

Evaluation of a Digital Interface Prototype Focusing on the Errors Inspection Method and Interactivity

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1 Context

The dissemination of information technology and the expansion of Web Design area, along with the increasing value of information, enabled the digital interface to become the central element in the design of virtual products (REDIG, 2004). One of the main features of the technology in digital format is to allow the media to reach users, so that they get an immediate response. Therefore, the Interactivity is a key topic of digital communication (SANTAELLA, 2004).

This study evaluated the prototype of a digital interface from the precepts of Interactivity and Errors Inspection Method, proposed by Paternò and Santoro (2002). This prototype is an online interface which main objective is to monitor and manage road freight transportation in Santa Catarina. Monitoring seeks to discourage violations committed by drivers or trucking companies.

In digital interface design, Interactivity is rarely addressed and one can consider that the importance of its implementation in projects of this type is underestimated. This statement is justified by the fact that there is no conceptual consensus regarding Interactivity (SIMS, 1997; Moraes, 1998; JENSEN, 2005; FERRERA, 2008). Therefore, studies and appropriate tools to evaluate the Interactivity of an interface, focusing on the interaction between humans and computational systems are scarce.

2 Method

To achieve the results found in this work, it was necessary to conduct a theoretical review of Interactivity and map the Objects of Interaction of a digital interface (BATISTA, 2008).

The method used to analyze the Monitorize System prototype was the Preventing User Errors, developed by Paternò and Santoro (2002). This technique is a kind of ergonomic inspection, in which the expert applies a set of questions on a task to be performed on the prototype interface. In the context of this research, the method follows two main steps: (1) to identify how the system design requires a task to be performed, and (2) to analyze the deviations from the basic tasks.

The Monitorize System shows three well-defined virtual environments. In the first, you can fill out forms to feed the system with information. In the second, some documents will be generated using this information. In the third, it is possible to monitor the transportation using the information and documents from these two digital environments. Thus, it is essential to have the data correctly registered and filled without any error, and that the generated documents must be reliable and safe.

The deviation tasks are guidewords which have three classes: None, Other Than and Ill - Timed (PATERNÒ; SANTORO, 2002). Each of these three classes represents, respectively, the questions "What if nothing happens?", "What if something else happens?", "What if something happens out of time?" (CYBIS; BETIOL; FAUST, 2010). Each of these classes of deviation generates a specific table with appropriate guidelines to inspect that deviation. This table presents besides the guideword, the following items: Task (what task is performed at the time), Explanation (explains how the deviations were interpreted for the task), Causes (indicates the potential causes for deviation), Consequences (indicates possible effects that caused the deviation), Protection (describes the protections that have been implemented so far) and Recommendation (propose suggestions for an improved design, which is able to handle the considered deviation).

A task considered important in the Monitorize System was elected to apply the Preventing User Errors Method. This task consists of an insertion of more than one estimated delivery date for a particular transport. There were created three tables which had the same guideword (None - What if nothing happens?). Each of them had a different explanation: (1) when the user has no way to accomplish the task by a system functional failure, (2) when the user can accomplish the task, but not actually performs it, and (3) when the user performs one part of the task, but do not performs it in fact. Each one of these explanations generate causes, consequences, system protections that already exists and Recommendations.

3 Results

It was found that the Objects of Interaction of the graphical user interface help to prevent errors while the tasks are performed in the system. Therefore, the Objects of Interaction are suitable to address problems of task deviation in the Monitorize System.

Objects of Interaction are not just ornaments to decorate the interface. Besides enabling the application of a pleasing aesthetic, they have a symbolic function, since the colors, shapes, among other visual aspects, facilitate the understanding of their meaning. For example, a message box when viewed in gray, yellow or red, presents different meanings: yellow draws attention to a crucial source of information, the red alerts for a major failure and gray represents a message more discreet, which can or cannot be read immediately.

4 Conclusions

The inspection pilot presented was used to find a pattern suggestion to improve the interface design: The Recommendation. This item of Paternò and Santoro method relates to Interactivity and digital interface Objects of Interaction. This is due to the fact that the proposed recommendations to improve the interface design of the Monitorize System were dependent of these interactivity elements.

As recommendations for further works, it should be conducted a detailed evaluation of each GUI Monitorize System, as well as an identification of the exact function of each interactive element. This will allow a study of the syntax of the visual language concerning each one of these elements (colors, shapes, contrasts, among others), thus making them increasingly suitable for the interface in which they are being used.

5 References

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