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**INFORMATION TECHNOLOGY AS THE ENABLER OF
ONE-TO-ONE MARKETING**

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TUTORIAL

INFORMATION TECHNOLOGY AS THE ENABLER OF ONE-TO-ONE MARKETING

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ABSTRACT

Until recently, one-to-one marketing, the ability to sell targeted goods to an individual based on their known or perceived needs, was not possible for most product types on a mass basis. Indeed, marketing practice in recent years centered around segmented marketing, in which people are treated as members of groups with similar interests and marketing is done at the group level. However, recent advances in information technology, including the Internet and its World Wide Web, database management systems, computer graphics, and electronic mail, as well as increased processor speeds, now permit one-to-one marketing on a mass basis over the Web. This tutorial explains the concept of one-to-one marketing, including how companies can aspire to move in this direction. It outlines a set of one-to-one marketing practices on the Web and explains how advances in information technology made these practices possible.

Keywords: Electronic commerce, Internet, one-to-one marketing, World Wide Web.

I. INTRODUCTION

The short, fifty or so year history of modern information technology is replete with examples, large and small, of how IT enabled changes in business organizations, business practices, and, indeed, entire business models. Without IT there would be no just-in-time inventory management, no instant credit card verification, and no e-mail. IT is credited with helping to eliminate levels of management and providing executives with the data they need for decision making.

Within marketing, specifically, the driving forces behind changes in marketing styles and techniques resulted from advances in technologies, including information technologies. For example, during the 1800s, the completion of the railroad transportation and telegraph communication infrastructure in the United States and the development of new manufacturing technologies made it possible to produce large quantities of standardized products and to distribute them nationally more economically than ever before. These technologies encouraged the expansion of the brand name concept. Then, beginning in the 1920s, advances in broadcasting and other media permitted large-scale advertising that encouraged the development of mass marketing through market segmentation [Chandler and Tedlow, 1985; Tedlow, 1990]. The modern computer era shifted the focus of technology-generated marketing changes to information technology.

In the 1970s, new telecommunications and database technologies led to an increased use of telemarketing, and the development of national account management programs [Shapiro and Wyman, 1981]. In the 1980s, personal computers together with their spreadsheet, database management, and decision support software, led to advances in sales call planning and contact management [Blattberg, Glazer, and Little, 1994; Buzzell, 1985; McCann, 1994]. Other information technologies, including electronic data interchange (EDI) and point-of-sale devices, coupled with the deregulation of the telecommunications

industry, also gave rise to new selling capabilities [Blattberg and Deighton, 1991; Deighton, Peppers and Rogers, 1994].

The latest advance, based on the Internet and its World Wide Web created a new form of marketing: business-to-consumer electronic commerce. This new environment, in which consumers can shop at company web sites, offers several distinct advantages both from the point of view of the company selling its products and from the point of view of the consumer [Gogan, 1997]. For the seller, marketing on the Web levels the playing field between large and small companies. Nothing, other than the cost of developing the Web site, stops a small company from creating just as elaborate a Web site as a large company. Marketing on the Web reduces overhead costs, for example, in being able to sell without having physical stores. The Web also tends to reduce the need for middlemen and the costs associated with them. For the customer, this model permits shopping twenty four hours a day, seven days per week, from the comfort of home. Furthermore, it greatly increases the number of sellers with whom the consumer can comparison shop, with a very small increase in effort. Finally, the Web allows the consumer to obtain wholesale cost and other product information with previously unattainable levels of access and convenience.

Business-to-consumer e-commerce led to a rebirth of the concept of personalized or one-to-one marketing, this time on a mass scale. One-to-one marketing is the use of information about an individual to market specific products to that individual that are assumed or projected to be of interest to him or her. It is not a new concept. It is what storekeepers did with their regular customers for as long as there were small town or neighborhood stores. But the advent of automobiles, suburbia, department stores, superstores, shopping malls, and the like, largely turned personalized marketing into a historical relic. It is the thesis of this tutorial that recent advances in information technology, specifically the Internet, the World Wide Web, practical, large-scale database management, techniques for effectively processing large-scale databases, and,

indeed, much faster processors, created an environment in which one-to-one marketing was not only reborn, but in which it can be practiced on a mass scale for the first time.

II. ONE-TO-ONE MARKETING

There was a time when the common way of shopping for one's household goods was to walk (or maybe take a buggy ride) down to the neighborhood or town store. The proprietor knew you, personally, as he knew all of his customers. He knew your name, he probably knew the names of the other people in your family, and he may have even remembered such personal information as your birthday or other significant events in your life. Certainly, he was familiar with your buying patterns in his store. It was not that he carefully wrote down and stored away such information. It was just a natural part of doing business and the relatively limited customer set that he had was compatible with the amount of information that he could naturally remember¹.

Your experience upon entering the store was, first of all, pleasant. It makes a person feel good and comfortable to be recognized by name and to be asked about their family and how they are doing. It is certainly reasonable to assume that a person who is made to feel relaxed in this way in a shopping environment is more likely to be a profitable customer, i.e., to buy things.² Furthermore, the proprietor used his accumulated knowledge about you in a friendly, helpful, and above all, in a mutually beneficial way. One of the authors remembers as a child walking into the neighborhood butcher shop with his mother and hearing the butcher ask if she wanted her usual grade of ground beef and if she would like to look at some nice steaks of a particular cut that he happened to have available that day. First, the "sales history" that he

¹ Remember the TV show, "Cheers," whose lead-in song said that the Cheers bar was a place, "Where everybody knows your name?"

remembered facilitated the repeat buying of the ground beef, which was certainly helpful to both parties. Second, projecting that she might be interested in buying a particular kind of steak based on her past buying patterns was both useful to her and was a significant "marketing technique" for him.

As time marched on, society changed. The advent of suburbia and the growing use of the automobile, saw the development of shopping malls, supermarkets, and, eventually, superstores of every description. While these retailers provided certain distinct advantages (such as the ability to display large varieties of different types of goods in attractive, relatively contained areas), the kind of personalized selling described above was lost. In this environment, marketing shifted to a mass media "segmented" approach. Thus, if the people who were expected to tune in to a particular sporting event on television were projected to be of a certain demographic group or segment of the population, the commercials lined up for that event would be for products that were assumed to be attractive to that group. The segment member would then, presumably, drive to a shopping mall, supermarket, or superstore to look for the product on the shelves.

While this type of shotgun marketing approach apparently works, after a fashion at least, nostalgia for the personalized approach remains. But, more than nostalgia, is the belief that if a company can somehow develop a personal relationship with a consumer, as in days of old, the consumer will tend to buy more from the company, thus improving the company's bottom line.

² A phenomenon that Wal-Mart acknowledges, even on an anonymous level, with their entry way "greeters.")

CONCEPTS

One-to-one marketing activities are characterized by a desire to interact individually with the most profitable customers of a firm. By learning the needs and desires of the most profitable customers³ and responding to those desires, companies can build an intensely loyal and profitable clientele. Several types of information and marketing activities are necessary to operationalize this objective. From an information perspective, two categories of data are needed about the behavior of individual customers:

1. the variety of needs an individual customer may try to satisfy through use of the firm's product(s) or services; and
2. the "value skew" of the distribution of the profits current customers generate for a firm.

The variety of customer needs for a good can range from very low (e.g., table salt) to moderate (e.g., a television set), to high (e.g., a computer). Similarly, the distribution of profits from a firm's customers can be uniform, with all or most of the customers exhibiting the same profitability (e.g., customers at a men's tie store), or it can be highly skewed, with a small percentage of the firm's customers accounting for a high percentage of the firm's profits (e.g., a bank).

Given these characteristics of need, variety, and profitability skewness, an analysis tool helps highlight the best opportunities for applications of one-to-one marketing [Peppers and Rogers, 1997a.] Simply dividing the variety and value skew dimensions described above into high and low categories provides a useful 2 x 2 matrix (Figure 1) which is called a Customer Differentiation Matrix (CDM). On the horizontal dimension, the variety of needs exhibited by the customer ranges from low on the left side, to high need variety on the right. On the vertical dimension, the value skewness of the customers (i.e., how much variability in profitability between customers exists) ranges from low at the bottom of the

³ Profitable in a lifetime value sense, not individual transaction sense.

dimension to high skewness at the top. This arrangement allows the designation of four quadrants, which exhibit the following characteristics:

1. Quadrant I - Low variety / Low Skewness – every customer wants the same things from the product or service and every customer buys about the same amount of product. Example: gasoline purchases.
2. Quadrant II – High variety / Low Skewness – every customer wants something different from the product or service, but every customer buys relatively the same amount of product. Example: book purchases from a bookstore.
3. Quadrant III – Low variety / High Skewness – every customer wants the same things from the product or service, but customers vary greatly in the amount of the product or service they buy. Example: airline tickets.
4. Quadrant IV – High variety / High Skewness – every customer not only want something different from the product or service, but they also vary greatly in the amount of the product or service they buy. Example: personal computers.

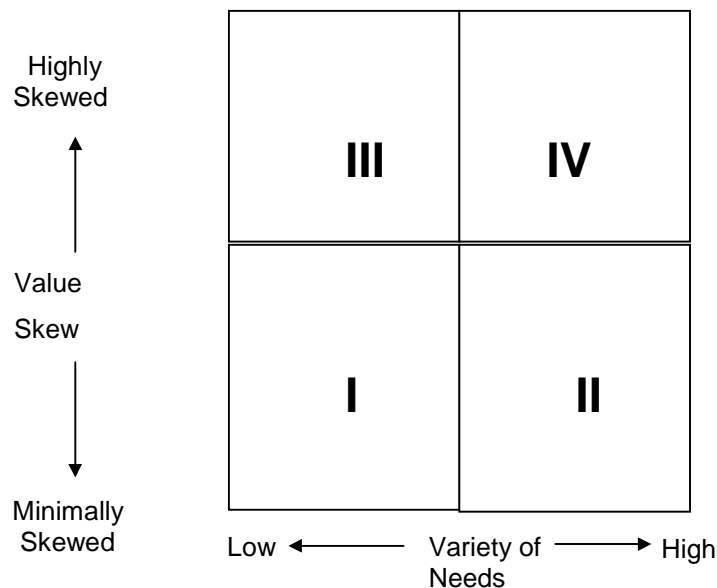


Figure 1. Customer Differentiation Matrix (CDM)

Two basic strategic concepts are behind the CDM. On one hand, the ability of the marketer to provide the exact product the customer wants becomes more valuable as the variety of needs and wants increases. This characteristic occurs because the ability to satisfy an increasing variety of needs and wants exactly become exponentially more difficult to achieve profitably as needs increase. On the other hand, as the value skewness of the customers increases, the profitability from exactly satisfying the most profitable customers is significantly higher than exactly satisfying the lowest profitability customer. Consequently, the CDM allows a firm to highlight and work to satisfy its most profitable customers first.

An additional benefit of the CDM lies in the technique's ability to make strategic decisions concerning the customer base within the framework of the CDM. For example, a bookstore might classify its customers in Quadrant II (high variety / low skewness). The ability to exactly satisfy individual customers does not have a significant payoff in terms of increased profitability because all customers buy about the same amount of product. If, however, a bookstore can find a way to expand the skewness dimension of its customer base, identifying the most profitable customers will have a distinguishable payoff. For example, combining a book inventory with a CD or videotape inventory might provide the store with the ability to cross-sell several items related to a movie, or sporting event (e.g., Titanic, Olympics)

The point to be made is that one-to-one marketers should attempt to move their customer base towards Quadrant IV (high variety / high skewness). Quadrant IV exhibits the characteristics most conducive to practicing one-to-one marketing tactics aimed at building learning relationships with individual customers. In Quadrant IV, customers have many different needs that the one-to-one marketer can work to meet through learning more about the customer. In addition, these additional relationship-building efforts will be good investments

because the one-to-one marketer has the capability to focus exclusively on the most profitable or loyal customers.

An underlying assumption here is that not every individual in a firm's customer base will represent an attractive target for one-to-one marketing efforts. Some customers will never spend enough to make such targeted efforts worthwhile. The successful one-to-one firms will begin to convert their customer bases toward eliminating those unprofitable/unloyal customers and replacing them with customers whose loyalty potential is high.

PREVIOUS WORK

At this point-in-time, rigorous published material on one-to-one marketing is limited and material specifically about IT as the basis for one-to-one marketing is almost non-existent. This situation is clearly a result of how quickly the field of electronic commerce is moving and of how recently one-to-one marketing appeared on the scene.

Two people, working and publishing together, defined contemporary one-to-one marketing. Don Peppers and Martha Rogers [Peppers and Rogers, 1997a , Peppers and Rogers, 1997b, Peppers et al., 1999a, Peppers et al., 1999b,] through their books and numerous articles have been nothing less than evangelical in defining and promoting this concept. Their book, *Enterprise One-to-One* [Peppers and Rogers, 1997a], defines and explains the concepts while providing many examples through short case studies. Their most recent book, *The One-to-One Fieldbook* [Peppers et al., 1999a], is more of a nuts-and-bolts guide to moving a company towards a one-to-one marketing approach. It's topics include analyzing the firm's customer base, determining how much of a corporate conversion is required to become a one-to-one oriented organization, personnel issues, forming alliances with business "channel" partners, and the use of the traditional mass media in this mode.

In addition to their books, Peppers and Rogers published a paper on one-to-one marketing in the *Harvard Business Review* [Peppers et al., 1999b.] Beyond that, they and others write an increasingly long stream of articles in the trade and popular presses. These articles either describe one-to-one marketing concepts in general or are targeted towards specific industries or companies. Examples of such articles include [Barnett and Barnett, 1999; Bulger, 1999; Foley, 1997; Lackner, 1998; Lardner, 1999; Mitchell, 1998; Peppers and Rogers, 1997c; Peppers et al., 1998; Peppers and Rogers, 1998.]

We found exactly one peer-reviewed paper that preceded this one on the relationship between information technology and one-to-one marketing. Wells, Fuerst, and Choobineh [1999], provide a high-level description of changes in IT management that would be required to accommodate one-to-one marketing. They point out that adjustments should be made in business process analysis, the integration and redesign of customer data, the choice of internal (e.g. kiosk) versus external (e.g. the Internet) technologies for interacting with customers, and the accessibility and distribution of pertinent data within the organization.

