

USABILITY ASSESSMENT OF A QUICK START GUIDE OF A SAMSUNG GALAXY J5 CELL PHONE

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Abstract Manuals for the use of products may have different forms, depending on their primary purpose. One of the forms of user manuals for products is a quick start guide. The purpose of this manual is to quickly prepare a user for the initial use of the product. Different forms of the manuals for the use of products have previously been the subject of research. In this study, for the first time in the world, the problem of usability of a quick start guide has been considered. In this regard, an ergonomic assessment of the usability of the Samsung Galaxy J5 cell phone was performed. It was pointed out to the shortcomings in designing this manual. Taking into account the results from the analysis of the usability of this product, general recommendations for improving the usability of quick start guides are given. These recommendations can be applied to the design of the quick start guide of any product.

Keywords: Quick start guide; user manual; usability; ergonomics.

1. INTRODUCTION

Manuals for the products can be viewed as a part of the interface between the products and users. For that reason, the importance of designing the manuals for products has a huge significance. From the way the manual is designed, the interaction between man and the product depends. An inadequately designed manual can lead to errors in the use of the product, sometimes with fatal outcomes.

Usability is a concept that has wide application in the ergonomic designing and evaluation of different products and systems [1]. However, it is not uncommon for designers of user manuals working in companies to have no knowledge in the area of ergonomics and usability, or have minimal experience in this field. For this reason, many user manuals often have different shortcomings in the usability domain, which can be reflected in the success of the use of a product.

Although manuals have great significance for the use of products, a relatively small number of studies have been performed on the usability of user manuals. In the papers [2-21], the usability studies of the manuals for the use of different products have been presented. Product manuals may have different forms, depending on their primary purpose. However, on the basis of a detailed insight into the references in this area, it can be noticed that none study was done regarding the usability of a quick start guide, as a form of a user manual.

2. THE GOAL OF THE RESEARCH

The Quick Start Guide is a brief form of a product instruction manual. The main goal of this form is to prepare the user for the initial use of the product as soon as possible. This form of manuals usually

contains a description of the product, instructions for its installation and startup, familiarization with the basic functions of the device, basic product specification, and warnings related to its use.

It is not a rare case that users of a particular product have no previous experience with its use. Also, there are cases where users have some experience in using a particular product category, but a new product may have different hardware or software than previously used (as may be the case when using a mobile phone). In addition, users of a particular product can be older people as well as individuals with different levels of education. Bearing this in mind, it is extremely important that the quick start guide is designed on ergonomic principles and in accordance with the principles of usability in order to allow adequate initial interaction of the mentioned user categories with the new product.

In addition to the above, it is often the case that manufacturers place a multilingual user manual in the product packaging. In most cases, the user guide is written in English. In some papers and manuals [22, 23], the importance of presenting user manuals in the local language is highlighted, which is understandable since not all users need to know the English language. However, it is not a rare case that the translated form of the manual does not fully correspond to the original form, which can be a problem for the user.

The subject of this paper is the quick start guide for the Samsung Galaxy J5 cell phone. The brief instruction manual of this mobile phone consists of 10 pages of 100x50 mm format, soft bind and black and white print. This manual includes four images and two tables. The main objective of this study is to assess the adequacy of the quick start guide of the Samsung Galaxy J5 mobile phone from the aspect of usability, bearing in mind primarily the aforementioned categories of users.

3. METOD

Usability can be assessed on the basis of a large number of methods, both formal and non-formal. What method will be used in the specific case depends on several factors, such as the economic cost-effectiveness of the assessment, the evaluator's experience, the time required to carry out the assessment, the objective of the assessment, etc. Having these factors in mind, the authors of this paper, in the concrete case, have opted for the method of expert evaluation.

The expert assessment method can be used at any stage of the design process, including the final assessment of the implemented solution. Although this assessment can be carried out by an individual evaluator, in order to detect a greater number of shortcomings, it is desirable to involve more evaluators [24]. However, the number of evaluators may also vary depending on a number of factors. The experience of the evaluator, the level of training, as well as the volume of materials that are the subject of assessment are some of the factors that have an impact on the number of engaged evaluators. Taking into account the mentioned factors, for the ergonomic assessment in the concrete case, we have considered that it was sufficient to engage the two evaluators (who are at the same time the authors of this paper).

