Pricing of cloud computing services

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ABSTRACT

Pricing cloud computing has always been a big challenge not only to many Cloud Service Providers (CSPs) but also to many cloud consumers because of the exponential growth of new service features or characteristics appear almost daily. However, pricing of cloud services is a challenging task due to its services complexity and dynamic nature of the ever-changing environment. In this project, we propose a solution based on value-based pricing, which not only consider how much does the service cost to a CSP but also how much a customer is willing to pay for the service. We demonstrate that the cloud extrinsic values would not only become one of the competitive advantages for CSPs to lead the cloud market but also increase the profit margin.

Keywords— Cloud computing, Cloud Service Provider (CSP)

1. INTRODUCTION

Pricing cloud computing has always been a big challenge not only to many Cloud Service Providers (CSPs) but also to many cloud consumers because of the exponential growth of new service features or characteristics appear almost daily. Although the pricing of cloud service delivery has often been drawn an analogy as a new public utility service, the underlying structure of cloud pricing is much more complicated than the traditional public utility services due to the rapid development of cloud technologies and multiple layers of service delivery models. As Weinman had noticed, the utility pricing is not the only possible model for the cloud. Some firms have begun to explore their marketing strategy to support “pay-what-you-like”. He indicated one of the important lessons that CSPs should learn from other industries is that relying on innovative cloud services and technologies is not enough. CSP has to also come up with new pricing models for their services. This means that CSP should “move beyond competition just on the price to compete on pricing.” The question of how to move beyond competition just on price leads to the idea of how to establish innovative pricing models for cloud services. Our observation shows that the revenue growth of Amazon Web Services (AWS), one of the leading global CSPs, has a positive correlation with its cloud characteristics. Most importantly, how we can calculate or estimate the values of these characteristics. One of the solutions is a so-called hedonic model. The compelling reason to propose the hedonic model is that it can capture extrinsic values for the cloud ecosystem and evolutionary characteristics that either directly or indirectly impact on its service prices.

Empirically, the basic premise or assumption of the hedonic function is that the product price difference is closely aligned with its characteristics variation. This means that if we can successfully establish a relationship between cloud service price differences with various cloud service characteristics, we will be able to estimate the price of cloud services accurately. In comparison with other methods, such as survey-based or contingent valuation, hedonic regression approach is quick and cost-effective if the chosen dataset is sufficiently large for the regression analysis. Moreover, it can be easily updated. It is a great fit for the cloud environment because of its ever-changing market conditions and rapid technological innovations. Historically, the hedonic model has two different objectives. One is to predict the future price of goods or services that customers are willing to pay. The other is a hedonic index, which is to establish a price ratio by comparing it with a price in a base period. The goal of the hedonic index is to monitor the price, which is to verify what has happened in the past.
2. EXISTING SYSTEM

Cloud Service Providers (CSP) and cloud consumers often need to forecast the cloud price to optimize their business strategy. However, pricing of cloud services is a challenging task due to its services complexity and dynamic nature of the ever-changing environment. Moreover, cloud pricing based on consumers’ willingness to pay becomes even more challenging due to the subjective of consumers’ experiences and implicit values. Unfortunately, many existing pricing models often cannot support value-based pricing.

2.1 Drawbacks of the existing system
There are some drawbacks are present. They are,
- There is no user satisfaction.
- Price for the cloud is fixed.
- Only MNC companies can store their data where startup companies cannot store their data because of the high cost.
- Here there is no policy like “how much a customer is willing to pay.
- Here we consider only value-based pricing.

3. PROPOSED SYSTEM

We propose a solution based on value-based pricing, which does not only consider how much does the service cost (or intrinsic values) to a CSP but also how much a customer is willing to pay (or extrinsic values) for the service. Historically, the hedonic model has two different objectives. One is to predict the future price of goods or services that customers are willing to pay. The other is a hedonic index, which is to establish a price ratio by comparing it with a price in a base period. In this paper, we mainly focus on hedonic prediction or estimation. In order to achieve a better estimation, we introduce the concept of both intrinsic and extrinsic variables for hedonic function model for cloud pricing problem.

3.1 Advantages of proposed data
The following are the advantages of the proposed system by overcoming the drawbacks of the existing system. These are as follows,
- User satisfaction is there.
- Price for the cloud is not fixed.
- Both MNC companies and startup companies can store their data because of the low cost.
- Here there is a policy like “how much a customer is willing to pay”.
- Here we predict the future price of goods or services that customers are willing to pay.
- Here we consider both value-based pricing and how much a customer is willing to pay.

4. SYSTEM ARCHITECTURE

![Fig. 1: Pricing of cloud computing service](image)

5. MODULES

The main modules present in this paper are as follows, these play major roles in this system.
- Cloud Service Provider
- User

5.1 Cloud Service Provider
Here the cloud can register and log in with their own credentials. After login, he can add cloud details like cloud name, storage space, cost, data transfer capacity, data transfer price, get capacity, get price, put capacity and put price. He has an ability to view users, user requests and user files and give response for that user request.

5.2 User
Here the user can register and log in with their own credentials. After login, he can view all the cloud details like cloud name, storage space, cost, data transfer capacity, data transfer price, get capacity, get price, put capacity and put price which is uploaded by the cloud server. He can send a request to cloud based on how much the user willing to pay if the cloud accepts that request, from now onwards can upload files to that cloud. He can view and delete files also.
6. RESULT

6.1 Result 1

Fig. 2: Result 1

6.2 Result 2

Fig. 3: Result 2

6.3 Result 3

Fig. 4: Result 3

6.4 Result 4

Fig. 5: Result 4
6.5 Result 5

![Fig. 6: Result 5](image)

6.6 Result 6

![Image](image)

7. CONCLUSION

We propose a novel solution based on value-based pricing, which does not only consider how much does the service cost (or intrinsic values) to a CSP but also how much a customer is willing to pay (or extrinsic values) for the service. Historically, the hedonic model has two different objectives. One is to predict the future price of goods or services that customers are willing to pay. In order to achieve a better estimation, we introduce the concept of both intrinsic and extrinsic variables for hedonic function model for cloud pricing problem. The intrinsic variables mean cloud resources, such as memory, CPU, storage, and network performance. The extrinsic variables can be anything from Burstable CPU, Open Stack compatible API, the global footprint of Cloud Data Center (DC), Mobile Application, vertical scaling without a reboot, to even one account for all locations.

8. REFERENCES