THE LEARNING BASIS OF ONE-TO-ONE MARKETING

The essence of establishing one-to-one relationships with customers is learning about them. For the seller, learning about each potential customer's characteristics and needs, and trying to satisfy those needs on an individual basis, has tremendous potential for increasing revenues and profits. It is well understood that keeping an existing customer is about five times more profitable than to getting a new one [Reichheld, 1996.] Personal selling is a major inducement to this concept of customer loyalty. From the customer's point of view, such personal marketing over the Web has all the usual advantages of shopping over the Internet plus the added attraction of being effortlessly presented with a narrow selection of goods that he or she is highly likely to be

interested in. The data collected from or about the customer in the learning process can be used by the company to determine which product to offer to the customer next.

The three primary types of data for such learning are shown in Figure 2.

1. Basic demographic information: age, education level, household or personal income, vocation, and the like (Figs. 3 and 4).
2. Product interest or preference data from each customer (Figure 5.) A good example that is applicable to music sales sites is whether the customer prefers jazz, classical, rock, or some other form of music.
3. Sales history data, i.e. records of customers' prior purchases from you to establish their known needs.

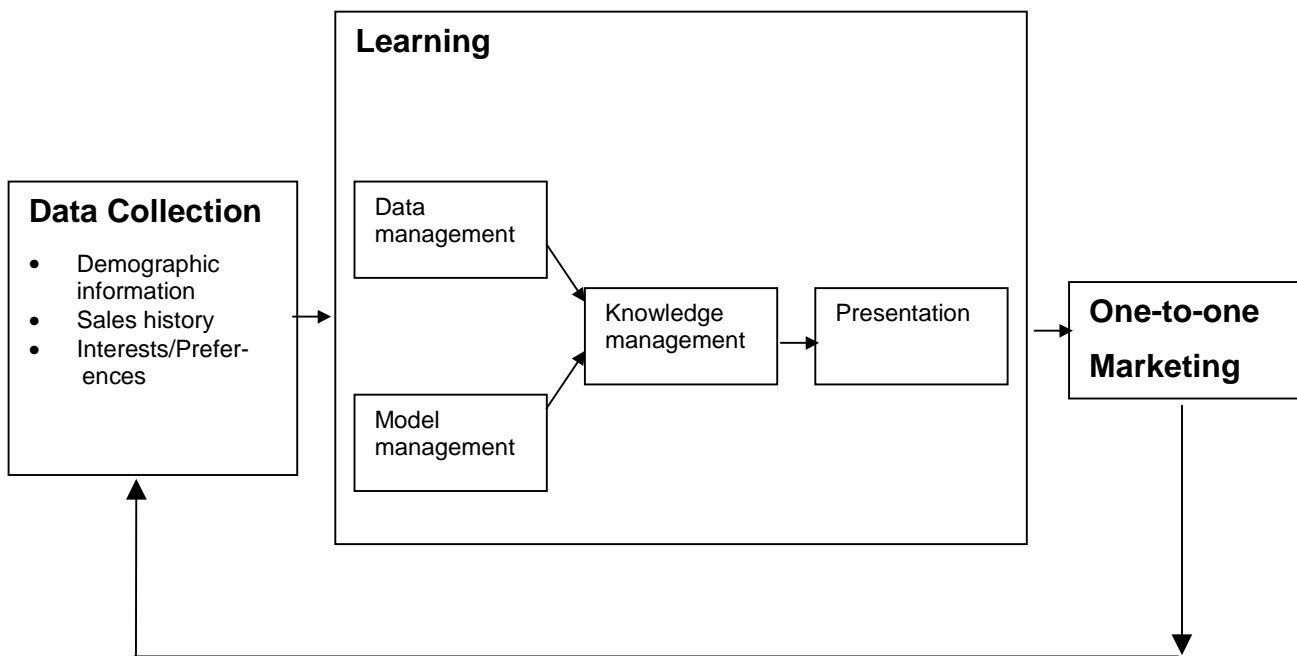


Figure 2. Learning in One-to-One Marketing

Home • Shop EB • View Order • Send Order • Place Catalog Order • Virtual Dressing Room • Search • Help

SEARCH
 Go
[More Detailed Search](#)

MEMBER REGISTRATION
Update Profile

Login Name: mgillnsm
 Password:
 Wish List Password:
 On Our Mailing List?
 Email Address: mgillnsm@memphis.edu
 First Name: Mark
 Last Name: Gillenson
 Address:
 * Apt. No:
 City:
 State:
 Zip Code:
 Home Phone:
 * Work Phone:
 * Fax Number:
 * Favorite Color:
 * Birthday (MM/DD/YYYY): / / 1900

Save **Cancel**

SEARCH
[About Eddie Bauer](#)
[Corporate Sales](#)
[Customer Service](#)
[Eddie Bauer Careers](#)
[Reminder Service](#)
[Create/Edit Reminders](#)
[Register](#)
[View My Profile](#)
[Edit My Profile](#)
[Log Out](#)
[Site Information](#)
[Wish Lists](#)

Figure 3. Demographic Information
 (Source: www.eddiebauer.com)

my b profile

create a b profile
 Bloomingdale's is like no other store in the world™. You are like no one else in the world. Getting to know you will help us personalize your shopping experience. To help us do that, please tell us a little about yourself.

About You:
 *Required fields

*First Name:
 *Last Name:
 Company
 *Address:
 *City:
 *State/Province: Select a State

Figure 4. Demographic Information
 (Source: www.bloomingdales.com)



Figure 5. Interests/Preferences Information
(Source: www.cdnw.com)

An important issue for a company is how to obtain demographic and interest data from the customer⁴. The company must make an effort to induce the consumer to give it this type of personal data [Peterson et al., 1997]. Of course, if a person understands and buys into the consumer benefits of one-to-one marketing, then she perceives that she is making a valuable investment in teaching the company about herself and readily turns over the data. Otherwise, the hope is that consumers will be interested in inducements that the company gives them to yield the data. Such inducements have included discounts, gifts, entry into contests, and the like. In addition, sophisticated companies may be able to infer interest data by recording and analyzing the customer's page visitation patterns on their web site. Also, given some basic identifying data about a consumer, companies can purchase additional data from database marketing companies that maintain vast databases on consumers for this purpose.

⁴ Sales history data, of course, is already possessed by the company and is not an issue.

If, over time, both parties perceive that this relationship is valuable, it produces a sense of commitment on both sides to maintain and grow the relationship. The relation is beneficial to the consumers in having their needs satisfied and is beneficial to the company in increased sales and profits. But, how can a company achieve the goal of personalized marketing in the mass marketing environment? Two components are necessary.

- The ability to reach each, individual consumer for what one might call a “personal shopping session.”
- The ability to bring to bear the data that the seller has accumulated about the consumer to offer specifically targeted products to him.

The solution to these problems lies in recent advances in information technology.

