Chapter 14
The Influence of E-Commerce Website Colors on Usability

Jean-Eric Pelet
ISG Paris, IEMN Nantes, France

ABSTRACT
This chapter aims to study the effects of the colors of e-commerce websites on consumer behavior, in order to better understand website usability. Since color components (Hue, Brightness and Saturation) affect behavioral responses of the consumer (memorization and buying intention), this research reveals the importance of the interaction between hue and brightness, in enhancing the contrast necessary to ensure an easy navigation. By comparing graphic chart effects according to their level of saturation and brightness depending on the hue, it aims at focusing on particularly important consideration of webdesign, linked to choices of color. The obtained results were conveyed through the changes in internal states of the organism, which are emotions and mood. The interaction of hue and brightness, using chromatic colors (as opposed to Black & White) for the dominant (background) and dynamic (foreground) ones, supports memorization and the intent to purchase, reinforcing the importance to attach to usable websites. This is even more evident when contrast rests on a weak situation of brightness. The data collection was carried out during a laboratory experiment so as to ensure the accuracy of measurements regarding the color aspects of e-commerce websites.

INTRODUCTION
The impressive rise of e-commerce, while inspiring dismay in some and awe in others, merits closer examination. One of the factors which has contributed significantly to this success, is the enhanced “ease of movement” on the site, otherwise referred to as the “usability of the site”. Moreover, the ease of recognizing functional zones such as the navigation bar, the search engine, the possibility to sort the information, constitutes a major aspect of this research. A significant part of this chapter is dedicated to the usability of websites, and to the quantity of information retained following a visit to an
e-commerce website. By usability, we mean “the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use” (ISO 9241-11). The possibility of identifying the links and the useful buttons to change pages constitute other key factors in the success of e-commerce. Characteristics such as hue, brightness and saturation, all of which are related to color are crucial in getting the consumers attention. Indeed, the design of e-commerce website interfaces is receiving increasing managerial and research attention in the online retail context.

People don’t take the time to read the contents if they are not appealing enough: the consumer’s decision is based on a first impression. This is especially true when people cannot read the text because of poor contrast, for example. Though the color variable is a widely researched topic (see the periodical published by Divard and Urien, 2001), to this day, very few studies focus on this phenomenon within the context of the Internet. Yet color is omnipresent on e-commerce websites. The lack of research on the effects of the colors used on e-commerce websites suggests that more study in this area is needed. In their effort to spur Internet users to buy, brands do not seem to focus systematically on color choice when conceiving or updating websites.

While several studies on the impact of colors on Internet site readability provide advice about how to choose the most harmonious colors (Hill and Scharff, 1997; Hall and Hanna, 2004), experts in research on usability such as Nielsen (2000) have made managerial recommendations. However studies have not addressed the variation of hue, brightness and saturation on e-commerce. In an attempt to address this gap, this paper aims to shed light on how customers perceive the usability of e-commerce website interfaces, and how colors can be helpful for them, in order to improve the usability of the website.

**Definition of the Atmosphere Constructs**

Atmosphere is a marketing tool which is used as the number of competitors on the market increases. More exactly, the action of the physical environment of the store can constitute a means of attracting new customers and of developing the loyalty of former customers. The same happens with e-commerce websites, where the interface is considered as the atmosphere of the store. From a cognitive point of view, the simple fact of getting lost on a webpage, for example, seems to be a consequence of a user’s difficulty in simultaneously managing two cognitive activities, i.e. processing and locating (Tricot, 1995). A homepage simply indicates which actions are possible, which zones of the screen correspond to such and such an action (e.g. to visit the catalogue, look for the search engine, to recommend a page or a product to a contact); these actions constitute important control levers in the eyes of the consumer. He or she considers them attentively to feel comfortable and to be ready to return to the site as was revealed in the interviews conducted during the qualitative analysis.

**Importance of the Visual Dimension on Internet**

The fact that the state of a color changes when a user passes over a link counts among the standards recognized by consumers. It thus seems very important to change the color of this link when it is passed over because the users visiting a page, which does not respect this convention may:

- revisit the same pages unintentionally
- get lost more easily because his comprehension of the significance of each link is reduced
- badly interpret or be unaware of the difference between two similar links if he is not sure which ones he already visited