

# Analyzing the Perspectives and Strategies in Localizing Software in Kiswahili

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**Abstract:** Computer software and the Internet has now become a worldwide commodity and unlike before when the market was limited to major languages such as English, it has now grown to include even smaller languages such as Kiswahili. This has been made possible through translation and localization of software products and Applications so that firstly, people can access those products and Applications in the language that they understand better and secondly, the products and sites are packaged in the form that is acceptable by the target culture. In order to deliver properly localized products and Applications, the role of the localization translator as an expert in linguistic and cultural mediation is crucial. This paper looks at perspectives and strategies employed by localizers to localize some of Google software products and Internet sites. This is done from the point of view of Translation Studies and particularly from the communicative-functional approach to translation. The paper looks into the linguistic, mechanical, cultural and other translatorial dimensions to translations that play out to facilitate the communicative function of Google's software products that have been localized in Kiswahili.

**Keywords:** Software Localization, Equivalence, Lexical and Terminological Units

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## 1. Introduction

Software localization is a complex undertaking that involves many players, many interlinked activities and numerous updates. All these players are supposed to work in tandem to deliver a flawless localized product devoid of errors. This is because errors in localization may lead consumers to question the quality of the product. Functional errors like typographical, terminological, or grammatical errors introduced during localization will portray the product or App negatively and hence give the same negative result. All this has the potential to lead users to abandon using the product and look for alternatives. In order to get rid of errors in a localization project, clients seek services of an experienced localization team to guide through the complete process of localization. Such a team ought to be equipped with the necessary tools, resources and competences to ensure an efficient and quality localized product.

The localization of software products and Internet sites in Kiswahili is a process that consists of two main stages. The

first step is translation of language resources to reflect Kiswahili language. At this stage, all translatable language resources are translated into Kiswahili. The most important goal here is for the translators to capture the intended meaning of the source text and to transfer it into Kiswahili as smoothly as possible. As they convey the full meaning of the source language into Kiswahili they do so while following proper Kiswahili grammar, syntax and style rules. The second step involves adjusting software to local cultural habits. Here, language experts who also have adequate cultural knowledge of the target audience are used to adapt the application to reflect local customs.

## 2. Software Localization Perspectives

As mentioned in the introduction, in the last two decades, localization has become one of the most important issues for companies that want to market and sell their products in international markets [4]. This is why localization and translation studies have been found to inform the development of theory on language in international business

[9]. According to a study [4], in many cases, localization has proven to be the key factor for international product acceptance and success. The study [6] rehearses this view by saying that when a business invests abroad, it adopts to some extent to local conditions in order to maximize local demand for their products or services and to minimize the chance of their being discriminated against.

The study [9] borrows from international business to propose three perspectives on translation and language use: mechanical, cultural, and political. He goes ahead to show how each of them leads to a different language strategy in the localization process. The role of translators is significant in all strategies. Let us now discuss the first two perspectives – Mechanical and cultural, which have been found to apply in the case of localization of Google products in Kiswahili.

### 2.1. Mechanical Perspective

Mechanical perspective is consistent with the source model of translation, which views translation as a technical exercise by which a source text is “correctly” rendered from one language to another, and assumes a clear and unambiguous relationship between language and empirical reality and translation equals the transfer of objective information and thus takes for granted that it is possible to achieve a directly equivalent translation between languages [21]. In other words, equivalence does exist between texts. As a study puts it, a static view of both translation and equivalence pushed to the extreme forces the conclusion that for any linguistic unit in a SL, there is an equivalent unit in the TL and that it is the translator’s job to find that equivalent [7].

This means that an element of form, isolated from the TL as a likely candidate for a formal correspondence of an element in SL will yield exactly the same element whose correspondent it is thought [7]. Thus terms “like” (as in the case of a page or photo), “comment” [verb] in Google+ and “search” and “link” in Google Search translates as *penda*, *maoni*, *tafuta* and *kiungo* respectively and when back-translated, they will yield the same correspondents. This lexical equivalence favored by back-translation therefore serve as a check on the semantic content.