INFORMATION TECHNOLOGY AND ONE-TO-ONE MARKETING

Clearly, the information technology that is the most profound enabler of one-to-one marketing is the Internet itself. The Internet and its World Wide Web, and all of their underlying technologies, permit marketing to any individual with a personal computer and Internet access, who visits a seller's web site. Consumers have the luxury of shopping at any time of the day or night and they have unprecedented comparison shopping opportunities. Companies, including new, web-only companies, have unprecedented access to consumers on a worldwide basis. Furthermore, the nature of the Internet levels the playing field between the largest, established companies and the smallest, new start-ups. Web sites have already gone through several generations of design [Siegel, 1997] and are constantly becoming more attractive and more useful. Some of the underlying technologies, such as security and encryption techniques, which create a trusted Web commerce atmosphere, are constantly being refined. But, that is not all. With a consumer on one end of a Web session and a company's cleverly written Web site software on the other end, the Internet, together with supporting information technologies, makes possible precisely the kind of one-to-

one, interactive, personal shopping session that heretofore was not possible on a mass basis.

Improved database management systems, cheaper and larger-scale disk storage devices (not to mention cheaper and faster processors) permit the storage and efficient retrieval of vast amounts of customer data, a critical component of one-to-one marketing. Data warehouse technology further aids in the storage and efficient use of the data. As we said earlier, this data can take the form of customer characteristics such as age, income level, and the like, but it can also take the form of individual sales histories. Both of these data categories can be very effective tools in developing individualized marketing strategies, examples of which will be given below.

With the availability of data warehouses comes another concept in one-to-one marketing: community knowledge. If a customer, based on his characteristics or buying patterns, fits into a pattern with a group of similar customers, can the seller predict his next need based on the buying patterns of the others in the group [Levinsohn, 1998; Westergren, 1996]? If the seller can, then the one-to-one marketing effort toward this customer is enhanced. This point is somewhat controversial point in that one could argue that it falls somewhere on the border between truly personalized and segmented marketing. Personal data supplied by a specific customer is used as input to a process that relies on data gleaned from many other customers to reach a conclusion. Indeed, current research efforts study such relationships [Gillenson et al., 1999].

Other information technologies are also being pressed into action for one-to-one marketing. One is e-mail, which is one way the company can contact the customer when it wants to propose an item for sale. The company can certainly e-mail when the customer is signed on to his web site. But, of course, the company cannot control when or how frequently the customer will sign on. The company can use the traditional means of mail and telephone to contact the

customer, but these can be expensive propositions. An effective, very cheap, and potentially highly automated solution is e-mail. Certainly, people who visit web sites are likely to be e-mail users and so contacting them in this way, while being careful not to "spam" them is an important part of one-to-one marketing.

Another information technology used in one-to-one marketing is computer graphics. As marketers attempt to personalize the shopping experience, visual elements of a person come into play. Examples of this are in the marketing of clothing and of eyeglasses, both of which will be discussed, below.

Using these various information technologies, one-to-one marketing is beginning to be practiced on the World Wide Web in a number of ways today, although it is certainly still in its infancy. We shall describe several key, contemporary techniques, pointing out along the way the information technologies that make them feasible.

The most widely used device in one-to-one marketing is the presentation to the customer of a suggestion that she buy a particular product. The selection of the product is, of course, based on what the company learned about the customer thus far and may involve any of the three data categories: demographics, interests, or sales history or some combination thereof. At its most basic, the nature of the presentation can be a simple suggestion to buy a targeted product. The mode of presentation is most often IT-based: either a web page or portion of a web page, the next time the customer visits the company's web site or an e-mail message. In terms of cost, both of these modes are essentially free. One can certainly envision other communication media that are not specifically IT-based, being used for this type of activity, including regular mail. Internet bookseller Amazon.com is famous for instantly suggesting related books as soon as the customer indicates interest in any one, particular book (Figure 6.) Amazon.com then goes a step further and e-mails its customers,

weeks or months after a purchase, to suggest targeted follow-up purchases based on prior choices by the customer (Figure 7.) Another example is music seller CDNOW, which stresses the suggestion of products based on interest information that the customer previously provided (Figures 8, 9.)

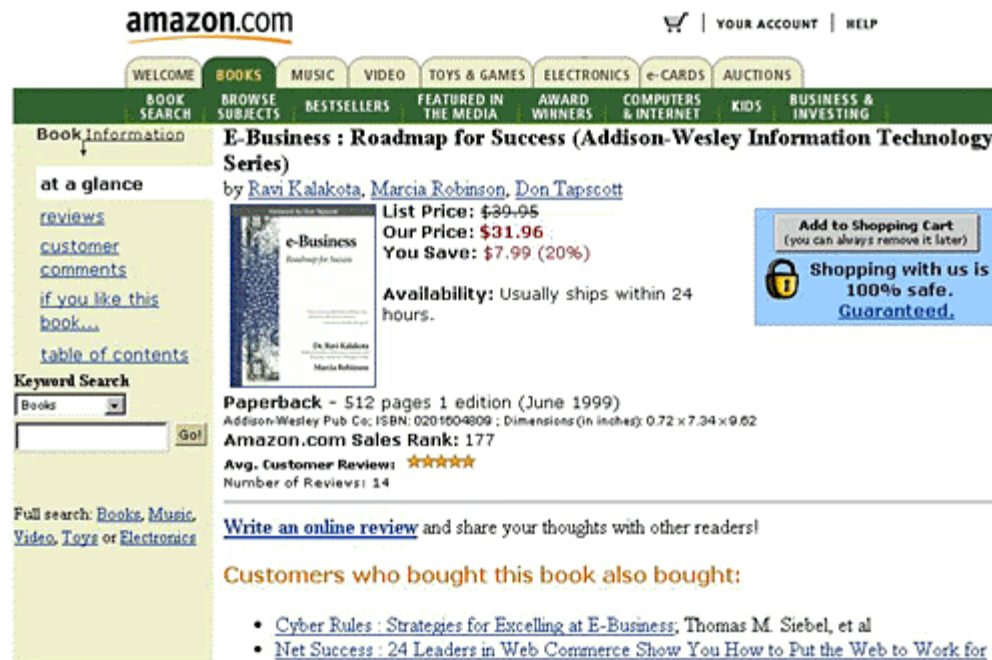


Figure 6. Messages Suggesting Additional Purchases
(Source: www.amazon.com)

