A Location Based Value Prediction for Quality of Web Service

Dr.C.K.Gomathy[1], K. Bindhu sravya[2], P. Swetha[3], S.Chandrika[4]

[1]Assistant professor, Department of CSE, SCSVMV University, Enathur, Kanchipuram, India
[2,3,4] U.G Scholar, Department of CSE, SCSVMV University, Enathur, Kanchipuram, India

Abstract*—The number of web services with functionality increases, the service users usually depends on web recommendation systems. Now a days the service users pay more importance on non functional properties which are also known as Quality of Service (QoS) while finding and selecting appropriate web services. Collaborative filtering approach predicts the QoS values of the web services effectively. Existing recommendation systems rarely consider the personalized influence of the users and services in determining the similarity between users and services. The proposed system is a ranking oriented hybrid approach which integrates user-based and item-based QoS predictions. Many of the non-functional properties depends on the user and the service location. The system thus employs the location information of users and services in selecting similar neighbors for the target user and service and thereby making personalized service recommendation for service users.*

***Keywords*—Web Service, Collaborative filtering, Location aware, QOS prediction.**

I. INTRODUCTION

Web services have gained interest due to their importance in developing business to business (B2B) or web applications. In web connections are affordable and on-demand services, which can be leased or traded. The popularity of the cloud and its distinctive economies of scale computation advantages make a cloud-based market a plausible and attractive option for publishing and trading web services. Conversely, offering web services through a cloud-based market has underlying risks associated with probable service failure – for instance, because of undependable service provision of the cloud service provider, hardware malfunctions or unpredicted fluctuations in demands for the traded service as a shared resource, etc. All these factors may increase the risks associated with service level agreement (SLA) violations for web applications benefiting from the cloud-based market. Our work views the cloud as a marketplace for trading in-stances of web services, which web applications can explore trade and use as substitutable and compassable entities in the architecture of cloud-based service applications. We propose a location aware personalized collaborative filtering (CF) method for web service recommendation. The proposed method detailed both location of users and web services when we are selecting similar neighbors for the target users or service.

II. RELATED WORK

The paradigmatic shift from a Web of manual interactions to a Web of programmatic interactions driven by web services is creating unprecedented opportunities for the formation of online Business-to-Business (B2B) collaborations. In particular, the creation of value-added services by composition of existing ones is gaining a significant momentum. Two selection approaches are described and compared: one based on local (task-level) selection of services, and the other based on global allocation of tasks to services using integer programming [5]. Shao et al. [10] proposed a user-based CF method for QoS-aware Web service recommendation. Zheng et al. [6] combined the user- based and item-based CF algorithm to recommend web services. However, since neither of the two approaches recognized the different characteristic between web service QoS and user ratings, the prediction accuracy of these methods was unsatisfactory.

III. METHODOLOGY

We firstly define notations for the convenience of describing our methods and algorithms. The algorithm in the first adaptation cycle asks the buyer to set the minimum accepted QoS, the required number of web services, the maximum price that (s)he is willing to pay C-max as well as the weight of quality attributes PWA, PWE and PWSe of the web service in line.

Then the algorithm identifies the web services Si which offer the functionalities required by the user and satisfy the QoS and cost constraints in line. After that, the buyer agent will access the Knowledge Base, which is maintained by the market regulator, to retrieve the likely risks. Prediction coverage is also an important metric for evaluating a QoS prediction algorithm.

IV. TECHNIQUES FOR QOS VALUE PREDICTION

A quality of services variation should be incorporated in to user and service similarity measurement. In this

technique, simply aim to facilitate some perceives functionality as implemented.

- Regulator
- Seller
- User/Consumer

4.1 REGULATOR

A device maintains a certain designated characteristic is known as regulator.

4.1.1 Authentication

If you are the new user to consume the service then they have to register first by providing necessary details. After completion of sign up process successful, the user has to login into the application by providing username and exact related password. The user has to provide exact username and exact password which was provided at time of registration, if login is success means then it will take up to main page else it will remain in the login page itself.

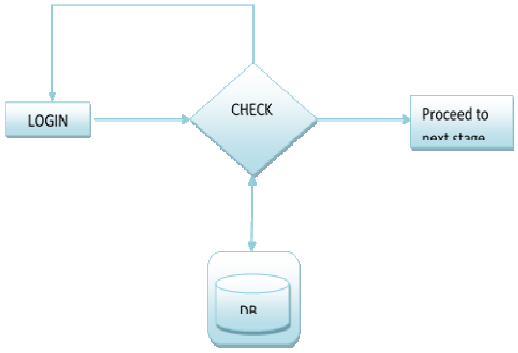

Fig.1: Authentication

4.1.2 Monitoring services

In this scheme regulator just monitor the service which has been sold by the seller in the cloud environment. Just they can figure out how many users have been subscribed for the service and they could see over all lists of the web services in the cloud environment.

