Chapter 1
Introduction

Abstract Database marketing is "the use of customer databases to enhance marketing productivity through more effective acquisition, retention, and development of customers." In this chapter we elaborate on this definition, provide an overview of why database marketing is becoming more important, and propose a framework for the "database marketing process." We conclude with a discussion of how we organize the book.

1.1 What Is Database Marketing?

The purpose of marketing is to enable the firm to enhance customer value. In today's competitive, information-intensive, ROI-oriented business environment, *database* marketing has emerged as an invaluable approach for achieving this purpose. The applications of database marketing are numerous and growing exponentially. Here are a few examples:

- "Internet Portal, Inc." determines which of its customers will be most receptive to targeted efforts to increase their usage of the portal. Perhaps more importantly, it determines which customers will *not* be receptive to these efforts.
- "XYZ Bank" decides which of its many financial products should be marketed to which of its current customers.
- "ABC Wireless" develops the ability to predict which customers are most likely to leave when their contract runs out, and designs a "churn management program" to encourage them to stay.
- UK Retailer Tesco develops thousands of customized promotion packages it mails to its 14 million customers (Rohwedder 2006).
- Best Buy has identified the major segments of customers who visit its stores. It then (1) tailors its store in a particular locality to fit the representation of the segments in that locality, and (2) trains its store personnel to recognize which segment a particular customer belongs to, so the customer can be serviced appropriately (Boyle 2006).

- Catalogers routinely use "predictive models" to decide which customers should receive which catalogs.
- "E-tailer Z" uses "recommendation engines" to customize which products it "cross-sells" to which customers.
- Dell Computer uses data analyses of prospects to improve its customer acquisition rate (Direct Marketing Association 2006).

These are but a few examples of database marketing in action. The common theme is that all of them are based on analyzing customer data and implementing the results.

1.1.1 Defining Database Marketing

While the above examples provide an idea as to what database marketing is about, it is useful to formally define the topic. The National Center for Database Marketing, quoted by Hughes (1996a, p. 4), defines database marketing as:

> Managing a computerized relational database, in real time, of comprehensive, up-to-date, relevant data on customers, inquiries, prospects and suspects, to identify our most responsive customers for the purpose of developing a high quality, long-standing relationship of repeat business by developing predictive models which enable us to send desired messages at the right time in the right form to the right people – all with the result of pleasing our customers, increasing our response rate per marketing dollar, lowering our cost per order, building our business, and increasing our profits.

While perhaps a bit long-winded, this definition in our view captures the essentials of database marketing – analyzing customer data to enhance customer value. A more succinct definition, which we advocate, is:

> Database marketing is the use of customer databases to enhance marketing productivity through more effective acquisition, retention, and development of customers.

Each phrase in this definition is carefully chosen. First, database marketing is fundamentally about using of *customer databases*. The "customer" can be either current customers or potential customers. Firms have data on their current customers' purchase behavior and demographic and psychographic information, as well as the firm's previous marketing efforts extended to these customers and their response to them. For potential customers – prospects – firms may be able to obtain data on customer demographics and psychographics, as well as purchase history data, although obviously not in the same depth as available for their current customers.

Second, database marketing is about *marketing productivity*. In today's results-oriented businesses, senior management often asks the simple question, "Do our marketing efforts pay off?" Database marketing attempts to

quantify that effectiveness and improve it. It does this through effective targeting. The retail pioneer John Wannamaker is credited with saying, "I know half of my advertising doesn't work; I just don't know which half." Thinking more broadly, in terms of marketing rather than advertising, database marketing identifies which half of the firm's marketing efforts is wasted. It does this by learning which customers respond to marketing and which ones do not. The responsive customers are the ones who are then targeted.

Third, database marketing is about *managing customers*. Customers must be acquired, retained, and developed. Acquiring customers means getting an individual who currently does not do business with the company to start doing business with the company. Retention means ensuring the current customer keeps doing business with the company. Development means enhancing the volume of business the retained customer does with the company. A key concept in database marketing that captures these three factors is "customer equity" (Blattberg et al. 2001), which we investigate in detail when we discuss "Acquisition and Retention Management" in Chapter 26. For now, the important point is to recognize that database marketing is concerned with all three elements of customer equity. The Dell example above involves customer acquisition. The ABC Telecom example involves customer retention. The XYZ Bank, Tesco, and E-tailer Z examples involve customer development.

