

## Chapter 15: Marketing and Selling

### 15.1 Introduction

Web storefronts are the most obvious symbol of the e-commerce revolution. A physical store is replaced by a virtual one. Catalogue mail order foreshadowed the separation of buyer and seller by location, but the Web has economies of scale in reaching customers that print catalogues cannot match. Web storefronts mimic bricks and mortar stores in advertising existence to the prospective buyer, trying to pull her in with attractive displays, and providing information on products and prices. Of course businesses do not advertise only through their stores. They use television, radio, magazines, newspapers, and mail flyers to inform and persuade prospective buyers. The World Wide Web adds another ingredient to this stew of advertising media, with banner ads, pop-ups, and hyperlinks. Electronic mail (which may be web-based or not) provides a lower-cost alternative to the postal service.

The flexibility of digital content, and the richness of the medium (words, graphics and pictures that can move any way the creator wants) have made advertising and marketing on the Web a source of much excitement. Numerous business models have been developed which rely solely on advertising revenue, as commercial television and some magazines and newspapers do. If the Internet and the Web are part of the information and communications revolution, then advertising is a natural candidate for participating in this profound change.

Of course advertising is only a component of a business's overall marketing plan and effort. If marketing is about identifying needs and filling them (at a price attractive for the seller), then the possibilities of the Internet for achieving this may seem boundless. The ideas of "real-time" marketing and a "market of one" refer to the process of rapid, customized product development, that we discussed in Chapter 13. The information that allows the business to match the customer's tastes more accurately also allows it to charge closer to what the customer is willing to pay, as we discussed in Chapter 14. In those chapters, we focused abstractly on these issues of product differentiation and differential pricing. In this chapter, we examine some of the practicalities of the sales channel and the buying experience. Besides outlining some general concepts, we emphasize that a key feature of e-commerce, in advertising and marketing as elsewhere in the value chain, is the exchange and processing of information about what sellers have to offer, and what buyers want, and want to pay.

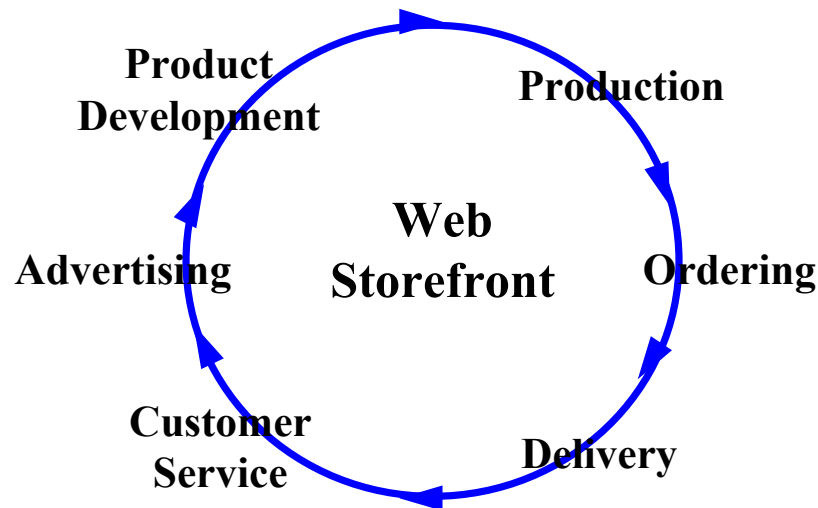
We begin with a brief overview of marketing, and the strategic issues raised by e-commerce, including information gathering, "cross-selling" and branding. This discussion builds on the analysis of the previous two chapters. We then turn to advertising, as a significant component of marketing. We examine the economic roles of advertising in abstract, including a discussion of how products differ in terms of consumer information, as well as practical issues of advertising methods and their effectiveness. Next, we look at the problem of information from the customer's perspective. The customer has an incentive to search for needed product and price

information, and this search process complements and, on the Internet in particular, even merges with advertising. Therefore discuss how the Internet changes customer search. Finally, carrying on with this theme, we briefly take another look at the role of intermediaries in e-commerce, what in this context have been dubbed “infomediaries”. A useful economic perspective that will underlie our discussion is the idea that the ultimate scarce resource in the economy (new or old) is people’s attention. This understanding will be critical to any successful marketing or advertising strategy.

### 15.2 Marketing and the Internet

Marketing is more than just advertising or selling -- it is about designing and positioning the product. Positioning the product includes design features that will appeal to identifiable segments of the market, pricing it appropriately for each segment, and (the most visible part to us as consumers) communicating the appeal and attractiveness of the product to each segment. Marketing can thus be viewed as the practical implementation of the ideas discussed in Chapters 13 and 14.

**Figure 15.1: Active Online Marketing**



The idea of a “market of one” (or “one-to-one marketing”) is simply the extreme case of market segmentation. As we have noted, e-commerce is just the latest aspect of a general movement toward this ideal. Even if the ideal is unattainable, or not cost-effective, it serves as a useful guidepost for marketing strategy. The general approach to marketing that it indicates is that of customization for more and more targeted and specialized segments of the market. If the those being marketed to are not just passive recipients of information and persuasion, but are pulled into the process of customization itself, then the result is what has been called “real-time marketing” (see Illustration Box, next page). A less hyperbolic name for the same phenomenon is active online marketing: various selling and support processes -- product development, advertising, ordering, customer service -- are integrated into one seamless whole, with Web storefronts as the

focal point for this goal (Figure 15.1). Continual interaction with customers replaces periodic pushing of information to them.

