The Importance Of User Message Text and Why Professional Writers Should Be Involved
A Critical Review

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Helpful dialog between a system and its user is critical to the usability of a piece of software. Without clear and precise feedback, many systems become inefficient and costly in terms of both time and money. Research papers have been published describing the way in which professional writers can be employed to improve the overall effectiveness of a system. This paper aims to summarise and review one such study, which comes to the conclusion that systems do indeed benefit from the input of professional writers.

1. Introduction

It is not uncommon for a developer of a system to spend huge amounts of resources on hiring external professionals employed solely to design the user interface to a piece of software. Unfortunately, a disproportional amount of effort is usually spent on the implementation of user messages, such as error and system status messages. These messages are quite often only understood by the developer, but not by the intended users. Although some developers realise that a problem with user messages exist, they are not helped by the fact that even simple sentences can be written in many different ways, as highlighted by the following example from [4]:

- List programmers department managers supervise.
- What programmers work for department managers?
- List programmers working for department managers.
- List any programmers department managers supervise.
- Which programmers work for managers of departments?

A solution to this problem, as described in the study [1], is to use professional writers to word all user messages.

We believe that the arguments presented in the paper are valid and that professional writers are indeed a valuable asset when developing a new software system. In addition, the research methods used to come to this conclusion are well defined and suitable to the subject of the study. Unfortunately, as discussed in detail later in this paper, the way in which the results of the study are presented is not ideal.

2. User Messages and Professional Writers

In any system there are many different types of user message, which can be grouped into three separate categories. First there is what is known as “user-directed” help. This includes any message which the computer displays to the user after a user action, e.g. the clicking of a help button. This is a large area and is not covered extensively by this paper.

The other two categories are error and system status messages. These are both displayed by the system without any specific action from the user and are known as “application-directed”. Error messages are displayed when an action results in an error, which generally requires extra user input. System status messages on the other hand are messages which require no action, but inform the user of the current state of the system, e.g. progress dialog boxes.

The role of a professional writer, especially a technical communicator, is to explain complex technical ideas in a simple fashion so that the users of the technology concerned can easily understand them. Examples of the skills of technical communicators are audience analysis, writing skills, layout/illustrations, graphics skills and
interviewing [2]. In relation to information systems development, technical communicators can contribute in a number of ways, especially by trying to approach the system from a users point of view, which should lead to a more user-friendly system.

3. Critique

The following section closely mirrors the organisation of the author’s paper for easy reference to appropriate sections.

3.1 Importance of Message Design

The author begins by justifying this study saying that user messages which are not carefully designed are accusing in nature and tend to make users angry. We do not believe that this is entirely true. It may be the case that a user becomes angry if already stressed, but not solely due to a user message. In our view, her justification for a study such as this should emphasise the lack of help a message conveys, rather than the emotion it evokes. An example of such an unhelpful and badly written error message is the infamous DOS error message:

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Not ready reading drive A
Abort, Retry, Fail?f
Current drive is no longer valid>
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This is quite obviously a badly designed error message, but did it ever actually make anyone angry?

The author continues by stating what constitutes a good error message:

“In designing error messages ... it is important that the message be timely, in a language the user can understand and provide enough information for the user to be able to know how to continue.”

These are good points made by the author and could be used as a guide to writing user message for use by developers if professional writers are not available.

One point that the author tries to make is that:

“Despite the evidence and the literature on the importance and often critical nature of system status and error message text, users today are still confronted with messages that do not communicate effectively what the problem is or what the system is doing.”

Whilst this may be true of older systems, more modern systems on which the research is based (i.e., systems developed during 1997 and 1998) do, in our view, have more acceptable user messages than they are given credit for in the paper. Although they are still not perfect, they are much better than the author suggests.

3.2 The Role of the Technical Communicator

Although the author briefly outlines the role of professional writers, especially technical communicators, we believe that more detail is needed for readers who are not as knowledgeable of the subject area. The author has published another paper detailing the role of these writers but has not referenced it properly. Instead, it has been referenced to support improvements in systems where professional writers have been involved.