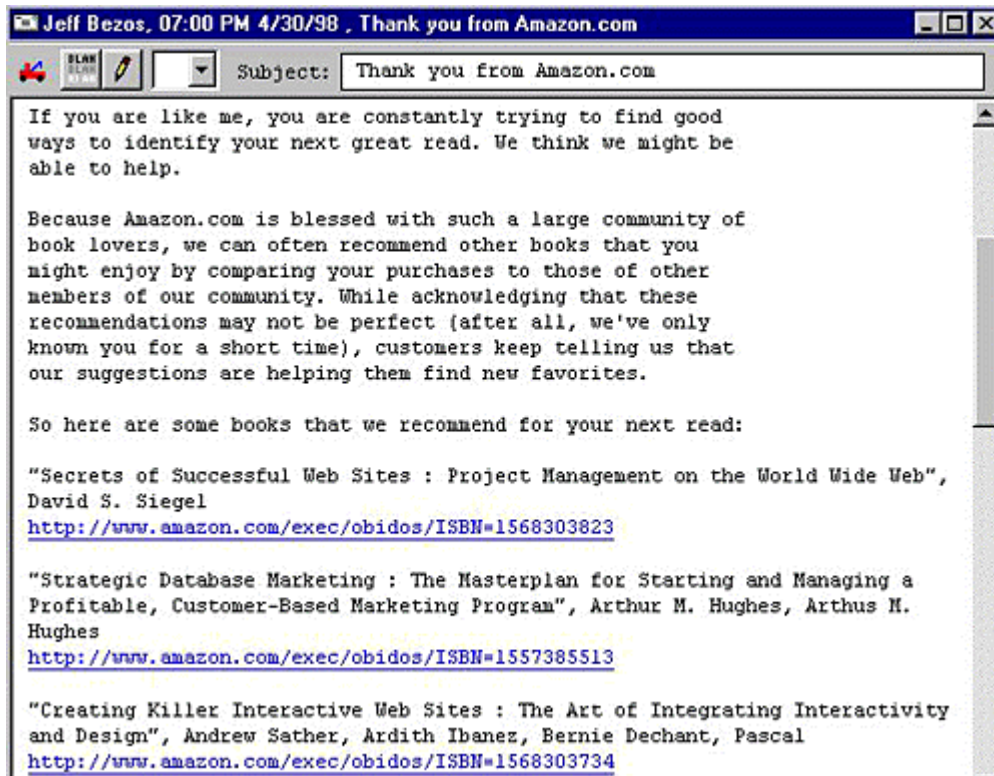


Figure 7. Messages Suggesting Additional Purchases

CDNOW Home News & Reviews Sales & Specials Gifts My CDNOW Help

Your Music. Your Store. Artist Find It Search Classical

Shopping Cart contains 0 items

5th Anniversary Storewide Sale
Up to 30%* off through
Aug. 10 at 11 AM ET

FREE MUSIC DOWNLOADS
Sugar Ray's "Every Morning" & more!

myCDNOW

- CDNOW RECOMMENDS
- WISH LIST
- FAVORITE ARTISTS
- ACCOUNT INFORMATION & ADDRESS BOOK
- RATE YOUR MUSIC
- ORDER HISTORY
- PREFERENCES
- FFWD

CDNOW Recommends for Mark Gillenson

We recommend these items especially for you, based on what our customers tell us they like. Of course, taste in music is very personal and no music recommendations can be 100% accurate; however, we think you'll find our personalized recommendations a great source for discovering new music.

Please be sure to tell us if we recommend something you don't like by clicking "not for me." Like everyone else, we learn from experience!

 <p>Backstreet Boys Backstreet Boys List Price: \$17.97 CDNOW Price: \$17.97 \$12.58</p> <p>add to cart \$12.58 move to wish list own it already</p>	 <p>Diane Schuur Music Is My Life List Price: \$16.97 CDNOW Price: \$16.97 \$11.88</p> <p>add to cart \$11.88 move to wish list own it already</p>
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Figure 8. Messages Suggesting Additional Purchases
(Source: www.cdnow.com)

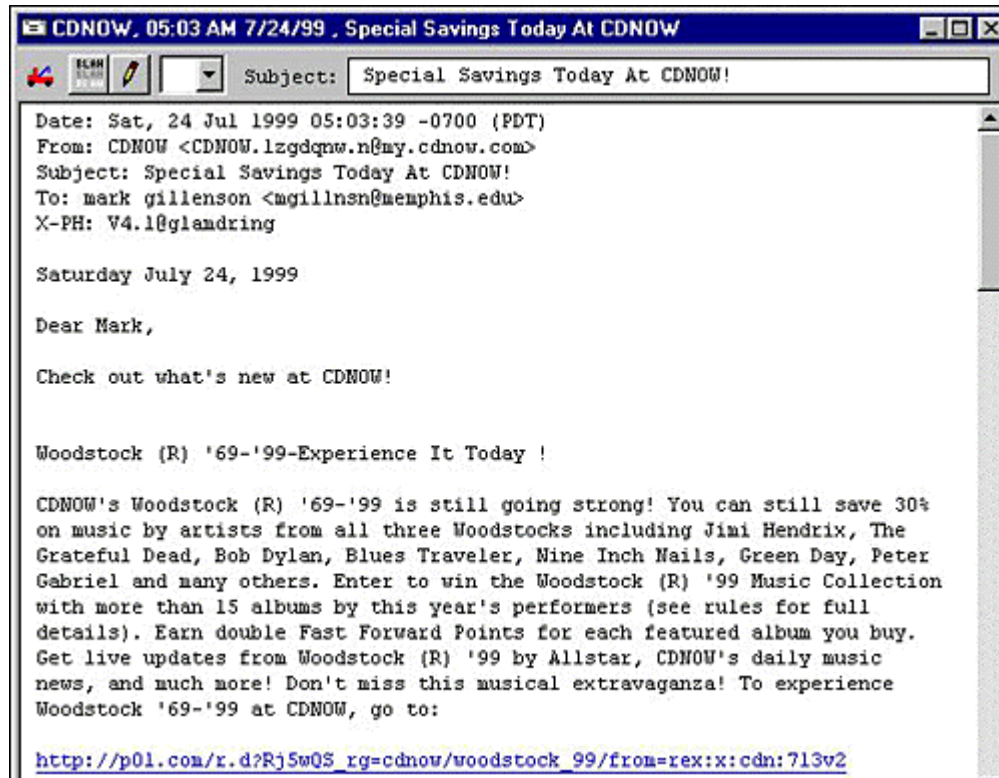


Figure 9. Messages About New Products, Sales, Etc.

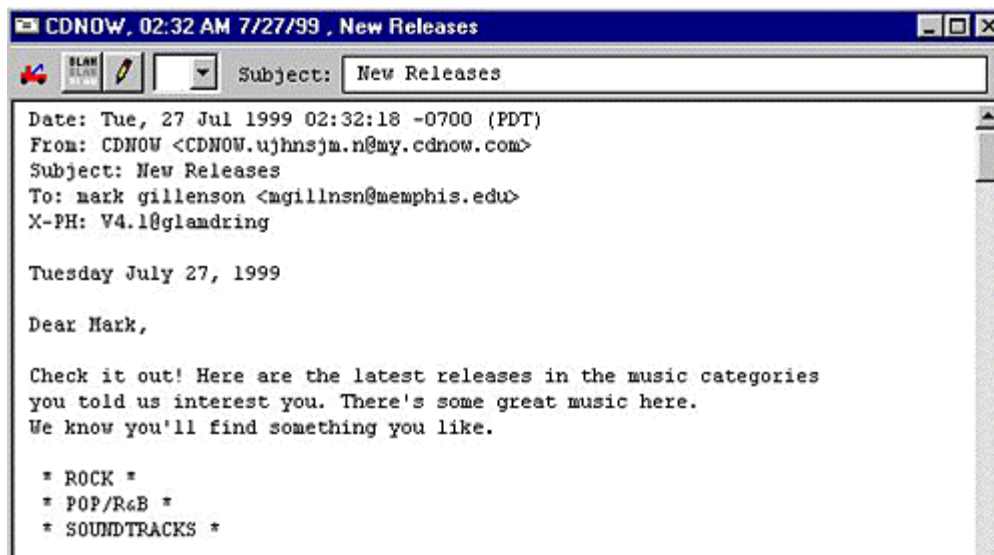


Figure 10. Messages About New Products, Sales, Etc.