For increased interaction with customers to work, two factors have to be recognized. First, as we have mentioned, people's attention is the ultimate scarce resource in the economy. Interaction has to be made worthwhile for buyers. Marketers have recognized this for some time, and the offering of rewards for filling out mail surveys or answering questions on the phone is the most obvious example of paying for customers' time. This extends to e-commerce naturally through online surveys, which are both more convenient and less intrusive than traditional approaches. We will discuss other manifestations of the "attention economy" in looking at e-commerce advertising later in this chapter.

### Illustration Box Adventures in Marketing

Three influential thinkers in the marketing of high-tech products have been Regis McKenna, Geoffrey Moore, and Donald Norman.

**Real Time Marketing** McKenna made his reputation as the first guru of high tech marketing. His latest venture is 'real time marketing', which he describes as follows:

A real time marketing system uses relationship marketing thinking leveraged by information technology (IT) to provide a cost effective (i.e. scalable) method of developing and maintaining an online interactive relationship with customers, and with people who might become customers.

**Crossing the Chasm** Moore originally worked with McKenna, before becoming famous for his book on marketing strategy for innovative, technology intensive products. The 'chasm' he refers to is that between smaller market segments made up of early adopters, and the great majority of potential customers. Moore took his basic ideas from the academic work of Everett Rogers, but innovated by arguing that high tech firms' main strategic problem was the marketing one of 'crossing the chasm'. In this and a subsequent book, he offered advice on how to do it. 'Crossing the chasm' is, in many ways, the problem that e-tailers and other consumer-oriented e-commerce businesses face right now.

**User Experience** Donald Norman is a former academic who brings a psychological perspective to how people use products. In his last book, *The Invisible Computer*, he argued that the 'User Experience' (UE) is important enough to separate out from the marketing function in businesses. He likens UE, marketing, and product development to three legs of a stool. If people like McKenna are right, however, marketing, product development and UE will actually become intertwined, a process that online commerce will ease and accentuate.

from one with a focus on simple strategies that emphasize selling to one where large

quantities of information have to be analyzed, and the implications drawn out for pricing and product design. Marketing experiments and adjustment of strategy also become more important in e-commerce, as digital products and pricing models can be tried out rapidly, and quickly modified based on actual customer behavior, rather than “focus groups” or surveys. Not quite “real-time”, but close.

Active marketing built around Web storefronts also extends to partnering, linking, cross-selling. Accumulating customer information about buying patterns and preferences allows a business to offer not only its own products and services, but also links to the web sites of partners, offering either related products, or products that are likely to be bought by customers with the given profile. Partnering and cross-selling are marketing tools that exist in the bricks and mortar world (all those coupons for other products on cereal boxes, for example), but only the Internet provides immediacy and the destruction of distance: everything is a click away.

The joint marketing of products illustrates another way to think about how marketing is changing as e-commerce develops. The focus is no longer on marketing and selling particular products, but on serving particular customers. Mass marketing meant offering standardized products to many, many potential customers at once. Retailing in department stores did introduce jointness in marketing products and focus on customer relationships (the Nordstrom customer is different from the Walmart customer), so this is not a new idea. But, as is often the case, the contribution of the Internet and the Web is to expand immensely the scope, plus reduce the costs of such strategies. This focus on customer relationships leads to a view of marketing as one of acquiring, serving and retaining the most valuable customers. How to do this is important enough to be treated in detail in the next chapter, where switching costs and customer ‘lock-in’ are explored.

Marketing is a ubiquitous feature of modern life, and the Internet has proved to be no exception. Its history as a noncommercial medium of communicating and sharing information provided some initial resistance to the most glaring aspects of commercialization. To some extent, this history still shapes the ethos of e-commerce. For example, people may be more likely to be offended by unsolicited direct marketing offers sent by electronic mail (e-mail) than they would be if they received them by regular mail. Partly, this may reflect the ‘in your face’ nature of e-mail, more like a telephone call in that respect. This may also be a rational response to the prospect of unmanageable floods of ‘spam’ e-mail, without the cost check that exists with ordinary postal mail. To the extent that online marketing understands these concerns, and has a focus on long-term customer relationships, winning strategies will rely more on ‘pulling’ in customers, rather than ‘pushing’ information at them. Targeting market segments, packaging and bundling products and services, and pricing appropriately all remain important conventional components of marketing, but the approach must take account of the new medium and the attitudes of those who use it.

### **15.3 Advertising: Reasons, Methods and Effectiveness**

Advertising often gets short shrift in economics textbooks, perhaps because advertising in practice does not fit well with the economist’s model of calculating,

rational consumers with fixed preferences. Yet it has important economic dimensions that have been highlighted in e-commerce, again because of the power and reach of the Internet and World Wide Web as a communications medium.

**Reasons** The fundamental reasons for advertising are to inform potential customers and/or to persuade them. Which role is more important depends on the nature of the product or service itself. Economists have identified three relevant categories of products and services: search goods, experience goods, and credence goods:

- **Search goods** are those whose quality or other characteristics can be learned by the customer before being bought. An example is clothes, which may be examined and tried on before buying. A song or a music CD may be sampled online before buying, as another example.
- **Experience goods** are those for which the characteristics are learned after purchase, by actually experiencing the use of the good. An online financial information service or an Internet service provider has to be used to be judged, for example, just as a restaurant meal has to be eaten.
- **Credence goods** are ones for which even experience in use will not reveal important characteristics. For example, it may be impossible to judge the quality of an online healthcare portal, unless one is a medical expert.

Several points need to be made about this categorization. First, the difference in the categories is when the buyer learns about the product or service: before purchase, after purchase, or never. Second, goods are not always obviously purely in one category or another. We can judge the looks of a car, and its comfort and driving performance through a visit to a dealer's showroom and a test drive. However, in the absence of external sources of information, we can only learn its reliability, its long run performance, and so on, through owning and driving the car for some time. Finally, we will never learn about whether the car's fuel tank is poorly designed and explodes in collisions, or will learn only when it is too late (again in the absence of external information). The car has attributes that overlap with all three classes of goods: search, experience and credence. Third, an experience good can be made into a search good in essence by providing a perfect warranty. For example, if your ISP is unsatisfactory, you get your money back. This does not always make sense for the seller, because the buyer can disassemble, or conceal the actual value received. Information products, in particular, may be subject to this problem: opened music CDs, video games and software are often not returnable for a refund, though they may be exchanged for another copy of the same product.