1.1.2 Database Marketing, Direct Marketing, and Customer Relationship Management

We can shed more light on the definition of database marketing by considering its close cousins, direct marketing and customer relationship management (CRM). Indeed, direct marketing and CRM overlap strongly with database marketing. While each of the three concepts has its own nuances, the key distinguishing characteristic of database marketing is its emphasis on the use of customer databases.

Customer relationship management emphasizes enhancing customer relationships. That certainly is part of the definition of database marketing (acquisition, retention, and development). However, firms can enhance customer relationships without using data. The local clothing store's salesperson gets to know individual customers through their repeated visits to the store. The salesperson learns how to treat each customer and what their tastes are. This produces and enhances a relationship between the store and the customer. There is no formal analysis of databases. Essentially, the "data" are the experiences remembered by the salesperson. Database marketing can be viewed as an approach for large companies to develop relationships with customers, because there are so many customers and so many salespersons

that it is impossible for every salesperson to really know each customer. Paradoxically, the software and computer systems for compiling the data needed to implement database marketing to enhance customer relationships have been marketed as *CRM* software or technology.

Direct marketing's emphasis is on "addressability," the ability to interact with a customer one-to-one (Blattberg and Deighton 1991). Addressability is certainly a key aspect of database marketing, since targeting is the key way that database marketing enhances marketing productivity. But direct marketing can directly address customers simply by purchasing lists that "make sense," and sending customers on that list an offer. Note again, there is no formal data analysis in this example. Database marketing emphasizes the analysis of the data. In addition, while database marketing implementations often involve direct one-to-one contacts, this need not be always the case. In the Best Buy example above, the first component of the application is that the analysis of customer data drives the design of the store. This is not direct marketing but it is database marketing. The second component of the application, training salespeople to recognize particular market segments as they shop in the store, is more along the lines of direct marketing.

In summary, database marketing, direct marketing, and customer relationship highly overlap. They differ in points of emphasis – database marketing emphasizes the analysis of customer data, direct marketing emphasizes addressability, and customer relationship management emphasizes the customer relationship. However, many people who call themselves direct marketers certainly analyze customer data. And many CRM applications software companies emphasize customer data. So customer data analysis is not the exclusive domain of database marketing – it's just database marketing's specialty.

1.2 Why Is Database Marketing Becoming More Important?

It is difficult to find statistics that document the size of the database marketing industry. Some suggestive numbers are: (1) The market for "CRM Software" is valued at $7.773 billion in 2005 and expected to grow to $10.940 billion by 2010 (Band 2006). (2) As of 2004, 100 of the top 376 companies in the Fortune 500 list of US corporations are members of the Direct Marketing Association, the trade association for direct marketing (Direct Marketing Association 2004, pp. 22–23). (3) In 2004, 39.153 million US adults bought products through the mail (Direct Marketing Association 2004, p. 29). (4) Business-to-business direct marketing advertising expenditures totaled $107 billion in 2003, and are expected to increase to $135 billion by 2007

(Direct Marketing Association 2004, p. 167). These numbers provide indications of the size of the industry, but do not include budgets for marketing analytics groups that analyze the data, for campaigns that implement database marketing programs, or for the multitude of service firms (advertising agencies, data compilers, and list management firms), that account for significant expenditures.

The indications are that the database marketing industry is huge and increasing. The question is, why? We hypothesize five major classes of reasons:

- *Information technology*: Companies now have the ability to store and manipulate terabytes of data. While the software to do so is expensive, the capabilities are dramatic.
- *Growth of the Internet*: The Internet is a data-collection "machine." Many companies that previously could not collect and organize data on their customers can now do so through the Internet.
- *Lower productivity of mass marketing*: While there are no good statistics on this, there is the belief that mass advertising and non-customized marketing efforts are eliciting poorer response, while costs are increasing and margins are declining. One can write the profitability of a marketing campaign as $\Pi = Npm - Nc$, where N is the number of customers reached by the campaign, p is the percentage that respond, m is the contribution margin when they respond, and c is the cost of contact per customer. For a campaign to be profitability, we need $p > c/m$. Unfortunately, all three of these terms are moving in the wrong direction. Response is lower (p), costs are higher (c), and margins are lower (m). Database marketing targets customers for whom response is maximal, helping the profit equation to remain in the black.
- *Marketing accountability*: Results-oriented senior managers are requiring all business functions to justify their existence, including marketing. No longer is it taken on faith that "marketing works" or "marketing is a cost of doing business." The demands of senior managers for proven results feed directly into database marketing's emphasis on analyzing data and measuring results.
- *Increasing interest in customer relationships*: Companies are more concerned than ever about their relationship with the customer. They see their products commoditizing and customer loyalty wilting away. Database marketing is a systematic way to improve customer relationships.
- *Establishing a competitive advantage*: Companies are always trying to determine what will be their source of competitive advantage. Perhaps that source lies in the data they have on their *own* customers, which allows them to service those customers better through database marketing.

