

# Chapter 10

## Electronic Commerce Payment Systems

# Learning Objectives

1. Understand the shifts that are occurring with regard to online payments.
2. Discuss the players and processes involved in using credit cards online.
3. Discuss the different categories and potential uses of smart cards.
4. Discuss stored-value cards and identify under what circumstances they are best used.

# Learning Objectives

5. Describe the situations where e-micropayments are used and the alternative ways for handling these situations.
6. Describe the processes and parties involved in e-checking.
5. Understand the major types of mobile payments.
6. Describe payment methods in B2B EC, including payments for global trade.

# The Payment Revolution

- Critical factors that come into play in determining whether a particular method of e-payment achieves critical mass:
  - Independence
  - Interoperability and Portability
  - Security. How safe is the transfer?
  - Anonymity
  - Divisibility
  - Ease of Use
  - Transaction Fees
  - International Support
  - Regulations

# Using Payment Cards Online

- **payment card**

Electronic card that contains information that can be used for payment purposes

- Credit cards
- Charge cards
- Debit cards

# Using Payment Cards Online

- **PROCESSING CARDS ONLINE**

- **authorization**

- Determines whether a buyer's card is active and whether the customer has sufficient funds

- **settlement**

- Transferring money from the buyer's to the merchant's account

# Using Payment Cards Online

- Three basic configurations for processing online payments. The EC merchant may:
  - **Own the payment software**
  - **Use a point-of-sale system (POS) operated by an acquirer**
  - **payment service provider (PSP)**

A third-party service connecting a merchant's EC system to the appropriate acquiring bank or financial institution; PSPs must be registered with the various card associations they support

# Using Payment Cards Online

- **FRAUDULENT CARD TRANSACTIONS**

- Key tools used in combating fraud:

- **Address Verification System (AVS)**

Detects fraud by comparing the address entered on a Web page with the address information on file with the cardholder's issuing bank

- **Manual review**

# Using Payment Cards Online

- **Fraud screens and automated decision models**
- **card verification number (CVN)**

Detects fraud by comparing the verification number printed on the signature strip on the back of the card with the information on file with the cardholder's issuing bank

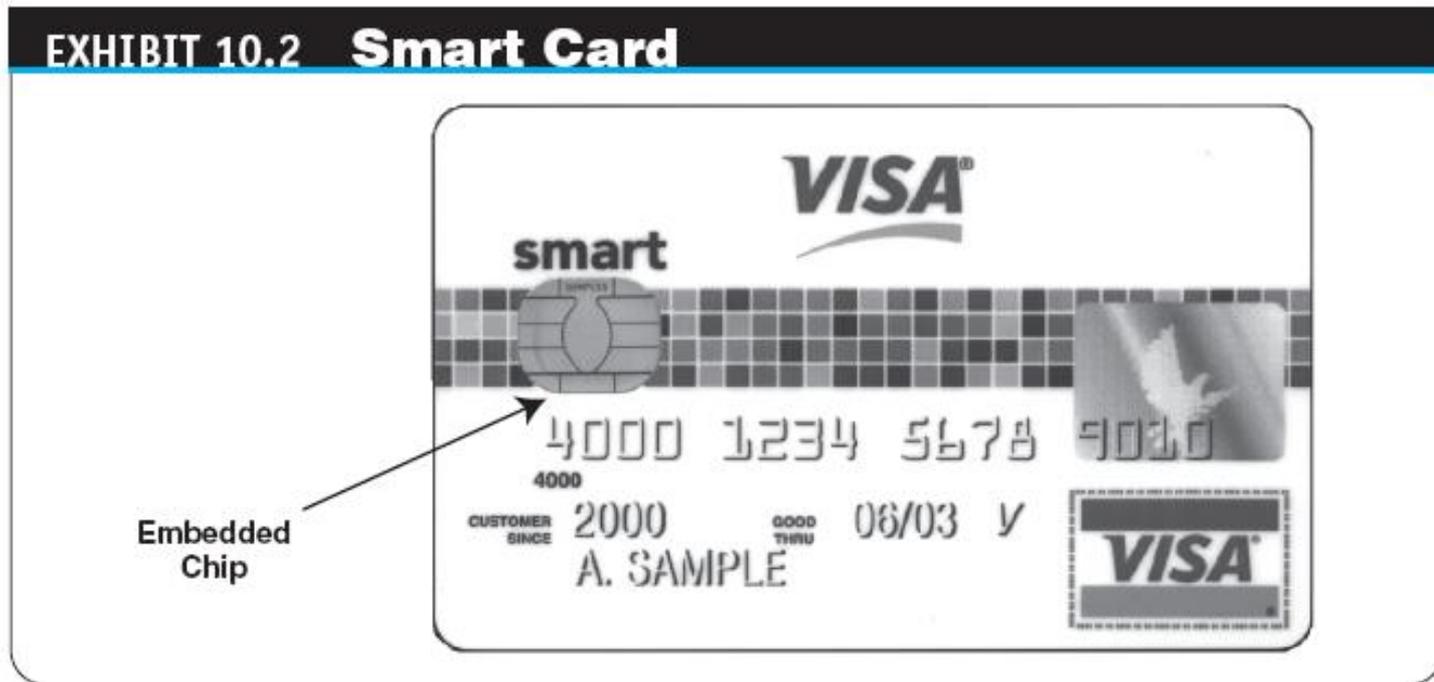
- **Card association payer authentication services**
- **Negative lists**