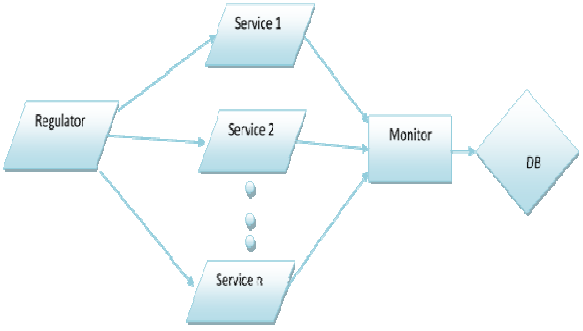

Fig.2: Monitoring services

4.1.3 Analyze Qos parameter

The Regulator selects the web service and they could analyze quality of a web service. They could analyze security, response time, feedbacks and availability of a web service for an every day. If they regulate something like this then they could improve the web service quality in the cloud environment.

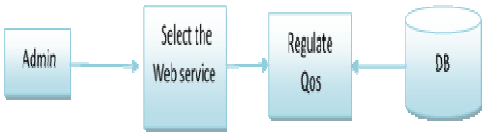

Fig.3: Analyze Qos parameter

4.1.4 Reports

The regulator generates the reports based on the Qos parameter based on the values which is obtained from the analysis module. It could be easy to understand the overall quality of the web services

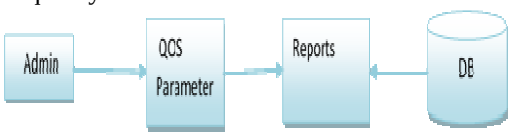

Fig.4: Reports

4.2 SELLER

After the successful completion of the login seller has to decide to sell their service into the cloud.

4.2.1 Authentication

The user has to give exact username and password which was provided at the time of registration, if login success means it will take up to main page else it will remain in the login page itself.

4.2.2 Sell a service

After the successful completion of the login seller has to decide to sell their service into the cloud. Also they cloud see the subscriber list. Before that then could add the description of the web service and then they will update into the cloud environment.

Authentication *Authentication*

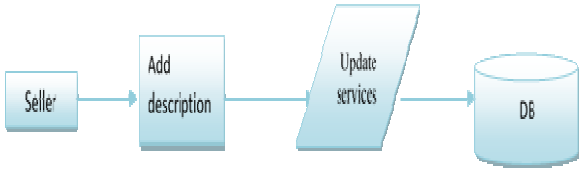

Fig.5: sell a service

4.2.3 View Subscribers

In this module the seller has to decide to sell their service into the cloud. Also they cloud see the subscriber list for might want to about total consumer we have in the cloud environment.

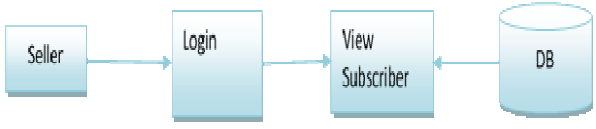

Fig.6: View Subscribers

4.3 USER/CONSUMER

The new user to consume the service then they have to register first by providing necessary details.

4.3.1 Authentication

If you are the new user to consume the service then they have to register first by providing necessary details.

4.3.1.1 Registration

If you are the new user to login into the application then they have to register first by providing necessary details. After completion of sign up process successfully, the user has to login into the application by providing username and exact related password.

Fig.7: Registration

4.3.1.2 Login

The user has to provide exact username and password which was provided at time of registration, if login success means it will take up to main page else it will remain in the login page itself.

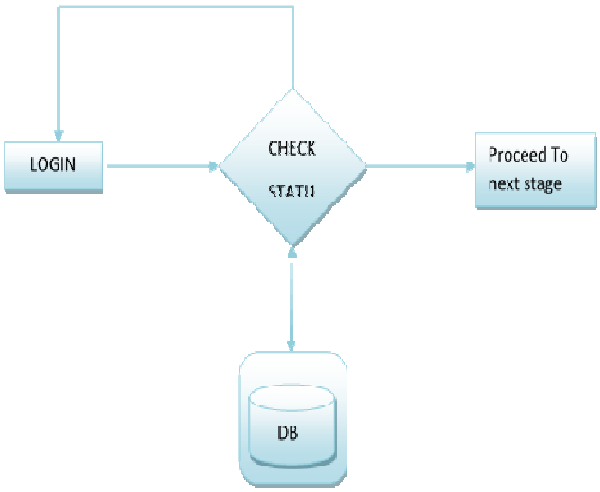

Fig.8: Login

4.3.2 Search services

The user after the successful login goes to view the Searching page. In that category contains could request the file into cloud server. After that consumer has to select and subscribe the web service. Then after user has to give some details for subscription.

