The Amazon of Innovation

On November 26, 2012, Amazon.com customers ordered 26.5 million items worldwide, an average of 306 items per second. On its peak order-fulfillment day, Amazon shipped more than 15.6 million units, and the last unit delivered in time for Christmas was ordered on December 24 at 11:44 AM and delivered that same day, 3 hours later.[12] Such performance is only possible because of Amazon's innovative use of information systems. Some of its major innovations are listed in Figure 1-8.

You may think of Amazon as simply an online retailer, and that is indeed where the company achieved most of its success. To do this, Amazon had to build enormous supporting infrastructure—just imagine the information systems and fulfillment facilities needed to ship 15.6 million items on a single day. That infrastructure, however, is only needed during the busy holiday season. Most of the year, Amazon is left with excess infrastructure capacity. Starting in 2000, Amazon began to lease some of that capacity to other companies. In the process, it played a key role in the creation of what are termed *cloud services*, which you will learn about in Chapter 4. For now, just think of cloud services as computer resources somewhere out in the Internet that are leased on flexible terms. Today, Amazon's business lines can be grouped into three major categories:

- Online retailing
- Order fulfillment
- Cloud services

Consider each.

Amazon created the business model for online retailing. It began as an online bookstore, but every year since 1998 it has added new product categories. In 2011, the company sold goods in 29 product categories. Undoubtedly, there will be more by the time you read this.

Amazon is involved in all aspects of online retailing. It sells its own inventory. It incentivizes you, via the Associates program, to sell its inventory as well. Or it will help you sell your inventory within its product pages or via one of its consignment venues. Online auctions are the major aspect of online sales in which Amazon does not participate. It tried auctions in 1999, but it could never make inroads against eBay.[13]

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.

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 $79). How do they 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) allows 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.

Finally, with the Kindle devices, Amazon has become a vendor of both 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.

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[12]"For the Eighth Consecutive Year, Amazon Ranks #1 in Customer Satisfaction During the Holiday Shopping Season," *Amazon.com*, last modified December 27, 2012, *http://phx.corporate-ir.net/phoenix.zhtml?c=176060&p=irol-newsArticle&ID=1769785&highlight=.*

