

Electronic Payment System



OBJECTIVES

- To understand the concept of Electronic Payment System and its security services.
- To bring out solution in the form of applications to uproot Electronic Payment.
- To understand working of various Electronic Payment System based applications.

What Electronic Payment system is?

Electronic payment system is a system which helps the customer or user to make online payment for their shopping.

- To transfer money over the Internet.
- Methods of traditional payment.
 - Check, credit card, or cash.
- Methods of electronic payment.
 - Electronic cash, software wallets, smart cards, and credit/debit cards.

Some Examples Of EPS:-

- ☐ Online reservation
- ☐ Online bill payment
- ☐ Online order placing (nirulas)
- ☐ Online ticket booking (Movie)

Two storage methods

- On-line
 - Individual does not have possession personally of electronic cash
 - Trusted third party, e.g. online bank, holds customers' cash accounts
- Off-line
 - Customer holds cash on smart card or software wallet
 - Fraud and double spending require tamper-proof encryption

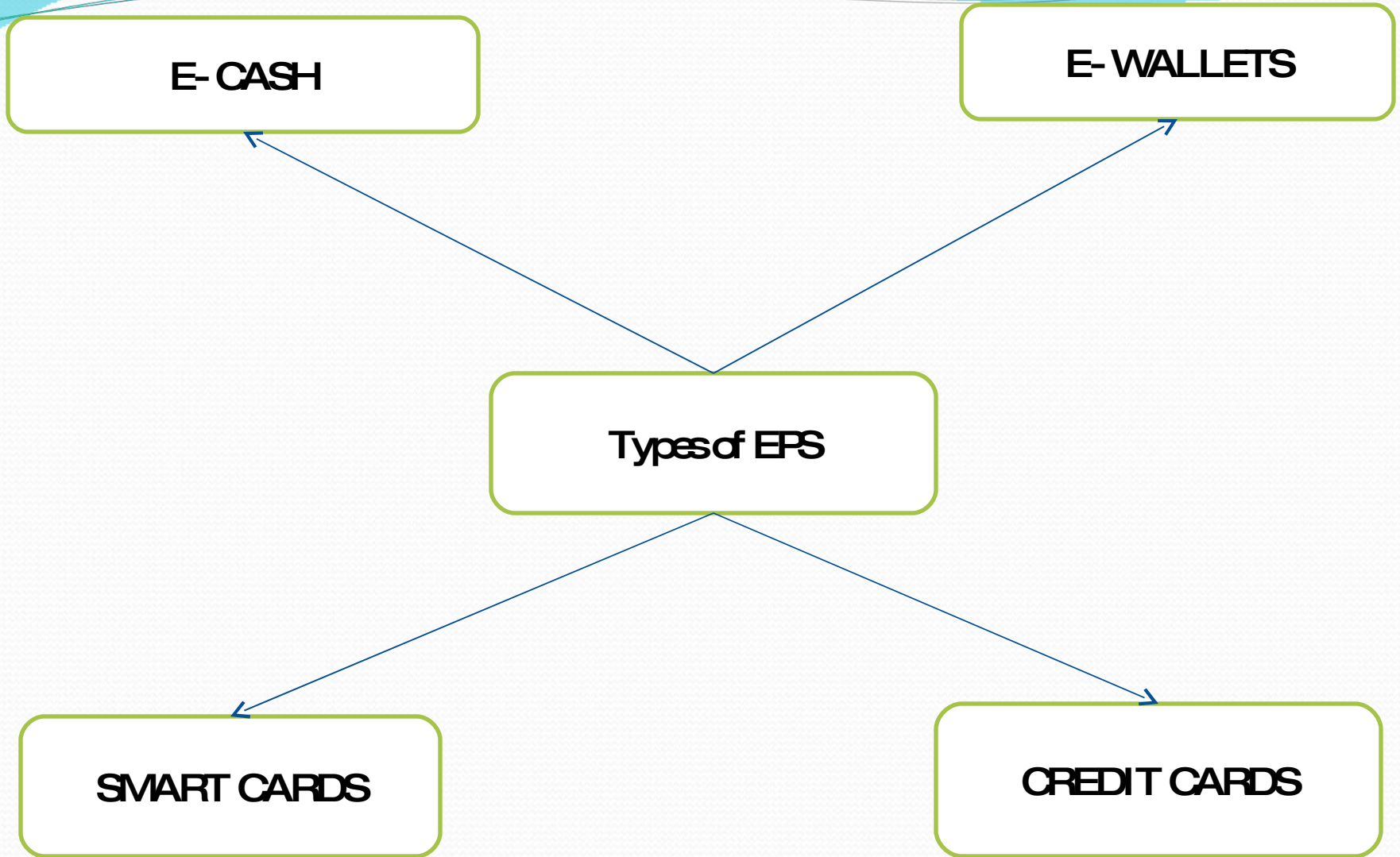
E- CASH

E- WALLETS

Types of EPS

SMART CARDS

CREDIT CARDS



