

AN ARCHITECTURE FOR A VOICE-ENABLED HEALTHCARE SYSTEM

Oyelami Olufemi Moses

Department of Computer and Information Sciences

Covenant University, Ota, Nigeria.

olufemioyelami@yahoo.com

ABSTRACT

People read books and search websites using graphical user interface (GUI) for information about self-care, prevention of diseases and treatment. In developing countries, people die of minor illnesses that could have been prevented with simple medications and healthy lifestyle.

Nigeria with an estimated population of 140 million people has the ratio of doctors to population to be about 1 to 3,333, a situation which results in many untimely deaths because of lack of adequate healthcare. The use of Information and Communication Technology (ICT) is however, steadily growing in the developing countries of the world and people are taking advantage of the benefits it brings.

This paper presents an architecture for a voice-enabled healthcare system to allow access to health information about illnesses, prevention, treatment, alternative therapy, drugs, fruit therapy, results of medical researches, diagnosis and to search for specialist doctors and hospitals in a particular locality by able-bodied people, the blind, visually impaired, health professionals, people without computer skills, the illiterates, semi-literate and the highly literate through natural language.

This provides a great opportunity for people in the developing nations where almost everyone has access to mobile phones even in the rural areas and where healthcare is inadequate.

Keywords: Architecture, VoiceXML, Voice Application, Healthcare, eHealth, Health Information.

1.0 INTRODUCTION

Healthcare, according to the World Health Organization (WHO), embraces all the goods and services designed to promote health, including preventive, curative and palliative interventions, whether directed to individuals or to population [1]. The viability and sustainability of a country's economic and social growth depend largely on vibrant healthcare sector of that nation and no country can maintain a steady economic growth in the absence of an adequate healthcare system [2]. The adages "health is wealth" and "prevention is better than cure" are still valid today because it is with a good health a man can make wealth. However, in a case where a person is already sick, care is inevitable to avoid an

untimely death and both care and cure are only feasible when there is information about them.

A child falls ill with fever, chills and convulsions in a village over a half-a-day journey on a bad road where automobiles are few and away from the nearest health center. After three sleepless nights of agonizing helplessness for the family, he succumbs. People die of minor illnesses that could have been prevented with simple medications and healthy lifestyles [2]. An ill person that needs an emergency care from a specialist doctor does not know where to get one and not even an information about where the nearest hospital is. Nigeria has an estimated population of 140 million and the ratio of doctors to the population is about 1 to 3,333[3]. This is not peculiar to