Many analysts wonder if Amazon ([*www.amazon.com*](http://www.amazon.com)) will ever fulfill its original promise to revolutionize retailing. Despite being the largest online retailer with annual sales in excess of $10 billion, Amazon has not shown the consistent profit growth that investors have expected. In fact, profits have fallen, and the company’s operating margins (about 4.1 percent) are less than Wal-Mart’s (5.9 percent). In addition, competition is increasing, with other Web sites becoming preferred first stops on the Web. Google, for one, has replaced retail sites such as Amazon as the place where many people start their shopping (see Froogle at[*http://froogle.google.com*](http://froogle.google.com)). Other Web sites such as MySpace and YouTube (owned by Google) have become prime places for many people to gather online and eventually shop.

**The IT Solutions**

By 2007, Amazon had spent 12 years and some $2 billion building the infrastructure of its online store, which is among the biggest and most reliable in the world. However, Amazon uses only 10 percent of its processing capacity at any one time. As a result, the company has decided to provide a series of computing, storage, and other services that make its infrastructure available to companies and individuals to help them run the technical and logistical parts of their businesses. Three of these services are the Simple Storage Service (S3), the Elastic Compute Cloud (EC2), and the Mechanical Turk. With S3, Amazon charges 15 cents per gigabyte per month for businesses to store data and applications on Amazon disk drives. Through EC2, Amazon rents out processing power, starting at 10 cents per hour for the equivalent of one basic server. The Mechanical Turk service combines processing power with networks of real people who are paid to do the kind of work that machines cannot do well, such as recognizing inappropriate content in images or transcribing audio. Companies post pieces of work onto the Mechanical Turk and pay people online, for which Amazon receives a 10 percent commission.

**The Results**

Thousands of companies are using Amazon services. For example, Webmail.us ([*www.webmail.us*](http://www.webmail.us)) is an e-mail hosting company that maintains e-mail programs, filters spam, and removes malicious software such as viruses and worms from e-mail for clients. The company uses S3 for storage, sending Amazon more than a terabyte of data per week. To host the development effort required to build and maintain its systems’ interface to S3, Webmail.us uses EC2. The company also uses EC2 for processing tasks related to storage backup. Webmail.us states that Amazon cut its data backup costs by 75 percent overnight. Another example is Startup company Powerset ([*www.powerset.com*](http://www.powerset.com)), which offers searches that use natural language rather than stilted phrases and imprecise keywords. This task requires large amounts of processing capacity. Powerset uses S3 and EC2 to keep its costs down, while handling the background work of reading, processing, and indexing the vast number of Web pages that underlie its search processes.

* Since its debut, the Mechanical Turk has attracted thousands of “Turkers” working for dozens of companies. One company, Efficient Frontier ([*www.efrontier.com*](http://www.efrontier.com)), uses the service to analyze tens of thousands of search keywords to see which ones best attract potential shoppers to particular Web sites. Another company, Casting Words ([*www.castingwords.com*](http://www.castingwords.com)), uses Turkers to transcribe 10-minute podcast segments, assemble them into full transcriptions, and check the quality. The jury is out on whether Amazon services will contribute significantly to the company’s bottom line. However, these service offerings are a bid by Amazon to be a leading player in the next wave of the Internet. Specifically, Amazon is competing directly with Google, Microsoft, and other giants to build a Web-based, global computing platform. It remains to be seen if Amazon will be successful in this endeavor.