



Fraunhofer

PORTUGAL

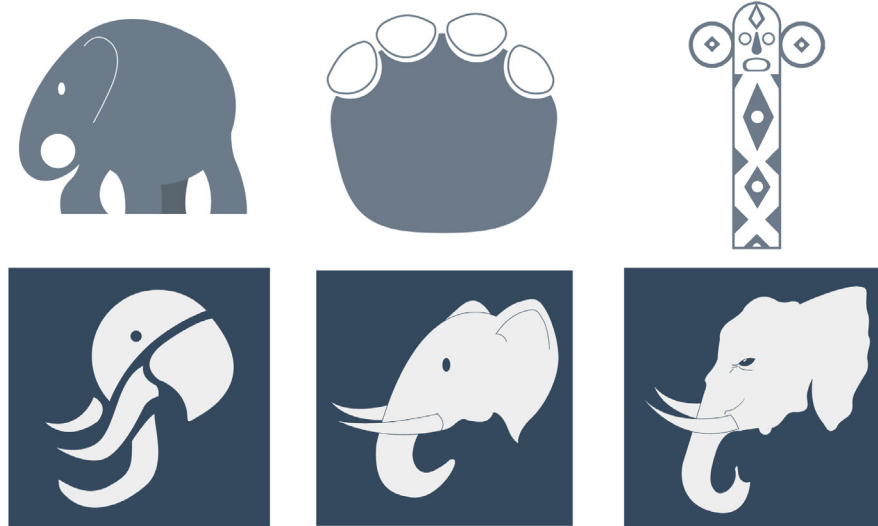


Fig1. Set of icons designed and used for experimental procedures.

CULTURALLY SENSITIVE ICONS

DESIGNING CULTURALLY SENSITIVE ICONS FOR USER INTERFACES

The usage of smartphones has been steadily growing in the developing world, in particular the Sub-Saharan region. Cultural diversity from these areas must be contemplated in order to ease the interaction process, but also to promote the usage of smartphones within novice users, illiterates and other individuals from different cultural backgrounds. This research aims to enhance user experience and improve usability of solutions according to the cultural values of the users. Icons are the main focus of the project due to being one of the most conspicuous, but also one of the least understood aspect of user interfaces.

Problem

Due to the premise that user interfaces are developed according to the

preferences of western individuals, a significant amount of actions and functions are not congruent to the ones embodied by individuals in developing nations.

Currently, designers lack information about appropriate visual and metaphoric characteristics of graphical user interfaces to be applied in the design of systems to be used in developing countries.

The project aims to develop culturally sensitive icons according to users' preferences and, subsequently, to improve individuals' interaction with the systems. Improvement in interaction may ultimately support the improvement of users' quality of life through enhanced usability of mobile technologies.

Contact

Rua Alfredo Allen, 455
4200-135 Porto, Portugal

+351 220 430 300
info@fraunhofer.pt
www.fraunhofer.pt

Tools

Two solutions, TIQSI and Okavango, were developed and designed specifically for this project.

TIQSI is an interactive cultural bank with the purpose to familiarize the practitioner with the cultural values of the target audience and inspire in the creation of appropriate solutions through user-centered design techniques.

Okavango is a data collection application with the objective of retrieving reliable data from primary sources in urban and remote areas of developing nations through a gamification approach.

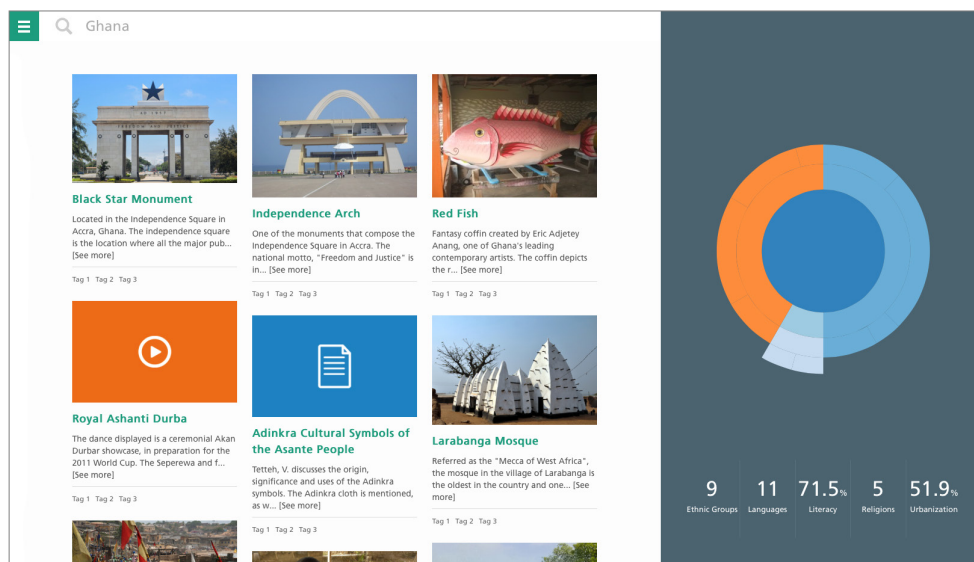


Fig2. TIQSI, an interactive cultural bank aimed to assist professionals.

Objectives

The ultimate goal of the study is to develop interfaces according to the characteristics of the users and improve the interaction process between the user and the system.

Moreover, the objectives of the research were the following: (1) assess users' level of recognition of icons from mobile operating systems; (2) establish icon preference patterns; (3) determine preference levels regarding elements constituent of an icon; (4) evaluate the recognition level of culturally sensitive icons; (5) compare user preference between icons from mobile operating systems and culturally sensitive icons; (6) develop a repository system able to assist professionals in future research approaches.

Results

62 people, from 8 countries, participated in the experimental procedures related to icon design. 12 professional participants conducted a usability test to evaluate the repository.

The findings concluded that culture has a significant impact on users' level of

icon recognition and culturally sensitive icons were slightly favored in comparison to other icons. In addition, professionals involved in Information and Communication Technologies for Development (ICT4D) solutions believe a repository system is helpful and able to assist in the creation of user-centered design solutions.

Future Work

A larger, more diverse and consistent data sample is required to further validate the findings. Moreover, the integration of Okavango with TIQSI and the further development of Okavango are required.

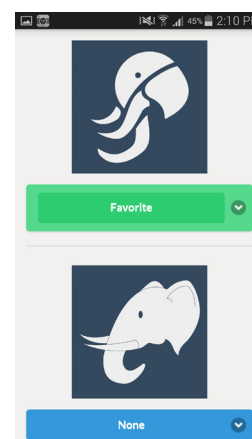


Fig3. Okavango, a data collection application.