Another picture of translation and translation equivalence is when translation is regarded as a process rather than as a result. In this case then, we talk of substituting messages in one language for message for message in another language [8]. Put in other words, it is about reproducing in the receptor language the closest natural equivalent of the message of the source language [14]. This view looks at translation with a communicative angle where the translation is a product of the dynamic process of communication between the sender of the original message and the ultimate receiver of the translated message through the translator. Under this view, equivalents are not texts but rather messages. Perhaps that is the reason why text segments in GTT are referred to as messages and not texts.

From the view of translation and translation equivalence as communication, we see the rationale of translators rendering

“home”, that is, the home page on Google+ where users see posts from their circles; the central hub on Google+ as *mwanzo* instead of *nyumbani* which would ordinarily be the lexical equivalent of “home” in Kiswahili. This is because, whereas in English the word “home” bears the sense of the starting position in a computer application, such sense is not in Kiswahili word *nyumbani*, which prompts the translators to look for an appropriate term to bring out that sense, which in this case is *mwanzo*.

### 2.2. Cultural Perspective

Cultural perspective in localization is complex, demanding, difficult even to define clearly, and largely unrecognized in the literature on localization [3]. Cultural localization means the adaptation of programmes written in one language by members of one culture to another language and another culture in such a way that they seem fully consistent with the assumptions, values, and outlooks of the second culture. Kiswahili is spoken in a region that is multicultural and where cultural nuances can carry a lot of meaning. Therefore, software localization by Google aims at producing products and computer programmes that are culturally indistinguishable from a programme that would be written by members of the culture in Kiswahili speaking locale.

The cultural model in translation and localization emphasizes the importance of the target audience and of the need to recognize the cultural dimension of language. In this model, the translator’s detailed knowledge of language is not sufficient; s/he will also need deep understanding of the target audience culture. This encourages a cultural perspective on language use, and leads to strategy which is more respecting of the diversity of native languages spoken within the locale and views translators as mediators between different cultural meaning systems [9].

Very often translators of software are confronted with the difficulty of achieving direct equivalence when translating such terms that are culture-bound. Coincidentally, such terms are numeral in most software products that have been localized in Kiswahili especially products like Google+ which have low formality, meaning users are free to a large extent to play with the language the way they want to suit their circumstances. A good example of such a culture-bound term is “tap”, a term that means to briefly touch a User Interface (UI) element with a fingertip to perform an activity, such as choosing an action from a menu or opening an item. In Google glossary, its equivalent is *gonga*. Some users who come from societies where the denotative meaning of *gonga* is to “beat” might have difficulties in comprehending the term. Other examples are proper names such as names of popular places or people which must be replaced with names that recognizable in the target culture.

Therefore, it follows that the software localizer must be careful to overcome cultural barriers between the SL and the TL societies if the translations have to be informative, which is the sole purpose of reproducing a TL version of software originally written for SL users only.

To conclude, the translator is obliged to make concessions to the reader by “bending” the translations to meet the lexical, syntactic and stylistic demands of the TL, which means that a different type of translation of the same text should be made for the readers of different TLs [20].

### 3. Software Localization Strategies

Translation scholars and theorists view the notion of translation techniques and by extension, localization techniques differently depending on who is looking at it. The differences are not only terminological but also conceptual. In fact that explains why the notion is referred to by different names: procedures, techniques or strategies [12].

According to a study by Šarčević, a procedure is a method used in dealing with something or an approach, techniques are technical skills; degree to which one is able to apply procedures and methods, and strategy is the art and science of developing and employing instruments of work in a synchronized and integrated fashion in order to achieve some objectives [19]. From this, we can say that whichever name we call them is not important. What is important rather are the key issues that need to be put into consideration when localizing software products: that there is a task to be done, there are expected results, and that there is need apply some methods in order to realize desired results.

