Chapter- 10

E-Commerce: Digital Markets, Digital Goods

🔖 Topic- 18: What are the unique features of e-commerce, digital markets, and digital goods?

In 2017, purchasing goods and services online by using smartphones, tablets, and desktop computers will be ubiquitous. In 2017, an estimated 217 million Americans will shop online, and 185 million will purchase something online, as did millions of others worldwide. Although most purchases still take place through traditional channels, e-commerce continues to grow rapidly and to transform the way many companies do business. In 2017, e-commerce consumer sales of goods, services, travel, and online content, about 12 percent of total retail sales of $5.6 trillion, are growing at 15 percent annually (compared with 3 percent for traditional retailers) (eMarketer, 2016a). E-commerce has expanded from the desktop and home computer to mobile devices, from an isolated activity to a new social commerce, and from a Fortune 1000 commerce with a national audience to local merchants and consumers whose location is known to mobile devices. At the top 100 e-commerce retail sites, more than half of online shoppers arrive from their smartphones, although most continue to purchase using a PC or tablet. The key words for understanding this new e-commerce in 2017 will be "social, mobile, local."

18.1: E-commerce Today

E-commerce refers to the use of the Internet and the web to transact business. More formally, e-commerce is about digitally enabled commercial transactions between and among organizations and individuals. For the most part, this refers to transactions that occur over the Internet and the web. Commercial transactions involve the exchange of value (e.g., money) across organizational or individual boundaries in return for products and services.

The very rapid growth in e-commerce in the early years created a market bubble in e-commerce stocks. Like all bubbles, the dot-com bubble burst (in March 2001). A large number of e-commerce companies failed during this process. Yet for many others, such as Amazon, eBay, Expedia, and Google, the results have been more positive: soaring revenues, fine-tuned business models that produce profits and rising stock prices. By 2006, e-commerce revenues returned to solid growth, and have continued to be the fastest-growing form of retail trade in the United States, Europe, and Asia.

- Online consumer sales will grow to an estimated $669 billion in 2017, an increase of more than 15 percent over 2016 (including travel services and digital downloads), with 185 million people purchasing online and an additional 217 million shopping and gathering information but not purchasing (eMarketer, 2016a). The Internet influences more than $1.3 trillion in retail commerce that takes place in physical stores.
- The number of individuals of all ages online in the United States is expected to grow to 270 million in 2017, up from 147 million in 2004. In the world, more than 3.3 billion people are now connected to the Internet. Growth in the overall Internet population has spurred growth in e-commerce (Internet World Stats, 2016).

- Approximately 96 million households will have broadband access to the Internet in 2017, representing about 78 percent of all households.
- About 223 million Americans will access the Internet by using a smartphone. Mobile e-commerce has begun a rapid growth based on apps, ringtones, downloaded entertainment, and location-based services. Mobile e-commerce will account for about $170 billion in 2017, 25 percent of all e-commerce, and about 50 percent of all retail e-commerce. In a few years, mobile phones and tablets will be the most common Internet access device. Currently, more than 80 percent of all mobile phone users access the Internet by using their phones (eMarketer, 2016b).
- B2B e-commerce (use of the Internet for business-to-business commerce and collaboration among business partners) expanded to more than $7 trillion. Table 10. 1 highlights these new e-commerce developments.

TABLE 10.1 THE GROWTH OF E-COMMERCE

BUSINESS TRANSFORMATION
E-commerce remains the fastest-growing form of commerce when compared to physical retail stores, services, and entertainment. Social, mobile, and local commerce have become the fastest-growing forms of e-commerce.
The breadth of e-commerce offerings grows, especially in the services economy of social networking, travel, entertainment, retail apparel, jewelry, appliances, and home furnishings.
The online demographics of shoppers broaden to match that of ordinary shoppers.
Pure e-commerce business models are refined further to achieve higher levels of profitability, whereas traditional retail brands, such as Walmart, Sears, JCPenney, L.L.Bean, and Macy's, use e-commerce to retain their dominant retail positions. Walmart, the world's largest retailer, has decided to get serious about e-commerce and take on Amazon with a more than $1 billion investment in its e-commerce efforts (see the chapter-ending case study).
Small businesses and entrepreneurs continue to flood the e-commerce marketplace, often riding on the infrastructures created by industry giants, such as Amazon, Apple, and Google, and increasingly taking advantage of cloud-based computing resources.
Mobile e-commerce has taken off in the United States with location-based services and entertainment downloads, including e-books, movies, music, and television shows. Mobile e-commerce will generate more than $170 billion in 2017.