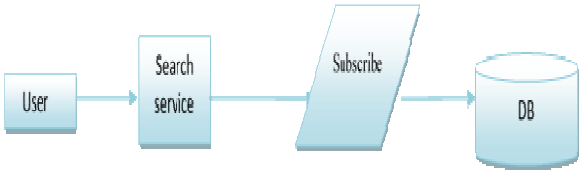

Fig.9: Search services

4.3.3 Preview Qos parameter

In this phase the authenticated users view the services based on the searching result. The user wants to see the particular category of service then they have to access the category and they can generate a request. Once the Request is generated then it shows the quality parameter list. Based on the quality parameter user has to select the web services. And again they going to be request for the confirmation for the web services.

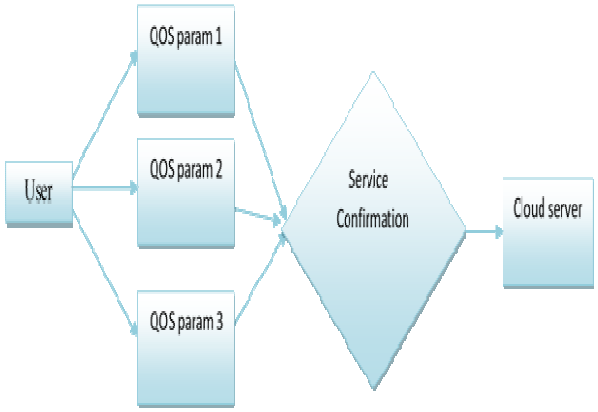

Fig.10: Preview Qos parameter

4.3.4 Buy services

The requested and conformed service is then bought by the consumer. In that user has to give some account information for this process. Then only they could have the web services

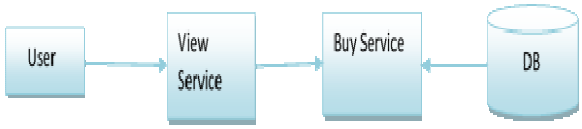

Fig: 11 Buy services

4.3.5 Feedbacks

In this module the user will get a response and suggestion's based on the quality of the web services. This might improve the service quality. These feedbacks are carried out to the sellers and they could do some modification.

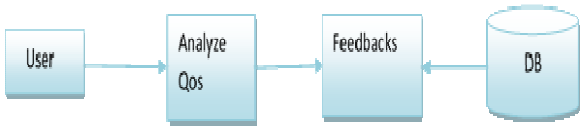

Fig.12: Feedbacks

V. ARCHITECTURE OF WEB SERVICE RECOMMENDATIONS

Where an active user is searching for high-quality Web services in a Web service discovery system or the system is recommending high-quality web services to an active user. In these scenarios, predicting QoS values for Web services unknown to the active user is firstly required; then, Web services with satisfactory QoS can be identified and recommended to the user. This work focuses on predicting QoS values of Web services for recommendation.

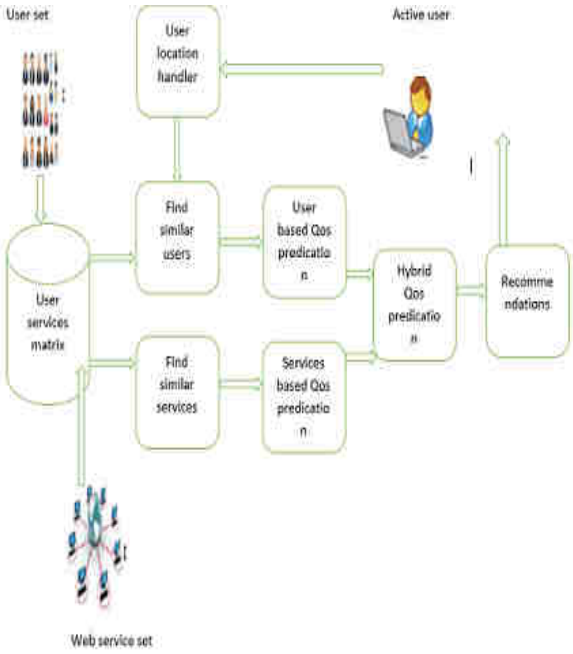

Fig.13: Web Service Recommandation

This web service recommendation depicts the relationship between different components of system. In this service is very important to know the overall concept of the system, in which the principal parts or functions are represented by blocks joined by lines that show the relationships of the blocks. They are heavily used in the engineering world in hardware design,electronic design, software design, and process flow diagrams.

VI. RESULTS

In this work, we found location of the service and quality of service based on collaborative filtering web service recommendations. In this web service finding the attributes like response time and throughput, we have proved and determined with the results are verified.

VII. CONCLUSION

In this work, we have introduced a novel, dynamic and adaptive design diversity approach for web services selection and allocation in the cloud using portfolio thinking. We have viewed the cloud as a marketplace for trading in-stances of web services, which cloud-based applications can explore trade and use as substitutable and composable entities. In particular, we have used a portfolio-based optimization to improve SLA compliance by diversifying the selection and consequently the allocation of traded instances of web services from multiple providers. Unlike the reviewed classical design diversity solutions that share the assumption of uncorrelated failures.

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