According to Molina, the strategies used in any localization project are related to text, context, and process. She adds that textual categories describe mechanisms of coherence, cohesion and thematic progression [12]. Contextual categories introduce all the extra-textual elements related to the context of source text and translation production. Process categories are designed to answer two basic questions: which option has the translator chosen to carry out the translation project, i.e., which method has been chosen? How has the translator solved the problems that have emerged during the translation process, i.e., which strategies have been chosen?

Hariyanto defines thirteen translation procedures and strategies that can be used to translate culturally-bound words or expressions [5]. These strategies are found to have been used in Google’s localization project to achieve equivalence as earlier discussed in the mechanical perspective of software localization and cultural equivalence as stated in the cultural perspective of software localization. They are: transference, naturalization, cultural equivalent, descriptive equivalence, synonymy, recognized translations, using componential analysis, reduction, expansion, addition and note, modulation, deletion, and literal translation.

#### 3.1. Transference

Transference otherwise referred to as loan word by some experts is the process of transferring a SL word to a TL as a translation procedure [1]. The translator uses SL LTU without changing its form and structure. The word then becomes a ‘loan word’ [13]. It usually is done in translating proper names such as names of people, products, and places

that are not to be localized. The following are examples:

- 1) *Our Mobile Planet*.
- 2) *Oyster*.
- 3) *Video*.

These terms derived from Google+ are transferred to the TT as they appear in the ST. This strategy is employed in Google localization projects because of two reasons: one, they are brand names and as Newmark says, brand names have to be transferred [13]. The localization style guide also prescribes that certain terms such as brand names remain untranslated due to internationalization issues. This applies in the case of (1) and (2). In the case of (1), where “Our Mobile Planet”, a think with Google website is a product name and in (2) “Oyster”, a database which contains a variety of data related to maps. These are left untranslated due to internationalization which requires certain terms such as product names and some proper nouns to remain as they are in the SL. The second reason applies to (3) where the LTU already conforms to the morphological structure of the TT language (in this case Kiswahili word structure) and is thus transferred without any modification. There are very few examples in this category though.

However, using loan translations (calques) for culture-bound terms, sometimes, puts translators in a risk of rendering the original text incomprehensible to the majority of users of software products in the TL society.

#### 3.2. Naturalization

In the case of naturalization, the source language (SL) term is brought into the target language text (TLT) and the writing is adjusted to the TLT writing system. For Nida, naturalization comes from transfer and is actually a form of borrowing whereby a SL word is adapted to the TL phonetically and morphologically in order for it to fit in the norms of the TL [15]. This procedure succeeds transference and adapts the English SL words first to the normal pronunciation in Kiswahili, before adapting them to the normal Kiswahili morphology (word-forms). These terms comprise a very big percentage of lexical and terminological units present in the products that Google have localized into Kiswahili. The justification for this strategy could be drawn from the fact that most of the terms are neologisms that need to preserve the local “color” and “taste” [13]. Here are a few examples from the data.

	Term	Gloss
(4)	Ajenda	Agenda
(5)	Akaunti	Account
(6)	Lebo	Label

#### 3.3. Cultural Equivalents

The strategy involving use of cultural equivalents entails a procedure in which the SL word is replaced with the TL cultural word. It is very similar to Newmark’s functional equivalent, and would be an adaptation involving for example changing baseball, for football in a translation into English where the ST was intended for American audience

and the TT for Brazilian audience [12]. This category comprises fewer terms compared to other categories. Even when such terms appeared in the ST, most of the times they are rendered by their formal equivalents. It appeared that a culture has emerged that can be described as digital culture whereby anyone that uses Internet by extension subscribes to this culture. However there are a few examples from the data.

	Term	Gloss
(7)	Lo!	Phew
(8)	Leo ni siku yangu	I'm feeling lucky
(9)	Umemwandikia Ali ambaye hukumkusudia	Got the wrong Bob

In (7) “wow” is an English exclamation of relief, surprise, disbelief or disgust. Kiswahili equivalent for the same feeling is “lo!” In (8) the expression “I’m feeling lucky” as displayed on main Google search page to allow the browser to go directly to the first search result page without seeing the list of search results is rendered as “Leo ni siku yangu” instead of literally being rendered as “Ninajihisi mwenye bahati” because that is how naturally Kiswahili speakers express such a feeling. In (9), name “Bob” does not fit in common Kiswahili names and therefore it is replaced with “Ali” which is a more culturally familiar name. This is important and as [18] argues, factoring in expressions in ST with equivalent connotation in TL would be fundamental and should thus never be ignored or given second priority consideration when translating culture-bound terms.