What does this tell us about the role of advertising? If the categorization of a good, and the potential buyer's purchase decision depend on the amount of information available about the good, then advertising may play an important informative role. Advertising may include pictures or other visuals of the product, its specifications, its uses, and so on. This kind of advertising makes sense particularly for search goods, since the relevant information can sway the customer's purchasing decision. In the portal

example of Chapter 13, Simon may simply need to know that the choice S, which is his ideal, is available to him.

However, it turns out that experience goods are heavily advertised. There are two explanations for this. First, the advertising may be simply about the existence of the product, where it is available, its price, and its looks. These forms of information are relevant for credence and experience goods as well as for search goods. Second, advertising has an important persuasive role in practice. The preferences of buyers (such as Carly and Simon in Chapter 13) may not be completely predetermined, but affected by advertising. What Simon thinks is an attractive look or content for his portal may depend on advertising that attempts to persuade him (“everyone’s reading this”). This is a well known, much discussed aspect of advertising, and we will keep it in mind where necessary.

### **Application Box E-tailers and Marketing**

Online retailers, or e-tailers, took off with the promise of greater supply chain efficiency and customer convenience. Aside from the problems they faced in achieving these gains, and the pressures on margins created by easy entry and competition among e-tailers themselves, one of the main stumbling blocks has been the marketing costs of competing with established brands of physical retailers. For example, Pets.com spent \$30.7 million on marketing in the fourth quarter of 1999, almost six times its sales revenue! Besides the upward pressure on marketing expenditures from competition, there is another economic reason: there are only a few effective Web portals. They are a scarce resource, and economic theory tells us that the scarce resource in the value chain will capture disproportionately more of the value (the economic rent).

Source: “E-Tail Gets Derailed: How Web Upstarts Misjudged the Game”, *Wall Street Journal*, April 5, 2000, p. A1.

A second way of classifying the purposes of advertising is in terms of its competitive strategy implications. Whether advertising is meant to inform or persuade, or both, its goal is to favorably affect the revenues and profits of the advertiser. Even a monopolist will want to advertise for these purposes. Competition, actual or potential, provides additional motivation. In Chapter 13, we discussed the nature of product differentiation, in terms both of objective characteristics and of subjective perceptions. Advertising that increases the perceived differentiation of a firm and its products softens price competition, and potentially increases profits by doing so. Brand-building advertising essentially fills this purpose. This is the case of horizontal differentiation. In the case of vertical product differentiation (by quality) firms may also advertise to signal

quality. This can also be a form of brand-building. Even without this effect, advertising may discourage entry by competitors, or make competition more costly for them. Advertising in this case is like any other costly investment that must be matched by a competitor, or which makes the investing firm a more aggressive competitor. This has been a stumbling block for ‘e-tailers’ competing against established bricks-and-mortar retailers (see Application Box).

Whether advertising is informative or persuasive, and whether the advertising firm has competitors or not, we can abstractly view the main goals of advertising in terms of its effects on demand. Advertising that increases demand, that is, shifts the demand curve to the right, will increase profits if the extra revenue generated outweighs the extra cost. We consider this issue in more detail in the case of a monopolist, deriving what is best for a monopolist to do.

Suppose that the demand curve facing the monopolist is represented by the customer’s willingness to pay,  $P(q, A)$ , where  $q$  is output and  $A$  is the expenditure on advertising. In the simplest case, an increase in  $A$  shifts the demand curve to the right or, equivalently, shifts the willingness to pay upward. Suppose that the (minimum) cost of producing output  $q$  is  $C(q)$ . The monopolist’s profits are then given by:

$$\Pi = P(q, A)q - C(q) - A = R(q, A) - C(q) - A,$$

where  $R(q, A)$  is total revenue. Optimizing this with respect to output yields the usual condition (see Figure 15.2a):

$$MR = MC \text{ or } P(1 - 1/\varepsilon) = MC \text{ or } (P - MC)/P = 1/\varepsilon,$$

where  $\varepsilon$  is the absolute value of the price elasticity. The last equation is the price markup form of the profit-maximizing condition for output.

The optimal amount of advertising is similarly given by (see Figure 15.2b):

$$MR_A = 1,$$

where the left hand side is the marginal revenue from advertising, and the right hand side is simply the marginal cost, since it is measured in dollar terms. If we instead work with the demand curve  $Q(p, A)$  this condition can also be written in terms of the marginal impact on quantity demanded, as:

$$(P - MC)\Delta Q = \Delta A$$

The left hand side is the marginal impact on profit as quantity changes, keeping price constant, multiplied by the impact of advertising on quantity, again for a given price. The right hand side is the increased expenditure on advertising. This equation can be further rewritten, however, in terms of the elasticity of demand with respect to advertising, as:

$$(P - MC)\varepsilon_A q/A = 1.$$

Finally, combining this with the price markup equation from above, we get:

$$A/PQ = \varepsilon_A/\varepsilon.$$

In words, the monopolist's optimal advertising-sales revenue ratio equals the ratio of the advertising elasticity of demand to the price elasticity of demand. Note that an increase in the price elasticity, for whatever reason, decreases the optimal advertising-sales ratio in this model .

