# Factors Influencing the Quality of Digital Game Localization

Marián Kabát

# Mgr. Marián Kabát, PhD. Comenius University Bratislava Faculty of Arts Gondova 2 911 02 Bratislava 1 SLOVAK REPUBLIC



Marián Kabát is an assistant professor at the Department of British and American Studies, Faculty of Arts, Comenius University in Bratislava, Slovakia. He teaches translation courses (both literary and specialized translation). His research focuses on localization (of software, websites, and digital games), machine translation, and post-editing. In 2020 he was awarded the Rising Star Scholarship by GALA. Other than being an avid teacher and researcher, he is also a practicing translator and mostly localizer of various software products.

#### **ABSTRACT:**

Software localization is an integral part of a business process as long as a company wants to sell their software products on a global scale. The purpose of the following article is to provide information about some key features of the development and publishing process that have a significant impact on digital game localization from English into Slovak. The selected features are based on a study by M. Kabát on localization aspects of non-gaming software that are here adapted to digital game localization, and on the author's practical experience. Each key feature is briefly introduced and its impact on digital game localization is described. Where necessary, examples are provided. Other than presenting key features of digital game localization, the intent behind this paper is to spread information on digital game localization as I believe that, e.g., developers should be more informed on this topic to create more effective cooperation with localizers and in that way higher quality localization.

#### **KEY WORDS:**

development, digital games, English, localization, Slovak, variable.

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## Introduction

Like any type of translation, localization, with localization in this paper meaning the translation of software, digital games¹ and websites,² has its own specifics. Since localization has not received much attention in Slovakia compared to other types of translation, some basic features of localization of digital games from English to Slovak need to be highlighted. It needs to be stressed that this paper will mainly focus on the rules of localization of digital game software (digital games), as other features come into play when localizing non-gaming software and websites, which are often very specific or seemingly the same, but manifest themselves differently, and which are addressed in another paper.³ In addition, examples of translation will only be provided where necessary to better explain the problem at hand.

The paper aims to contribute to knowledge on digital game localization from English into Slovak. While for example in Poland (also a Slavic language using country), research on digital game localization seems to be better established,<sup>4</sup> research on digital game localization in Slovakia began only recently with the most prominent scholars on this topic

Remark by the author: The article uses the term 'digital game' although the term 'video game' is still the preferred term in Translation Studies and digital game localization research.

JIMÉNEZ-CRESPO, M. A.: Localisation Research in Translation Studies: Expanding the Limits or Blurring the Lines?. In DAM, H. V., BRØGGER, M. N., ZETHSEN, K. K. (eds.): Moving Boundaries in Translation Studies. London, New York, NY: Routledge, 2019, p. 26-27.; KABÁŤ, M., KOSCELNÍKOVÁ, M.: Lokalizácia a jej miesto v translatológii. In L10N Journal, 2022, Vol. 1, No. 1, p. 11-12. [online]. [2023-05-30]. Available at: <a href="https://lionjournal.net/index.php/home/article/view/11/1">https://lionjournal.net/index.php/home/article/view/11/1</a>.

<sup>3</sup> See also: KABÁT, M.: Pár poznámok k špecifikám lokalizácie. In KABÁT, M., PODLUCKÁ, L. (eds.): Prekladateľské listy 8. Bratislava: Comenius University in Bratislava, 2019, p. 21-34.

<sup>4</sup> For more information, see: KUDŁA, D.: History of Video Game Localization in Poland. In *Studia Translatorica*, 2022, Vol. 13, No. 1, p. 127-146. [online]. [2023-05-14]. Available at: <a href="http://www.studia-translatorica.pl/en/articles/13-7">http://www.studia-translatorica.pl/en/articles/13-7</a>.

being M. Koscelníková and M. Kabát. They focus on terminology, localization training and other aspects, however a more practical insight into the topic of digital game localization is still missing.