We will discuss the marketing productivity, customer relationship, and competitive advantage issues in depth in Chapter 2, because they essentially define the database marketing strategy of the firm.

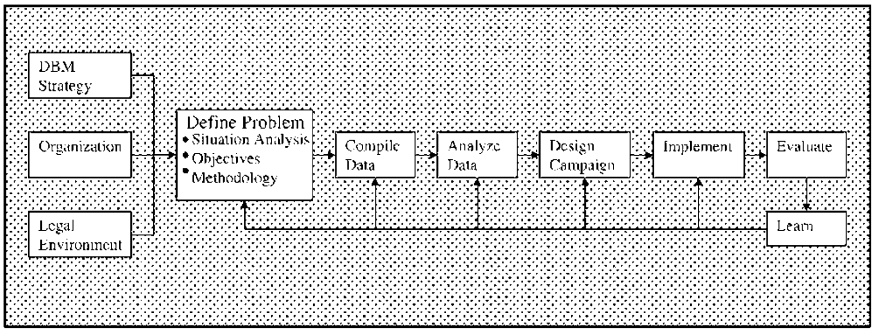


Fig. 1.1 The database marketing process.

1.3 The Database Marketing Process

Database marketing is implemented through a process depicted in Fig. 1.1. The process originates in an environment characterized by the firm's overall database marketing strategy, its organization, and legal issues (especially privacy). These factors determine the nature of problems the firm faces, and how they will be solved. The firm then needs to define the particular problem it wishes to address through database marketing. This entails a situation analysis, a statement of objectives, and an outline of the methodology that will solve the problem. For example, a firm whose DBM strategy emphasizes customer relationships may notice that it is losing too many customers. The objective may be to reduce the "churn rate" from 20% to 15% per year. The firm therefore decides to design a proactive churn management program (Chapter 24) with its attendant data requirements and statistical tools. Most of the work can be done internally because the company has the organizational capability in terms of information technology, marketing analytics, and campaign implementation. The company can then proceed to compile and analyze the data. The analysis yields a campaign design that is implemented and evaluated.

There are two key feedback loops in this process. First is the *learning* that takes place over time. After a program is evaluated, it provides guidance on what types of issues can be addressed successfully by database marketing, what data are most valuable for providing insights and for predicting customer behavior, how to analyze the data, and how to translate the analysis into program design and implementation. This learning and the expertise it breeds is one way in which database marketing can become a competitive advantage for the firm. The second feedback loop is that each database marketing campaign provides *data* for use in future analyses to solve future problems. For example, customer response to a catalog mailing is used to update "recency", "frequency", and "monetary" (RFM) variables for each customer. These become part of the database and are used to develop future targeting strategies.

