A localized osCommerce telephony adaptor/interface for MRA entrepreneurs

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Abstract

An osCommerce application allows the entrepreneurs to manage online store quickly and effectively. Also an osCommerce store can be used by non-IT professionals. Hence, in this project the osCommerce telephony interface for the Marginalised Rural Areas (MRA) we took into consideration everything that online entrepreneurs needs to work with i.e. products, customers, orders, pricing and other aspects of online store data. Therefore, through the use of a telephony interface it is very convenient for entrepreneurs to manage their stores. This also allows them to make any changes that are applied to online stores instantly without delays. The use of computer telephony integration suite has become popular in the current business environment. In order to compete with other businesses within the world entrepreneurs in the MRA have to access osCommerce telephony interfaces. These applications could be customized to meet MRA entrepreneurs' needs. This allows them to offer the best services while increasing overall business efficiency.

Keywords - osCommerce, MRA, telephony interface, PBX, entrepreneurs, online store, e-Commerce, VXML

I. INTRODUCTION

In South Africa there are a limited number of osCommerce shops in the MRA communities. The OsCommerce shops available in South Africa are yet to offer osCommerce solution through a telephony interface for the administrators; hence some MRA entrepreneurs find it very difficult and more expensive to purchase desktop computers [1]. Coupled with the fact that majority of entrepreneurs in MRA have little or no shop managerial skills at all this worsen the situation on shop management. Regarding the plight of MRA entrepreneurs, a localized OsCommerce telephony adaptor in their own language can be an alternative to fulfill their osCommerce needs [1].

Outlined in this paper is a guide to link asterisks and osCommerce to create a wonderful application in the form of a localized telephony interface. The paper describes the methods that have to be adopted in some well-known voice systems. It explores different system architectures, design, and evaluation. It also outlines the currently available voice development toolkits and prospects for future development in osCommerce telephony adaptors. [2, 3]

II. BACKGROUND

The basis of the application in this paper assumes that the MRA entrepreneurs have limited or no business managerial skills due to the high illiterate levels in the areas concerned. Furthermore, the MRA have limited internet access, computers are scarce as well as poor infrastructure such as network. Therefore, the localized osCommmerce telephony adaptor will enhance the ability of the entrepreneurs through the use of their native language [3]. This allows them to manage their stores online through the use of telephony devices i.e. telephone or a cell phone which in most MRA are ready available.

Similar work has been done, like "**The Localization into isiXhosa of the iLanga Telephone System"** [4]. This project focuses on the localization of iLanga, a VoIP PBX system, into isiXhosa. In South Africa, for social and political reasons, making systems available in the African languages is becoming more and more important. On one hand, it gives access to the use of technology to people who are not fluent in English. And on the other hand, it has a strong symbolic value. Although, a variety of software is already available in a number of African languages, localization in such language is still in its early stage. In this paper the difference in relation to other similar project is that we are to develop a telephony interface for an osCommerce store which has not been done by others.

III. MOTIVATION

Interactive telephony interface systems allow users to interact with computer-based applications such as e-Commerce databases and expert systems by using natural spoken language [3, 4]. The last decade has seen integration of telephony applications, with major advances in speech technology, that large-scale working systems have been developed and in some cases, introduced into commercial environments such as e-Commerce. As a result, many major telecommunications and software companies have become aware of the potential for spoken dialogue technology to provide solutions in newly developing areas such as computer-telephony integration. Voice portals, which provide a speech-based interface between a telephone user and Web-based services, are the most recent applications of spoken dialogue technology. However, for the MRA entrepreneurs this remain a dream as they are yet to experience speech recognition, language understanding, dialogue management and communication with an external source such as a an osCommerce store database. Therefore, this research will try to cater for such

MRA entrepreneurs by localizing an osCommerce telephony interface where they can manage their stores from the use of a phone be it a mobile one or a landline telephone. [5]

IV TECHNICAL OBJECTIVES

Listed below are the key objectives which we aim to achieved and expect as the touchable deliverables of the application explained in this paper

- To design and implement a dynamic telephony interface for the marginalized rural communities and incorporate it into the architecture of an existing osCommerce web application.
- To develop a localized osCommerce telephony interface that shall provide an alternative for MRA entrepreneurs with limited or no internet access to use a phone to interact with their business on a 24 hour basis.
- To provide all data related to product information, orders and customers in an electronic and voice form, such that it could be used in a production system for tasks like order processing, bookkeeping or analytical purposes e.g.data warehouse [6]

IV DESIGN AND IMPLEMENTATION

The aim of the research is to design and implement a dynamic localized osCommerce telephony interface for the MRA entrepreneurs and incorporate it into the architecture of an existing osCommerce web application. There would be two servers involved in the process. Firstly, there will be asterisk communication server and a VoiceXML server that will accepts the user request and converts them as a request to the web server of the existing website. Secondly, there will be a web server that processes the request from the asterisk communication server and generates a dynamic response in VXML format using the existing system database. Finally, the asterisk communication server converts the VXML codes in audio format and plays back to the user. In order to demonstrate the entire process, an e-Commerce storefront is chosen from one of the osCommerce applications and a dynamic telephony interface is developed under the same system architecture to provide similar functionalities to those provided by the existing website [7]

Figure1 below shows the proposed system architecture

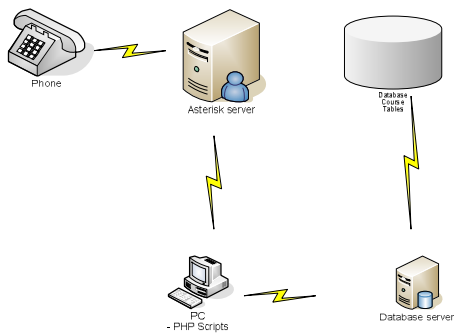

Figure 1: Proposed System architecture

IV. CONCLUSION AND FUTURE WORK

We hope to develop a telephony interface that can be enhanced and extended to support other technologies like Wi-Fi, WiMAX and Bluetooth. Hence, telephony services interface that can be used by multiple client applications and servers. This will improve the service delivery from MRA entrepreneurs selling their products online.

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