TECHNOLOGY FOUNDATIONS

Wireless Internet connections (Wi-Fi, WiMax, and 4G smartphones) grow rapidly.

Powerful smartphones and tablet computers provide access to music, web surfing, and entertainment as well as voice communication. Podcasting and streaming take off as media for distribution of video, radio, and user-generated content.

Mobile devices expand to include wearable computers such as Apple Watch and Fitbit trackers.

The Internet broadband foundation becomes stronger in households and businesses as transmission prices fall.

Social networking apps and sites such as Facebook, Twitter, LinkedIn, Instagram, and others seek to become a major new platform for e-commerce, marketing, and advertising. Facebook has 1.65 billion users worldwide and 222 million in the United States (Facebook, 2016). One hundred ninety million Americans use social networks, about 70 percent of the Internet user population.

Internet-based models of computing, such as smartphone apps, cloud computing, software as a service (SaaS), and database software greatly reduce the cost of e-commerce websites.

NEW BUSINESS MODELS EMERGE

More than 70 percent of the Internet population has joined an online social network, created blogs, and shared photos and music. Together, these sites create an online audience as large as that of television that is attractive to marketers. In 2017, social networking will account for an estimated 28 percent of online time. Social sites have become the primary gateway to the Internet in news, music, and, increasingly, products.

The traditional advertising industry is disrupted as online advertising grows twice as fast as TV and print advertising; Google, Yahoo, and Facebook display nearly 1 trillion ads a year.

On-demand service e-commerce sites such as Uber and Airbnb extend the market creator business model to new areas of economy.

Newspapers and other traditional media adopt online, interactive models but are losing advertising revenues to the online players despite gaining online readers. The *New York Times* adopts a paywall for its online edition and succeeds in capturing over 1 million subscribers, growing at 15 percent annually. Book publishing thrives because of the growth in e-books and the continuing appeal of traditional books.

Online entertainment business models offering television, movies, music, and games grow with cooperation among the major copyright owners in Hollywood and New York and with Internet distributors such as Apple, Amazon, Google, YouTube, and Facebook. Increasingly, the online distributors are moving into movie and TV production.

18.2: Why E-commerce is Different

Ubiquity: In traditional commerce, a marketplace is a physical place, such as a retail store, that you visit to transact business. E-commerce is ubiquitous, meaning that it is available just about everywhere all the time. It makes it possible to shop from your desktop, at home, at work, or even from your car, using smartphones. The result is called a marketspace—a marketplace extended beyond traditional boundaries and removed from a temporal and geographic location. From a consumer point of view, ubiquity reduces transaction costs—the costs of participating in a market. To transact business, it is no longer necessary for you to spend time or money traveling to a market, and much less mental effort is required to make a purchase.

Global Reach: E-commerce technology permits commercial transactions to cross cultural and national boundaries far more conveniently and cost effectively than is true in traditional commerce. As a result, the potential market size for e-commerce merchants is roughly equal to the size of the world's online population (estimated to be more than 3 billion).

Universal Standards: One strikingly unusual feature of e-commerce technologies is that the technical standards of the Internet and, therefore, the technical standards for conducting e-commerce are universal standards. All nations around the world share them and enable any computer to link with any other computer regardless of the technology platform each is using. In contrast, most traditional commerce technologies differ from one nation to the next. For instance, television and radio standards differ around the world, as does cellular telephone technology. The universal technical standards of the Internet and e-commerce greatly lower market entry costs—the cost merchants must pay simply to bring their goods to market. At the same time, for consumers, universal standards reduce search costs —the effort required to find suitable products.

Richness: Information richness refers to the complexity and content of a message. Traditional markets, national sales forces, and small retail stores have great richness; they can provide personal, face-to-face service, using aural and visual cues when making a sale. The richness of traditional markets makes them powerful selling or commercial environments. Prior to the development of the web, there was a trade-off between richness and reach; the larger the audience reached, the less rich the message. The web makes it possible to deliver rich messages with text, audio, and video simultaneously to large numbers of people.

