

# Chapter 21

## Using Bibliometrics and Text Mining to Explore the Trends of E-Marketing Literature from 2001 to 2010

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### ABSTRACT

*This paper describes a hybrid approach, using bibliometrics and text-mining, used to analyze longitudinal trends in the literature of e-marketing research from 2001 to 2010. The abstracts of 888 articles from six leading marketing journals were analyzed. The analysis identifies several core topics and themes of e-marketing research and reveals trends occurring in this growing area. The study reveals that combining bibliometrics with text-mining is a useful way to identify themes and trends for a topic in the literature and can produce meaningful results to help researchers achieve a deeper understanding of an area of interest.*

### 1. INTRODUCTION

E-marketing is growing at a dramatic pace and is significantly impacting customer and business market behaviors (Sheth & Sharma, 2005). E-marketing uses the internet as a platform and allows firms to reach customers who may not have been accessible due to temporal and locational limita-

tions (Watson, Leyland, Berthon, & Zinkham, 2002). As e-marketing typically involves a lower cost than other marketing platforms such as face-to-face salespeople or middlemen/distributors (Watson, Leyland, Berthon, & Zinkham, 2002), many firms, such as Dell, are actively adopting e-marketing strategies to enhance their reach to customers. Meanwhile, there is an increased interest in e-marketing research and numerous e-marketing

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articles have appeared in various journals over the past decade. To help e-marketing researchers get a better understanding of the e-marketing literature as well as the recent development of the e-marketing field itself, we conducted a preliminary analysis of the longitudinal trends in the literature of e-marketing research from 2001 to 2010 using a novel approach by combining bibliometrics and text-mining techniques. Specific efforts have been made to explore and identify core topics and themes from the articles we collected. This study aims to enrich the body of literature and to make a methodological contribution by testing the use of an innovative technology-oriented methodology as a way for e-marketing literature analysis.

The rest of the paper is organized as follows. In Section 2, we give an overview of e-commerce and e-marketing, bibliometrics and text-mining. In Section 3, we describe the research questions explored in this paper. Sections 4 and 5 describe the details of our methodological approach (sampling, data collection, and analysis) and the results of the analysis. Section 6 discusses the key findings and limitations of our study. Finally, Section 7 presents our conclusion and future research.

## **2. LITERATURE REVIEW**

### **2.1. E-Commerce / E-Marketing**

Over the past decades, extensive research has been conducted on e-commerce. E-Commerce is a term used to describe trade that takes place over the Internet (Mahadevan, 2000). It also describes the way in which transactions take place over telecommunication networks (Ma, 2010). The practice of conducting business over the Internet was seen in the early 1990's as a revolutionary way to conduct business because the buyer and seller never had personal contact.

E-commerce is an expansive subject that covers the entire purchasing process, from information search to follow-up product support. Because of

limited resources and time, the authors of this study focused on the marketing aspects of e-commerce, i.e., e-marketing which is the marketing (generally promotion) of products or services over the Internet. E-marketing is also known by a number of names such as online marketing, interactive marketing, and web analytics. E-marketing offers advantages such as reduced costs and a wider reach to customers (Sheth & Sharma, 2005). A preliminary review of the literature indicates that e-marketing publications often explore or discuss which marketing strategies and techniques are effective and which ones are not for promoting products or services over the Internet, and they offer various e-marketing opportunities and issues in different contexts (Ngai, 2003; Schibrowsky, Peltier, & Nill, 2007; Sheth & Sharma, 2005).

### **2.2. Bibliometric Analysis**

Bibliometric analysis is a method for summarizing the research reported in the scientific literature by measuring certain indicators (Ding, Chowdhury, & Foo, 2001; Thelwall, 2008). A common form of bibliometric analysis is descriptive statistics regarding a corpus. Researchers read the papers comprising the corpus and count the number of papers which match a given criteria. Examples include counting the authors from a particular region, or reporting the distribution of journals within the corpus. According to Keshaval, Gireesh, and Gowda (2008) and Hung (2011), "bibliometric analysis sums up publication information with quantitative statistics regarding growth of papers by year and citations, rankings of most prolific contributors, authorship patterns, rankings of geographical distribution of authors, rankings of most productive institutions, collaboration among institutions, range and percentage of references per paper, and frequency distribution of subject descriptors."

Quite a few researchers have used bibliometric analysis techniques to analyze literatures. For example, Treviño, Mixon, Funk, and Inkpen

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