Chapter I
Comparison-Shopping Services and Agent Design: An Overview

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ABSTRACT
This chapter provides an overview of comparison-shopping services. Four research topics are covered: How to design a good shopbot? How Shoppers using the comparison-shopping services? What is the strategic use of comparison-shopping as a new channel by online vendors? And what is the impact of comparison-shopping on existing price equilibrium and electronic market structures? Emerging research topics like mobile comparison as well as comparison in health information are also discussed.

INTRODUCTION
Comparison-shopping was introduced into the World Wide Web in 1995 as the third mode of B2C ecommerce after online retailing and online auction. Shopbots became a popular shopping aid. They evolved from providing mere price information to offering a combination of product and vendor review as well as ratings for functions for a particular product or service. The vendor attitude towards comparison-shopping also evolved from doubt and refusal to complete acceptance and paying to participate.

Daily life is also influenced by this service. More and more people visit one of the major comparison-shopping sites before make any important purchase online. Cell phone users found they could be informed about online prices for the same product while they are shopping in a local store, and all they needed to do was to key in the barcode.

The concept of Web-based comparison-shopping was extended into the public domain too. Several state governments set up comparison-shopping websites to allow their residents to
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compare the service quality of hospitals and physicians as well as prescription drugs.

Web-based comparison-shopping seems also to have increased the general welfare of the society. We found term life insurance rates dropped around 8 to 15 percent because of the use of comparison-shopping sites.

The research in the field of comparison-shopping, however, is relatively scant. This book aims at providing a summary and general reference for existing research in this field.

WHAT ARE COMPARISON-SHOPPING SERVICES AND SHOPBOTS?

Comparison-shopping services refer to the Web-based service online shoppers use when they try to find product, price, and other related information aggregated from multiple vendor sites. Instead of visiting each vendor site offering the same product, online shoppers can view the prices from the comparison-shopping site and make shopping decisions. Once they made the decision, they will be redirected to the chosen vendor site to complete the purchase.

Shopbots is a term that refers to the software agent on the backend of the comparison-shopping service. Though there are variations in design and implementation for different services, shopping basic functions include data collection, storage, and presentation. It is the data collection methodology that differentiates most shopbot technologies, which could roughly be divided into two categories: data wrapping and data feeding.

Shopping.com is a typical comparison-shopping service. A shopper may use a keyword to locate a product or browse to find a product from existing categories. Once a product has been identified, the shopbot displays the prices from multiple vendors. In addition to prices, it also provides product review and vendor rating information to the shopper. On the back end, a sophisticated shopbot technology was used to allow vendors to feed their product price information into the Shopping.com database. Meanwhile, these data are matched with product review and other cost information to be presented to shoppers upon request.

Shopping.com is only one example of comparison-shopping services. In other business categories like online travelling, comparison-shopping had already been the preferred business approach, even before the Web era, and their transformation to the Web was more challenged by existing business model than by technology.

Consider the so called “big three” in online travelling: Expedia.com, Travelocity.com, and Orbitz.com. All of them offer one-stop comparison-shopping for integrated services, including airfare, hotel, and car rental. Because of the maturity of such business categories, derived comparison-shopping services like Kayak.com also emerged to allow shoppers to compare offers provided by different comparison-shopping services. In personal finance, comparison-shopping services like bankrate.com allow individuals to find the best loan rate offered by different financial institutions for their mortgage and other financial needs.

Apart from pure online comparison-shopping services, in recent years, mobile comparison-shopping services have also emerged and have been adopted gradually. All these innovations have important implications for the future evolution of comparison-shopping services.

Compared with the explosive growth of comparison-shopping services and shopbots, research in this field is relatively limited. We classify the existing research in this field into following topics:

1. **Agent design**: How to design a good shopbot?
2. **User**: How shoppers use the comparison-shopping services?
3. **Vendor**: How online vendor use comparison-shopping strategically as a new channel?
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