### 3.4. Synonymy

Use of synonyms is one of the most common strategies in Kiswahili localization projects whereby standard near SL equivalents are used. This procedure is used for a SL terms that do not have a clear one-to-one equivalent especially for non-lexical terms as in the case of adjectives such as *bora/-zuri* (good/nice) or adverbs such as *mno/sana* (a lot); *kwenye/katika* (in). These synonyms are appropriate particularly where there are character limits set and it is proving that their use is able to solve the problem.

### 3.5. Using Descriptive Equivalent

In this strategy, localization translators created terms in Kiswahili by way of explaining or describing the function of the idea embodied in the English word. Description and function are essential elements in explanation and therefore in translation [13]. There are few terms created by this strategy and for a reason. Sometimes describing the function and an idea results in long wording since the explanation is done in several words. This is discouraged in software because oftentimes message strings come with character limitation which if exceeded, it affects usability of the software because of truncation of messages. However where such limits are not set, descriptive equivalents are ideal for dealing with English terms that did not have one-to-one equivalents in Kiswahili as exemplified below.

	Term	Gloss
(13)	Kompyuta ndogo	Notebook
(14)	Kichanganuzi	Parser
(15)	Kompyuta kibao	Tablet

In (13) a notebook is rendered as *kompyuta ndogo* (literally ‘a small computer’) because of its small size as compared to other computers. Parser in (14), on the other hand is a specialized software programme that analyzes text by breaking it into smaller parts. The analysis function motivates its translation as *kichanganuzi* from the root *changanua* which means to analyze. In (15) the tablet is translated as *kompyuta kibao*. In Kiswahili, *kibao* means a small block of wood and the tablet is given that lexical equivalent since it takes that appearance.

### 3.6. Using Recognized Translation

This is the translation of a term that is already official, even though it may not be the most adequate [13]. This strategy is used particularly in the case of neologisms that have already attained stable status [10]. This means that, they have been accepted fully to be part of the SL lexicon. Such terms are many in Kiswahili and most of them have been coined to describe new terms in IT.

	Term	Gloss
(16)	Mchakato/ chakata	Process (noun/ verb)
(17)	Shiriki	Share
(18)	Kipanya	Mouse

The terms above represent the formal equivalents for corresponding English terms. However, despite the status, they remain new to majority users who most of them are ‘supposed’/ thought to ordinary people. Is of quite high register and may be comprehensible to only a few Kiswahili users. Nonetheless they are used with presumption that they will gain stability with the passage of time/the more they are used.

### 3.7. Paraphrase

Paraphrase is not as widely used as the other translation strategies. In this strategy, meaning of SL word is restated in the TL in other words in order to complete the meaning which is not embodied within the first TL word. This strategy is close to a descriptive equivalent in the sense that in the effort to make the meaning of the referent clearer, oftentimes the translator adds words that more or less describe the referent. However, it does not involve the function of the idea of the SL word.

	Term	Gloss
(19)	Ingia katika akaunti	Sign in
(20)	Zana ya Kupanga Matangazo ya Video	Video Planner
(21)	ubadilishaji wa maandishi kwenda usemi	text to speech

“Sign in” means to enter a particular set of details (username, password) in order to access a website or service, for example, “sign in to your Google account” has been rendered as *ingia katika akaunti* instead of just *ingia* in order to clarify where exactly because in Kiswahili there are

possibilities of entering many places like a chat group or website. In (20) the translation includes the word *zana* which means a “tool” because “video Planner is indeed a tool that advertisers can use to help plan video advert campaigns. Likewise in (21) text-to-speech cannot be literally translated as for instance as *makala-kuwa-usemi* but rather the word *ubadilishaji* is added to the translation to bring out the sense of converting text input into the artificial production of human speech.