# Smart Cards

- **smart card**

An electronic card containing an embedded microchip that enables predefined operations or the addition, deletion, or manipulation of information on the card

## EXHIBIT 10.2 Smart Card



# Smart Cards

- **TYPES OF SMART CARDS**

- **contact card**

A smart card containing a small gold plate on the face that when inserted in a smart card reader makes contact and passes data to and from the embedded microchip

- **contactless (proximity) card**

A smart card with an embedded antenna, by means of which data and applications are passed to and from a card reader unit or other device without contact between the card and the card reader

# Smart Cards

- **smart card reader**

Activates and reads the contents of the chip on a smart card, usually passing the information on to a host system

- **smart card operating system**

Special system that handles file management, security, input/output (I/O), and command execution and provides an application programming interface (API) for a smart card

# Smart Cards

- **APPLICATIONS OF SMART CARDS**
  - **Retail Purchases**
  - **Transit Fares**

# Stored-Value Cards

- **stored-value card**

A card that has monetary value loaded onto it and that is usually rechargeable

- Stored-value cards come in two varieties:
  - *Closed loop* are single-purpose cards issued by a specific merchant or merchant group
  - *Open loop* are multipurpose cards that can be used to make debit transactions at a variety of retailers

# E-Micropayments

- **e-micropayments**

Small online payments, typically under \$10

- Five basic micropayment models that do not depend solely or directly on credit or debit cards
  1. Aggregation
  2. Direct payment
  3. Stored value
  4. Subscriptions
  5. À la carte