The main task of the engaged experts was to identify issues related to the usability of the quick start guide of the Samsung Galaxy J5 cell phone. Evaluators independently carried out the identification of

the usability problem. For the purpose of the realization of the assessment, experts used general and also certain specific heuristics of usability [8, 25], which could be considered valid in the specific case. After completion of individual sessions, the evaluators conducted a joint discussion in order to form a final list of identified usability problems.

Since most users are using the manual for the use of products in their mother tongue, the subject of the analysis was the quick start guide for the Samsung Galaxy J5, which was written in Serbian. In addition to the instructions in the Serbian language, in the packaging, in addition to this product, there were several versions of the guides in other languages. However, in this case, the packaging did not contain instructions written in English. The entire analysis carried out in this paper exclusively refers to the version of the quick start guide written in the Serbian language.

4. RESULTS OF THE USABILITY ASSESSMENT

Below is a review of the identified usability problems of the quick start guide for the Samsung Galaxy J5 cell phone. The identified deficiencies are separately presented in the following sections.

4.1. The non-existence of the name of the device type and inadequate device marking

Already on the first contact with the quick start guide of the Samsung Galaxy J5 cell phone, a lack related to its usability is encountered. On the cover page of the manual, below the name of the type of the manual, the mark SM-J530F/DS is inscribed, figure 1. Given that the Samsung Galaxy J5 is the market name of the device, previously mentioned mark without indication of the name of the device (and even a data that indicates that the manual is applied to a mobile phone as a device) may influence the user to consider whether he got an adequate user guide along with the device. Although maybe it is not a bigger problem for a user to come to the conclusion that the user guide refers to a mobile phone as a device, he will still be at least somewhat insecure whether this manual is directly related to his mobile phone model. All this can cause user dissatisfaction and initially reduces usability.



Figure 1. The title-page of the quick start guide for the Samsung Galaxy J5 cell phone.

However, even later, if the user practices postponement of the instructions for use outside the packaging (for example, along with instructions for using other devices - mobile phones, etc.), after a certain longer period of time the user may have a problem with finding the appropriate manual, if there is a possibility that he forgot the problem he initially had when trying to use it.

4.2. The effect of folding the pages of the guide on the organization of the sequence of instructions

The quick start guide for using the Samsung Galaxy J5 mobile phone is made of paper that is folded into a "zig-zag" form, figure 2. This pattern of bending pages of the manual can be a problem for the user when reading. In this particular case, when the manual is closed, the first page is the front page, while on the back (conditionally said on the last page) there is a statement of conformity. After turning the front page, the user has the insight into the next two pages, by additional turning it can be found the next two pages, and after another turn, it can be found the last page of the manual. This initially can lead the user to the idea that he has read the entire manual. However, as the manual is folded into a "zig-zag" form, the user in the essence read out only half of the quick start guide, i.e. the part that is printed on one side of the paper. When the user realizes that he has not read out the entire manual and begins to read the rest of the document, the question of the sequence of the instructions and eventual omission of an important instruction in the sequence of instructions that are necessary for the execution of a specific function of the device becomes actual. All this can cause confusion of a user, cause a delay in the start of work with the device and affect user's satisfaction.

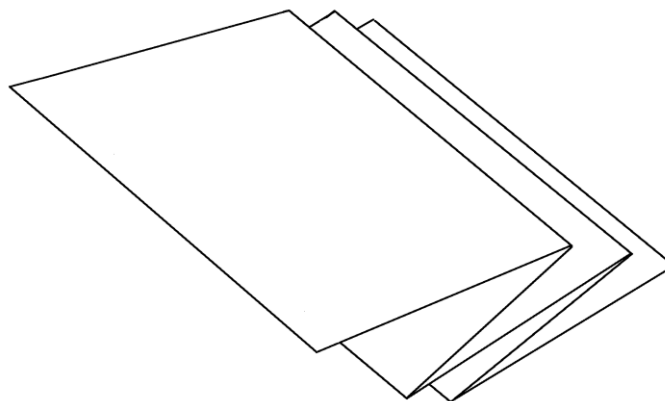


Figure 2. Bending of the pages of the manual in "zig-zag" form.