Figure 15.2a

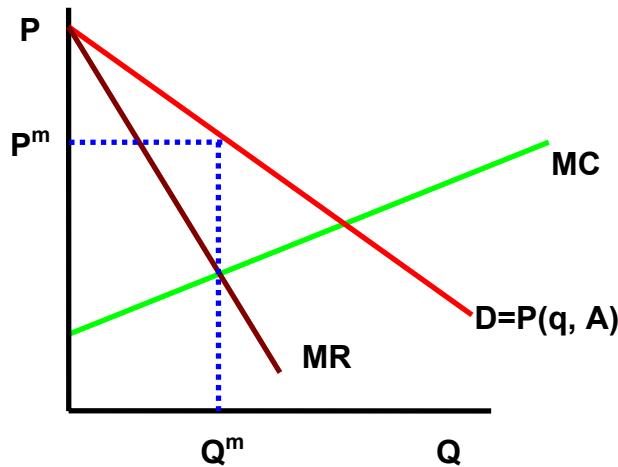
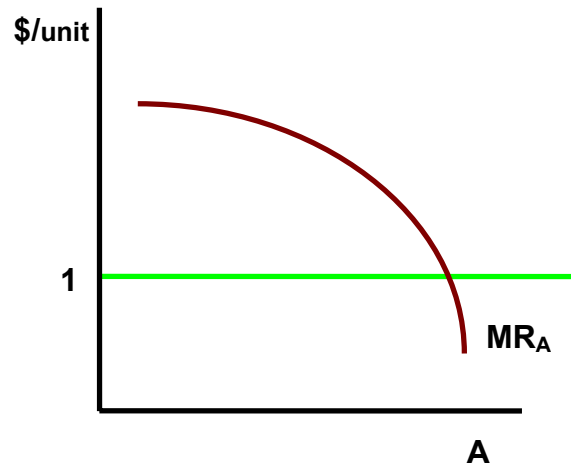


Figure 15.2b



The foregoing analysis is not meant to suggest that it is a practical guide to the choice of the level of advertising. However, it does highlight the fact that the logic of marginal benefit and cost applies to advertising expenditures, just as it does to any strategic decision. Marketing therefore includes the analytical task of estimating the marginal effectiveness and costs of advertising. The analysis can be extended to the case of competition, by allowing firms to choose their advertising expenditures as best responses to their competitors' choices. This is messy but conceptually straightforward. We will also consider the case of multiple channels of advertising in the next section.

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**Concept Check:**

In the algebraic example of advertising decisions, suppose that the demand curve is given by  $q = p^{-2}A^{0.2}$ , that is the elasticities are constant and given by  $\epsilon = 2$  and  $\epsilon_A = 0.2$ . What is the optimal advertising-sales ratio in this case? Why is it independent of the firm's costs in this case? Why is it not independent of the firm's costs in general, that is, how do costs affect the relationship  $A/PQ = \epsilon_A/\epsilon$  in the general case?

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A major additional factor that should be considered before applying the above analysis is competition from rivals. We assumed above that the firm choosing its advertising was a monopolist. We could also think of the demand curve in the analysis as being the firm's demand given particular levels of advertising and prices chosen by rivals. In that case, the elasticities might be higher: the price elasticity because there are



substitutes available, and the advertising elasticity because of direct ‘business stealing’. If the latter effect is strong enough, then advertising expenditures as a ratio of sales might indeed be higher with competition (recall the Illustration Box on E-tailers). Another factor working in this direction is that advertising has cumulative effects over time (through brand awareness), while price cuts probably do not. For new industry entrants looking at the long run, the advertising elasticity of demand may be very high.

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**Concept Check:**

We first analyzed the advertising decision using the market willingness to pay function. If the demand curve is  $q = p^{-2}A^{0.2}$ , what is the willingness to pay for quantity  $q$ ? Suppose that quantity demanded depends on the price and advertising expenditures of a rival also. What will the demand curve look like if all the elasticities are constant? What will be the signs of the elasticities of demand with respect to the rival’s price and advertising expenditure? What do think will be the relative magnitudes of the elasticities?

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In addition to shifting the demand curve to the right, and increasing the size of the market or market share at any given price, advertising may also be viewed as decreasing the elasticity of demand at any given price. This is technical side of increasing perceived product differentiation: the customer views other products (brands) as less substitutable, and her quantity demanded is less sensitive to increases in price. From the markup equation,  $(P - MC)/P = 1/\epsilon$ , a lower elasticity of demand allows the firm to charge a higher markup. Ideally, advertising shifts demand outwards, as well as decreasing its price elasticity.

**Methods** Internet advertising includes several direct and indirect techniques. Almost all of them have print or broadcast analogues, but the Internet introduces subtleties of intentions as well as lower costs. The list of Internet advertising methods includes:

- Web storefronts
- Product information pages
- Electronic billboards, banners and pop-ups
- E-mail to customers and prospects
- Web links from/to other companies’ pages
- Listings with search services
- Newsgroup endorsements / reviews

Everyone who has been on the Internet is quite familiar with these devices now, though they were initially quite novel. The categories are not mutually exclusive. One of the main common features, of course, is hyperlinks -- the central aspect of the World Wide Web. Billboards, banners and pop-ups now invariably include hyperlinks, so that the viewer can instantly click through to further information. E-mail messages and search listings also include these links. The implications of this common feature of Internet advertising are examined in more detail below.

The subtlety of intention comes partly from the technology itself, which may allow the source of information to be disguised, so that it does not appear to be advertising. This principle is used in print and broadcast advertising also, where attempts are made to mix advertising with regular content, or present it in such a way that the difference is not apparent. As buyers become more experienced with an advertising medium, some of this problem recedes, of course. Carriers of the information also have an incentive to make distinctions between advertising and content clear, in order to protect their own reputations. We discuss this below in the section on infomediaries.

