Factors Influencing the Adoption of Mobile Application Development Platforms: A Qualitative Content Analysis of Developers’ Online Reviews

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ABSTRACT

Mobile application development platforms (MADPs) vary in terms of their development capabilities and competency to fulfill the specific needs of organizations. Therefore, acknowledging the most appropriate MADP to adopt remains a challenging task for many organizations. Aiming to investigate the key factors of MADPs adoption in organizations, this study analyzed 1200 online evaluation reviews for six widely used MADPs posted by mobile applications developers. Based on the content analysis of online reviews, 26 factors emerged as significant contributors to the adoption decision of MADPs from the standpoint of developers. These factors were integrated into a conceptual framework of MADPs adoption based on the technology-organization-environment (TOE) framework. The results of this study indicate that in addition to the technological capabilities, the adoption decision of MADPs depends on several organizational and environmental factors. These results provide not only a theoretical foundation for further research on MADPs adoption but also offers actionable guidance for practical implementation.

KEYWORDS

Content Analysis, Mobile Application Development Platform (MADPs), Online Reviews, Technology Adoption, Technology-Organization-Environment (TOE) Framework

INTRODUCTION

Early on, mobile devices were simply used for making or receiving calls. Ultimately, organizations realized that the purpose of mobile phones could be ingrained into their business operations by adding new technologies into it and improving its features and capabilities (Baktha, 2017; Pandey, Litoriya, & Pandey, 2019a). Rather than being just a verbal communication tools, mobile devices have been extended to be an essential part of people’s communication and daily life. Nowadays, millions of mobile phones owners rely on mobile applications for many essential daily uses. Mobile devices have been relied on to access online services such as social networking (e.g., Facebook, Instagram, Twitter, LinkedIn), online banking (transactions and balance sheet), emailing (scheduling meetings and manage work), and solving problems (Amen, Mahmood, & Lu, 2015; Ma, Gu, & Wang, 2014; Song, Baker, Wang, Choi, & Bhattacharjee, 2018). Many organizations such as healthcare, manufacturing, financial services, real estate, transport, IT services and retail are increasingly promoted by mobile applications (Pandey et al., 2019a). These organizations are interestingly seeking to maximize return

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on investment to their businesses and gain a competitive advantage of the use of mobile applications along with their environment (Husam, Luke, & Louis, 2017; Markdy & Alexander, 2019; Smutyň, 2012); therefore, mobile applications are increasingly becoming in-demand, and thus, a vast numbers of mobile applications are spread into market for various purposes (Abdul & Jianhua, 2017; Chopdar, Korfiatis, Sivakumar, & Lytras, 2018; Pandey, Litoriya, & Pandey, 2019b).

The proliferation of mobile devices and growing demand for mobile applications have stimulated many vendors to get on board and contribute to the provision of mobile application development platforms (MADPs) (Ahmad et al., 2018; Appiah, Hayfron-Acquah, Panford, & Twum, 2015; Hansen, Gronli, Ghinea, & Alouneh, 2019). The ultimate objective of MADPs vendors is to target as many developers as possible by providing them with different integrated development environments (IDEs), programming languages, APIs, and Apps distribution market (Baktha, 2017; El-Kassas, Abdullah, Yousef, & Wahba, 2017). Although the selection of MADPs is mainly market-driven, it also depends on their capabilities and business and technical requirements of the organization (Pandey, Litoriya, & Pandey, 2018b). In general, the adoption of a MADP and toolset is not an easy process especially for developers who are familiar with the features and the specifications of each platform (Gavalas & Economou, 2011; Hansen et al., 2019). Developers who go in deep with the platforms and study the details that are related to it will have more difficulties on making a decision and identifying which platform could be the best to be adopted for developing desired applications (Huang & Korfiatis, 2015). The choice of a specific platform for an organization will also be crucial for appraising the developers’ efforts and work and giving their business the desired value. Achieving the greatest benefit and value for the organization will need a careful decision of which MADP to choose. Such a decision will also be important to evaluate how valuable is the time they spend working on their mobile application development and weather it deserves it or not (Ahmad et al., 2018; Appiah et al., 2015).

The benefits of MADPs have been demonstrated by various empirical and field studies (Benlian, Hilkert, & Hess, 2015; Chopdar et al., 2018; Gartner, 2018; Hansen et al., 2019; Husam et al., 2017; Pandey et al., 2018b, 2019b; Song et al., 2018). While this represents a significant progress in the area of mobile applications development, part of the difficulties to the research and business communities is that technologies based on MADPs have evolved without enough attention to the challenges associated with the adoption process and the factors influencing MADPs adoption in organizations from developers’ perspective (Benlian et al., 2015; Song et al., 2018). Although much effort has been devoted toward advancing the technical capabilities of MADPs, the current research has paid limited attention to the investigation of the technological, organizational, and environmental factors that affect the adoption of MADPs. Thus, the main objective of this research is to develop a model for MADP adoption. This model aims to assist mobile applications developers and organizations in choosing appropriate MADPs for their mobile strategy and diverse business requirements. The framework for MADPs adoption would help developers as well as organizations to gain the needed knowledge for determining which platform to adopt.

Owing to the explorative nature of this study, a qualitative content analysis approach was used to extract, analyze, and categorize the textual content of online reviews posted by mobile applications developers on their perceptions and experiences with using MADPs to fulfill their mobile applications development needs. The online reviews were gathered from Gartner.com and included a sample of 1200 online reviews for six widely used MADPs. Based on the content analysis of online reviews, a total of 26 factors were identified as key contributors to the effective and successful adoption of MADPs in organizations. These factors were ranked and categorized into technological, organizational, and environmental dimensions based on the technology–organization–environment (TOE) framework (Daradkeh, 2019b; Tornatzky & Fleischer, 1990). The resulting model is expected to provide a theoretical framework for researchers to gain a better understanding of the factors that could affect the adoption of MADPs from organizational, technological, environmental, and individual perspectives. It also provides a practical guidance for practitioners to choose the most suitable MADP for their mobile applications initiatives and approaches (Pandey et al., 2019a).
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