4.3. The non-existence of pages numeration

The pages in the analyzed quick start guide are not numbered, which is another drawback. This omission further complicates the user's work, who has already been previously confused by the way the pages are folded. The page numbering would allow the user to know in which order the reader should read. The numbering of pages would also contribute to additional security for users in terms of the order of presentation of information in the manual and a quicker finding of the desired data.

4.4. Imprecise instruction on placing nano-SIM and microSD cards

Another of the shortcomings in the analyzed manual that can cause misunderstanding of written up among some users is an instruction that was written up in an incomplete and ambiguous way. Namely, in the manual, it is written up: "Place the ejector needle into the bay to slacken it". This sentence in the manual is imprecise, since the term which in Serbian can be translated as "slacken" was used. If a user only slackens the cardholder and does not pull it out of the device, it will not be able to position the card. Instead, for a more precise definition and understanding of the action that a user needs to take to achieve the desired goal (setting the card in the holder), the following instruction can be used:

Place the eject needle into the hole in the holder tray to remove the SIM card holder, and then place the card in the holder.

4.5. Inadequate battery charging instruction and non-existence of instruction for operating the device

In this quick start guide, one more inaccurate instruction has been written. This instruction refers to one of the necessary parts for functioning the device. It's about a cell phone battery charger. The instruction has been written up as follows: "During charging, the charger should be kept near the electrical outlet in order to be easily accessible." The sentence that is written up in that way certainly does not describe in the right way the action to be taken.

If the user would comply with the instructions in the manual, the mobile phone would never be charged, as an easily accessible charger near the electrical outlet does not provide for charging the phone. Instead of the previous one, in order to achieve the desired activity, the following instruction can be used:

During charging the battery, the charger must be placed in an electrical outlet and connected by the other end with the phone, in order to achieve charging.

Another drawback related to charging a battery is to assemble the charger and its putting into the functional state. The charger that comes with the device consists of two parts, from the adapter and the cable. These two parts have been packed in separately in the box, whereby the manual does not point out that these two parts need to be connected in order for the charger to be fully ready to charge the phone battery. In this case, an important instruction for putting the mobile phone into operation is omitted. It is unlikely that users who for the first time use a mobile phone with such a type of charger be able to carry out charging the batteries of the mobile phone with electricity without any dilemma.

4.6. Inadequate title of a chapter (section) of the manual

Within the framework of the analyzed manual, there is a chapter entitled "Device schedule", which is incomprehensible (since the subject of the instruction is one device - mobile phone). In order for the title of this chapter to correspond to what was meant to be explained, the title of the chapter should read:

The layout of the controls of the cell phone.

Alternatively, the name of this chapter could be "Layout of the push buttons, connectors, and bays of the device".

4.7. Inconsistency of the textual explanation and the representation in the picture

In the quick start guide of the Samsung Galaxy J5 cell phone, there are few inconsistencies between the textual explanation or the name of the entity that is presented with the illustration in the figure. In Figure 3, these discrepancies can easily be seen. They are identified in the mentioned figure by arrows with alphanumeric symbols.

- Arrow with mark a). The push button is called "Recent button" in the figure. The name of this button is unsuitable because it does not indicate an adequate way to the function it performs. Instead of the used, depending on the preference, the following names can be used: Back key to the previous screen, Back button to the previous activity, and the like.
 - The arrow with mark b). The name "SIM card/memory card slot" is used. This name also inadequately indicates the entities in question. Instead of the used one, the following name can be used for these objects: SIM card slot/memory card slot, or slots for SIM card and memory card.
 - The arrow with mark c). The denomination "Volume button" is used. However, since there are two buttons in the picture, the denomination should have been written in the plural, i.e. Volume buttons.
- In case of individually labeling these buttons, then there should be two names (i.e. for each of them individually), Volume up button and Volume down button.