# E-Checking

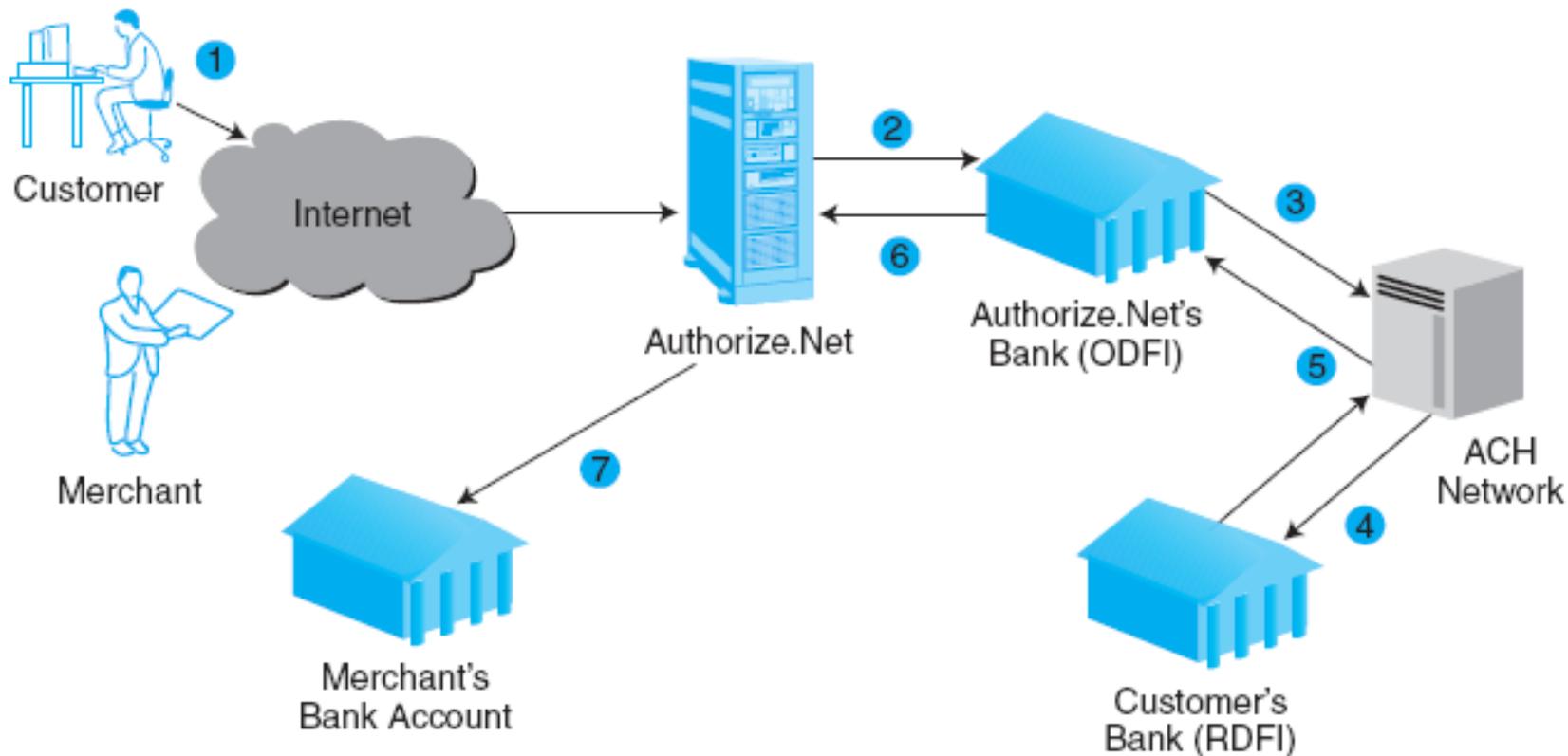
- **e-check**

A legally valid electronic version or representation of a paper check

- **Automated Clearing House (ACH) Network**

A nationwide batch-oriented electronic funds transfer system that provides for the interbank clearing of electronic payments for participating financial institutions

## EXHIBIT 10.3 Processing E-Checks with Authorize.Net



# Mobile Payments

- *Mobile payment*: payment transactions initiated or confirmed using a person's cell phone or smartphone
- **MOBILE PROXIMITY PAYMENTS**
  - Mobile proximity payments are used for making purchases in physical stores or transportation services.
  - Proximity payments involve a special mobile phone equipped with an integrated chip or smart card, a specialized reader that recognizes the chip when the chip comes within a short distance of the reader, and a network for handling the payment.

# Mobile Payments

- **MOBILE REMOTE PAYMENTS**

- **Making Mobile Payments**

1. The payer initiating the payment sets up an account with a mobile payment service provider (MPSP).
2. The user selects an item to purchase. The merchant asks for a payment.
3. To make the payment, the payer sends a text message (or a command) to the MPSP that includes the dollar amount and the receiver's mobile phone number.

# Mobile Payments

4. The MPSP receives the information and sends a message back to the payer, confirming the request and asking for the customer's PIN.
5. The payer receives the request on his or her mobile device and enters the PIN.
6. After the MPSP receives the payer's PIN, money is transferred to the receiver's account (credit card or bank account). The payer's account is debited.
7. After the transaction occurs, the payment information is sent to the payer's mobile device and his or her account at MPSP is debited.

- **MOBILE POS PAYMENTS**

# B2B Electronic Payments

- **CURRENT B2B PAYMENT PRACTICES**
- **enterprise invoice presentment and payment (EIPP)**

Presenting and paying B2B invoices online

# B2B Electronic Payments

- **EIPP Models**
  - Seller Direct
  - Buyer Direct
  - Consolidator

# B2B Electronic Payments

- **EIPP Options**

- **ACH Network**

- **purchasing cards (p-cards)**

Special-purpose payment cards issued to a company's employees to be used solely for purchasing nonstrategic materials and services up to a preset dollar limit

- **Fedwire or Wire Transfer**

- **letter of credit (L/C)**

A written agreement by a bank to pay the seller, on account of the buyer, a sum of money upon presentation of certain documents

# Managerial Issues

1. What payment methods should your B2C site support?
2. What e-micropayment strategy should your e-marketplace support?
3. What payment methods should the C2C marketplace support?
4. Should we outsource our payment gateway service?
5. How secure are e-payments?
6. What B2B payment methods should we use?

# Summary

1. Payment revolution
2. Using payment cards online
3. Smart cards
4. Stored-value cards
5. E-micropayments
6. E-checking
7. Mobile payments
8. B2B electronic payments



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