Methodologically, the paper is based on a parallel paper<sup>5</sup> dealing with non-gaming software, since it is assumed that the localization problems are more or less the same in both cases, but in different contexts (user software vs. digital games). To verify the claim that the localization problems in these two types of software are the same, a corpus of digital game texts was created and analysed by hand. The corpus consisted of texts from various digital games and together contained 30,452 words. The corpus was analysed by hand. During the analysis similar text instances to those mentioned in the already mentioned parallel paper were sought. Finding a similar issue in the corpus meant that the issue was present in both non-gaming and gaming software as well, thus it is present in among the selected features.

# Selected Features

Currently, there is no text that generally summarizes the issues of English to Slovak digital game localization. While there are partial documents,<sup>6</sup> these reflect the issue of localization of software products in general and do not focus specifically on the issue of localization of digital games. Thus, the aim of this paper is to list as many crucial elements that influence the translation of game software as possible, and to give examples of their arising in practice. At the same time, it should also be noted that this paper does not address the translation of subtitles or dubbing, as these aspects, while forming part of many digital games, are rather the domain of audiovisual translation.<sup>7</sup> Nor does the paper directly address the issue of intertextuality, which can occur in digital games,<sup>8</sup> but is equally inherent in other types of translation.

## Variables

Software contains strings of text with so-called variables - variable units. These are placeholders or tags (e.g., %s, %d, <0>, <1>) that are replaced by different numeric or textual values when the product is used $^9$ .

The localizer must be careful with variables, as their violation or removal could result in the software's malfunctioning or being completely inoperable. The localizer must discover the meaning of the variable and also what syntactic constituent it will be replaced with in order to be able to adjust the syntax of the sentence appropriately.

For example, see: KABÁT, M.: Pár poznámok k špecifikám lokalizácie. In KABÁT, M., PODLUCKÁ, L. (eds.): Prekladateľské listy 8. Bratislava : Comenius University in Bratislava, 2019, p. 21-34.

For more information, see: KABÁT, M., KOSCELNÍKOVÁ, M.: Training Localization. In DJOVČOŠ, M., ŠVEDA, P. (eds.): Translation and Interpreting Training in Slovakia. Bratislava: STIMUL, 2021, p. 157-170.; KABÁT, M.: Všeobecná štylistická príručka pre lokalizáciu softvérových produktov. Bratislava: STIMUL, 2022, p. 125.

<sup>7</sup> O'HAGAN, M., MANGIRON, C.: *Game Localization: Translating for the Global Digital Entertainment Industry.* Amsterdam, Philadelphia, PA: John Benjamins Publishing Company, 2013, p. 250.

<sup>8</sup> BODIŠOVÁ, K.: Intertextovosť a kultúrne špecifiká pri lokalizácii videohier. In *L10N Journal*, 2022, Vol. 1, No. 2, p. 40. [online]. [2023-05-30]. Available at: <a href="https://l10njournal.net/index.php/home/article/view/5">https://l10njournal.net/index.php/home/article/view/5</a>.

<sup>9</sup> Localization Guide, Variables. [online]. [2023-05-30]. Available at: <a href="http://docs.translatehouse.org/">http://docs.translatehouse.org/</a> projects/localization-guide/en/latest/guide/translation/variables.html>.; KABÁT, M.: Všeobecná štylistická príručka pre lokalizáciu softvérových produktov. Bratislava: STIMUL, 2022, p. 125.

Variables pose the biggest problem in software localization and are one of the most characteristic features of localization. What follows are some examples to show the problematic nature of variables in software (O stands for original sentence, T for translation).

- O: %s was kicked from the game.
- T1: %s bol vyhodený z hry.
- T2: Hráč %s bol vyhodený z hry.
- T3: Hráč (%s) bol vyhodený z hry.
- T4: %s bol/-a vyhodený/-á z hry.

The above example shows the basic problem that variables create in a text. The player's name replaces the %s variable in the example. If the T1 translation were used, there would be a problem with gender in the Slovak version, because Slovak distinguishes gender in the verb as well (vyhodený stands for male, vyhodená for female). An erroneous message could appear in the digital game, e.g., Maria Kabatova bol vyhodený z hry.

