Abstract

"User eXperience focuses on interaction between a person and something that has a user interface."

User expectations, motivations, and feelings when using a system have prompted the need to investigate beyond traditional usability issues by evaluating and designing for the user experience. User eXperience (UX), therefore, has emerged from the recognition that usability alone does not take into account the more subjective emotional responses experienced when interacting with a system.
Although the term User eXperience has been widely accepted in the area of Human-Computer Interaction (HCI), its relationship to certain aspects of the User Interface (UI), such as accessibility and situational awareness, still remains unclear.

The main purpose of this research thesis was to determine how much influence the UI has on the UX when it is conditioned by accessibility and situational awareness.

First, the main goal during the UI design phase was to create a good experience for all users, regardless of skills. In most cases, people design a UI that in no way reflects the need for accessibility. However, many people live with disabilities and such projects make it difficult to use applications and systems and contribute to discrimination due to lack of inclusiveness. To achieve this, the focus has been on three main groups who live with disabilities and have difficulty accessing UIs due to inadequate UX design. These groups include people with hearing impairments, people with visual impairments and cognitive impairments (focusing on learning and behavioral disorders). Some of the solutions offered ensure that these groups, which are a large population, have access to UIs include proposals to help them in their daily life and, above all, to support them in their independence. In addition, the research found that most developers do not

include factors such as accessibility in the design or development phase of UIs. This lack, especially with regard to mobile apps, is mainly caused by the lack of sufficient tools for the design and the lack of awareness of the accessibility guidelines by the developers. Making mobile app UIs highly inaccessible to a large population, including people with disabilities. In this case, the focus was on Android applications by examining the accessibility guidelines built into them.

The second focus was geared towards how UX is affected due to poorly designed UIs, making it difficult for users to maintain high SA. By focusing on Ground Control Stations for monitoring drone fleets, the research helped identify discriminating factors for SA levels. Most designers do not take SA as a factor in UX when designing UIs. UIs continue to grow in complexity and are becoming difficult for most operators due to too many features, some of them automated. In this regard, it was crucial to ensure that such UI designs are easy for operators to use to reduce the number of incidents and increase operator efficiency, thus improving UX. These changes are also proposed to be implemented in the UIs of manufacturing and industrial plants. Currently most of the factory managers use the Andon system to monitor the production process. In this case, guidelines and a UI solution have been proposed to help keep SA high.

The overall results of this research have provided some valuable insights and helped create a set of user experience heuristic practices that can be used to inform both future research and design practice.