Interactivity: Unlike any of the commercial technologies of the twentieth century, with the possible exception of the telephone, e-commerce technologies are interactive, meaning they allow for two-way communication between merchant and consumer and peer-to-peer communication among friends. Television, for instance, cannot ask viewers any questions or enter conversations with them, and it cannot request customer information to be entered on a form. In contrast, all these activities are possible on an e-commerce website or mobile app. Interactivity allows an online merchant to engage a consumer in ways similar to a face-to-face experience but on a massive, global scale.

Information Density: The Internet and the web vastly increase information density—the total amount and quality of information available to all market participants, consumers, and merchants alike.

E-commerce technologies reduce information collection, storage, processing, and communication costs while greatly increasing the currency, accuracy, and timeliness of information. Information density in e-commerce markets make prices and costs more transparent. Price transparency refers to the ease with which consumers can find out the variety of prices in a market; cost transparency refers to the ability of consumers to discover the actual costs merchants pay for products. There are advantages for merchants as well. Online merchants can discover much more about consumers than in the past. This allows merchants to segment the market into groups that are willing to pay different prices and permits the merchants to engage in price discrimination—selling the same goods, or nearly the same goods, to different targeted groups at different prices. For instance, an online merchant can discover a consumer's avid interest in expensive, exotic vacations and then pitch high-end vacation plans to that consumer at a premium price, knowing this person is willing to pay extra for such a vacation. At the same time, the online merchant can pitch the same vacation plan at a lower price to a more price-sensitive consumer. Information density also helps merchants differentiate their products in terms of cost, brand, and quality.

Personalization/Customization: E-commerce technologies permit personalization. Merchants can target their marketing messages to specific individuals by adjusting the message to a person's clickstream behavior, name, interests, and past purchases. The technology also permits customization—changing the delivered product or service based on a user's preferences or prior behavior. Given the interactive nature of e-commerce technology, much information about the consumer can be gathered in the marketplace at the moment of purchase. With the increase in information density, a great deal of information about the consumer's past purchases and behavior can be stored and used by online merchants.

Social Technology: User Content Generation and Social Networking: In contrast to previous technologies, the Internet and e-commerce technologies have evolved to be much more social by allowing users to create and share with their friends (and a larger worldwide community) content in the form of text, videos, music, or photos. By using these forms of communication, users can create new social networks and strengthen existing ones. All previous mass media in modern history, including the printing press use a broadcast model (one-to-many) in which content is created in a central location by experts (professional writers, editors, directors, and producers), and audiences are concentrated in huge numbers to consume a standardized product. The new Internet and e-commerce empower users to create and distribute content on a large scale and permit users to program their own content consumption. The Internet provides a unique many-to-many model of mass communications.

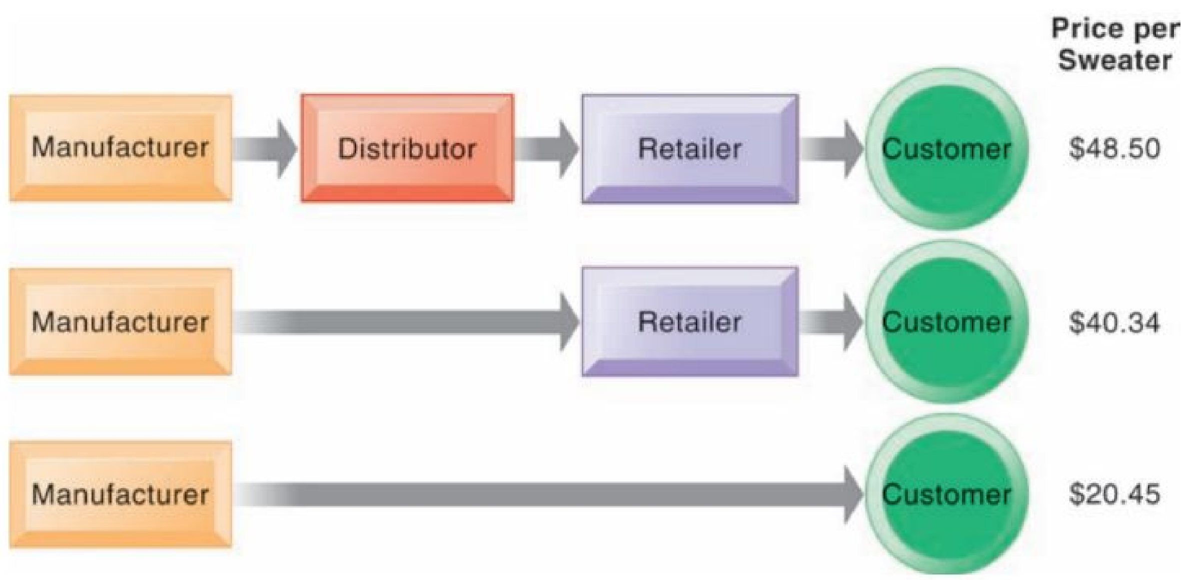
18.3:Key Concepts in E-commerce: Digital Markets and Digital Goods in a Global Marketplace