### 3.8. Reduction

In reduction, a translation unit in SL is replaced with another in the TL which results in reduction of the number of words or items that form the source language term. In software translation, it is used mainly in translation units that have character limitation and that exceeding the set limits have implications on the design and usability of the software. The following terms in the data were found to have been created through reduction technique.

	Term	Gloss
(22)	Maarufu	What's hot
(23)	Faida	Return on investment
(24)	Mtumiaji	App user

In Google+ “What’s hot” refers to a new stream view that contains popular, or recommended, posts, not necessarily from the viewer's circles. Ideally, this could be translated as *ni nini maarufu* but when reduction strategy is used *ni nini* is left out of the translation without compromising the communicative effectiveness of the term. The same case applies to (23) and (24) where a three-word and a two-word phrase respectively are reduced to a single word while still keeping their senses comprehensible.

### 3.9. Expansion

In expansion, a SL word or phrase as a translation unit is replaced with a TL word or phrase which covers the SL word meaning plus something else. Newmark calls it amplification which entails adding linguistic elements to the translation [13].

	Term	Gloss
(25)	Kuhadaa ili kupata maelezo ya kibinafsi	Phishing
(26)	Blogu ya video	Vblog
(27)	Otomatiki	Auto

In (25), phishing, which is “criminally fraudulent process of attempting to acquire sensitive fraudation such as usernames, passwords and credit card details by masquerading as a trustworthy entity in an electronic communication” is rendered as *kuhadaa ili kupata maelezo ya kibinafsi* an expansion of meaning by a way of adding other words that explain in Kiswahili what the term really means. Vblog in (26) is a short form of “video blog”, a form of blogging for which the medium is video. In this case, extension strategy is employed and the resultant translation is *blogu ya video*. Ideally, the translation would have easily

translated the term as *vblogu* to maintain the style as it is in the ST but expanding the term makes it clearer to the user. Similarly, in (27), “Auto”: could have easily been naturalized as *oto*, but has been expanded by adding more morphemes to make it sound more natural and to avoid ambiguity.

### 3.10. Literal Translation

This is the most dominant translation strategy employed by the localization translators. As data revealed, literal translation was the first step in translation, and except in situations when it plainly proved inexact or, uncommunicative, localization translators tried as much as possible to adhere to meaning and form of the source text, in other words translating SL translation units into TL units while conforming to the SL syntactic rules. Literal translation occurs when there is an exact structural, lexical, even morphological equivalence between two languages [12]. The following are just but a few examples of terms translated literally.

	Term	Gloss
(29)	Dirisha	Window
(30)	Wingu	Cloud
(31)	Pakia	Load

The above English lexical and terminological units have a Kiswahili translation, all with a corresponding grammatical function. ‘Cloud’ is a virtual place where web-based (cloud-based) programs live, and where data associated with these programs is stored (i.e. on hosted servers, as opposed to individual computers). The term is literally translated as *wingu* which is the lexical equivalent of cloud in Kiswahili. The same technique is applied when translating “window” which literally means an opening with the frame, sashes and panes of glass by which it is closed [19]. The term is rendered literally as *dirisha* despite the fact that in all Google products it means a framed area on a screen containing a particular program and content, for example, “browser window”.

## 4. Conclusion

From a theoretical standpoint, the above strategies within functionalist approach are compatible with the concept of trans-creation which is responsible for creation of lexical and terminological equivalents in Kiswahili. According to a study Liubinienė, functionalism provides solid grounds for explaining how the process of translating a text is highly dependent on the function it needs to produce in the target audience [11]. Nord’s model of functionalism optimized and streamlined functionalist approaches by supporting a rational or moderate model of functionalism as demonstrated through the above strategies [16]. According to a study by Nord, functionalist translations do not have to forget about the source text, but will be subject to the function the message has to render in the target audience [16].

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