Chapter 1

Introduction

Information systems that assist consumers in the buying decision process are recognized to be one of the most promising appliances in e-commerce environments [SP02, SV99]. In this context recommender systems support the consumer in this process by providing recommendations of products and services to help customers find products to purchase [SKR01]. Recommender systems aid the consumer by reducing information overload, providing personalized product information, ranking products according to the individual user's preferences, providing community critiques, and summarizing community opinion [Run00]. Hence, recommender systems represent interesting opportunities for e-commerce vendors to deliver value-added services to the customer. Recommender systems ideally assist e-commerce vendors in turning new and infrequent visitors of the web-site into buyers, building credibility through community inputs, inviting customers back, improving cross sales, and building long term relationships [SKR01].

1.1 Research Goal

The majority of research literature regarding recommender systems deals with this topic from the viewpoint of computer science. The focus is on the underlying algorithms for generating recommendations [KSS03, SKKR00, BS97,
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Bur02, SVA97, Run00]. The existing research in respect of the marketing perspective (e.g. the influence of recommendations on consumers decisions) is still scarce [SN04, HK04, HM03, CLA+03, HT00]. Therefore, the author has decided to address the research field "recommender systems" from a marketing perspective.

As examined by Katz and Lazarsfeld in their classic article "Personal Influence: The Part Played by People in the Flow of Mass Communications" interpersonal communication (i.e. "word-of-mouth") is a very important factor in the buying decision process [KL55]. By providing community critiques and summarizing community opinion, recommender systems may be used to facilitate interpersonal communication between customers. In this context, the question arises which psychographic and sociographic factors determine the interest in recommendations as well as the interest in word-of-mouth.

Thus, the thesis strives to identify the underlying psychographic and sociodemographic determinants that define: (1) the consumer's interest in personalized recommendations, (2) the consumer's interest in participating actively in virtual communities of transaction located at online purchase environments by submitting product-related ratings and comments, and (3) the consumer's interest in product-related opinions of other consumers in virtual communities.

The author tries to address this question in the context of online book recommendations. This product class was chosen for the following reasons:

- Books are the most prominent product category sold over the Internet worldwide and in Austria [AIM05]. Hence, it is more likely that participants of a survey with respect to book recommendations have experience in this context, which makes the results of the survey more reliable.

- Books are a product class where subjective tastes and preferences are of high importance for the buying decision. As a consequence, word-of-mouth and virtual communities are important facets in this product category.

- Selling books over the Internet is a typical application domain for recommender systems based on collaborative filtering or summarization of community opinion.
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Further, the following research topics are addressed by means of exploratory research:

- Recommendations and impulse buying behavior.
- Importance of ratings and comments from different sources for the decision process.
- Motives for submitting ratings and comments to virtual communities.
- Benefits of recommendations from the consumer’s perspective.
- Privacy issues in the context of implicit data acquisition for preference elicitation.
- Communication methods for the delivery of recommendations.

In the thesis, a quantitative approach for the examination of the research questions is applied. Consumers were asked to answer a standardized web-based questionnaire regarding recommendations and product-related word-of-mouth. The research model is verified by the application of structural equation modeling and regression analysis.

1.2 Contents and Organization

This doctoral dissertation is divided into six chapters that review relevant marketing and computer science literature, introduce the underlying theory and hypotheses, describe the study methodology, and present the results as well as conclusions, implications and limitations.

In the following chapter, recommender systems are examined from a marketing perspective. At first, the working definitions of the thesis and a taxonomy of recommender systems are established. The next section takes a look at business goals of recommender systems and introduces the corresponding application models. The following section deals with the consumer decision process and how this process may be influenced by recommender systems.
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In the last section of Chapter 2 virtual communities and their relevancy for recommendation purposes are addressed.

Chapter 3 reviews functional aspects of recommender systems. In the first section of the chapter, input and output data of recommender systems are illustrated. Further, approaches to provide supplementary explanations (i.e. why certain products are recommended) are investigated. In the next section, different statistical measurement scales for the elicitation of preferences are introduced. Additionally, the information delivery aspects of recommender systems are highlighted. The chapter concludes with a section that gives a detailed review of recommendation methods and their corresponding advantages and disadvantages.

Chapter 4 deals with the research model, the hypothesis and the methodology of the thesis. In this connection, the problem statement of the thesis is elaborated and the research questions are introduced. Furthermore, the underlying theoretical framework and the hypothesis derived from the research questions and the framework are described. The final section of this chapter focuses on the methodological aspects of the thesis and introduces the research design.

In Chapter 5 the results of the study are set out. In the first step, the descriptive results are presented (i.e. results that are not related to the hypotheses and the research model respectively). In the next section the verification of the research model is conducted. This section is structured in three parts: (1) hypotheses regarding psychographic factors that are verified using structural equation modeling, (2) hypotheses regarding psychographic factors that are scrutinized using a regression model, and (3) demographic hypotheses.

Chapter 6 reviews the dissertation's implications and limitations. In addition, directions for further research are outlined.