Chapter 15
Modeling the Ranking of Evaluation Criteria for Cloud Services:
The Government Organization Perspective in India

Kshitij Kushagra
Guru Gobind Singh Indraprastha University, India

Sanjay Dhingra
Guru Gobind Singh Indraprastha University, India

ABSTRACT

The cloud market has become increasingly dense as vendors of all size compete for customers who have gravitated to technology as a way to run their operations. Today traditional players, as well as new vendors, are showing greater agility in the cloud business of India. At present, there are limited industry standards for the cloud-related businesses to assess their services. End-user government departments are puzzled as to which CSP is best suited for their requirements. An evaluation of cloud service providers should not only be driven by cost, but importance should also be given towards service provider ability and commitment to deliver the services. The absence of a common framework to assess the evaluation criteria of CSPs, combined with the fact that no two CSPs are the same, complicates the matter of CSP selection. This article proposes a framework for ranking of evaluation criteria for CSPs. The framework leverages the capability analysis of CSPs, measurable metrics and ranks the evaluation criteria for assessing the best CSP suitable for end-user government organizations.

INTRODUCTION

At present in India where the government wants everything to be digital by default in its ambitious 'Digital India' programme, there is drive in the government organizations to utilize and harness the benefits of cloud. A favorable cloud first policy, digital savvy government, huge IT talent pool can drive India to

the hot seat of cloud. The cloud landscape in India has a promising future. The Figure 1 illustrates the forecast for India public cloud services.

However, the journey to the cloud is not straightforward. With many dissimilarities and variants of cloud services, procurement of cloud is a confusing task. The cloud computing presents a complex scenario to the end user departments with the issues related to technology, security issues, data hosting, business models and pricing mechanism making it even more complicated. Cloud service providers have large number of baffling attributes and characteristics which is difficult for the end user departments to assess and evaluate.

Also, as the user base for the cloud adoption is increasing in the government departments, therefore to meet the requirements newer CSPs are making entry into the cloud market. The concern is that not all of them are first hand owners of cloud infrastructure and lacks inherent capability of a true CSP. In such cases it becomes difficult for the end user departments to gauze the capabilities of these new middleman or distributor who are selling the customized cloud services. Also, many organizations are seeking the validation of their strategy and need assistance in finalizing the evaluation criteria for CSPs. End user departments tend to struggle with this dilemma while finalizing the procurement. As per Bardsiri and Hashemi (2014) cloud providers offers similar products at different cost and different capabilities making it difficult for end user to make proper cloud selection. Duan (2017) stated that different cloud services are offered with different terminologies resulting in opacity and blurred picture for cloud services. As per Liu et al. (2016) the criteria parameters for cloud services are complex in nature which results in digression of cloud services. Therefore, in the absence of a common framework to assess the capabilities of CSPs, it becomes difficult for the end user departments to select the right CSP meeting their requirements with the underlying fact that no two CSPs are same. Even though the end user department is aware of the service characteristics, but is not confident of final checklist of evaluation criteria and which criteria are the most important ones. It is the need of the hour that a comprehensive framework for identification and ranking of evaluation criteria for CSPs, may be devised which an end user department can utilize to assess the right CSP suitable for its cloud requirements.

With this objective, this paper tries to identify and rank the evaluation criteria on which a CSP can be assessed with respect to the services offered, inherent capabilities and services metrics measurement.

Figure 1. Public cloud services market value in India (millions of USD) (Source: Statista 2018)
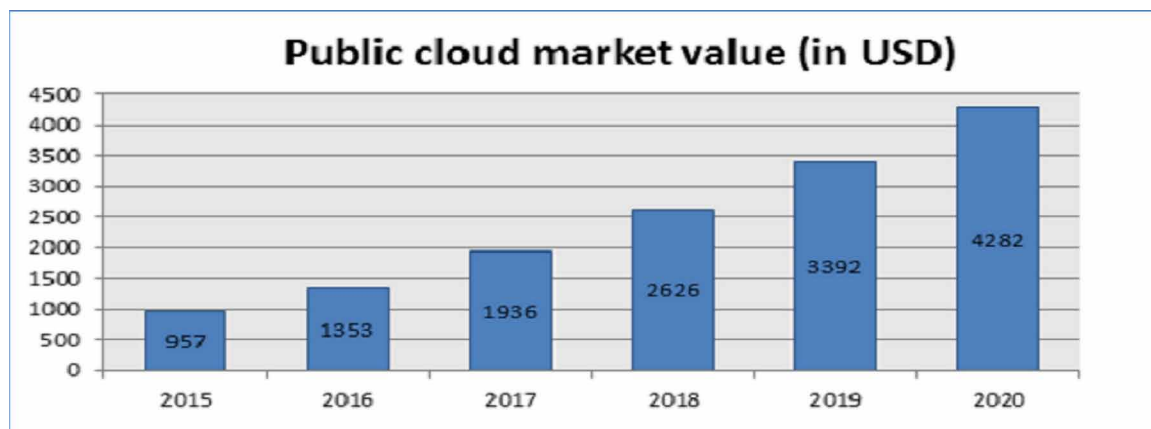
Related Content

A Holistic View on Blockchain and Its Issues
Mohd Azeem Faizi Noor, Saba Khanum, Taushif Anwarand Manzoor Ansari (2021). *Blockchain Applications in IoT Security (pp. 21-44).*
www.irma-international.org/chapter/a-holistic-view-on-blockchain-and-its-issues/261878

Crop Disease Prediction Using Deep Learning Algorithms
Pancham Singh, Mrignainy Kansal, Manoj Kumar Singh, Sachin Kumarand Anupam Dwivedi (2023). *Convergence of Cloud Computing, AI, and Agricultural Science (pp. 290-305).*
www.irma-international.org/chapter/crop-disease-prediction-using-deep-learning-algorithms/329140

Predictive Modeling for Imbalanced Big Data in SAS Enterprise Miner and R
Son Nguyen, Alan Olinsky, John Quinnand Phyllis Schumacher (2018). *International Journal of Fog Computing (pp. 83-108).*
www.irma-international.org/article/predictive-modeling-for-imbalanced-big-data-in-sas-enterprise-miner-and-r/210567

Realm Towards Service Optimization in Fog Computing
Ashish Tiwariand Rajeev Mohan Sharma (2019). *International Journal of Fog Computing (pp. 13-43).*
www.irma-international.org/article/realm-towards-service-optimization-in-fog-computing/228128

Feedback-Based Resource Utilization for Smart Home Automation in Fog Assistance IoT-Based Cloud
Basetty Mallikarjuna (2020). *International Journal of Fog Computing (pp. 41-63).*
www.irma-international.org/article/feedback-based-resource-utilization-for-smart-home-automation-in-fog-assistance-iot-based-cloud/245709