The Internet reduces information asymmetry. An information asymmetry exists when one party in a transaction has more information that is important for the transaction than the other party. That information helps determine their relative bargaining power. In digital markets, consumers and suppliers can see the prices being charged for goods, and in that sense, digital markets are said to be more transparent than traditional markets.

Digital markets are very flexible and efficient because they operate with reduced search and transaction costs, lower menu costs (merchants' costs of changing prices), greater price discrimination, and the ability to change prices dynamically based on market conditions. In dynamic pricing, the price of a product varies depending on the demand characteristics of the customer or the supply situation of the seller. For instance, online retailers from Amazonto Walmart change prices on many products based on time of day, demand for the product, and users' prior visits to their sites. Using big data analytics, some online firms can adjust prices at the individual level based on behavioral targeting parameters such as whether the consumer is a price haggler (who will receive a lower price offer) versus a person who accepts offered prices and does not search for lower prices. Prices can also vary by ZIP code, with higher prices set for poor sections of a community. Uber, along with other ride services, uses surge pricing to adjust prices of a ride based on demand.

Figure 10. 2illustrates how much savings result from eliminating each of these layers in the distribution process. By selling directly to consumers or reducing the number of intermediaries, companies can raise profits while charging lower prices. The removal of organizations or business process layers responsible for intermediary steps in a value chain is called disintermediation. E-commerce has also given rise to a completely new set of new intermediaries such as Amazon, eBay, PayPal, and Blue Nile. Therefore, disintermediation differs from one industry to another.

FIGURE 10.2 THE BENEFITS OF DISINTERMEDIATION TO THE CONSUMER



The typical distribution channel has several intermediary layers, each of which adds to the final cost of a product, such as a sweater. Removing layers lowers the final cost to the customer.

TABLE 10.3 DIGITAL MARKETS COMPARED WITH TRADITIONAL MARKETS

	DIGITAL MARKETS	TRADITIONAL MARKETS
Information asymmetry	Asymmetry reduced	Asymmetry high
Search costs	Low	High
Transaction costs	Low (sometimes virtually nothing)	High (time, travel)
Delayed gratification	High (or lower in the case of a digital good)	Lower: purchase now
Menu costs	Low	High
Dynamic pricing	Low cost, instant	High cost, delayed
Price discrimination	Low cost, instant	High cost, delayed
Market segmentation	Low cost, moderate precision	High cost, less precision
Switching costs	Higher/lower (depending on product characteristics)	High
Network effects	Strong	Weaker
Disintermediation	More possible/likely	Less possible/unlikely

🔖 Topic- 18.2: What are the principal e-commerce business and revenue models?

18.2.1: Types of E-commerce

There are many ways to classify electronic commerce transactions—one is by looking at the nature of the participants. The three major electronic commerce categories are business-to-consumer (B2C) e-commerce, business-to-business (B2B) e-commerce, and consumer-to-consumer (C2C) e-commerce.

- **Business-to-consumer (B2C)** electronic commerce involves retailing products and services to individual shoppers. Amazon, Walmart, and iTunes are examples of B2C commerce. BarnesandNoble.com , which sells books, software, and music to individual consumers, is an example of B2C e-commerce.
- **Business-to-business (B2B)** electronic commerce involves sales of goods and services among businesses. Elemica's website for buying and selling chemicals and energy is an example of B2B e-commerce.
- **Consumer-to-consumer (C2C)** electronic commerce involves consumers selling directly to consumers. For example, eBay, the giant web auction site, enables people to sell their goods to other consumers by auctioning their merchandise off to the highest bidder or for a fixed price. eBay acts as a middleman by creating a digital platform for peer-to-peer commerce. Craigslist is the most widely used platform consumers use to buy from and sell directly to others.

