Designing for comfort

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Abstract

In this paper human factors in designing of a more comfortable aircraft cabin for passengers are described. Comfort is a complex concept, consisting of both objective ergonomics requirements and subjective impressions. Elements of comfort can be described by four different models: 1) The passenger bubble, in which the passenger is isolated from disturbances and can pursue his/her own activities; 2) The health model, where the focus is on absence of discomfort, potential health dangers and annoyance, and on physical well-being; 3) The community model, in which passengers belong to a public-transport group, who communicate and share common experiences; 4) The aesthetic-economical model, in which comfort is perceived as being in an interesting, advanced and beautiful environment, for a reasonable price. All these models put different requirements on the passengers' environment, sometimes overlapping, but sometimes also conflicting. In order to support designing for comfort, we present a model in which these requirements can be combined based on cognitive function analysis. Four principles are identified that should guide design: affordance, situational awareness, individualisation and customisation, and variability and flexibility. The paper concludes with a discussion on the design process.

Introduction

If you ask aeroplane passengers in economy class how their comfort can be enhanced most of them will probably say: make the seats larger and put more space between them. This, however, is not a very viable solution, as it means less seats in the plane, and thus higher costs. If we want to enhance passenger comfort, other measures may be envisaged. In order to investigate what measures to take, the main question is what do we mean by comfort? Although nearly anyone is capable of saying whether he or she feels comfortable, comfort is not a one-dimensional concept that can be measured in a simple way, as the temperature can. In this paper, we will discuss how to model the comfort concept, and which kinds of improvements will follow directly from these models. Next, we will discuss ways in which designers may go about designing a comfortable environment, providing design principles.

According to dictionaries, comfort is a complex concept consisting of a mix of feelings, perception, mood and situation. It can be defined as follows. Comfort is: