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## Preferences and concerns regarding mobile digital TV in Brazil

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### Abstract

In this paper it is listed some findings of a research conducted in Brazil that tried to identify the preferences, constrains and concerns in real life use of a mobile Digital TV (DTV). The research was conducted in the beginning of 2014, when mobile digital service were already consolidated, in technological terms, but with a lack of adoption by the mobile market. To achieve the research objective, it was chosen two research techniques: Diary of Usage and a usability testing.

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### 1. Introduction

According to a research regarding media consumption from the Social Communication Secretary of Brazil's Republic Presidency [1], TV still is the favorite media of Brazilian population, with 76,4% of preference, followed by internet (13,1%), radio (7,9%), Newspaper (1,5%), magazines (0,3%) and other responses (0,8%).

The same study suggests that the TV usage intensity is directly proportional to the city's size, i.e., how large the city is, more intense the TV usage tends to be. For example, from Monday to Friday, the usage intensity in small cities (with a population until 200.000) is 3h10, while in the big ones (with a population of 500.000 or more) it grows to 3h45.

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Due this, the present research was conducted in two Brazilian cities where the DTV is consolidated as service: Manaus and Recife, both with a population over 1.5 million residents. The research objective was to investigate the DTV user habits in order to understand their preference, constrain and concerns while using a DTV mobile device.

Free-to-air TV is really popular in Brazil, there is a tradition in watch News and soap operas at specific moments. Based on that habit, the users search for the same channels and programs that they already knew, trying to maintain and replicate their TV watching routine. The service was used to spend time while in transportation or when the users were waiting for a service to be complete, as waiting in the cashier line or waiting for an order in a restaurant. [1]

The Device used in the research was a prototype with a 4,3" capacitive touchscreen, image resolution of 800x480 pixels, 1GB of RAM memory and 1,2 GHz dual core processor. In virtue of this, part of the test was also dedicated to gather the user's opinion regarding the device performance itself in a real context of use.

According to Maguire [2], the context of use consists of the users, tasks and equipment (hardware, software and materials) and the physical and social environments in which a product is used. The author explains that when a product (or system) is developed, it will be used within a particular context. A user population with certain characteristics will use it. The user will have certain goals and wish to perform various tasks. The product will also be used within a certain range of technical, physical and social or organizational environments that may affect its use and usability.

The ISO 9241-11 [3] defines Usability as 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.

It is incorrect to describe a product as ergonomic or usable, without also describing the context in which the product will be used - in other words, whom the product was designed for, what it will be used for and where it will be used. [2]

To do so, the main objective of the research was to identify these context issues in order to provide an understanding of the circumstances in which the mobile DTV is used, addressing issues associated with the mobile device usability and providing contextual validity of (usability testing) evaluation findings.

## 2. Methodology

To conduct the research it was recruited 11 users (5 men and 6 women, with age from 20 to 42 years old) in two different cities from Brazil: Manaus, in the state of Amazonas - that is located in the North region- and Recife, in the state of Pernambuco - that is located in the Northeast. Five of these users had previous experience with mobile digital TV while the other six were inexperienced ones.

Since the research was conducted in two different regions; it permitted to verify which issues were related with technological environment and those who were related with the solution itself.

Eleven mobile DTV devices were distributed among 11 users as following: 5 users in Manaus and 6 users in Recife. The devices were a prototype of a new smartphone that would be released in few months.

The research participants used the mobile device prototype - a touch screen smartphone with a mobile digital TV app - during one week, at the end of each day, they should fulfill a Diary of usage, that was a notebook with 7 questionnaires with questions regarding the preferences and satisfaction with this service, such as where do they used the app, overall satisfaction, crash problems and other topics.

During the first six days, at the end of each day, they should fulfill the same questionnaire with questions concerning frequency and performance of the app and user's preferences. The data provided by this questionnaire was used to compare and measure the usage experience during that six days.

At the seventh day, there was a specific questionnaire with questions concerning the overall experience and some post-use thoughts, as comparison between the solution and others DTV applications and its strengths and weakness.

The Diary of usage covered the following topics:

- Signal quality, in order to evaluate the impact of the DTV signal quality in the user experience;
- Picture quality, although that point being connected to the DTV signal quality, it was evaluated to discover the user perception about it;

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