Therefore, localizers insert a descriptor (a prefix word or a descriptive word) in front of the variable, to which the other parts of the sentence are grammatically linked (in this case with the masculine gender, because a generic masculine is used) and the sentence will be grammatically correct as in T2 and T3, e.g., Hráč Maria Kabatova bol vyhodený z hry.

Such a procedure could also be objected to and it is suggested to use a form with a slash, as can be seen in the T4 translation. However, slashes are often better avoided. In some software, and especially in programming languages, they can create problems, fragment the text, and style guides (which will be discussed below) often prohibit the use of the version that can be seen in the T4 translation.

- O: %s's Head.
- T: Hlava hráča %s.

A similar approach is used in the second example. Again, a descriptor was placed in front of the variable. This time, the problem is not created by the genders of the words, but by the inflection. Since the word that will replace the variable will always be in the nominative case, it is impossible to create a smooth translation. However, a localizer can help themself by using a descriptor, so that instead of an incorrect sentence such as: Hlava Marian Kabat, the grammatically correct version Hlava hráča Marian Kabat is displayed.

- O: {\*PLAYER\*} sent you...
- T: {\*PLAYER\*} vám posiela...

In this case, the variable is {\*PLAYER\*}, so it cannot be translated (translating a variable would lead to an error). However, it is made quite clear what will be inserted instead of the variable. Furthermore, since the sentence can be formulated so that the variable represents the subject (so it will be in the nominative case), there is no need to use a descriptor. On the other hand, in the next example, the situation becomes more complicated.

- O: {\*PLAYER\*} was doomed to fall by {\*SOURCE\*} using {\*ITEM\*}.
- T: Hráč {\*SOURCE\*} porazil hráča {\*PLAYER\*} pomocou predmetu {\*ITEM\*}.

This message contains up to three variables, and it's always clear what they will be substituted with. The variable {\*SOURCE\*} may cause a problem for the localizer, but based on additional context, they would know that it is the name of another player.

With this translation, descriptors can no longer be avoided and a translation like the one in the example needs to be used. In a digital game, the player would see a message like this: Hráč Maria Kabatova porazil hráča Marian Kabat pomocou predmetu meč. At this point it should be said that such a sentence is not stylistically perfect, but it contains all the necessary information and conveys it in a comprehensible and grammatically correct way.

One more thing to say here about variables is that the localizer needs to take care to not accidentally confuse them, because mistakes could result in a translation with incorrect naming of the winner and the loser. This implies a simple rule: the order of the variables may be changed, but their content must not be changed.

O: Autosaving in %d...

T: Automaticky sa uloží o %d...

This example shows that a variable can also represent time, in this case the time remaining before autosaving the game. There is no need to use a descriptor here, as the sentence can be formulated to sound natural and fluent without one. The following is another example where a variable replaces a number.

O: You received %d swords.

T1: Dostali ste %d meče.

T2: Dostali ste %d mečov.

T3: Dostali ste meče (%d).

While in English there is only one plural noun form (by adding the -s at the end of a word), in Slovak two forms can occur (numbers 2-4 are created with the accusative and 5 or more with the genitive). Since a localizer does not know what number is used in place of the variable, the T1 or T2 translations cannot be used. The solution to this problem is the T3 translation, where it is indicated in the text what the user has added, and then the variable is used in parentheses so that the number appears after the text. The resulting text would then look like this: Dostali ste meče (6).

O: You received {0, plural, one {sword}, other {# swords}}.

T: Dostali ste {0, plural, one {meč}, few {# meče}, many {# meča}, other {# mečov}}.

This last example of variables uses the ICU (International Components of Unicode) syntax, which, when localizing strings with pluralization variables, allows the localizer to add the necessary grammatical forms to the variable, thus producing a translation that will ultimately be both grammatically and stylistically correct. In the above example, the player will see in the game one of the versions (Dostali ste meč./Dostali ste # meče./Dostali ste # meče./Dostali ste # mečov.) depending on how many swords they actually receive. The individual parameters in the variable represent these numbers: one = 1, few = 2 to 4, many = decimal, other = 0 and 5 or more.

