Chapter 4
UX Challenges and Best Practices in Designing Web and Mobile Solutions

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ABSTRACT

The design of web and mobile applications is one of the most challenging fields of the current information technology landscape. Increasingly, companies intend to have a strong presence in the information society, which allows them to advertise their products, services, make online business, interact with customers, among others. However, the development and design of web and mobile solutions have numerous challenges and best practices that should be known and applied. In this chapter, the authors adopt a qualitative methodology based on multiple case studies that allow them to identify a total of six challenges and best practices that are later confronted and compared with the recent findings on the coverage of the topic.

INTRODUCTION

Information technologies (IT) have become fundamental in professional and personal daily life. Through the Internet, people access to a wide range of services from their workplace, home or on the go. At the same time, the growth and constant evolution of the Internet have also increased the number of devices capable of accessing information. This popularization of the Internet, coupled with the idea of using mobile devices while performing daily tasks, contributed to the increased number of ubiquitous and heterogeneous devices.

Design of interfaces is a relevant field of study in the context of Human-Computer Interaction (HCI). This area is notoriously challenging and requires multidisciplinary competences from the teams responsible for the design and conception of Web and mobile interfaces. One of the great challenges is to create

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"clean" and intuitive interfaces, and the success of a design task depends to a large extent on the use of elements with which user identifies himself. User Experience (UX) emerges as a highly debated and subjective topic. It is difficult to objectively and directly tell how to create good user experiences, but it is possible to learn how to design an interface to provide a satisfying experience for someone who uses it, and identify all aspects of user interaction with that product, service, or environment.

The challenge of making Web application accessible to all devices is extremely demanding. In the Web context, we can already find a significant number of challenges and best practices, but that significantly increases in the mobile paradigm. While on desktops there is more space for a variety of ways to trigger actions and provide a greater volume of information to a user that is only focused on the computer, mobile devices need to prioritize the information that needs to be accessible, which divides his/her attention between the smartphone, tablet or other devices with other routine activities. In addition, care must be taken regarding the size and memory of the mobile devices. It is to overcome these challenges that the UX has become increasingly important and more present in mobile app projects.

This paper intends to identify and synthesize the main challenges and suggested best practices in designing Web and mobile solutions. For that, we adopt a multiple case study approach and we compare the results obtained from those interviews with the recent findings identified in the literature. The paper is organized as follows: we initially perform a review of literature in the field of Web design process, development frameworks and UX experience. After that initial phase, we present the adopted methodology, highlighting the structure of the multiple case study approach. Then, we analyze and discuss the findings obtained from the case studies and we compare it with the recent advancements of the literature in the field. Finally, future research directions are hinted and the conclusions of this work are drawn.

BACKGROUND

The Evolution of Web Design Process

The evolution of Web design process can be characterized by a set of notable events in terms of technology advances and social paradigms. Its evolution can be grouped in eight phases (Work, 2011): (i) the early 1990s; (ii) the mid-1990s; (iii) the late 1990s; (iv) the year 2000; (v) the early to mid-2000s; (vi) the mid-2000s; (vii) the late 2000s; and (viii) the mobile Web.

Tim Berners-Lee invented the World Wide Web (WWW) in 1989. The Web was originally conceived and developed to meet the demand for automatic information-sharing among scientists in universities and institutes around the world (CERN, 2013). The first websites of the early 1990s were text-based sites in a single column format. Websites looked like a series of text documents strung together by inline links.

In the mid-1990s the design process evolved to table-based sites and online page builders. The use of tables made it possible to create multiple column websites, allowing a better content organization and navigation layout. Websites have gained color and images. Animated text, scrolling text and gif images started to become popular across many sites. Frame pages have also become a popular way to clearly distinguish the body of the website from the sidebar navigation. Furthermore, websites started to be built online in a very simple and intuitive way. Free page builders, such as Angelfire or Geocities, allowed anyone with an Internet connection to build their own website.

The late 1990s were characterized by the rise of Flash. Flash was introduced in 1996 and turned possible to design any shapes, layouts, animations, interactions, use any font and all this in just one tool