Pergamon

Technology in Society 24 (2002) 483–502

Technology In Society

www.elsevier.com/locate/techsoc

Data mining techniques for customer relationship management

Chris Rygielski [a], Jyun-Cheng Wang [b], David C. Yen [a,*]

[a] *Department of DSC & MIS, Miami University, Oxford, OH, USA*
[b] *Department of Information Management, National Chung-Cheng University, Taiwan, ROC*

Abstract

Advancements in technology have made relationship marketing a reality in recent years. Technologies such as data warehousing, data mining, and campaign management software have made customer relationship management a new area where firms can gain a competitive advantage. Particularly through data mining—the extraction of hidden predictive information from large databases—organizations can identify valuable customers, predict future behaviors, and enable firms to make proactive, knowledge-driven decisions. The automated, future-oriented analyses made possible by data mining move beyond the analyses of past events typically provided by history-oriented tools such as decision support systems. Data mining tools answer business questions that in the past were too time-consuming to pursue. Yet, it is the answers to these questions make customer relationship management possible. Various techniques exist among data mining software, each with their own advantages and challenges for different types of applications. A particular dichotomy exists between neural networks and chi-square automated interaction detection (CHAID). While differing approaches abound in the realm of data mining, the use of some type of data mining is necessary to accomplish the goals of today's customer relationship management philosophy.

© 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Customer relationship management (CRM); Relationship marketing; Data mining; Neural networks; Chi-square automated interaction detection (CHAID); Privacy rights

---

[*] Corresponding author. Tel.: +1-513-529-4826; fax: +1-513-529-9689.
E-mail address: yendc@muohio.edu (D.C. Yen).

0160-791X/02/$ - see front matter © 2002 Elsevier Science Ltd. All rights reserved.
PII: S0160-791X(02)00038-6

1. Introduction

A new business culture is developing today. Within it, the economics of customer relationships are changing in fundamental ways, and companies are facing the need to implement new solutions and strategies that address these changes. The concepts of mass production and mass marketing, first created during the Industrial Revolution, are being supplanted by new ideas in which customer relationships are the central business issue. Firms today are concerned with increasing customer value through analysis of the customer lifecycle. The tools and technologies of data warehousing, data mining, and other customer relationship management (CRM) techniques afford new opportunities for businesses to act on the concepts of relationship marketing. The old model of "design-build-sell" (a product-oriented view) is being replaced by "sell-build-redesign" (a customer-oriented view). The traditional process of mass-marketing is being challenged by the new approach of one-to-one marketing. In the traditional process, the marketing goal is to reach more customers and expand the customer base. But given the high cost of acquiring new customers, it makes better sense to conduct business with current customers. In so doing, the marketing focus shifts away from the breadth of customer base to the depth of each customer's needs. The performance metric changes from market share to so-called "wallet share". Businesses do not just deal with customers in order to make transactions; they turn the opportunity to sell products into a service experience and endeavor to establish a long-term relationship with each customer.

The advent of the Internet has undoubtedly contributed to the shift of marketing focus. As on-line information becomes more accessible and abundant, consumers become more informed and sophisticated. They are aware of all that is being offered, and they demand the best. To cope with this condition, businesses have to distinguish their products or services in a way that avoids the undesired result of becoming mere commodities. One effective way to distinguish themselves is with systems that can interact precisely and consistently with customers. Collecting customer demographics and behavior data makes precision targeting possible. This kind of targeting also helps when devising an effective promotion plan to meet tough competition or identifying prospective customers when new products appear. Interacting with customers consistently means businesses must store transaction records and responses in an on-line system that is available to knowledgeable staff members who know how to interact with it. The importance of establishing close customer relationships is recognized, and CRM is called for.

It may seem that CRM is applicable only for managing relationships between businesses and consumers. A closer examination reveals that it is even more crucial for business customers. In business-to-business (B2B) environments, a tremendous amount of information is exchanged on a regular basis. For example, transactions are more numerous, custom contracts are more diverse, and pricing schemes are more complicated. CRM helps smooth the process when various representatives of seller and buyer companies communicate and collaborate. Customized catalogues, personalized business portals, and targeted product offers can simplify the procurement process and improve efficiencies for both companies. E-mail alerts and new

دریافت فوری ← **متن کامل مقاله**

ISIArticles
مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات