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## **Chapter IX**

# **Usability Inspection of the ECONOF System's User Interface Visualization Component**

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### **ABSTRACT**

*This chapter is a report on the findings of a user interface evaluation process performed on a decision support system named ECONOF. The issue of properly evaluating the visualization component of a system's user interface is first addressed. Then, the usefulness of the results obtained is shown through the illustration of the improvements made to the ECONOF visualization component. As the user interface evaluation step in most software design and development projects is more often than not neglected, when not totally bypassed, computer professionals need to be more aware of the importance of the user interface design step within any kind of development life cycle.*

## INTRODUCTION

The usability of the user interface has been recognized as a key success factor to the design and development of interactive systems. This recognition led to the development of evaluation methodologies. This chapter aims at illustrating how the results obtained from a carefully performed evaluation process can lead to the improvement of a user interface. The process that has been used comes from the “usability inspection” method (Molich & Nielsen, 1990; Nielsen, 1993; Nielsen & Mack, 1994; Wiklund, 1994). It is a low-cost, easy to perform, and informal (heuristic) evaluation method that can bring major and significant improvements to a particular user interface.

The system evaluated for the sake of the illustration is named ECONOF (Economie de la Formation). It was developed to provide help and assistance to managers that have to select continuous training activities. ECONOF proposes a set of topics, facets, and criteria that guide managers who perform the analysis of the teaching and learning activities proposed by different providers of online learning programs. More specifically, the chapter provides a description of the initial user interface, then shows how its usability has been evaluated and, finally, illustrates what improvements to the ECONOF user interface have been made.

## BACKGROUND

The role of illustrations in the problem-solving process has been addressed by several researchers. Katz and Lesgold (1996), Levonen (1996), Merlet (1998), and Merlet and Gaonac’h (1996) performed a synthesis of the research results concerning the effects of simultaneously using various media on a same device (such as animated text, fixed images, animated images, and sounds). They reported that for the past 20 years, a large number of research results consistently showed that images combined to a text make easier the understanding of the text (Levie & Lentz, 1982; Levin, Anglin, & Garney, 1987). The works of Belton and Elder (1994) concerning visual interactive modeling (VIM) and those from Chau and Bell (1996) regarding the use of VIM as an interface for decision support systems (DSSs) are integrating these findings. As ECONOF refers to DSS domain, i.e., the selection of the online learning program, if any, that best suits the need for continuous training of a particular organization, we were believing that the adding of visual elements to the interface would benefit to the managers using the system. The problem was to find where to integrate the visual elements and doing so, enhancing the usability of the ECONOF system.

Many user interface usability concerns have been addressed by computer and human sciences researchers coming from the multidisciplinary human-computer interaction (HCI) community. One of them is the software life cycle. As example, we can mention the step-by-step design and development process proposed by Mayhew (1999). Its main characteristics are to be centered around usability engineering

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