[13]For a fascinating glimpse of this story from someone inside the company, see "Early Amazon: Auctions" at *http://glinden.blogspot.com/2006/04/early-amazon-auctions.html*, accessed August 2012.
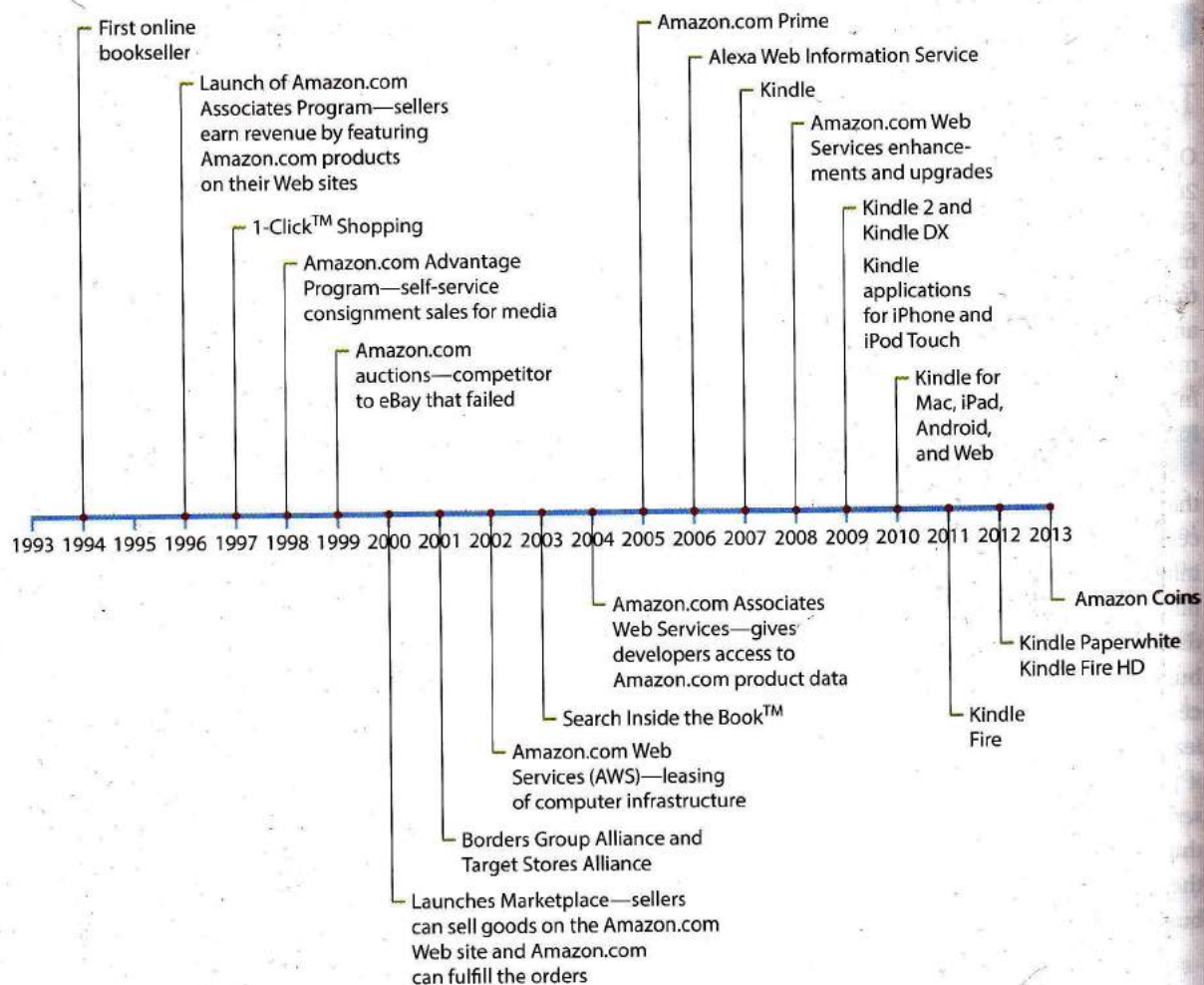
First online bookseller

Launch of Amazon.com Associates Program—sellers earn revenue by featuring Amazon.com products on their Web sites

1-Click™ Shopping

Amazon.com Advantage Program—self-service consignment sales for media

Amazon.com auctions—competitor to eBay that failed

Amazon.com Prime

Alexa Web Information Service

Kindle

Amazon.com Web Services enhancements and upgrades

Kindle 2 and Kindle DX

Kindle applications for iPhone and iPod Touch

Kindle for Mac, iPad, Android, and Web

1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

Amazon.com Associates Web Services—gives developers access to Amazon.com product data

Search Inside the Book™

Amazon.com Web Services (AWS)—leasing of computer infrastructure

Borders Group Alliance and Target Stores Alliance

Launches Marketplace—sellers can sell goods on the Amazon.com Web site and Amazon.com can fulfill the orders

Amazon Coins

Kindle Paperwhite Kindle Fire HD

Kindle Fire

Figure 1-8

Innovation at Amazon

Source: Data from Amazon.com: *http://phx.corporate-ir.net/phoenix.zhtml?c=176060&p=irol-corporateTimeline*, accessed June 2013.

QUESTIONS

1-4. In what ways does Amazon, as a company, evidence the willingness and ability to collaborate?

1-5. In what ways does Amazon, as a company, evidence the willingness and ability to experiment? Use Amazon Coins as an example: *https://developer.amazon.com/post/Tx2EZGRG23VNQ0K/Introducing-Amazon-Coins-A-New-Virtual-Currency-for-Kindle-Fire.html.*

1-6. In what ways do you think the employees at Amazon must be able to perform systems and abstract thinking?

1-7. Describe, at a high level, the principal roles played by each of the five components of an information system that supports order fulfillment.

1-8. Choose any five of the innovations in Figure 1-8 and explain how you think Moore's Law facilitated each innovation.

1-9. Suppose you work for Amazon or a company that takes innovation as seriously as Amazon does. What do you suppose is the likely reaction to an employee who says to his or her boss, "But, I don't know how to do that!"?

1-10. Using your own words and your own experience, what skills and abilities do you think you need to have to thrive at an organization like Amazon?