

Today, it's hard to remember how much of what we take for granted was pioneered by Amazon. "Customers who bought this, also bought that"; online customer reviews; customer ranking of customer reviews; books lists; Look Inside the Book; automatic free shipping for certain orders or frequent customers; and Kindle books and devices were all novel concepts when Amazon introduced them (Figure 3-14).

Amazon's retailing business operates on very thin margins. Products are usually sold at a discount from the stated retail price, and 2-day shipping is free for Amazon Prime members (who pay an annual fee of \$99). How does it do it? For one, Amazon drives its employees incredibly hard. Former employees claim the hours are long, the pressure is severe, and the workload is heavy. But what else? It comes down to Moore's Law and the innovative use of nearly free data processing, storage, and communication.

In addition to online retailing, Amazon also sells order fulfillment services. You can ship your inventory to an Amazon warehouse and access Amazon's information systems just as if they were yours. Using technology known as Web services (discussed in Chapter 6), your order processing information systems can directly integrate, over the Web, with Amazon's inventory, fulfillment, and shipping applications. Your customers need not know that Amazon played any role at all. You can also sell that same inventory using Amazon's retail sales applications.

Amazon Web Services (AWS) allow organizations to lease time on computer equipment in very flexible ways. Amazon's Elastic Cloud 2 (EC2) enables organizations to expand and contract the computer resources they need within minutes. Amazon has a variety of payment plans, and it is possible to buy computer time for less than a penny an hour. Key to this capability is the ability for the leasing organization's computer programs to interface with Amazon's to automatically scale up and scale down the resources leased. For example, if a news site publishes a story that causes a rapid ramp-up of traffic, that news site can, programmatically, request, configure, and use more computing resources for an hour, a day, a month, whatever.

With its Kindle devices, Amazon has become both a vendor of tablets and, even more importantly in the long term, a vendor of online music and video. And to induce customers to buy Kindle apps, in 2013 Amazon introduced its own currency, Amazon Coins. In mid-2014, Amazon introduced the Fire phone, which, among other attributes, makes it even

easier to, you guessed it, order from Amazon! And, just as we went to press, Amazon opened a 3D printing store from which customers can customize their own toys, jewelry, dog bones and dozens of other products.⁴

Finally, Jeff Bezos announced in 2014 that Amazon was experimenting with package delivery using drones, a service called Prime Air.⁵ Critics derided the idea, but Amazon is serious enough about it to be hiring in May 2014.⁶ But that's in the future; consider a business service that Amazon.com is offering right now.

Fulfillment by Amazon (FBA)

Fulfillment by Amazon (FBA) is an Amazon service by which other sellers can ship goods to Amazon warehouses for stocking, order packaging, and shipment. FBA customers pay a fee for the service as well as for inventory space. Amazon uses its own inventory management and order fulfillment business processes and information systems to fulfill the FBA customers' orders.

FBA customers can sell their goods on Amazon.com, sell them via their own sales channels, or both. If the FBA customer sells on Amazon.com, Amazon will provide customer service for order processing (handling returns, fixing erroneously packed orders, answering customer order queries, and the like).

The costs for Fulfillment by Amazon depend on the type and size of the goods to be processed. As of February 2014, the fees for regular-sized goods for a company like AllRoad are:⁷

- Order handling per order is \$1.00.
- Pick and pack per item is \$1.02.
- Weight handling between \$.46 for less than 1 pound to \$1.34 plus \$.34 per pound for items over 2 pounds.
- Storage per cubic foot per month is a \$.48 between January and September and \$.64 from October to December.

If goods are sold via Amazon.com, Amazon uses its own information systems to drive the order fulfillment process. However, if the goods are sold via an FBA customer's sales channel, then the FBA customer must connect its own information systems with those at Amazon. Amazon provides a standardized interface by which this is done called Amazon Marketplace Web Service (MWS). Using Web-standard technology (see Chapter 6), FBA customers' order and payment data are directly linked to Amazon's information systems.

⁴<http://www.amazon.com/b?ie=UTF8&node=8323871011>

⁵Marcus Wholsen, "Jeff Bezos Says Amazon Is Seriously Serious About Drone Deliveries," *Wired*, accessed May 22, 2014, www.wired.com/2014/04/amazon-delivery-drones.

⁶George Anders, "Amazon's Drone Team Is Hiring: Look at These Nifty Job Ads," *Forbes*, accessed May 22, 2014, <http://www.forbes.com/2014/05/19/amazons-drone-team-is-hiring/>.