Extensions of the technique of simply suggesting another product include the announcement of a *new* product that the customer may be interested in (Figures 10, 11), the announcement of a *sale* on a targeted product (to build customer loyalty), or the offering of a *discount coupon* on a product. Again, the selection of the product may involve any of the three types of data and the process is largely cost-free. An interesting variant, and we believe there will be many more such variants as time goes on, is the idea of a kiosk at the entrance to a supermarket. It scans an incoming customer's company-issued bar-coded identification card and instantly prints out cents-off coupons for products that the supermarket wants to market to that particular customer.

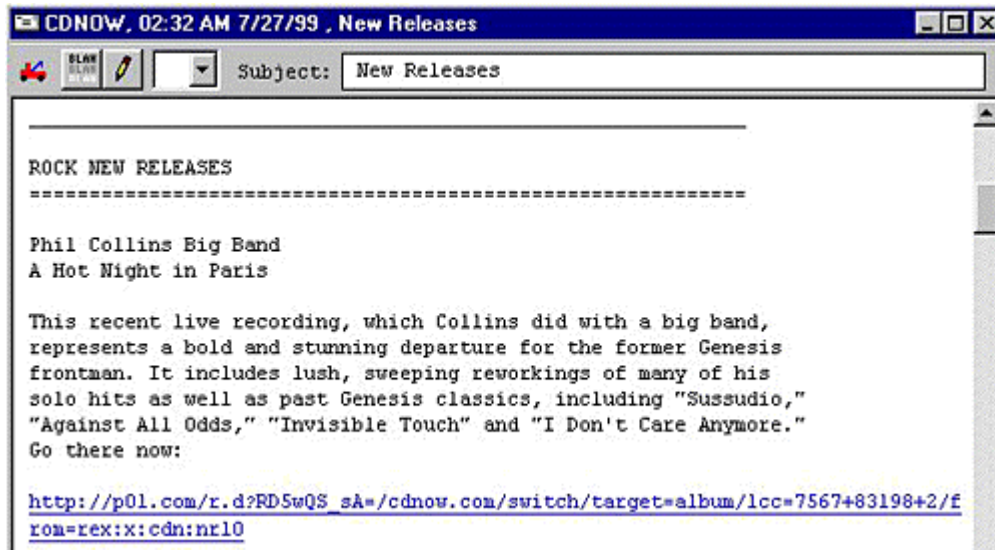


Figure 11. Messages About New Products, Sales, Etc.

Another increasingly common device is the customer-generated gift list. One common variant of this is the bridal registry (Figures 12, 13), which is increasingly finding its way online and on the Web. In general, the data principle behind a gift registry falls into the category of interest data that the customer self-specifies. Once created, these lists, which clearly are based on a melding of

bridal

shop our registry bridal events register with us! bridal completion program be our couple of the month home planner wedding planner

the registry:
shop our registry
The Registry

select one
 bride groom registrant (for commitment ceremonies)

first initial

last name (at least first two letters)

wedding date July 1999

sort registry by category price

Please click to continue search

Figure 12. Gift Lists
(Source: www.bloomingdales.com)

Web and database technologies, can be used in a variety of clever ways. Some examples that are being used include the customer's ability to give others access to her gift list (as one would naturally do with a bridal registry) (Figure 14), the ability of the customer to actually e-mail his gift list to a third party, the company occasionally offering the customer a sale on an item on the list, and the company offering the customer a discount on any unpurchased items on the list (again, a bridal registry feature) (Figure 15.) Yet another kind of list is a repetitive order list, such as a grocery list. For example, Streamline.com allows you to build and recall such lists for current and future order purposes.

the registry:

the ultimate registry

how our bridal registry works: [terms and conditions](#) ([click here](#))



We are excited to be able to offer another way for you to register for your special day with bloomingdale's. Now you can begin your bridal gift registry process right here with us, online!

As the bloomingdale's registry is a very personal process, we still want to work with you personally to create your bloomingdale's registry, but we want to make it more convenient for our online customers to begin your registry process right here. A knowledgeable bridal consultant will contact you after you fill out the form below.

Please tell us some information about both of you as a couple: lifestyle, interests, couple style. A bloomingdale's bridal consultant can help you to select gifts which match your lifestyle and tastes.

bride		groom	
*First name	<input type="text"/>	*First name	<input type="text"/>
*Last name	<input type="text"/>	*Last name	<input type="text"/>
*Address	<input type="text"/>	Address	<input type="text"/>
*City	<input type="text"/>	City	<input type="text"/>
*State	<input type="text" value="select state"/>	State	<input type="text" value="select state"/>
*Zip code	<input type="text"/>	Zip code	<input type="text"/>
*Email	<input type="text"/>	Email	<input type="text"/>
*Phone number	<input type="text"/>	Phone number	<input type="text"/>
*Wedding date	<input type="text" value="month"/> <input type="text" value="day"/> <input type="text" value="year"/>		

Please tell us more about your interests, tastes and couple style - and which gifts or manufacturers you may be interested in.

Figure 13. Gift Lists
(Source: www.bloomingdales.com)

shop a wish list

Don't let someone you know be disappointed with gifts they don't like. Give them exactly what they want. It's easy if they created a wish list with Bloomingdale's.

Simply enter the email address and secret password of the person's wish list you want to shop.

E-mail Address:

Password:

Figure 14. Gift Lists
(Source: www.bloomingdales.com)


bridal

- shop our registry
- bridal events
- register with us
- bridal completion program
- be our couple of the month
- home planner
- wedding planner

the registry:

[the dining circle club](#) (click here)

[10% bridal completion program](#)



At Bloomingdale's we dedicate ourselves to bringing you a unique bridal registry experience that continues even after your wedding day.

All of our registered couples will receive a **10% Bridal Completion Card*** approximately 10 days after the wedding. As you sort through all of your wonderful gifts and send out your thank you notes, you may find that you didn't get everything on your wish list. You know, one place setting shy of service for 12. Or one sheet shy of a dreamy bedroom set. That's when your special 10% savings will come in handy.

It's like a sale where all of the remaining items on your Registry list are 10% off. Complete your list with your Bridal Completion Card. It's good for dinnerware, fine china, crystal, cookware, appliances, sheets, towels, linens, luggage, lamps, mattresses - almost everything on your registry list. Come in as many times as you like before your 6-month anniversary and receive your 10% savings with each purchase.