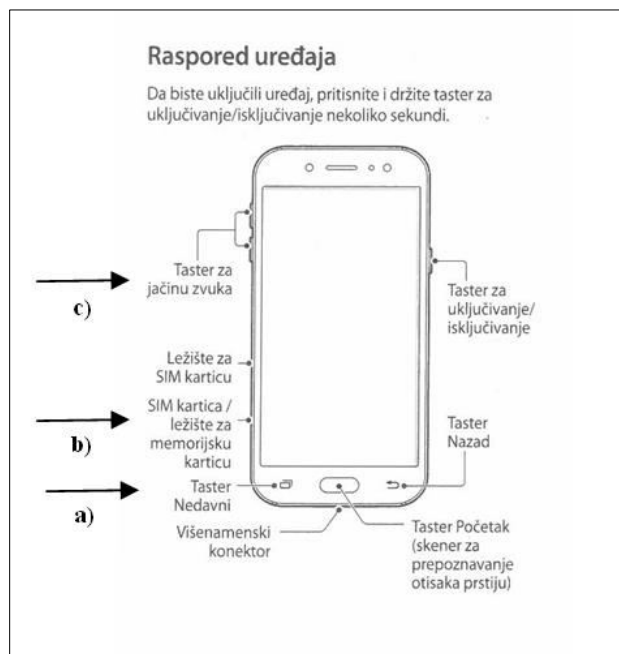


Figure 3. View of the basic buttons and connectors required to work with the device.

4.8. Different location of the figure and text that refers to the figure and the absence of the appropriate reference

In this quick start guide, it can be noticed that the text that explains the figure and the figure itself are not on the same page. The example of this in the quick start guide is placing the nano-SIM and microSD cards. In connection with these cards, the installation instruction is located on a different page from the illustration that indicates how to position them. In addition, there is not even a reference to indicate the correlation of the textual explanation with the figure.

4.9. Lack of a legend of used symbols

In the analyzed quick start guide, at different locations can be seen symbols, such as an exclamation mark in a round frame or a bell in a square frame (figure 4). However, these signs, together with their meaning, are not given in a separate legend. Such a legend would allow the user to understand the symbol which he encounters. When a user knows what the symbol represents, he may devote proper attention to the sentence next to the sign. In this way, a user who does not want to read the entire manual immediately gets an insight into the most important details that he should pay attention to, including the safety of use.

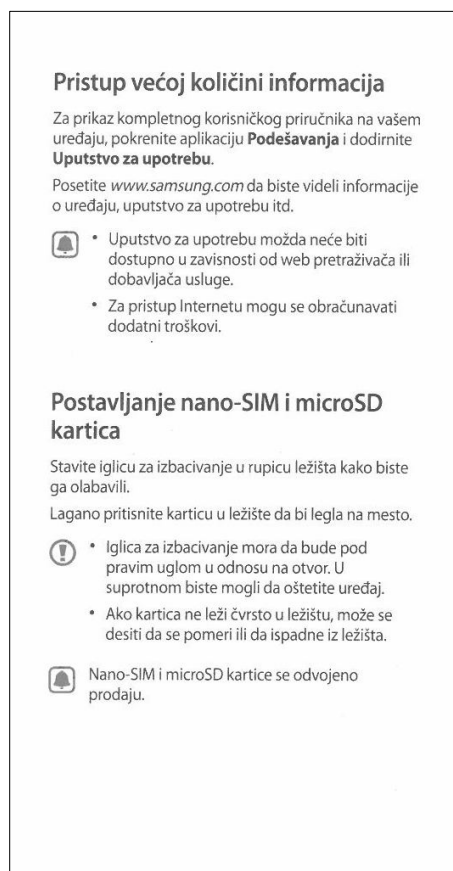


Figure 4. An example of the used signs (graphic symbols) for which no specific legend has been given with an explanation of their meaning.

4.10. The non-existence of the basic contents of the quick start guide

One more disadvantage in this manual is the lack of content. The manual that was analyzed has ten pages and ten chapters. The existence of internal contents would allow the user to easily handle the manual, as well as to quickly access information that interests him at a given moment.

4.11. The non-existence of the insight into the detailed contents of the manual

At the moment, conditionally speaking, the lack of insight into the detailed contents of the Samsung Galaxy J5 mobile phone cannot be considered a disadvantage. The reason for this is that there is currently no quick start guide for any product featuring a presentation related to its detailed manual. It is understandable that the Quick Start Guide does not contain all the information that is related to the use of a particular product. In this way, if a quick start guide for a particular product does not contain a presentation that refers to the contents of a more comprehensive, detailed manual for that product, there is a possibility that the user will give up of searching for specific information, which would be relevant to his needs. He may assume that perhaps this information is not present in the detailed manual, so that he will give up of additional engagement in the direction of acquiring the detailed manual (say on the Internet).