Online advertising is still a small fraction of total advertising, which represents 2 to 3 per cent of GNP in the United States, or well over \$100 billion. Advertising expenditures excluding direct mail are about 30 per cent for TV, 5 per cent for cable/satellite TV, 11 per cent for radio, 36 per cent for newspapers, and 14 per cent for magazines. In contrast Internet advertising had only reached about \$500 million by 1997, though that figure may not include implicit advertising expenditures such as web storefronts. More comprehensive, recent estimates for 1999 put the figure for online advertising as high as \$7 billion, but this is still only a small fraction of total US advertising expenditures.

The economic logic of choosing the optimal level of advertising expenditures can be extended to the choice among several different methods or communication channels. We illustrate this simply for the case of two channels, say the Internet (subscripted by 'I') and other ('traditional') methods (subscript 'T'). We introduce another dose of reality also, by assuming that advertising expenditures work by reaching a particular number of potential buyers (or 'eyeballs' in popular terminology). For example, spending \$10,000 on an Internet banner ad may reach 50,000 unique viewers, while spending \$20,000 for more frequent display may reach 75,000 unique viewers, since some of the viewers will simply see the banner more often. Of course that can be a good thing too, but we neglect here the effect of increased frequency of viewing in the following.

In this framework, the advertiser's profit is

$$\Pi = P[Q, n_I(A_I), n_T(A_T)]Q - C(Q) - A_I - A_T,$$

where  $n_i(A_i)$  is the number of potential customers reached if advertising expenditure on channel I is  $A_i$ . This formulation allows others also to buy the product, even if they do not see the ads. It also allows the channels to have complementary effects on demand. As usual, the profit-maximizing choice of output is given by the balance of marginal revenue and marginal cost of production:

$$MR = MC$$

The profit-maximizing choice of  $A_i$  works through its effect on the number of people reached, which in turn affects the willingness to pay at the margin. this is equated to the marginal cost of advertising expenditures, which is just one:

$$Q \cdot (\Delta P / \Delta n_i) \cdot (\Delta n_i / \Delta A_i) = 1 \text{ for each 'i' (I or T).}$$

This equation can also be rewritten as

$$Q. \Delta P / \Delta n_i = \Delta A_i / \Delta n_i, \text{ or } MR_{ni} = MC_{ni}.$$

In words, the marginal revenue from reaching one more person through the  $i^{\text{th}}$  channel should be equated to the marginal cost of reaching one more person. This sounds easy, but of course many practical strategic issues in marketing, and advertising in particular, rest on what the effects are empirically. This has always been a problem for marketers, though changes in demand, or responses to infomercials or direct marketing campaigns can be quantified and measured. We discuss this further in considering effectiveness, below. A further complication to note is that the marginal impacts are not necessarily independent: spending on one mode of advertising may impact the effectiveness of other modes of advertising. Thus marketers should ideally plan coordinated campaigns, deciding simultaneously how much to spend on each advertising channel.

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**Concept Check:**

What practical factors do you think will determine the marginal revenue from reaching an additional person through a particular channel? What factors might determine the marginal cost?

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Of course the real-world is much more complicated. The Internet is not a homogeneous channel but includes different approaches within it, many of which have parallels with specific traditional approaches. For example, banners and pop-ups are like magazine or newspaper ads, intruding on us as we read for content. E-mail marketing offers are the equivalent of direct mail marketing. Each form of advertising campaign can be developed and refined for a target audience, where what matters is not only the number of eyeballs, but all the other characteristics that go with that anatomical part. This ties in, of course, with our earlier discussion of product differentiation and pricing: if you have a product or service designed for a particular segment of the market (outdoor enthusiasts, videogame players, teenagers) your advertising needs to reach that group as efficiently as possible. We can interpret the algebraic models above as being specific to particular product lines, rather than broad product categories, so that the segmentation is already assumed in the demand equation.

**Effectiveness** Various surveys have suggested that Web users do look at banner ads and find them effective. In fact, some research suggests that potential buyers respond better to repeated exposure for banner ads than for print ads. These kinds of results, while not definitive, are not surprising. One of the most significant aspects of e-commerce is the integrated, interactive nature of the buyer's experience, and the easy capture and processing of the information generated in the interaction. Perhaps the closest match in traditional commerce is the person who is reading a magazine or watching a TV infomercial, sees a product with a toll-free number, and calls up and orders it. The seller can tally how many people called and bought during the infomercial, and use codes or survey questions to identify whether a buyer was prompted by the magazine ad. The Internet automates this kind of information capture for online buyers. More importantly,

it expands the scope of the interaction much beyond what is possible with a print ad or broadcast commercial.

In online buyer-seller interactions, the buyer is not limited to just choosing whether to buy or not. An ad can trigger a complex information search that helps the potential buyer make up her mind (hopefully for the seller, in the affirmative). The buyer's sequence of 'click-throughs', going through various parts of a web site, can help a seller understand where there might be problems in clinching a sale. Of course the same process can be done over the telephone, if the potential buyer talks to a customer service or sales representative, but it is costly, often cumbersome, and lacks immediacy. The information capture of the buyer's search process is also difficult.

