



**University
of Victoria**

Graduate Studies

Notice of the Final Oral Examination
for the Degree of Master of Science

of

JIE CHEN

BSc (Central China Normal University, 2013)

“Leveraging Purchase History and Customer Feedback for CRM: a Case
Study on eBay's Buy It Now”

Department of Computer Science

Wednesday, March 23, 2016

3:00 P.M.

Engineering and Computer Science Building
Room 467

Supervisory Committee:

Dr. Kui Wu, Department of Computer Science, University of Victoria (Supervisor)
Dr. Alex Thomo, Department of Computer Science, UVic (Member)

External Examiner:

Dr. Linda Hui Shi, Peter B. Gustavson School of Business, University of Victoria

Chair of Oral Examination:

Dr. Warren Magnusson, Department of Political Science, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies

Abstract

The rapid growth of e-commerce contributes to not only an increase in the number of online shoppers but also new changes in customer behaviour. Surveys have revealed that online shopper's brand loyalty and store loyalty are declining. Also the transparency of feedback affects customers' purchase intention. In the context of these changes, online sellers are faced with challenges in regard to their customer relationship managements (CRM). They are interested in identifying high-value customers from a mass of online shoppers, and knowing the factors that might have an impact on those high-value customers. This thesis aims to address these questions.

Our research is conducted based on an eBay dataset that includes transaction and associated feedback information during the second quarter of 2013. Focusing on the sellers and buyers in that dataset, we propose an approach for measuring the value for each seller-buyer pair so as to help sellers capture high-value customers. For one seller, the value of each of its customers has been obtained, and we create a customer value distribution for the seller so that the seller knows the majority of its customers' consumption abilities. Next, we categorize sellers based on their customer value distributions into four different groups, representing the majority of customers as being of high, medium, low, and balanced values, respectively. After this classification, we compare the performance of each group in terms of the sales, percentage of successful transactions, and the seller level labelled by the eBay system. Furthermore, we perform logistic regression and clustering to the sellers' feedback data in order to investigate whether a seller's reputation has an impact on the seller's customer value distribution. From the experiment results, we conclude that the effect of negative ratings is more significantly than that of positive ratings on a seller's customer value distribution. Also higher ratings about "Item as Described" and "Shipping and Handling Charges" are more likely to help the seller attract more high-value buyers.