3.3 Research Conducted

The research that was conducted for this study took the form of a questionnaire and taped interviews. The content of the questionnaire and the questions that would be asked in the interview were set out in a research protocol document, which Yin [3] argues increases the reliability of the results.

A research protocol is simply an outline of what is going to be asked of the interviewee. This allows all the interviewees to be questioned in a similar manner so that their answers can be compared.

A major criticism of the paper is that Fisher has not included the research protocol so we have no way of knowing the format of either the questionnaire or interviews, which could have made interpreting the results of this study much easier. This information could easily have been included as an appendix to the study, or even presented as a separate, referenced paper, but there is no other mention of the research protocol anywhere in the paper.

Instead of including the research protocol, Fisher has simply discussed the important points arising from the results.

In total, 99 people were questioned about 20 recently developed systems. This group of people was made up of 22 developers, 11 technical communicators and 66 users. This seems to be a reasonable number of people questioned and systems involved in the study to make the results useful. We do feel, however, that more developers should have been questioned as they currently make up a much more substantial part of a development team than technical writers, hence the ratio of the number of developers to technical writers questioned is not representative of the current development environment.

3.4 Results Obtained

In general, the results obtained from the case study were valid and substantiated. However, the format in which the results are presented is in fact poor. The author has chosen to discuss the results in words and has decided against presenting them in a structured tabular form, and therefore reducing the overall comprehensibility.

When asked to rank a list of nine items concerning software systems, users ranked meaningful error messages fourth highest. The only items ranked higher than the error messages were ease of use, consistent terminology and reliability. Interestingly meaningful error messages were ranked higher than online help, user manuals and interface design. Unfortunately, the author then confuses these results by contradicting herself, stating:
The results clearly indicate that for users, meaningful error messages are the most important information they need to use a system effectively.

She has just stated that three other items rank higher than meaningful error messages, including consistent terminology and system ease of use, which are both related to information the user needs.

One interesting point that arose from the results is the hidden costs to organisations from something as simple as badly written error messages. This was an issue that we had not even considered before reading this paper. This is summarised as five distinct points, mainly relating to time wasted whilst the user resolves the error message. Also related to cost is the fact that many users simply ignore error message they do not understand, which is a valid point, especially considering the fact that the message could, for example, indicate a destruction of records in a database.

The next section describes the views of users and developers concerning the quality of error messages. They were asked to score each statement out of five. The following table summarises the results from this section:

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do the system messages keep you informed?</td>
<td>3.47</td>
<td>1.127</td>
</tr>
<tr>
<td>The error messages are clear and helpful?</td>
<td>3.13</td>
<td>1.351</td>
</tr>
<tr>
<td>The system always tells me what is happening</td>
<td>3.21</td>
<td>1.32</td>
</tr>
<tr>
<td>Developers ranking of error message quality</td>
<td>3.55</td>
<td>.887</td>
</tr>
</tbody>
</table>

One criticism about this table is that it contains the answers from both the users and developers, whereas the caption states that all the results are from questions asked of the users only. In fact, the last question in the table relates to a question that was asked of the developers and the rest relates to questions asked of the users.

The author then states:

"More than half the developers (11) rated the users' satisfaction with the quality of the error messages higher than the users did, suggesting that many developers are unaware of the difficulty users are having with the error message text."

There are two issues that need to be raised about this statement. The first is only a minor, but important point relating to the emphasis placed on the number of developers. The figure in brackets could either refer to the fact that 11 is half of the developers questioned, or that 11 is the number of developers that rated the users' satisfaction with the quality of the error messages higher than the users did. If the latter interpretation was the author's intended meaning, then the percentage of developers that rated the error messages higher than the users should in fact be 50%, rather than "more than half", as written. The other point is that the results on which this statement is based are not present in the paper, leaving us to wonder exactly what questions were asked.

