CHARACTERIZING AND PREDICTING EARLY REVIEWERS FOR EFFECTIVE PRODUCT MARKETING ON E-COMMERCE WEBSITES

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Abstract:
Online reviews have become an important source of information for users before making an informed purchase decision. Early reviews of a product tend to have a high impact on the subsequent product sales. In this paper, we take the initiative to study the behavior characteristics of early reviewers through their posted reviews on two real-world large e-commerce platforms, i.e., Amazon and Yelp. In specific, we divide product lifetime into three consecutive stages, namely early, majority and laggards. A user who has posted a review in the early stage is considered as an early reviewer. We quantitatively characterize early reviewers based on their rating behaviors, the helpfulness scores received from others and the correlation of their reviews with product popularity. We have found that (1) an early reviewer tends to assign a higher average rating score; and (2) an early reviewer tends to post more helpful reviews. Our analysis of product reviews also indicates that early reviewers’ ratings and their received helpfulness scores are likely to influence product popularity. By viewing review posting process as a multiplayer competition game, we propose a novel margin-based embedding model for early reviewer prediction. Extensive experiments on two different e-commerce datasets have shown that our proposed approach outperforms a number of competitive baselines.

Keywords: Ecommerce

I. INTRODUCTION
The emergence of e-commerce websites has enabled users to publish or share purchase experiences by posting product reviews, which usually contain useful opinions, comments and feedback towards a product. As such, a majority of customers will read online reviews before making an informed purchase decision. It has been reported about 71% of global online shoppers read online reviews before purchasing a product. Product reviews, especially the early reviews (i.e., the reviews posted in the early stage of a product), have a high impact on subsequent product sales.

We call the users who posted the early reviews early reviewers. Although early reviewers contribute only a small proportion of reviews, their opinions can determine the success or failure of new products and services. It is important for companies to identify early reviewers since their feedbacks can help companies to adjust marketing strategies and improve product designs, which can eventually lead to the success of their new products. For this reason, early reviewers become the emphasis to monitor...
and attract at the early promotion stage of a company. The pivotal role of early reviews has attracted extensive attention from marketing practitioners to induce consumer purchase intentions.

With this program, Amazon shoppers can learn more about products and make smarter buying decisions. As another related program, Amazon Vine2 invites the most trusted reviewers on Amazon to post opinions about new and prerelease items to help their fellow customers make informed purchase decisions.

II. PROCEDURE

To predict early reviewers, we propose a novel approach by viewing review posting process as a multiplayer competition game. Only the most competitive users can become the early reviewer’s w.r.t. to a product. The competition process can be further decomposed into multiple pairwise comparisons between two players. In a two-player competition, the winner will beat the loser with an earlier timestamp. Inspired by the recent progress in distributed representation learning, we propose to use a margin-based embedding model by first mapping both users and products into the same embedding space, and then determining the order of a pair of users given a product based on their respective distance to the product representation.

III RELATED WORK

Architecture is all about figuring out who the stakeholders are; what their needs, wants, and constraints are; and coming up with a solution that satisfies the stakeholders within all their constraints. Think of building a house. Stakeholders include the buyer, their kids, maybe their pets, the local zoning and building boards, the mortgage company, the guys who will build it, and suchlike. The architecture must lay out a plan for meeting all the stakeholder needs and constraints (big enough, enough bedrooms and bathrooms, a kitchen but maybe not a formal dining room, buildable within a given budget, and compliant with all local building codes). The diagrams that show the architecture might include a floor-plan and a three dimensional view to show the physical views, a summary of plumbing and electrical layout, a summary of expected cost of construction, etc. It is not the detailed design, just enough information to get across the concept of the house that meets everyone’s needs.
IV PROPOSED SYSTEM

In our current work, the review content is not considered. In the future, we will explore effective ways in incorporating review content into our early reviewer prediction model. Also, we have not studied the communication channel and social network structure in diffusion of innovations partly due to the difficulty in obtaining the relevant information from our review data. We will look into other sources of data such as Flixster in which social networks can be extracted and carry out more insightful analysis. Currently, we focus on the analysis and prediction of early reviewers, while there remains an important issue to address, i.e., how to improve product marketing with the identified early reviewers. We will investigate this task with real e-commerce cases in collaboration with e-commerce companies in the future.

V MODULES

1. Upload product
   Uploading the products is done by admin. Authorized person is uploading the new arrivals to system that are listed to users. Product can be uploaded with its attributes such as brand, color, and all other details of warranty. The uploaded products are able to block or unblock by users.

2 Product Review Base Order
   The suggestion to user’s view of products is listed based on the review by user and rating to particular item. Naive bayes algorithm is used in this project to develop the whether the sentiment of given review is positive or negative. Based on the output of algorithm suggestion to users is given. The algorithm is applied and lists the products in user side based on the positive and negative.

3 Rating and Review
   Ratings and reviews are main concept of the project in order to find effective product marketing. The main aim of the project is to get the user reviews based on how they purchased or whether they purchased or not. The major find out of the project is when they give the ratings and how effective it is. And this will helpful for the users who are willing to buy the same kind of product

4 Data Analysis
   The main part of the project is to analysis the ratings and reviews that are given by the user. The products can be analysis based on the numbers which are given by user. The user data analysis of the data can be done by charts format. The graphs may vary like pie chart, bar chart or some other charts.

VI CONCLUSION

In this project, we have studied then over task of early reviewer characterization and prediction on two real-world online review datasets. Our empirical analysis strengthens a series of theoretical conclusions from sociology and economics. We found that (1) an early reviewer tends to assign a higher average rating score; and (2) an early reviewer tends to post more helpful reviews. Our experiments
also indicate that early reviewers’ ratings and their received helpfulness scores are likely to influence product popularity at a later stage. We have adopted a competition-based viewpoint to model the review posting process, and developed a margin based embedding ranking model (MERM) for predicting early reviewers in a cold-start setting. In our current work, the review content is not considered. In the future, we will explore effective ways in incorporating review content into our early reviewer prediction model. Also, we have not studied the communication channel and social network structure in diffusion of innovations partly due to the difficulty in obtaining the relevant information from our review data. We will look into other sources of data such as Flixster in which social networks can be extracted and carry out more insightful analysis. Currently, we focus on the analysis and prediction of early reviewers, while there remains an important issue to address, i.e., how to improve product marketing with the identified early reviewers. We will investigate this task with real e-commerce cases in collaboration with e-commerce companies in the future.

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