Another way of classifying electronic commerce transactions is in terms of the platforms participants use in a transaction. Until recently, most e-commerce transactions took place using a desktop PC connected to the Internet over a wired network. Several wireless mobile alternatives have such as smartphones and tablet computers. The use of handheld wireless devices for purchasing goods and services from any location is termed mobile commerce or m-commerce. All three types of e-commerce transactions can take place using m-commerce technology,

13.2.2: E-commerce Business Models

Changes in the economics of information described earlier have created the conditions for entirely new business models to appear, while destroying older business models. Table 10. 5describes some of the most important Internet business models that have emerged. All, in one way or another, use the Internet (including apps on mobile devices) to add extra value to existing products and services or to provide the foundation for new products and services.

Portal: Portals are gateways to the web and are often defined as those sites that users set as their home page. Some definitions of a portal include search engines such as Google and Bing even if few make these sites their home page. Portals such as Yahoo, Facebook, MSN, and AOL offer powerful web search tools as well as an integrated package of content and services such as news, e-mail, instant messaging, maps, calendars, shopping, music downloads, video streaming, and more all in one place. The portal business model now provides a destination site where users start their web searching and linger to read news, find entertainment, meet other people, and, of course, be exposed to advertising, which provides the revenues to support the portal. Facebook is a very different kind of portal based on social networking. Portals generate revenue primarily by attracting very large audiences, charging advertisers for display ad placement (similar to traditional newspapers), collecting referral fees for steering customers to other sites, and charging for premium services. In 2017, portals (not including Google or Bing) will generate an estimated $37 billion in display ad revenues. Although there are hundreds of portal/search engine sites, the top four portals (Yahoo, Facebook, MSN, and AOL) gather more than 95 percent of the Internet portal traffic because of their superior brand recognition.

E-tailer: Online retail stores, often called e-tailers, come in all sizes, from giant Amazon with 2015 revenues of more than $107 billion, to tiny local stores that have websites. An e-tailer is similar to the typical bricks-and-mortar storefront, except that customers only need to connect to the Internet to check their inventory and place an order. Altogether, online retail (the sale of physical goods online)will generate about $457 billion in revenues in 2017. The value proposition of e-tailers is to provide convenient, low-cost shopping 24/7; large selections; and consumer choice. Some e-tailers, such as Walmart.comor Staples.com , referred to as bricks-and-clicks, are subsidiaries or divisions of existing physical stores and carry the same products.

Content Provider: Although e-commerce began as a retail product channel, it has increasingly become a global content channel. Content is defined broadly to include all forms of intellectual property. Intellectual property refers to tangible and intangible products of the mind for which the creator claims a property right. Content providers distribute information content—such as digital video, music, photos, text, and artwork—over the web. The value proposition of online content providers is that consumers can conveniently find a wide range of content online and purchase this content inexpensively to be played or viewed on multiple computer devices or smartphones.The phenomenal popularity of the iTunes Store, and Apple's Internet connected devices such as the iPhone, iPod, and iPad, have enabled new forms of digital content delivery from podcasting to mobile streaming. Podcasting is a method of publishing audio or video broadcasts through the Internet, allowing subscribing users to download audio or video files onto their personal computers, smartphones, tablets, or portable music players. Streaming is a publishing method for music and video files that flows a continuous stream of content to a user's device without being stored locally on the device. Estimates vary, but total online content will generate about around $24 billion in 2017, one of the fastest-growing e-commerce segments, growing at an estimated 18 percent annual rate.

Transaction Broker: Sites that process transactions for consumers normally handled in person, by phone, or by mail are transaction brokers. The largest industries using this model are financial services and travel services. The online transaction broker's primary value propositions are savings of money and time and providing an extraordinary inventory of financial products and travel packages in a single location.

Market Creator: Market creators build a digital environment in which buyers and sellers can meet, display products, search for products, and establish prices. The value proposition of online market creators is that they provide a platform where sellers can easily display their wares and purchasers can buy directly from sellers.

Service Provider: Whereas e-tailers sell products online, service providers offer services online. Photo sharing and online sites for data backup and storage all use a service provider business model. Software is no longer a physical product with a CD in a box but, increasingly, software as a service (SaaS) that you subscribe to online rather than purchase from a retailer, such as Office 365.

Community Provider (Social Networks): Community providers are sites that create a digital online environment where people with similar interests can transact (buy and sell goods); share interests, photos, videos; communicate with like-minded people; receive interest-related information; and even play out fantasies by adopting online personalities called avatars. Social networking sites Facebook, Google+, Tumblr, Instagram, LinkedIn, and Twitter and hundreds of other smaller, niche sites such as Sportsvite all offer users community-building tools and services. Social networking sites have been the fastest-growing websites in recent years, often doubling their audience size in a year.