However, if for any product there is a presentation of a detailed manual in the quick start guide, there is a high likelihood that the user will find out that there is a certain additional function or the possibility which his product can fulfill, for which he was not previously aware. In this way, the user can become aware of additional possibilities for using the product. In this case, the user may decide that it is rational and useful to look for information from the detailed manual for using a particular product.

5. RECOMMENDATIONS (HEURISTICS) FOR DESIGN OF QUICK START GUIDES

Recommendations for quick start guides (QSG) design will be presented here. These recommendations are derived from the usability analysis that has been implemented. However, they have a general character and can be applied to the design of a quick start guide to any product. In parentheses, at the end of each recommendation, the section label of this paper is specified based on which the specific recommendation is derived.

1. The QSG front page should contain the exact name of the device and its mark. Avoid designing QSG that is common to several products or product models (4.1.).
2. Avoid the QSG format where the pages are folded into a "zig-zag" form (4.2.). The booklet format is recommended.
3. If QSG contains more than two pages, pages need to be numbered. This is especially true for the "zig-zag" form of the manual, if for some reason (that is not related to usability) it is still used (4.3.).
4. Avoid uses of imprecise, incomplete or ambiguous instructions (4.4 and 4.5).

5. QSG should include all instructions that are essential for putting the device into operation, regardless of the fact that some instructions may sound trivial to an experienced user (4.5.).
6. The names of the chapters (sections) of QSG should completely provide an association to the specific feature of the product, the name of any its part or to activity that the user should perform with the device (4.6.).
7. If the identical control of the device is used for different purposes, then the names of each individual control of the same type (e.g. buttons) should be unique, whereby their names should be fully associated with the function they perform (4.7.).
8. The textual explanation (in the main text of the QSG) should be fully consistent with what is presented in the figure (illustration) in the manual (4.7.).
9. A textual explanation that refers to a figure or part of a figure from a QSG should be on the same page as the picture. Use separate views of details derived from a complex figure to achieve this. However, if this can not always be achieved due to the limited space caused by the used page format of QSG, then each figure should be numbered, whereby the instruction given in the text form should contain a reference that contains the ordinal number of the figure to which it refers (4.8).
10. If graphic symbols are used to emphasize the importance of specific instructions (information) in QSG, then it is necessary to make a legend of these symbols that will include the meaning of each individual symbol used (4.9.).
11. QSG should have a basic internal contents page, which will help a user to orientate himself and find information more quickly (except for short QSGs containing up to two pages), (4.10).
12. At the end of the QSG, it is desirable to have additional, a more comprehensive contents page that represents a presentation of the content of a more detailed user's guide that relates to the same product (which the user can look for at another location, say on the Internet), (4.11.).

3. CONCLUSION

Based on detailed insight into the scientific literature concerning the usability of manuals for the use of different products, it can be noted that the quick start guide as a form of manual has not previously been considered in terms of usability. In this paper, the subject of the analysis was the usability of the quick start guide for the Samsung Galaxy J5 cell phone. Bearing in mind the above, we can ascertain that the first study of the usability of a quick start guide in the world is presented here.

As a result of the carried out assessment of the usability of the mentioned quick start guide for the Samsung Galaxy J5, the shortcomings of this manual have been identified. Recommendations for removing these shortcomings have been given. However, these recommendations have a global significance, as they are given in the general form. In this way, in essence, the presented recommendations (heuristics) can be applied to design the quick start guide of any product.

In most cases, for writing manuals, it is not enough to engage only persons who possess technical knowledge, or persons who have knowledge in the field of linguistics and foreign languages (in the case of translation of the original text of the manual into a foreign language). In this regard, one of the most important recommendations for companies that manufacture devices for which user manuals are designed is that in their designing and/or evaluation from the aspect of usability participate ergonomists, or experts in the area of usability of products. In this way, it can be ensured that the quick start guide or any other form of product manual be to the fullest extent in accordance with the needs and expectations of users.

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