Fisher produced a meta-matrix, which was used to record positive and negative comments users made regarding numerous aspects of the systems under consideration. Fisher states the results:

"Twenty four or 36% of all users made a negative comment about the error message with only 6 making a positive comment"

Unfortunately she does not state whether this is 6 people or 6%, either of which is possible. Also nothing is mentioned about the other users – what type of comments did they make?

The author then discusses some of the criticisms that were levelled at error and system status messages. This section is well structured, with the author choosing a criticism and then discussing it with real examples.

In one sentence, Fisher quotes the following from a user:

"They do they say contact 'ISD'"

Neither of us understands this sentence and we believe it is a typing error on the part of the author, but if it was not, then why quote something unintelligible?

The only other criticism of this section is that some of the error messages that Fisher quotes are not in our view relevant to the study being conducted. The following is an example:

"Unable to resolve reference to item BLK PRG_"
"Argument 1 to built in display cannot be null"

In our view, both of these are debugging messages which have not been removed by the developers. This is not a badly worded error message as she is suggesting, but is simply a message the user should never have encountered.

Towards the end of this section, the following quote from a user is included:

“There is one key where the system says, 'Press the To Do Button', and you are looking for the 'To Do' button and it is F11 which, is 'Commit', so why doesn’t the message say 'Commit'.”

Whilst we understand that the author should quote users accurately, this sentence contains too many grammatical errors. For example, the word ‘key’ is wrong and should probably be ‘screen’, there is a comma after the word ‘which’, whereas it should be after ‘F11’, and finally there is no question mark at the end of the quote.

### 3.5 Discussion and Conclusion

The author concludes the paper with a discussion section in which she correctly sums up the entire paper in an easily understood manner. She does, nevertheless seem to contradict herself in the following two statements:
“Although technical communicators see the writing of system and error messages as a role they should perform, only half of the system developers agreed.”

“However when asked, developers acknowledged that if the technical communicator was involved in this work they did make a significant contribution.”

Although Fisher briefly mentions the importance of error messages to e-commerce applications in both the introduction and conclusion of the study, she does not explain in any detail why error messages are especially important to e-commerce systems, or why she has mentioned e-commerce systems at all.

4. Rating the Study

This section attempts to give the paper a rating out of 25 by considering 5 aspects of the paper, as outlined below.

4.1 Impact of Introduction / Abstract: 3/5

It is important that the abstract and introduction of any paper sum up the ideas, aims and results of the study involved. This paper sums up both the ideas and results, but the introduction does not state the aims of the paper at all.

4.2 Research Method: 4/5

The use of a research method coupled with a large number of people and systems in this paper makes for a good study. However, the ratio of developers to technical writers involved is not representative of the current development environment. Also, the research was carried out during 1997 and 1998, but the paper was not published until November 1999, so is the research still relevant to today’s software?

4.3 Summing Up: 5/5

The discussion and conclusion section in any paper is important, as it is the author’s last chance to put their ideas across. The summing up in this paper is excellent, clearly presenting the main results from the study and suggesting ways to improve user messages through the use of technical writers.

4.4 Practicality: 5/5

The result of this study is that technical writers should be more involved in the writing of user messages. This is a practical suggestion that could easily be implemented by most large software companies with the money to employ one extra person.

4.5 Presentation: 1/5

As mentioned above, the only outstanding parts of the paper are the introduction and conclusion. Although the content of what is said in the remaining sections is valid, the presentation is poor.

5. Conclusion

This study into the role professional writers can play in the development of information systems highlights some useful points. Unfortunately, the way in which the results of the study are presented in the paper is not ideal.

One major problem is that the role of professional writers is not clearly defined in this study, clearly aiming the paper at people who already have some knowledge of this field. A reference, however, is made to [2], another paper by Fisher, which more clearly details the role of professional writers.

Another problem is that the results are not all presented together, but instead are strewn throughout the paper. An appendix detailing the results of the study would have been extremely useful to readers of the study, especially those not as familiar with the subject matter as the author.

For the reasons outlined we have given the paper a mark of 18/25 according to the mark scheme described above.

References


