E-commerce, as one kind of new business model, is commercial trade over a wide range of activities with information technology, such as online shopping, online transactions and online payment businesses. Although the business model is the most important for the development of e-commerce, the development of information technology is also very important. E-commerce can not develop well without the development of information technology. Information technology is the foundation of e-commerce. At first, the emergence of e-commerce came from the application of EDI. Then, with the development of information technology, people gradually adopted more and more new information technology in e-commerce to promote its development, which led to high efficiency and low cost for business operations. Many popular technologies such as RFID, mobile computing and cloud computing are adopted by e-commerce.

From the perspective of the development of e-commerce technologies, e-commerce solutions can be divided into three kinds. Small and medium size companies, solutions for medium size to large businesses and solutions for large businesses. Small and medium size companies usually use a basic Commerce Service Provider (CSP) to provide e-commerce services because of weak capital resources. CSP can provide a wide range of standard e-commerce services including catalog and transaction processing. Taobao is a typical CSP. For midsize enterprises and some large enterprises, they can choose to purchase the equipment and establish their own e-commerce system so that they can have more control over the site. In general, e-commerce systems for medium size enterprises can interact with database software. Due to high transaction rates and partnerships, large enterprises usually need customizable systems according to their own characteristics. Solutions for large businesses include ERP, CRM, SCM, knowledge management and so on. Now e-commerce provides people with a brand-new communication path in different fields including taxation, banking, transportation, commodity inspection, customs, foreign exchange, insurance, telecommunications and authentication, as well as units such as shopping malls, merchants, enterprises and clients. In addition, with the development of information technology, e-commerce is developing from wired to mobile, from non-embedded to embedded, and from fixed to feasibly customized.
It can be seen that grasping the trends of information technology is very important for developing e-commerce. Only when adopting proper information technology, can e-commerce solutions be accepted by customers and developed fast. Although there are various kinds of information technologies relative to e-commerce, they still have something in common. Any e-commerce site needs fundamental technologies to support it. In addition, advanced technologies can make e-commerce sites more convenient and colorful. We will present e-commerce fundamental technologies, mobile communication technology and advanced technologies in the following.

6.1 E-Commerce Fundamental Technology

E-commerce fundamental technology refers to those technologies any e-commerce solution will need. As we know, e-commerce is based on the Internet. All the information is transferred and displayed on the Internet. So Web technology is needed. In addition, EDI is used to exchange electronic data. E-commerce develops on the basis of EDI technology. Meanwhile, e-commerce needs information processing technologies such as GPS, GIS and RFID. Moreover, there is no doubt that e-commerce is related to electronic payment and customer information protection. So how to protect online transactions and information safety is very important. If the e-commerce system is unsafe, customer information can be easily stolen and hackers can easily pretend to be real customers to purchase commodities. Therefore, security technology is also one of the fundamental e-commerce technologies. Next we will briefly introduce the four kinds of e-commerce fundamental technologies.

6.1.1 Web Technology

Web technology mainly consists of the Web technical structure, markup languages and computer networks. As we know, most e-commerce systems are based on Client-Server architecture, and the Web technical structure is used to standardize the process of information transfer. The markup languages are used to present the information on the WebPages. Meanwhile, computers are distributed in different places so that how to build a computer network is very important.

6.1.1.1 The Web

The structure of Web technology is shown in Fig. 6.1. The Web client acts as the terminal with a browser while the Web server is the mainframe which stores multimedia data resources and provides www services. The middleware invokes