Pair your Bridal Completion Card with our Dining Circle Club. You'll get even more value and no interest

Figure 15. Gift Lists
(Source: www.bloomingdales.com)

Reminders are another personalized marketing device. In this scenario, the customer sends the company dates, such as relatives' birth dates, that she wishes to be reminded of (Figures 16, 17.) The company sends the customer an e-mail reminder in advance of each date, with the hope that the customer will buy one of the company's products as a gift for the particular person involved. Some companies, like online florist Flowers.com, take the initiative and track birthdays and other personal events for which customers ordered goods in the past and send reminders as the same event approaches the next year. As with gift lists, reminders are made possible by a set of information technologies that include the Web, database management, e-mail, and some clever programming. Ratcheting-up the concept of reminders a notch is the concept of automated replenishment. Some Web marketers track their customers' purchases and suggest replenishment on a scheduled or probabilistic basis. Internet grocers like Peapod.com and Streamline.com do this.

The screenshot shows the Eddie Bauer website's 'Reminder Service' page. At the top, a navigation bar includes links for Home, Shop EB, View Order, Send Order, Place Catalog Order, Virtual Dressing Room, Search, and Help. On the left, a search bar is present with a 'Go' button and a 'More Detailed Search' link. Below the search bar is a vertical menu with links: About Eddie Bauer, Corporate Sales, Customer Service, Eddie Bauer Careers, Reminder Service, Site Information, and Wish Lists. The main content area is titled 'Eddie Bauer REMINDER SERVICE'. It features a form titled 'Add Reminder:' with the following fields: 'Event date:' with a dropdown menu set to 'January' and a date field set to '1'; 'Remind me:' with a dropdown menu set to 'Every Year'; and three radio button options: 'One Month', 'One Week', and 'One Day before the event'. Below these options is a text area labeled 'Message to remind me with:'. At the bottom of the form are 'Save' and 'Cancel' buttons.

Figure 16. Reminders/Automated Replenishment
(Source: www.eddiebauer.com)

eToys[®]
[home](#) [help](#)
[my_eToys](#) [shopping_cart](#)

TOYS BABY STORE BOOKS SOFTWARE VIDEO MUSIC VIDEO GAMES

birthday reminders

eToys Birthday Reminder Summary

Thanks for registering with the eToys reminder service! You can change, add to or delete your account summary information at any time.

If you aren't mgillnsn@memphis.edu, [Click Here!](#)

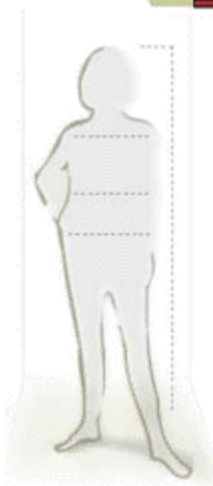
Personal Reminders:

Name	Relationship	Date of Birth	edit	delete
Caroline	Daughter	05/25/95	edit	delete
Rochelle	Daughter	12/20/92	edit	delete

Figure 17. Reminders/Automated Replenishment
 (Source: www.etoys.com)

One-to-one marketing can also take on a more pictorial tone, utilizing computer graphics technology. Some clothing retailers, such as Land's End, provide a "personal dressing room" (Figures 18, 19.) A model, scaled to the customer's own size, appears on the screen and the customer can "try clothes on" the model to see what they look like on her body shape and size. Variations on this theme include keeping track of what clothes the customer has tried on for the purpose of making future suggestions to her and using this information plus the knowledge of her body size and shape to have a selection of clothes already "hanging in her dressing room" the next time she visits the site. How long will it be before a clothing company stores digitized images of its customers faces in a database so that the graphical model not only reflects the customer's body size and shape but also has her face on it? In fact, there is already an optician's web site in the United Kingdom, that stores a photo of your face and allows you to "try on" eyeglass frames on it (Figure 20.)

Your Personal Model from Lands' End **Lands' End Home**



User Guide

Building My Model

Let's face it: we can't create your own model or give you personal clothing suggestions without knowing a little about you. If you already had a model, please complete our new questionnaire. We think your new model will reflect you even better. As always, we won't ask for anything more than we need.

Information to build my model:






If I were to describe my body I would say:

- My shoulders are broader than my hips.
- I have broad shoulders which are about as wide as my hips.
- My shoulders are more narrow than my hips.
- I have regular shoulders which are about as wide as my hips.





My bust size is:

- Smaller
- Larger






My Skin Tone is:

- 
- 
- 
- 
- 

My Face Shape is:

-  triangular
-  oval
-  round
-  rectangular

My Hair Style is:

- 
- 
- 
- 
- 

Choose your model's name:

Figure 18. "Personal Dressing Room"
(Source: www.landsend.com)



Figure 19. "Personal Dressing Room"
(Source: www.landsend.com)

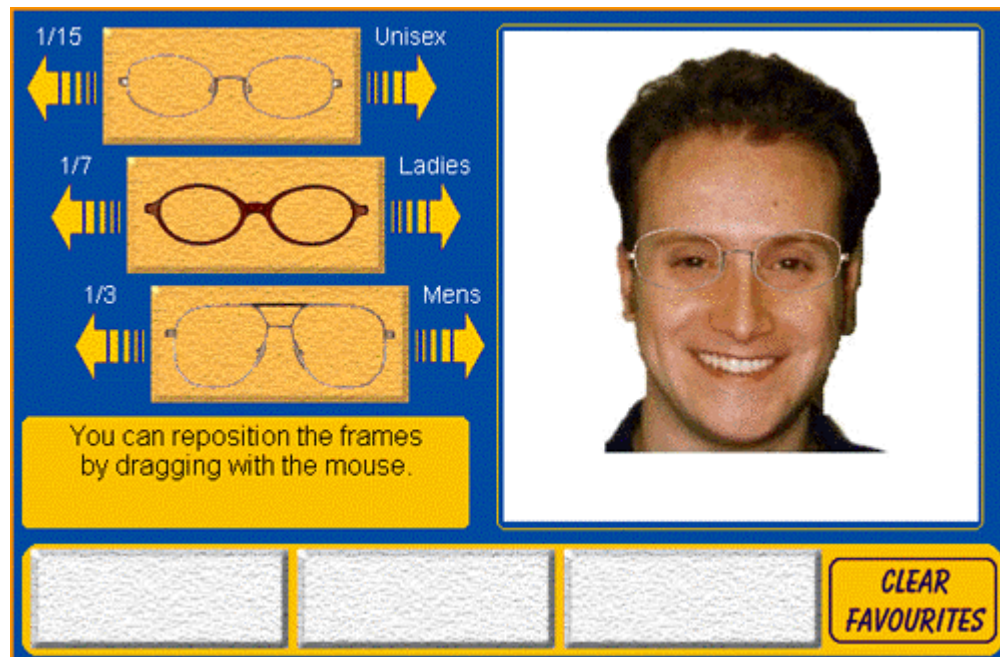


Figure 20. "Personal Dressing Room"
(Source: www.danda.co.uk/personaleyegs)

We have discussed the concept of presenting suggestions of particular products to customers when they next visit a company's web site. As a somewhat related, but separate issue, the over-all presentation of a web site can be made to vary based on the learned characteristics of the particular customer who visits. One variation on this theme can involve the market segment that a customer falls into. For example, a music retailer might vary not only the product suggestions but also the graphics, type font, etc., of its web site presentation depending on whether the customer visiting the site is known to prefer classical, jazz, rock, etc. as their primary music interest. But, it can also be much more personalized. For example, a customer who has previously purchased the music of a particular artist can be presented with an entire web page motif that includes stylistic elements, pictures, and current events items involving that artist, as well as a list of the artist's recordings that are for sale.

