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Topic of Research   : **Development of a Framework For Software Testing For Cloud Based Application**

Keywords: Cloud Computing, Cloud testing, Cloud adoption, Cloud security.

Findings

The extensive literature review revealed that there is little empirical research on the factors that determine the adoption of cloud-based testing. We believe this research is the initial to explore and examine the use of cloud computing for software testing.

This research uses a comprehensive approach to develop a framework that encompasses different perspectives, including the context of human, technological, organizational, and environmental aspects. The research integrates many theoretical frameworks to give a comprehensive analysis of the variables impacting cloud-based testing. Throughout the thesis, the TAM/TOE framework has been evaluated and validated and found to be able to support the cloud computing decision-making process for cloud-based testing.

The thesis bridges the gap between theoretical knowledge and implementation by developing a software tool to help organisations evaluate multiple perspectives in preparation for cloud computing for software testing.

Some significant findings from this research are offered to practitioners to aid in their use of cloud computing in software testing. It is true that business considerations play a major role in determining whether or not to employ cloud computing for software testing. The findings of this study indicate that there are significant disparities in relative advantage, compatibility, change management, top management support, decision-makers' innovation, internal expertise, and experience with existing technology across different adopting groups. This study emphasizes the significance of organizational and human factors in an organization's decision to embrace cloud-based testing based on the TOE/TAM model.

This thesis contributes to our current understanding of cloud computing by providing a thorough summary of the relevant literature.

Theoretical Contributions

The study makes two major theoretical advances. First, this study contributes to the theory by expanding knowledge of how cloud computing is used to test software. The factors influencing the adoption of a cloud computing infrastructure were identified using the conceptual framework TOE-DOI applied to cloud-based testing. In the empirical study, 9 independent factors were found to be statistically significant and beneficial for cloud-based testing. The second major contribution is the decision support framework created to facilitate cloud adoption for cloud-based application testing. Analysis of the literature revealed that there was no detailed description of the entire migration process exists.

The goal is to provide a unified theory that outlines key ideas from three established frameworks: TOE, TAM, and Organizational Fit Theory.

Practical Contributions

The empirical research offers a deep insight into the problem of software testing for cloud-based applications from the viewpoint of a cloud service provider. The main barriers to cloud adoption are complexity, a lack of skilled/experienced professionals and a lack of knowledge about the benefits of the cloud adoption. The study found a lack of understanding/clarity about the obligations of cloud service providers and cloud consumers regarding the legal implications of cloud adoption. From a top management perspective, the developed framework layout will help the decision makers to make successful cloud adoption decisions.

The framework presented in this thesis can be used as a basis for building a decision support system for cloud adoption for software testing. The architecture has been executed correctly, making decisions about cloud adoption easier and reducing administrative overhead.