18.2.3: E-commerce Revenue Models

A firm's revenue model describes how the firm will earn revenue, generate profits, and produce a superior return on investment.

Advertising Revenue Model: In the advertising revenue model, a website generates revenue by attracting a large audience of visitors who can then be exposed to advertisements. The advertising model is the most widely used revenue model in e-commerce, and arguably, without advertising revenues, the web would be a vastly different experience from what it is now because people would be asked to pay for access to content. Content on the web—everything from news to videos and opinions—is free to visitors because advertisers pay the production and distribution costs in return for the right to expose visitors to ads. Companies will spend an estimated $77.3 billion on online advertising in 2017 (in the form of a paid message on a website, paid search listing, video, app, game, or other online medium, such as instant messaging). About $53 billion of this will be for mobile ads. Mobile ads will account for 68 percent of all digital advertising. In the past five years, advertisers have increased online spending and cut outlays on traditional channels such as radio and newspapers. In 2017, online advertising will grow at 15 percent and constitute about 38 percent of all advertising in the United States

Sales Revenue Model: In the sales revenue model, companies derive revenue by selling goods, information, or services to customers. Companies such as Amazon (which sells books, music, and other products), LLBean.com , and Gap.comall have sales revenue models. Content providers make money by charging for downloads of entire files such as music tracks (iTunes Store) or books or for downloading music and/or video streams (Hulu.comTV shows). Apple has pioneered and strengthened the acceptance of micropayments. Micropayment systems provide content providers with a cost-effective method for processing high volumes of very small monetary transactions (anywhere from 25 cents to $5.00 per transaction).

Subscription Revenue Model: In the subscription revenue model, a website offering content or services charges a subscription fee for access to some or all of its offerings on an ongoing basis. Content providers often use this revenue model. For instance, the online version of Consumer Reports provides access to premium content, such as detailed ratings, reviews, and recommendations, only to subscribers, who have a choice of paying a $7.99 to 12.99 monthly subscription fee or a $30.00 annual fee. Netflix is one of the most successful subscriber sites with more that 75 million customers worldwide in 2016. The New York Times had about 1.3 million online paid subscribers, and the Wall Street Journal about 1 million in 2016. To be successful, the subscription model requires the content to be perceived as differentiated, having high added value, and not readily available elsewhere or easily replicated.

Free/Freemium Revenue Model: In the free/freemium revenue model, firms offer basic services or content for free and charge a premium for advanced or special features. For example, Google offers free applications but charges for premium services. Pandora, the subscription radio service, offers a free service with limited play time and advertising and a premium service with unlimited play. Spotify music service also uses a freemium business model. The idea is to attract very large audiences with free services and then convert some of this audience to pay a subscription for premium services. One problem with this model is converting people from being freeloaders into paying customers. “Free” can be a powerful model for losing money. None of the freemium music streaming sites have earned a profit to date. Nevertheless, they are finding that free service with ad revenue is more profitable than the paid subscriber part of their business.

Transaction Fee Revenue Model: In the transaction fee revenue model, a company receives a fee for enabling or executing a transaction. For example, eBay provides an online auction marketplace and receives a small transaction fee from a seller if the seller is successful in selling an item. E*Trade, an online stockbroker, receives transaction fees each time it executes a stock transaction on behalf of a customer. The transaction revenue model enjoys wide acceptance in part because the true cost of using the platform is not immediately apparent to the user.

Affiliate Revenue Model: In the affiliate revenue model, websites (called affiliate websites) send visitors to other websites in return for a referral fee or percentage of the revenue from any resulting sales. Referral fees are also referred to as lead generation fees. For example, MyPoints makes money by connecting companies to potential customers by offering special deals to its members. When members take advantage of an offer and make a purchase, they earn points they can redeem for free products and services, and MyPoints receives a referral fee. Community feedback sites such as Epinions and Yelp receive much of their revenue from steering potential customers to websites where they make a purchase. Amazon uses affiliates that steer business to the Amazon website by placing the Amazon logo on their blogs. Personal blogs often contain display ads as part of affiliate programs. Some bloggers are paid directly by manufacturers, or receive free products, for speaking highly of products and providing links to sales channels.