**Table 15.1**

**Web sites ranked by impressions for the week ended February 13, 2000**

<b>Rank</b>	<b>Company Name</b>	<b>Impressions</b>	<b>Unique Audience</b>
1	TRUSTe	683,741,385	14,518,289
2	Amazon	136,164,042	16,920,128
3	Yahoo!	132,226,705	13,112,965
4	America Online	107,050,620	16,141,691
5	Microsoft	76,669,124	13,260,472
6	SexTracker	70,873,985	3,419,758
7	Barnes and Noble	70,791,551	9,658,516
8	Next Card	69,331,559	11,311,527
9	E*TRADE	68,288,105	2,452,851
10	Netscape	62,833,283	10,321,849

Tracking eyeballs online can be done with astounding precision, as the following tables, from the Advertising Age web site show. If the web server can deposit and monitor cookies on the viewer's own computer, this information can of course also be processed and used. Thus Amazon, with close to 17 million 'hits' in the week shown (Table 15.1), presumably knows who visited their site most often, which banners and other links they clicked on, how far they went, and whether the process resulted in a purchase. Further, it can accumulate this information over time, to design its web site and the ads on it more effectively, for example to make it most attractive for its highest-spending customers, or customized for different market segments. The latter can be done 'on the fly' online, where a particular 'clickthrough' or purchase decision can instantly trigger what is displayed next: suggestions or information on similar books for example. Similarly, Table 15.2 displays the number of 'hits' on particular banner ads, and presumably the advertisers have information on the results. The original table on the

Advertising Age web site illustrated the interactivity of the Web: one could click on the company names and view the banner ads themselves.

**Table 15.2**

**The most viewed ad-banners for the week ended February 13, 2000**

<b>Rank</b>	<b>Company Name</b>	<b>Unique Audience</b>	<b>Reach %</b>
1	Bonzi Software	4,531,875	8.2
2	AmeriDebt	3,097,561	5.6
3	Capital One	2,924,063	5.3
4	Red Cross	2,201,503	4.0
5	ClassMates	2,055,752	3.7
6	Next Card	2,008,862	3.6
7	GetSmart	1,888,421	3.4
8	HealthQuick	1,872,918	3.4
9	@Backup	1,830,461	3.3
10	GetSmart	1,820,243	3.3

The low cost of production and modification of online ads (a quintessential digital product) means that targeted marketing and advertising can be pursued more effectively. One reason for broad-based advertising is technological: the channel may not allow an alternative. That has been the case with national network television. Another reason is economic: where a fairly standardized product is being sold to a cross-section of households, or where the goal is brand-building broad-based advertising makes sense. However, for reaching targeted market segments with differentiated or even customized products and services, the Internet holds great promise. Advertising to small niches becomes extremely cost-effective, even more so than through specialty magazines (which themselves have arisen to fill narrow niches as their cost of production has fallen thanks to computerization). The interactive nature of Internet advertising (and marketing more generally) and the nature of the information generated, also suggests that this targeting can easily be improved over time.

One issue we have discussed in Chapter 14, in the context of privacy, is of course very relevant here. Active and intrusive advertising, especially where it is obviously based on knowledge of customer behavior and characteristics may not work as effectively as in a world where people did not care about these issues. The ideas of 'push' and 'pull' are relevant here, as is the concept of 'permission marketing'. Traditional advertising has almost always been 'push' advertising, initiated by the seller. Online examples of push advertising are banners, pop-ups, and unsolicited commercial e-mail. The last of these is fiercely opposed and derided as 'spam', but nevertheless

continues. The Internet, through its history and its technological capabilities, has made pull advertising a real alternative. The information resources on the World Wide Web are 'out there' waiting for anyone to search for them. Information provided in response to a query is advertising pulled in by the customer, and more acceptable to many. We discuss this in the next section. Permission marketing is really permission to allow information to be pushed. We are all familiar now with little online boxes that, if not 'unchecked' will give tell the seller that we do not mind receiving e-mail messages about new products or wonderful special offers.

Another way around the distaste that many individuals may feel for pushed advertising is to explicitly bundle it with a product or service. This is familiar to us in the case of commercial TV and radio, where the content comes bundled with the advertising. To some extent, this is what happens with advertising on Web portals, online news services, and so on: the ads are bundled with the content. This bundling can be made more explicit, however, even with products and services that are not delivered simultaneously with the content. The consumer can be offered a choice between paying for content, or for a service such as connection to the Internet or e-mail, or a product such as a personal computer, in exchange for agreeing to view ads for a specified period. Again, the ability to monitor consumer reaction to the advertising makes this potentially a more attractive proposition than would be possible with any traditional advertising channel.

The bundling of advertising can be viewed as a form of barter -- consumer attention is traded for the product or service. This makes sense when one remembers that attention is one of the ultimate scarce resources. Even if an individual does not have an active dislike of advertising, looking at an ad and following through by clicking on it has an opportunity cost in the time used up in doing so. Paying for this time is appealing, if one can monitor reasonably well whether the individual is indeed keeping his end of the bargain. Therefore, a natural extension of the bundling-barter idea has been from companies like CyberGold, which pay consumers for viewing and responding to ads. CyberGold has even patented its version of this scheme, with Patent #5,794,210, called Attention Brokerage!

Like much else in online commerce, ideas such as attention brokerage have traditional analogues. People fill out surveys in exchange for gifts or cash, they receive rewards for going to a car dealer's showroom and listening to a sales pitch, and so on. The underlying driving force, the increasing opportunity cost of time, is one that explains many aspects of how our economy is changing (even the pursuit of more frenetic, capital-intensive leisure activities -- after all, we want to get our money's worth from our leisure!). E-commerce is a fertile breeding ground for manifestations of these trends, because it takes place in a medium where information can be exchanged and processed more easily and conveniently than ever before.

## **15.4 Customer Search**

The Internet was a repository of information for which people searched, long before it became a vehicle for commerce. As that store of information grew, and as the first browser was developed, search engines were invented to facilitate the hunt for information. Search engines naturally adapted to the advent of e-commerce, since in physical markets, buyers constantly search for product and price information. Advertising, such as newspaper ads and inserts, that provides this information, substitutes for some of this search: I can set off for the grocery store, flyer in hand, knowing much of what I want to buy and what prices I will pay, rather than checking and comparing once I am at the store. This kind of advertising will not be a perfect substitute-- it will not directly make price comparisons across stores -- though if I have flyers from all the grocery stores in my neighborhood, I may be able to partially compare. Partial information from ads may be better than perfect information from costly search.

