Acceptance of an Online Voting System at the Catholic University Institute of Buea

Damen Nyinkeu Ngatchu, Catholic University Institute of Buea, Cameroon
Andrew M. Ngwa, ICT University, Yaounde, Cameroon
Susannash Limunga Esowe, ICT University, Yaounde, Cameroon

ABSTRACT

Increasingly, more software is developed locally, to address the needs of the developer’s immediate community and yet little research has been done regarding their acceptance. The technology acceptance model (TAM), which has greatly been used in literature, failed to consider some cultural particularities of such software. Furthermore, most research has focused on the acceptance of foreign technologies in Africa. The primary objective of this article, is to investigate the validity of TAM for locally developed software within a community. The article utilizes quantitative methodology based on data gathered using a modified version of a published survey instrument; as well as Short Message Service for the collection of qualitative data. The findings concur with previous studies on technology acceptance and the raises interests on the use of qualitative data for understanding the context of technology acceptance.

KEYWORDS

Multiple Methods, Online Voting Systems (OSV), Short Message Service (SMS), Software Development, Sub-Saharan Africa (SSA), Technology Acceptance Model (TAM)

INTRODUCTION

The upsurge of technology in Africa in the last few years has touched almost every sector of every industry from education, through business to agriculture. A wide variety of technologies have been applied to these industries including computers, electronic learning environments, mobile phones and technology-driven service-provider platforms. Research efforts on acceptance and adoption of these technologies in and around Africa (Averweg, 2008; Afari, 2010; Lwasa et al., 2011; Okuboyejo and Adejo, 2012) is currently on the rise and the findings have significantly contributed to the body of knowledge regarding technology acceptance and adoption. However, most studies have examined the acceptance and adoption of technology that is developed out of Africa.

The processes and procedures for development of computer software have experienced considerable metamorphosis in the last two decades. Rico (2010) presents a short history of software development in relation to market conditions and shows how the transition forms waterfall software development methodology to current Agile methodology is related to the desire to create flexible software. The integration of Toyota’s Lean manufacturing principles and practices into the software development life cycle provides an opportunity to increase the efficiency and productivity of software development processes while focusing on the provision of high-quality software to the user. This approach aligns well with the need for software that is locally developed to meet the specific needs of local communities.
development domain (Poppendieck and Poppendieck, 2003; Ladas 2008) has led to an “on-the-fly” consumption of software, while it is being developed. It is intriguing, therefore, to investigate user’s acceptance of such software. The objective of this study is to explore the role of context in the technology acceptance process, while verifying and validating the fit of the renowned technology acceptance model to the context.

In 2014, the students and faculty of the School of Information Technology at the Catholic University Institute of Buea developed an Online Voting System (OVS) which was used for the elections of the president for the Student Government Association (STUGA). The web-based platform enabled students to register for the elections, view posters of the various presidential hopefuls and at the appointed voting period, make a selection of their desired candidate. Considering the shift in technology development methodology, particularly software development, it becomes difficult to dissociate the development process from the adoption process; given that in some cases, the developers and users live in the same community.

The development of the OVS followed the Lean methodology and provides a fertile ground for investigating the aforementioned gaps in scientific literature regarding technology acceptance and adoption. The scene for this study has therefore been set partially by experiences in training software engineers in Africa but mainly by need to explore and understand the technology acceptance process from a contextual standpoint. The findings reveal that users paid very little attention to the development process and focused on their use-experience. Quantitatively, they concur with previous studies on technology acceptance yet raise interests on the use of qualitative data for understanding the context of technology acceptance.

LITERATURE REVIEW

Since its introduction in 1989 by Fred Davis, the Technology Acceptance Model (TAM) has gone through validation, extension and elaboration, benefiting from the works of renowned authors and partially defining the academic discipline of information and communication technology. The model proffers that the perceived ease-of-use and the perceived usefulness of a technology are the principal constructs that determine user behavioral intention and actual use towards a particular technology. An earlier systematic review (Lee et al., 2003) of articles relating to TAM highlighted the stages of the model’s metamorphosis (Introduction, Validation, Extension and Elaboration) and expressed the need “…to develop the next generation TAM that synthesizes the previous effects and to resolve the limitations raised by previous studies.” (Lee et al., 2003, p. 757).

In the last decade, scholarly literature has witnessed the application of TAM to a wide variety of technological artifacts. Within the education industry, Eben and Akwasi (2010), Arumugam (2011) and Kung-Teck et al (2013) have studied the acceptance and adoption of computers by students in Ghana and Malaysia. Kumar-Sharma et al (2014) and Amer et al. (2013) studied the acceptance of e-learning platforms amongst University Students in Oman and in Yemen. The result of this effort is the appearance of enhanced and new models for studying technology-users’ behavior.

A prominent enhanced version of the technology acceptance model, rightly called TAM2, has been used (Jaradat and Faqih, 2014; Omotayo and Dahunsi, 2015; Güllü, et al., 2016) to elaborate and investigate the influence of different constructs (Output Quality; Result Demonstability; Facilitating conditions; Performance enhancement) to the original TAM. The Unified Theory of Acceptance and Use of Technology (UTAUT) has equally gained popularity in the discipline. Tan (2013) applied UTAUT to understand the factors affecting the use of English e-Learning websites; Antwi et al., (2014) analyzed the adoption and use of medical ICTs based on UTAUT while Boakye (2015) used it to explore the determinants of student utilization of computer information retrieval systems in academic libraries.

In all the above publications, none of them insinuated any linkage between the technology under investigation, its development process and their relationship with the user community. This missing
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