

Chapter 15

Low Cost T-Health and T-Social with Ginga: Experience with Mime TV, ImFine, and iFunnyCube Interactive TV Programs

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ABSTRACT

The chapter presents the actual state of the art in t-health and t-social applications running in countries using Brazilian Digital Television System (SBTVD). In order to accomplish it, this chapter makes a historical, political, and technological review of facts that were responsible for the decision of more than 10 countries that now are adopting SBTVD as their Terrestrial Digital Television standard, pointing to a unification of Ginga as the interactivity technology in those countries. Ginga is a middleware that at the same time serves as a digital inclusion tool for countries in development, like Brazil. It includes the best and most innovative technologies available for video/audio broadcasting and interactivity. As practical examples using Ginga, three case studies are presented: ImFine, Mime TV, and iFunnyCube. At the end, the authors present a module capable of reducing costs during interactions in the TV.

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INTRODUCTION

Built under the investment of more than US\$45 million, the Brazilian Government together with companies and universities reached the development of an international interactive digital television standard (SBTVD-Brazilian Digital Television System). SBTVD has created with three main objectives that are summarized in the following list:

1. Promote social inclusion, cultural diversity of the country and native language through access to digital technology, aimed at the democratization of information.
2. Propitiate the creation of universal network for distance education.
3. Stimulate research, development, and propitiate the expansion of Brazilian technologies and national industry related to information technology and communication.

Those characteristics have been decisive in the adoption of SBTVD by both, developed and underdeveloped countries. Because of its technological qualities, countries like Japan now are adopting it, and thanks to its social proposals, it became popular in Latin America and in African countries.

This chapter aims to present the actual state of the art in t-health and t-social applications used in countries using SBTVD and Ginga as its Interactive Digital Television middleware. In order to accomplish this, this chapter makes an historical, political, and technological review of facts that were responsible for the decision of more than 10 countries that now are adopting SBTVD as their TDT (Terrestrial Digital Television) standard. We have observed an unification in the use of Ginga Brazilian middleware for interactivity in those countries. Ginga, is a middleware that, at the same time serves as a digital inclusion tool for countries in development, like Brazil, it includes the best and innovating technologies available for video/ audio broadcasting and interactivity.

We make a discussion about the possibilities and uses of the interactivity in Digital Television Technology for healthcare and social objectives inside the context of those countries using the Brazilian Ginga middleware.

As practical examples using the SBTVD and its Ginga middleware, three case studies are presented introducing interactive applications for T-Health and T-Social applied in Brazil: ImFine, Mime TV, and iFunnyCube.

ImFine is a pervasive application for t-health that provide a way of keep track of the footprints of elderly people in a low cost solution, where not only the medical team could track the action of an elderly person, but also family and friends. This can be done by using set-top box or mobile phone.

Mime TV is an interactive application built using a GINGA subsystem, GINGA-NCL (Soares, 2009). It consist of a t-social application to teach children to read and write through the use of images and videos of imitations. We have applied it in a context of Brazilian public schools.

iFunnyCube is a t-social Interactive TV application built in GINGA-NCL and it is used for rehabilitation of people with special needs. As in Brazil we have about 300 thousand individuals with Down syndrome, we have applied it in a group of down syndrome people at APAE (Exceptional Parents and Friends Association), at Santa Cruz city in Brazil.

In this chapter all those three applications are described in detail, showing project, implementation, and the interface decisions behind them. Provide interactive application at a low cost, allowing people ranging from different social class to have access to those applications only was possible because we created a protocol using SMS messages. Compressing and adding a dictionary under new others SMS protocols we reduce the interaction costs, creating a cheaper way of communicate using Interactive Digital TV.

At the end of the chapter we trace future perspectives for the use of Digital Television as a t-health and t-social tool. Once new public and private investments are exclusively aimed at the

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