الشحن المنزلي» ("home charging"), «تتبع شحنتك» ("track your shipment"), and «شحن البضائع» ("cargo shipping").

At the same time, some difficulties with literal translation, lack of recognition of idiomatic expressions, retention of English terms, lack of consistent terminology and untranslated user interface elements have also been discovered. Such instances include Next Possible Business Day translated as «الأعمال المحتملة التالية», Navigating Latest Tariff Developments translated as « تصفح أحدث تطورات التعريفات» and BMW Digital Key remaining in the German language with no Arabic equivalents or explanations. These cases prove that the evaluation of localization should not be based only on lexical accuracy but should also consider the clarity of texts, appropriateness of context and ability of the localized information to help users complete the actions intended.

It is concluded that the efficient localization of European websites into Arabic presupposes not only translation competence but also cultural and technological knowledge. Therefore, it is recommended to create unified terminology databases, analyze translations in their entire digital environment, translate all the interface elements including error messages and input fields and add explanations in case foreign trade names are left in the initial language. Even though the study was limited to ten units of two websites, its results point to the need for further research on more websites and digital domains and with the use of bigger samples or testing with Arab users.

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