8-10-2020

The Service Retention Model of Cloud Computing

youngju park
The University of Texas at Dallas, young.park@utdallas.edu

The Service Retention Model of Cloud Computing

TREO Talk Paper

Abstract

Cloud computing has shifted the paradigm of the IT service industries by offering flexible and cost-efficiency subscription-based online services. Since its advent, the adoption of cloud computing has rapidly been increased in private business as well as governmental institutions. According to IDG's cloud computing survey (2018), 73% of organizations have at least one application or a portion of their computing infrastructure deployed in the cloud. The adoption rate has been on the rise from 51% in 2011, and so has the average cloud budget from $1.61 million in 2016 to $2.2 million in 2018 (IDG, 2018). One might think this is an opportunity for cloud computing as a research domain as well as a business model because it has enjoyed this unprecedented popularity. However, as cloud computing and relevant research have been matured, it has also posed various new challenges including sustainability, security, data management, and reliability and created the need for new approaches to study (Buyaa et al., 2018). In particular, given that cloud computing has been deployed since Amazon introduced its Elastic Compute Cloud (EC2) in 2006 (Regalado, 2011), it is time to think about not only adoption of cloud computing but also post-adoption usage of it. With this in mind, this study is designed to examine the post-adoption use of cloud computing. Using the analytic hierarchy process (AHP, Saaty, 1980) as a framework, this study investigates the factors that might affect firms' service retention decisions.

Methods

AHP approach is based on a pairwise comparison between issues for each criterion in hierarchy and between the criteria themselves (Whaiduzzaman et al., 2014). The pairwise comparison is measured on a 9-point scale (1=equally important, 3=moderately important, 5=strongly important, 7=demonstrably important, 9=extremely important). Other numbers (2, 4, 6, 8) means a middle number of its neighbors. In the cloud computing selection problem, numerous studies have used AHP to choose service providers among possible options including Amazon, Microsoft Azure, Oracle, etc. For instance, Sun and colleagues (2013) selected Amazon cloud computing system by using the AHP technique. By the same token, AHP is a suitable method to explore customers' decision to continue/discontinue cloud computing services. As mentioned above, the web-based software facilitating the computations for AHP methodology is called 'TransparentChoice.' The current study used this for analysis.

References

Buyya, R., Yeo, C. S., Venugopal, S., Broberg, J., & Brandic, I. (2009). Cloud computing and emerging IT platforms: Vision, hype, and reality for delivering computing as the 5th utility. *Future Generation computer systems*, 25(6), 599-616.

IDG Enterprise. (2018). 2018 IDG Cloud Computing Study. Retrieved from https://www.idg.com/tools-for-marketers/2018-cloud-computing-survey/

Saaty, T. L. (2001). Decision making for leaders: *The analytic hierarchy process for decisions in a complex world*. Pittsburgh, PA: RWS Publications.

Whaiduzzaman, M., Gani, A., Anuar, N. B., Shiraz, M., Haque, M. N., & Haque, I. T. (2014). Cloud service selection using multicriteria decision analysis. *The Scientific World Journal*, 2014.