## Character Limits

Character limits are also typical for localization. Localizers often have to work with texts that have a given length which cannot be exceeded, otherwise the text would interfere with graphics or not fit in dialog boxes. To help with character limits, good

internationalization (generalizing the product so that it can work with different linguistic or cultural conventions) can help, for example by making dialogue boxes at least 30% larger, thus creating more space for localizers to deal with them. The use of abbreviations is recommended only in extreme cases, as the user might not decipher them correctly or not understand them at all.<sup>10</sup> To better visualize character limits in the context of digital game localization, an example (all of the following examples are taken from *Super Lucky's Tale*<sup>11</sup>).

O: Welcome, young Lucky. I've created the most devilish, devious levels you've ever seen!<page>Cross these pits of peril, and you'll earn something more precious than diamonds or a gift card: my undying respect! And a gift card.

The character limits in the example are represented by the <page> variable, which indicates where in the game the page turns, i.e., a new dialogue bubble appears. In this case, the localizer should be instructed on how many characters (including spaces) each page can contain. If this doesn't happen, the localizer tries to produce a natural translation, but one that is not much longer than the original. If the translation exceeds a character limit, the error should be spotted by a language tester (described below), who will return the translation for reworking even with the maximum number of allowed characters.

# Text Fragmentation

Another feature of localization is text fragmentation. Text fragmentation occurs because the text to be translated is completely or partially separated from the source code during the localization process, so that the text reaches the localizers in the form of text strings. These often do not follow any logical order and the localizer does not even know where the text appears. When localizing digital games, this problem manifests itself in that the localizer sometimes does not know which character is speaking. Thus, this problem is also closely related to blind translation (below). The following model situation can occur.

O: Amazing! I don't have a formula for how well you did! If I did, it would be Lucky squared over awesome times something, something. We aren't buying anything! Well... unless you have those thin mint cookies...

In this case, the localizer does not know if both lines are spoken by one character or two different ones. Even though correct punctuation is used in the lines, punctuation cannot be used as monologue delimiter (e.g., a character can say several sentences before a second character starts speaking). However, as mentioned above, the text to be translated is only partially separated from the source code, and the localizer could also provide such additional information to the text.

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"XML:Text", 42; "Default$$FTON_Hub_AnnieLyd_Dialogue_08"
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<sup>&</sup>quot;XML:Text", 42; "Default\$\$FTON\_Hub\_Door\_Dialogue\_01"

<sup>10</sup> O'HAGAN, M., MANGIRON, C.: Game Localization: Translating for the Global Digital Entertainment Industry. Amsterdam, Philadelphia, PA: John Benjamins Publishing Company, 2013, p. 159.

<sup>11</sup> PLAYFUL STUDIOS: Super Lucky's Tale. [digital game]. Redmond, WA: Microsoft Studios, 2017.

Of the two sentences, the parts before the word Dialogue are the most important, because they indicate the character who will say the line (AnnieLyd and Door). Since the names are different, it is obvious that the lines will be spoken by two different characters, which makes the localizer's job easier. However, if the localizer does not get such information even when asked, they have to work in the dark, trying to create a neutral translation (they try to generalize so as not to misgender the character or the object) and they also rely on a language tester.

# Blind Translation and Its Causes

Localizers also must deal with blind translation during the localization of digital games. Blind translation means that the localizer has minimal or no context available to help translate the text strings correctly. There are several reasons for this. One is the fragmentation mentioned above. The other is the fact that translation occurs during software development (which is discussed below), and thus localizers do not have a finished version in which to check context. The third is the poor quality of the so-called localization packages (kits - a collection of materials for localizers), which contain reference materials. This is why inaccuracies often occur in translation.

To help reduce the impact of blind translation, localization kits can be prepared that also provide localizers with context. In addition, localization tools are being developed that allow working with text even within the source code and additionally offering a preview of the final product. Thus, the localizer can see where the translated text appears. The following is a simple example of blind translation.

0: Welcome, young Lucky. I've created the most devilish, devious levels you've ever diamonds or a gift card: My undying respect! And a gift card.

