# ENHANCING USER ADOPTION FOR SERVICE ORIENTED BUSINESS MODEL THROUGH SEMANTICALLY ANNOTATED AND EXTENDED ASSOCIATION RULE MINING IN SLAKY COMPOSER SYSTEM

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## ABSTRACT

All types of enterprises including traditional, e-commerce and web service have to cope up with the changes in their business model. A typical traditional grocery store soon transformed into super market where the customer picks his own choice of products. The customer picks the product only after evaluation of price and data of manufacturing. Web service oriented business models like freemium services have flourished in the recent days. We have word to pdf converter provided as an online service that is free of cost for limited sizes and expects a premium for heavy sized files. Users need to have an adoption to these changes. In India we have number of web based business services like Jabong, Flipkart, Myntra, etc. In fact the customer evaluation of the product to be purchased is done at their doorstep. There are several online garment selling services selling customized products to specific customers. OLX is another popular web based service for resale of products. The entire avenue of business has been transformed to buy products in easy and convenient manner. However these smart business modes have certain hurdles in being adopted by customers. Some serious issues include lack of penetration of internet in certain countries, lack of motivation of the customers to accept changes and security threats. Though the changes in technology promote easy utilization of services the mental barriers preventing user adoption must be cleared through user assistance. Web service composition is the process of construction virtual enterprises on the fly by aggregation of appropriate services. Web service composition can be static or dynamic. In case of static composition services for composition are fixed at compile time and cannot be customized to user preferences. Dynamic composition performs runtime composition and considers handling non determinism of services. Automatic composition is automation of composition by a software agent to promote ease of work for composer. To promote automation of service composition web services are annotated to describe themselves using ontology so that the software agent can decide for selection. In this paper we focus on service composition as a user adopted business model using Association Rule Mining. From service workflow patterns we filter the services that are personalized to user's preferences based on collaborative filtering. To implement user adoption OWL-S upper ontology and FOAF are extended. The novelty of the paper is that it promotes selection of services both from adoption and personalized preference perspective. The paper also works on how to frame association rules for new and upgraded services.

**KEYWORDS:** Association Rule Mining, Collaborative Filtering, Web Service Composition, Semantic Web Service, OWL-S, SLAKY Composer