E-commerce illustrates the continued coexistence of advertising and customer search. Even though online search for product and price information is less costly, it is not costless. Thus it does not make advertising redundant. Sellers also may have incentives to restrict the amount they put online. As we shall see below, costly search actually gives sellers market power, allowing them to charge higher prices. The information released through advertising is often restricted, so that the buyer is not able to arbitrage perfectly between competing sellers.

Greater product differentiation is one possible seller response to more efficient searching for price information. In addition to the reasons discussed in Chapter 13, product differentiation directly raises the costs of search, as well as creating a need for more search. This is an additional reason why the seller's market power increases. There can be further responses to this, as intermediaries, including search engines, continue to evolve: wherever there is an economic rent, there is an incentive for someone to try and capture some or all of it.

**Economics of Search** If a consumer knows what product she wants to buy, then search need only be for the lowest price available. If search is costless, this is easy. But if search is costly, in terms of time, effort, and travel costs, she has to decide how to search: where to go, how many sellers to sample, and when to stop looking (is the price low enough, even if not certainly the best price?).

If search is costly for all consumers, then sellers can have substantial market power. To see this point, consider the case where all potential buyers want one unit of a product which has a constant marginal cost of  $C$ . If there are many sellers and no search cost, then this will be the market price. However, if there is a cost of  $S$  of visiting a store, and going to stores one by one is the only way of getting price information, then a seller can charge at least the competitive price plus the cost of each store visit,  $C + S$ . This is because the buyer already in the store is willing to pay up to this much, since the best price she can at another store is  $C$ , plus she has to bear the cost of visiting another store. But if all sellers recognize this, then all would charge at least  $C + S$ . Now a seller can plan to charge  $(C + S) + S$ , since the customer who is in the store will pay up to this much. This reasoning can be continued, it turns out, until the monopoly price is reached:

that is the price that will prevail in this market! Now you can see why sometimes it is hard to get price quotes without visiting the store.

This gloomy scenario, where search costs lead to the monopoly price even with many sellers is tempered by the following two possibilities:

1. If some consumers have zero search costs, this creates a positive externality for other consumers, and some firms end up pricing lower. In the market equilibrium, there is price dispersion even for homogeneous products.
2. Repeat purchasing has the same kind of effect.

Sellers have a further competitive weapon, however -- they can randomize prices, for example, by having sales. Thus, what can happen in markets with search costs is much more varied than the simple story of perfect competition with a homogenous product and many sellers.

**Online Search** What does the above discussion imply for the working of e-commerce markets? Online searching dramatically lowers the costs of search, even below the telephone. Information can not only be gathered more easily, it can also be stored and processed much more easily. This includes information on a wide variety of product characteristics as well as prices. However, the available evidence on e-commerce strongly rejects the prediction that online searching will produce an “efficient” market (Price = Marginal Cost). (See Application Box).

There are several reasons why online searching may not be fully efficient:

- Sellers choose not provide all the relevant information
- Search algorithms are not sufficient to gather all relevant information
- Access to information (web sites) is costly or difficult, so search costs are not zero, even though they are smaller than alternative offline methods.

At the same time, there are factors working to increase market efficiency, in the sense of pushing the prevailing price closer to marginal cost. Competition in providing information (through advertising) may help to improve efficiency. If advertising is also cheaper online, this will increase the amount of information provided to buyers. Newsgroups and other online communities where users can broadcast messages and “tune in” to read them, as well as e-mail, act as electronic analogues and powerful extensions of traditional ‘word of mouth’, so that information sharing among consumers substitutes for direct search, reducing effective search costs.

### **Application Box** **Price Dispersion in E-Commerce**

Economists Erik Brynjolfsson and Michael D. Smith of MIT found that Amazon.com charges higher prices than online discounters of books and CDs. For example, Books.com charged less than Amazon 99% of the time, but had just 2.2% of the traffic. Reputation and other dimensions such as service may explain this phenomenon, but it illustrates the continuation of price dispersion even when knowledge of the lower price is ‘just a click away’.

Price dispersion also continues across traditional and online shoppers, but



In sum, online commerce contains a mix of information flows, initiated by buyers and by sellers, and between buyers, just as traditional markets do. The difference is that the costs of transmitting information are lowered, and it can be stored and processed more effectively. In addition, information flows in both directions are much more integrated: online consumer queries pull in targeted but automated online responses in ways that are hard to duplicate in the offline world. Even online, though, advertising by sellers is subject to incentive problems. Even if sellers are forced by law to be honest, it is impossible to force them to reveal all the information that might be relevant to a buyer's choice. This creates a role for information intermediaries, or 'infomediaries' online.

