

Chapter 9

E-commerce: Digital Markets, Digital Goods

LEARNING TRACK 5: E-COMMERCE PAYMENT SYSTEMS

Several electronic payment systems have been developed to pay for goods electronically on the Internet. Electronic payment systems for the Internet include systems for digital credit card payments, digital wallets, accumulated balance digital payment systems, online stored value payment systems, digital checking, and electronic billing presentment and payment systems.

TYPES OF ELECTRONIC PAYMENT SYSTEMS

Nearly all online payments in the United States (90 percent) use credit cards, or rely on the credit card system. Businesses can also contract with services that extend the functionality of existing credit card payment systems. **Digital wallets** make paying for purchases over the Web more efficient by eliminating the need for shoppers to enter their address and credit card information repeatedly each time they buy something. The digital wallet securely stores credit card and owner identification information and enters the shopper's name, credit card number, and shipping information automatically when invoked to complete a purchase. Google Checkout is an example.

Micropayment systems have been developed for purchases of less than \$10, such as downloads of individual articles or music clips, which would be too small for conventional credit card payments. **Accumulated balance digital payment systems** enable users to make micropayments and purchases on the Web, accumulating a debit balance that they must pay periodically on their credit card or telephone bills. Examples are Valista's PaymentsPlus used by AOL, Vodafone, and NTT DoCoMo, and Clickshare, which is widely used by the online newspaper and publishing industry.

Online stored value payment systems enable consumers to make instant online payments to merchants and other individuals based on value stored in an online digital account. Some online stored value payment systems such as Valista are merchant platforms. Others are focused on peer-to-peer payments, such as PayPal. PayPal is owned by eBay and makes it possible for people to send money to vendors or individuals who are not set up to accept credit card payments.

Digital checking systems such as PayByCheck extend the functionality of existing checking accounts so they can be used for online shopping payments. Digital checks are processed much faster than traditional paper-based checking.

Electronic billing presentment and payment systems are used for paying routine monthly bills. They enable users to view their bills electronically and pay them through electronic fund transfers from bank or credit card accounts. These services notify purchasers about bills that are due, present the bills, and process the payments. Some of these services, such as CheckFree,

consolidate subscribers' bills from various sources so that they can all be paid at one time. Table 9-1 summarizes the features of some of these e-commerce payment systems.

DIGITAL PAYMENT SYSTEMS FOR M-COMMERCE

Use of mobile handsets as payment devices is already well established in Europe, Japan, and South Korea. Three kinds of mobile payment systems are used in Japan, and these provide a glimpse of the future of mobile payment in the United States. Japanese cell phones support stored value systems charged to credit cards or bank accounts, mobile debit cards (tied to personal bank accounts), and mobile credit cards. Japanese cell phones act like mobile wallets, containing a variety of payment mechanisms. Consumers can pay merchants by simply waving the cell phone at a merchant payment device that can accept payments. Japan's largest phone company NTT DoCoMo introduced wireless RFID cell phones and a related payment system (FeliCa) in 2004. Currently 10 million wallet phones are in use in Japan.

In the United States, the cell phone has not yet evolved into a fully capable mobile commerce and payment system. The cell phone in the United States is not connected to a wide network of financial institutions, but instead resides behind the walled garden of the telephone providers. In Europe and Asia, cell phone users can pay for a wide variety of real goods and services, and their cellphones are integrated into large financial institutions.

TABLE 9-1 EXAMPLES OF ELECTRONIC PAYMENT SYSTEMS FOR E-COMMERCE

PAYMENT DESCRIPTION	SYSTEM	COMMERCIAL EXAMPLE
Credit card payment systems	Protect information transmitted among users, merchant sites, and processing banks	Visa MasterCard American Express
Digital wallet	Software that stores credit card and other information to facilitate form completion and payment for goods on the Web	Google Checkout
Accumulated balance digital payment systems	Accumulates micropayment purchases as a debit balance that must be paid periodically on credit card or telephone bills	Valista PaymentsPlus Clickshare
Stored value payment systems	Enable consumers to make instant payments to merchants or individuals based on value stored in a digital account	PayPal, Valista
Digital checking	Provides electronic checks with a secure digital signature	PayByCheck
Electronic billing presentment and payment systems	Support electronic payments for online and physical store purchases of goods or services after the purchase have taken place	Yahoo! Bill Pay, CheckFree