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# Do Free Users Make Seller Pay? The Asymmetry Network Effect of Free Users on Fee Sellers in Business-to-Business Electronic Platform

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**Abstract:** With the prosperity of worldwide e-commerce, platforms generally conduct premium model to convert customer assets. Extant research has investigated the network effect at e-commerce platform, but no study to date has analyzed whether the influx of free users can stimulate sellers to pay for the membership or backfire. In the context of B2B electronic market, we examine the dynamic network effect of free users in different participation quality on fee sellers with a VAR model. The results show that (1) the rise of registered regular sellers can incite more fee sellers to pay for the membership than that of regular buyers; (2) external users attracted by advertising (search advertising and social media advertising in this paper) can impact targeted internal user base. These findings emphasize more exploration should be pay attention to the engagement quality of user base in two-sided markets, and provide guidance related to advertising strategy.

**Keywords:** B2B Electronic Platform, Network Effect, Customer Engagement, Premium, VAR

## 1. RESEARCH QUESTION

The domain of membership decision has received significant attention in the online community and marketing strategy literature, with scholars attempting to explain the existence of peer influence<sup>[1]-[2]</sup> and the marketing action of platform firms<sup>[3]-[4]</sup>. However, showing the influence of free users on fee sellers does not suffice for platform-related research; instead, researchers as well as practitioners need to know the critical characteristics of free users, especially how the network effect scheme concerning free users on fee sellers occur. In such a context, we propose a taxonomy of free users according to the quality of participation and investigate the following question: whether and how the influx of free users with different participation quality can facilitate the growth of membership group and further the sustainable competitiveness of platform?

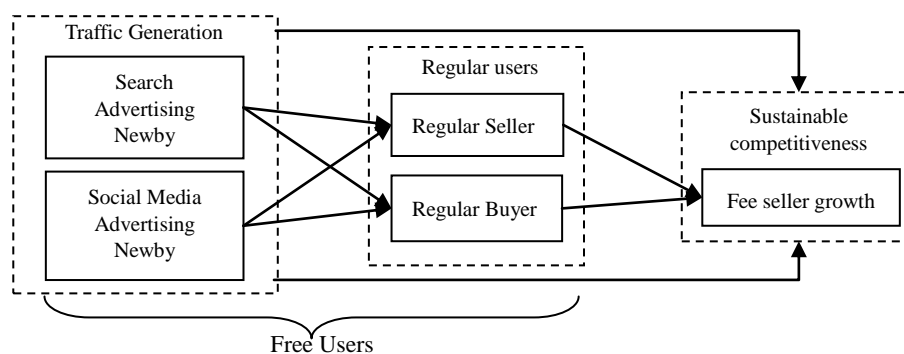


Figure 1. Framework of research: relationship between platform users

## 2. MAIN FINDINGS

We adopt a five-variable Vector Auto Regression (VAR) model to capture the interdependent evolution of variables, and further IRFs up to 4-week lags to gauge their short-term and long-term interactive relationship. The data set was collected from Alibaba, a world famous electronic B2B platform, and covers from March 31st in 2008 to March 31st in 2009 on a daily basis, altogether 366 valid days.

The results show that (1) the advertising strategies stimulate the growth of regular sellers and buyers differently. Specifically, the growth of traffic newbies from search advertising brings more regular sellers than newbies from social media advertising, while the later performs better in the inciting of regular buyers; (2) the growth of regular sellers can significantly increase the number of fee sellers in the short-term, while that of regular buyers is insignificant no matter in the short-term or long-term; (3) the advertising strategy has no direct effect on the growth of fee sellers and sustainable competitiveness of platform.

## 3. CONTRIBUTION

Different with traditional researches narrowing scope on the user base, we focus on the quality of free users and uncover the mechanism of how free users with different degree of participation influence fee sellers. There are two main theoretical contributions: (1) the participation quality of two-sided users significantly influences the sustainable competitiveness of platform, the effectiveness of which deepens as the degree of participation; (2) we indicate that advertising strategy enhances the performance of platform through increasing two-sided user base, which is totally different from most prior studies identifying it as invalid.

## ACKNOWLEDGEMENT

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