### **15.5 Infomediaries**

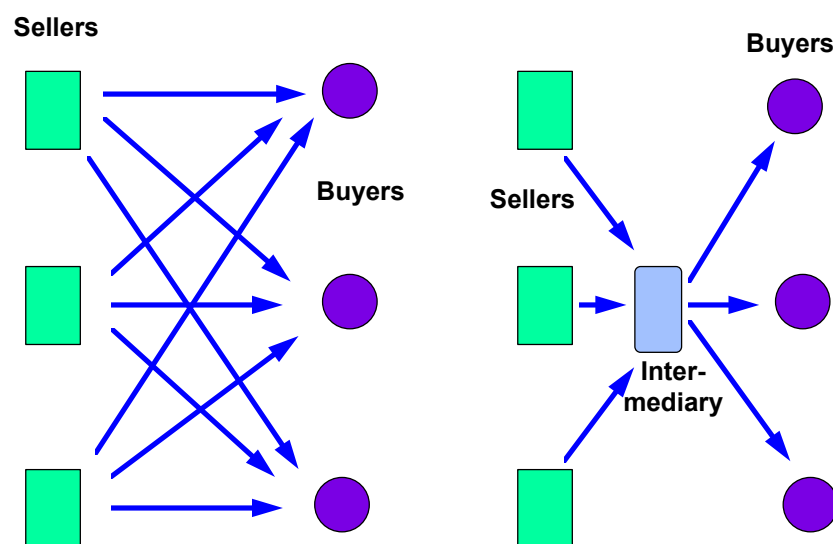
If customers value information about the products and services that are available, their characteristics, and their prices, but individual firms will not or credibly can not provide this information, then there is a role for intermediaries who collect, process and supply this information. We can call such information intermediaries 'infomediaries'. This term has originally been applied to firms that provide the service in the opposite direction, aggregating consumer information and using 'the combined market power to negotiate with vendors on their behalf' (Hagel and Singer, *Net Worth*, p. 19), but the term is apt for the reverse process. In fact, Hagel and Singer ultimately view infomediaries as providing information in both directions, emerging first 'in markets where product lines are rapidly changing and complex, and where pricing is opaque or complicated in ways consumers have a hard time understanding.'

Earlier in this chapter we made a distinction between search and experience goods: the latter have to be used to be properly judged. Repeat purchases and word-of-mouth blur this distinction, making already-experienced goods more like search goods. Reputation is built when consumer expectations of quality are consistently fulfilled, through one's own past use, or the experience of others. This reputation resides in the

brand name, an important aspect of the economic value of trademarks, which we shall take up in Chapter 17, along with other issues in the management of intellectual property rights.

For now, recall that in Chapter 8 we discussed the different roles intermediaries can play. One of these is providing reputations, especially to the many new players in e-commerce who are without their own reputations. An infomediary can build reputation of a certain kind, where even an established firm may not be able to. This is because the seller has an incentive to get the highest price it can (absent customer relationship considerations). Infomediaries have a role to play because they have incentives to put information, such as comparative prices, online where sellers would not want to do so. Even if similar information is displayed, such as product reviews, the infomediary will be more credible, because its reputational incentives are different. It selects, classifies and evaluates information as a “trusted third party”.

Figure 15.3



Infomediaries have several other possible roles. They may also try to facilitate the search process (the original role of search engines) and provide access to information in databases. They can also be information specialists -- they have greater experience and technical abilities in processing and evaluating information. Finally, because the virtual world online still requires a physical network, online intermediaries may economize on network traffic (Figure 15.3), though it is unclear how important this effect is.

This is not to say that infomediaries will be perfect. Incompleteness, outdatedness, bias and manipulation (by content providers) are all potential problems with search engines, for example. Different search engines use different algorithms and

methods -- brute force, using historical viewing information, or human compilations. Each of these methods has advantages and disadvantages, so none is perfect.

The idea of infomediaries, as conceived by Hagel and Singer, is much broader than simply conveying trusted, essential information to buyers. They are also conceived of as managers of information from customers as well. Thus they are thought of as 'super-matching' firms. The extent to which such infomediaries will actually develop remains to be seen. Here we have highlighted the current role infomediaries play in overcoming the inefficiencies of individual buyer search and seller advertising.

## 15.6 Conclusion

Infomediaries that merely compile and provide access to information run into the problem that people can only view and process a limited amount. Attention is the ultimate scarce resource. Search engines can overcome this by filtering and ranking the information 'matches' they provide. In general, infomediaries (or any sellers of information products) will add the most value and thrive the most if they provide information in its most useful form. This is the form that requires the least processing by the recipients of the information, or alternatively gives them the tools to process it into the form that makes the most sense for them. The paradox of the Internet is that huge quantities of raw information are now available to anyone with access to the network, but the value of many kinds of usable information remains high. The increased sophistication of the management of information flows between buyers and sellers, including advertising, marketing, and consumer search, is therefore just one example of the new 'information economy'.

## Summary

- E-commerce increase the amount and precision of customer information available to sellers, and makes marketing more powerful and more complex.
- The interaction of buyers and sellers online also changes marketing by altering the speed and timing of product design and positioning.
- 'One-to-one' and 'real time' marketing are terms that describe the increasing importance of targeting and interaction.
- Advertising provides information and persuasion. It attempts to reduce price competition and increase market share.
- Advertising is both significant and expensive for new firms in e-commerce, trying to build reputations.
- In principle, advertising, including Internet advertising, is governed by the general economic logic of balancing of marginal gains and costs.
- Internet advertising and marketing make precise measurement of their effectiveness, in terms of gains and costs, possible in ways that are much harder to achieve in the offline world.

- Greater interactivity and better measurement also mean that the dividing line between advertising and buyer search is blurred, and that information pertinent to the transaction becomes a viable commodity itself.
- Where buyers can not reduce their costs of search adequately, or sellers cannot credibly provide the information buyers want, information intermediaries can arise to create and capture value by improving the match of buyers and sellers.

### Questions

1. Why do dotcom businesses advertise on television? Why does Dell send out product catalogues to customers who previously ordered online? Why has Walmart never advertised on television?
2. Why do you think Yahoo metamorphosed from a search engine into a portal? What are the roles that a portal plays? What are its sources of revenue? How is Gomez.com different from Yahoo as an infomediary?
3. In *Net Worth*, Hagel and Singer argue that ‘one-to-one’ (or ‘relationship’) marketing and ‘permission’ marketing fail because they are still driven by the seller’s incentives, and fail to provide the customer with selection and comparison. How do you think infomediaries overcome this? How are infomediaries different from retailers that carry many brands? Will infomediaries become the managers of consumer information and attention?