While a customer's sales history is one of the three types of data that a company can use in its one-to-one marketing efforts, that very same sales history can be useful to the customer if made available to her. Knowing the details of what clothing a person has bought in the past might facilitate the purchase of related clothes or accessories. Having a record of what food items a person bought in the past might make preparing the next shopping list easier (Figure 21.)

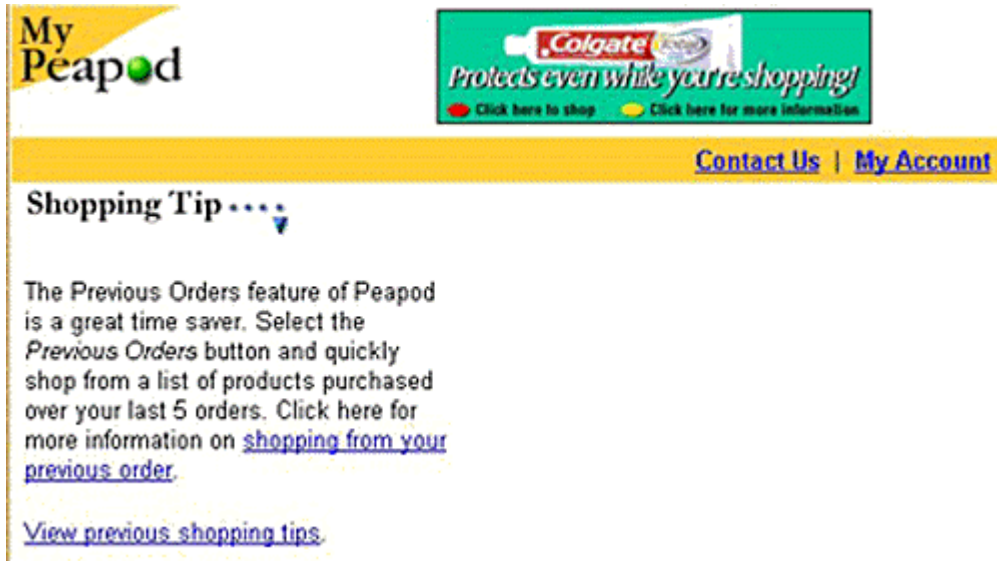


Figure 21. Access To Sales History
(Source: www.peapod.com)

Finally, we include for completeness two classes of personalization techniques that, while not an outgrowth of web-based marketing, are used with considerable success.

1. Buyer incentive programs, which come in two variations. One is giving the customer credits toward future purchases made with the same company, based on purchases made (Figure 22.) The other is giving customers credits with other companies, based on purchases made with your company, such as giving frequent flyer miles on one or more airlines.



REWARDS CATALOG

You have 153 points.

You need 347 more points to get a reward.

500 PTS.

Ten14 VMA CD



2,800 PTS.

FM RADIO
WALKMAN



Enjoy full stereo sound with your Sony FM radio. Comes complete with headphones and limited one-year warranty.

CDNOW CD



Pick any CD from CDNOW with a price between \$9.49-15.99 (tax, shipping and handling not included).

CAR VISOR CD
CARRIER



Holds 12 CDs without cases for instant access. Fits all car visors.

7,000 PTS.

THREE RING 96
CD ORGANIZER



OVER-THE-SHOULDER
60 CD CASE



PERFORMANCE
BINOCULARS



Figure 22. Buying Incentives
(Source: www.cdnw.com)

2. Mass customization. The ability to custom-make a product for every customer, while not strictly speaking a part of one-to-one marketing, is a further means for a company to make customers feel that they receive individual attention. For example, personal computer manufacturers allow customers to specify the exact components of a system and then build the system to order. Automobile manufacturers allow a customer to specify the options they want on a car and then assist them in finding a local dealer who either has such a car or will acquire one for them. When customers order new personal computers from Dell or Gateway using their web sites, they have a sense of being treated like an individual (Figures 23.)⁵ Typically, the companies that are sophisticated enough to practice mass customization do so with such techniques as highly automated supply chains that often rely on just-in-time inventory techniques and EDI systems.

⁵ Of course, those companies could use the stored ordering information to conduct one-to-one marketing with the customers in the future by, for example, offering them upgrades based on what components are in their machines.

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Figure 23. Customized Products
(Source: www.gateway.com)

III. FUTURE DIRECTIONS

One-to-one marketing offers tremendous opportunities in the years ahead, Each of which will be enabled by a mix of information technologies. More advanced analyses of sales patterns and cross-selling potential will lead to

suggestions for future purchases that are at once more useful for the customer and more profitable for the company. Likewise, further refinements in the data collected from customers and the sophistication of data mining techniques will help companies target customers with more desirable goods and services.

Consider combinations of the one-to-one marketing techniques described in Section II. A birthday reminder coupled with a wish list and a personalized grocery delivery service could result in an "instant birthday party," with all of the details taken care of. A sales history record of a previously purchased personal computer or automobile, together with advanced knowledge about the changes in a family's personal circumstances since that purchase, could generate suggestions for the features in a replacement product or in add-ons, a few years later. The use of sales history and buying incentives could encourage additional purchases while a consumer is shopping. For example, if a customer usually buys both suits and shirts, the company could offer the customer a discount on shirts at the time that he is buying a suit.

More realistic pictorial displays will continue to increase personalization. For example, if a customer's face pops up on the screen on a mannequin in a virtual dressing room in a clothing retailer's web site the one-to-one experience is enhanced. In terms of information technology, more telecommunications bandwidth, more data storage and faster retrieval systems would be needed. The pictorial display might involve object-oriented database management systems or relational DBMS with object-oriented capabilities. Depending on the sophistication level of the presentation, graphics software and techniques would need enhancement. Eventually, one could imagine customers being drawn into virtual reality shopping scenarios in their own homes.

IV. CONCLUSIONS

Steady advances in information technology profoundly affect business strategy and business models. Marketing, in particular, is a business area in which IT advances play a significant change-agent role. Business-to-consumer electronic commerce on the Internet and its World Wide Web is the latest and clearly the most revolutionary IT-instigated change in marketing since the advent of electronic computers. In turn, one of the newest advances in business-to-consumer electronic commerce is one-to-one marketing. One-to-one marketing promises to be an important component of electronic commerce and to change a significant portion of the marketing landscape.

It is thus essential for IT professionals to understand what one-to-one marketing is and information technology's role in enabling it. But, even more than that, one-to-one marketing is a key example of the rapid pace of acceleration in the changes information technology is bringing about in the way that we live and work. Creativity in the application of increasingly faster computers with greater storage capacities, and the ubiquitous networks connecting them, will bring further changes not only in marketing but also in finance, production, work styles, and virtually every aspect of commerce. It will also influence our homes, educations, and leisure activities. The successful IT professional of the future will be as much or more a creative applier of the technology, as an expert in the technology itself.

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EDITOR'S NOTE: The captions of figures in the text contains hyperlinks to World Wide Web pages. Readers who have the ability to access the Web directly from their word processor or are reading the paper on the Web, can gain direct access to these linked references. Readers are warned, however, that

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