Title of Article: A Framework For Intelligent Voice-Enabled E-Education Systems

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Abstract: Although the Internet has received significant attention in recent years, voice is still the most convenient and natural way of communicating between human to human or human to computer. In voice applications, users may have different needs which will require the ability of the system to reason, make decisions, be flexible and adapt to requests during interaction. These needs have placed new requirements in voice application development such as use of advanced models, techniques and methodologies which take into account the needs of different users and environments. The ability of a system to behave close to human reasoning is often mentioned as one of the major requirements for the development of voice applications. In this paper, we present a framework for an intelligent voice-enabled e-Education application and an adaptation of the framework for the development of a prototype Course Registration and Examination (CourseRegExamOnline) module. This study is a preliminary report of an ongoing e-Education project containing the following modules: enrollment, course registration and examination, enquiries/information, messaging/collaboration, e-Learning and library. The CourseRegExamOnline module was developed using VoiceXML for the voice user interface (VUI), PHP for the web user interface (WUI), Apache as the middle-ware and MySQL database as back-end. The system would offer dual access modes using the VUI and WUI. The framework would serve as a reference model for developing voice-based e-Education applications. The e-Education system when fully developed would meet the needs of students who are normal users and those with certain forms of disabilities such as visual impairment, repetitive strain injury (RSI), etc, that make reading and writing difficult.