Table 1.1 Database marketing activities

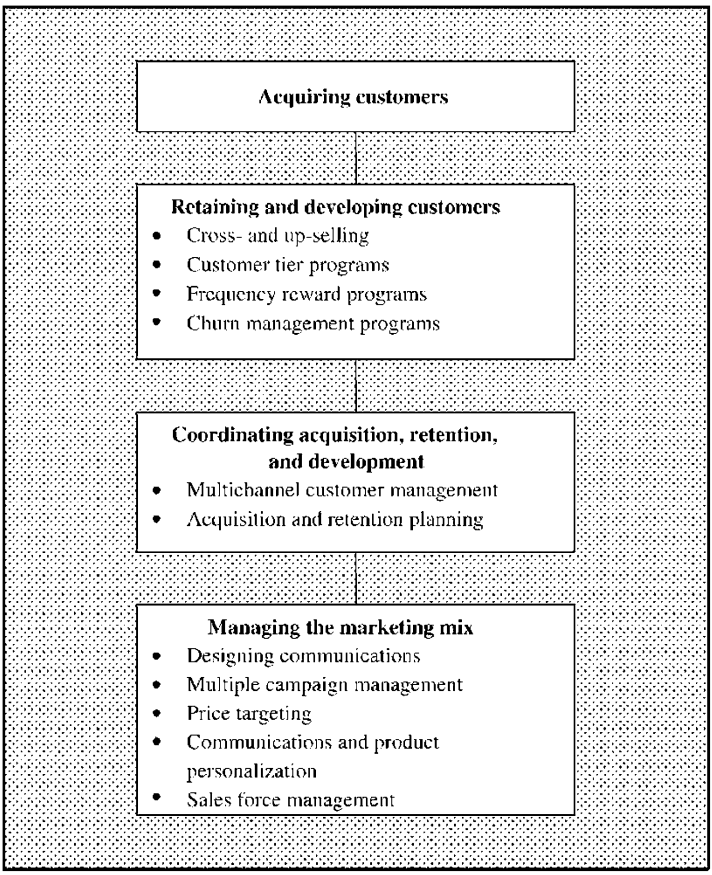
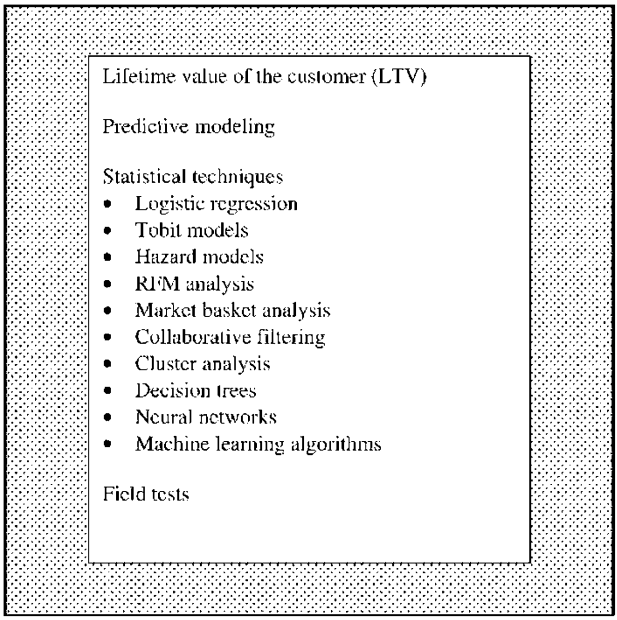


Table 1.1 provides a list of database marketing activities – essentially, a list of the marketing problems addressed by database marketing. These include acquiring customers, retaining and developing customers, coordinating acquisition, retention, and development, and managing the marketing mix. Several of the sub-issues within each of these merit their own chapter in this book. For example, we will devote full chapters to cross- and up-selling, multichannel customer management, etc. These are all very challenging problems and much work has been done on using database marketing to manage them more effectively.

Because of the focus on analyzing customer data, several data analysis techniques have emerged and been applied by database marketers. Table 1.2 lists these techniques. The two most basic analyses are lifetime value of the customer and predictive modeling. Lifetime value of the customer is the net present value of the incremental revenues and costs generated by an acquired customer. The reason LTV is so important is that it includes the long-term

Table 1.2 Database marketing analysis techniques



retention and development aspects of managing the customer. We devote three chapters to calculating and applying LTV. Predictive modeling is the most common form of analysis conducted by database marketers. It pertains to the use of statistical analysis to predict future customer behavior – will the customer churn, will the customer buy from this catalog, will the customer become more loyal if routed to the top-tier call center, will the customer be receptive to this recommended product? Predictive modeling is itself a process, and we devote a chapter to studying this process.

For the statistically oriented individual, "your ship has come in" when it comes to database marketing. Table 1.2 shows the multitude of methods used by database marketers. The reason why so many techniques have found application is partly due to the variety of problems to be addressed – e.g., collaborative filtering and market-basket analysis can be readily applied to cross-selling, hazard models are useful for predicting how long the customer will remain a customer; logistic regression, decision trees, and neural networks are all useful for predicting "0–1" behavior such as, will the customer respond, or will the customer churn?