This monologue was already used once before, but it can be used to illustrate the problem of blind translation as well. The localizer does not know whether the character who utters it is male or female, so the localizer cannot form a clear concept of the translation. In order to eliminate the problem of blind translation at least partially, the localizer can also look for help in the part of the source code that looks like this.

"XML:Text", 42; "Default\$\$FTON\_Hub\_Brett\_Dialogue\_01"

According to this, the localizer will detect that the monologue is spoken by the character Brett, so the translation will be written using the male gender. It needs to be stressed once more that if the localizer does not receive such information, they cannot be sure what character will say the line, and hence negative shifts may occur in the translation. This shows the importance of subsequent language testing.

One of the causes of blind translation is translation during development. Translation starts during product development. Therefore, the texts that localizers work with can change at any time. Translation is done during development because companies strive for

so-called sim-ship, i.e., the simultaneous release of all language versions of a product.<sup>12</sup> The fact that products are localized during development is one of the reasons for the occurrence of blind translation. This is because if there is no final product, it cannot be used as reference material.

On the other hand, it often happens that the client approaches the localizer to edit certain parts of the translation because changes have been made to the original text during development, which may affect the translation. The following sentence with a description from the code can be used as an example of this problem.

O: Hard to choose? Oh, I know. I've been staring at these for longer than I'd like to admit. "XML:Text", 42; "Default\$\$FH\_02\_GillieIsland\_Middle"

Since it is not logical for an island (Gillielsland) to say the line in the context of the digital game in question, as the code implies, it is not known which character said the line. Furthermore, when translating during development, the localizer cannot even identify who said the sentence from other parallel material (e.g., when translating updates or expansions, they can use YouTube to help them find videos of the game).

Another problem is what the word *these* refers to. Here the localizer has no context and must decide. Therefore, the localizer must either try to create a translation that does not imply any gender, or they can rely on a language tester that might (but might not) detect the error. It is preferable to produce a gender-neutral translation that is vague but avoids an error caused by misnaming an object or assigning the wrong gender to the character. Furthermore, in such a case, communication with a developer who can answer any questions the localizer may have can help.

Another cause of blind translation is so-called *sim-ship*. Sim-ship is a term derived from the phrase simultaneous shipment, which means that localized versions of a product should be released on the same day (or a few days apart) as the original product. This is due to the fact that the highest sales occur in the immediate weeks after the release of the original product, and developers want to avoid potential profit losses.<sup>13</sup> Moreover, this is how companies want to prevent or at least limit illegal copying and distribution of software.<sup>14</sup>

Thus, sim-ship is closely related to the development and creation of language mutations of a product. Again, then, it is one of the reasons why blind translation occurs.

#### Teamwork

Localization projects are almost always large projects, so teamwork is typical for localization. <sup>15</sup> Therefore, localizers also most often work in teams that include editors, terminologists, and language testers in addition to the localizers themselves.

In this case, it is very important that the localizers have a unified terminology database (either online or as part of a CAT tool), which is developed in advance by a terminologist,

<sup>12</sup> ESSELINK, B.: A Practical Guide to Localization. Amsterdam, Philadelphia, PA: John Benjamins Publishing Company, 2000, p. 111.

<sup>13</sup> See also: FRY, D.: The Localization Industry Primer. Féchy: SMP Marketing and the LISA, 2003.

<sup>14</sup> O'HAGAN, M., MANGIRON, C.: Game Localization: Translating for the Global Digital Entertainment Industry. Amsterdam, Philadelphia, PA: John Benjamins Publishing Company, 2013, p. 234-235.

For more information, see: SMOLÍK, M.: Lokalizácia softvéru ako tímová práca. In GROMOVÁ, E., ŠOLTYS, J. (eds.): Odborný preklad 4: Materiály zo seminára Informačné technológie a ich terminológia. Bratislava: AnaPress, 2009, p. 31-48.

because otherwise there is a risk of terminological differences. This is also where a style guide comes into play, which ensures that the translation is consistent even though it is produced by several localizers.

It is also beneficial for the team members to have a way to communicate together in order to translate consistently and seek advice for various translation problems. Anonymizing the team members may result in inconsistencies in the final product.

## CAT Tools

Localization is associated with the software industry, and it is therefore not surprising that it is characterized by the use of various technologies, among them being translation tools. As localization is primarily carried out in teams, it is essential to maintain consistency, which is facilitated, for example, by CAT tools with a translation memory.<sup>16</sup>

On the other hand, CAT tools can also cause fragmentation of the source text, as they sort the text during segmentation (typically turning each sentence of the original into one segment for the localizer to translate), resulting in a typical example such as that provided in the section on fragmentation.

# Testing

Before a localized product is released, it must undergo testing that goes beyond traditional proofreading. Localization distinguishes several types of testing: linguistic, technical, functional, and testing of the internationalized version.

During linguistic (language) testing, the person doing the testing (tester) should detect any language errors. It should be noted that the tester does not compare the original with the translation, but only checks that all the text is displayed correctly, does not exceed the boundaries of a window or button, meets the requirements of a style guide, etc. During testing, possible character limits may be found that the developers did not foresee at the beginning, so the client may approach the localizer to modify and adapt the translation to meet the character limits. Similarly, the language tester should detect errors that have arisen from insufficient context (such as those mentioned above).

# Post-release Updates

The localizer's work does not stop after a software is released. It is common for software to receive updates long after release, e.g., in the form of patches (designed to fix various technical bugs) or other types of updates. This means that the localizer "has to check all the changes that have taken place in the texts and translate what is needed". CAT tools are used to keep track of changes.

O'HAGAN, M., MANGIRON, C.: Game Localization: Translating for the Global Digital Entertainment Industry. Amsterdam, Philadelphia, PA: John Benjamins Publishing Company, 2013, p. 120.

<sup>17</sup> PETRŮ, J.: Video Game Translation in the Czech Republic – From Fan Era to Professionalism. [Master Thesis]. Brno: FF MU, 2011, p. 57.

There are some advantages for the localizer in translating updates. The biggest is that the product has already been released, so more context is available. The additional context can be provided to the localizer by the client, they can find it themself, or they can often be helped by YouTube videos, e.g., let's plays.

# Style Guides

A style guide is basically a list of rules and recommendations localizers should follow in order to work as a team to produce a coherent and consistent translation. It should be noted that style guides are not only part of localization projects, but are also used by other institutions, e.g., the European Union. Style guides therefore present a way for the standardization of texts.

A style guide may contain instructions on when to use which descriptor, how to inflect certain terms, how to translate different parts of the text (buttons, achievements, rewards), how to edit lists and sub-lists, how to handle punctuation, etc. In addition, some style guides also include the most common grammatical errors for a language and clarify the written use of a language. At the same time, style guides also determine the style (or tone) of the translation.

In addition, either the style guide or a separate document should contain information on the underlying context. This may include information about the story, characters, and places where the digital game is set. Pictures of the characters are also of great help here, so that the localizer can visualize them, and give an indication of the relationships between the characters, which will help the localizer to establish, for example, familial or other relationships.

## **Conclusion**

The paper discusses a few basic features that are regularly encountered while working on digital game localization from English to Slovak, namely variables, text fragmentation, blind translation, teamwork, CAT tools, testing, character limits, and updates. It tries to explain them briefly and gives practical examples of them.

While a skilled localizer should be able to work around several of these features, the degree of their success depends on their competence level. A localizer's language competence determines how well they will be able to deal with variables or character limits. Their technical competence establishes how well they are able to deal with various CAT tools and other software used in localization processes. Having good data-mining competence helps the localizer find additional context or terminology online or in other sources. Localization requires a complex set of competences, and a well-trained localizer should have these competences at a good level or at least should be able to work on them. In this sense a skilled localizer is key to successful digital game localization.

Although some of these problems (e.g., variables, character limits) mostly have their root causes in language specific issues, the others are closely tied to a lack of context. Therefore, the article concludes with a recommendation – if developers are looking for high quality localizations of their digital games, they should aim to provide as much context to their localizers as is possible, and they should be able and willing to respond to their questions, because even a skilled localizer with sufficient training cannot work without the necessary context.

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