However, in addition to the variety of problems stimulating the variety of techniques, the other reason for the plethora of statistical techniques that are applied by database marketers is the frantic race to achieve higher predictive accuracy. As we will see several times in this book, even a nominal increase in predictive accuracy can mean $100,000s in added profits for a single campaign. Each bit of information we can squeeze out of the data can be directly

Table 1.3 Organization of the book

Part 1: Strategic Issues

- Chapter 1: Introduction
- Chapter 2: Why Database Marketing?
- Chapter 3: Organizing for Database Marketing
- Chapter 4: Customer Privacy and Database Marketing

Part 2: Customer Lifetime Value (LTV)

- Chapter 5: Customer Lifetime Value – Fundamentals
- Chapter 6: Issues in Computing Customer Lifetime Value
- Chapter 7: Customer Lifetime Value Applications

Part 3: Database Marketing Tools: The Basics

- Chapter 8: Sources of Data
- Chapter 9: Test Design and Analysis
- Chapter 10: The Predictive Modeling Process

Part 4: Database Marketing Tools: Statistical Techniques

- Chapter 11: Statistical Issues in Predictive Modeling
- Chapter 12: RFM Analysis
- Chapter 13: Market Basket Analysis
- Chapter 14: Collaborative Filtering
- Chapter 15: Discrete Dependent Variable and Duration Models
- Chapter 16: Cluster Analysis
- Chapter 17: Decision Trees
- Chapter 18: Artificial Neural Networks
- Chapter 19: Machine Learning

Part 5: Customer Management

- Chapter 20: Acquiring Customers
- Chapter 21: Cross-Selling and Up-Selling
- Chapter 22: Frequency Reward Programs
- Chapter 23: Customer Tier Programs
- Chapter 24: Churn Management
- Chapter 25: Multichannel Customer Management
- Chapter 26: Acquisition and Retention Management

Part 6: Managing the Marketing Mix

- Chapter 27: Designing Database Marketing Communications
- Chapter 28: Multiple Campaign Management
- Chapter 29: Pricing

linked to marketing profitability and efficiency. For example, if a predictive model can increase response to a direct mail offer from 1% to 2%, this can literally make the difference between a huge loss and a huge gain. The reason is that while the percentage change is small, it is multiplied by 100,000s of customers, if not millions. In this way, the benefits of marginal increases in predictive accuracy add up, and we have a cornucopia of statistical techniques that compete for the title, "most accurate."

1.4 Organization of the Book

We have organized the book according to Table 1.3. Part I deals with the issues that shape the database marketing process – firm strategy, firm organization, and the legal environment. Chapter 2, "Why Database Marketing", relates to the firm's database marketing strategy, positing three fundamental reasons why companies might want to engage in database marketing: improving marketing productivity, improving customer relationships, or establishing competitive advantage. As discussed earlier, which of these reasons is the impetus for database marketing at a particular firm will influence the rest of the DBM process – which problems the firm attempts to solve, and how it tries to solve them. Chapter 3 deals with how to organize the firm's marketing function in order to implement database marketing. Chapter 4 represents the legal environment, in particular, the issue of customer privacy. This certainly determines the types of database marketing efforts the firm can undertake.

Parts II–IV of the book deal with database marketing tools – how to collect the data and do the analysis. Chapters 5–7 focus on the key concept of lifetime value of the customer (LTV). Chapters 8–10 focus on the basic tasks of compiling data, field testing, and predictive modeling. Chapters 11–19 cover the statistical methods used primarily in predictive modeling.

Parts V and VI focus on specific problems addressed by database marketing. They largely draw on the tools described in Parts II–IV. Part V covers customer management activities including Acquiring Customers (Chapter 20), Cross- and Up-selling (Chapter 21), Frequency Reward Programs (Chapter 22), Customer Tier Programs (Chapter 23), Churn management (Chapter 24), Multichannel Customer Management (Chapter 25), and Acquisition and Retention Management (Chapter 26). Part VI focuses on the marketing mix, particularly communications (Chapters 27 and 28) and Pricing (Chapter 29).

The result is intended to be a comprehensive treatment of the field of database marketing, including strategic issues, tools, and problem-solving.