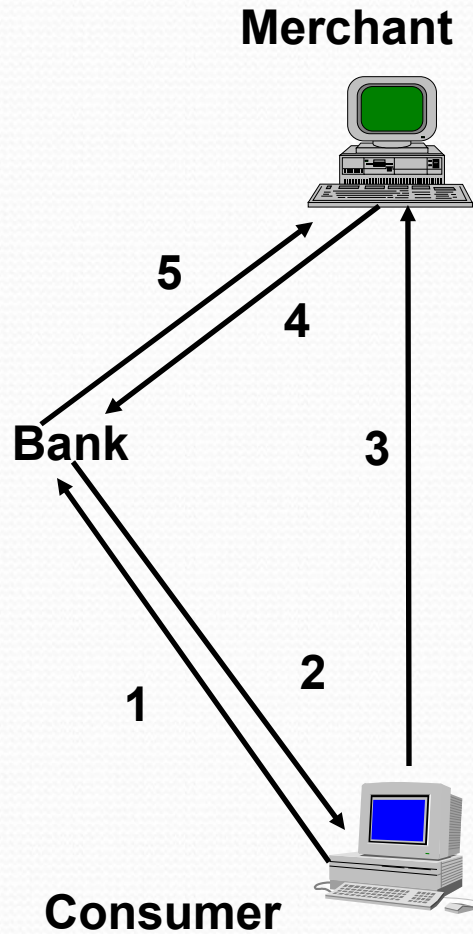
E-Cash

- A system that allows a person to pay for goods or services by transmitting a number from one computer to another.
- Like the serial numbers on real currency notes, the E-cash numbers are unique.
- This is issued by a bank and represents a specified sum of real money.
- It is anonymous and reusable.

Electronic Cash Security

- Complex cryptographic algorithms prevent double spending
 - Anonymity is preserved unless double spending is attempted
- Serial numbers can allow tracing to prevent money laundering

E-Cash Processing



1. Consumer buys e-cash from Bank
2. Bank sends e-cash bits to consumer (after charging that amount plus fee)
3. Consumer sends e-cash to merchant
4. Merchant checks with Bank that e-cash is valid (check for forgery or fraud)
5. Bank verifies that e-cash is valid
6. Parties complete transaction

E-Wallet

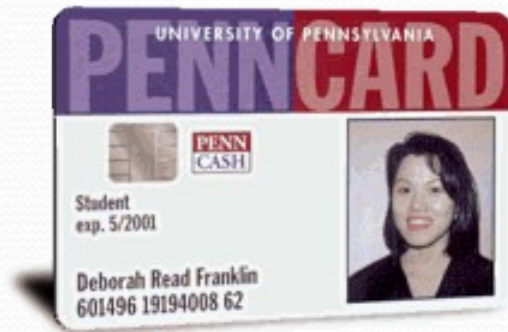
- The E-wallet is another payment scheme that operates like a carrier of e-cash and other information.
- The aim is to give shoppers a single, simple, and secure way of carrying currency electronically.
- Trust is the basis of the e-wallet as a form of electronic payment.

Procedure for using an e-wallet

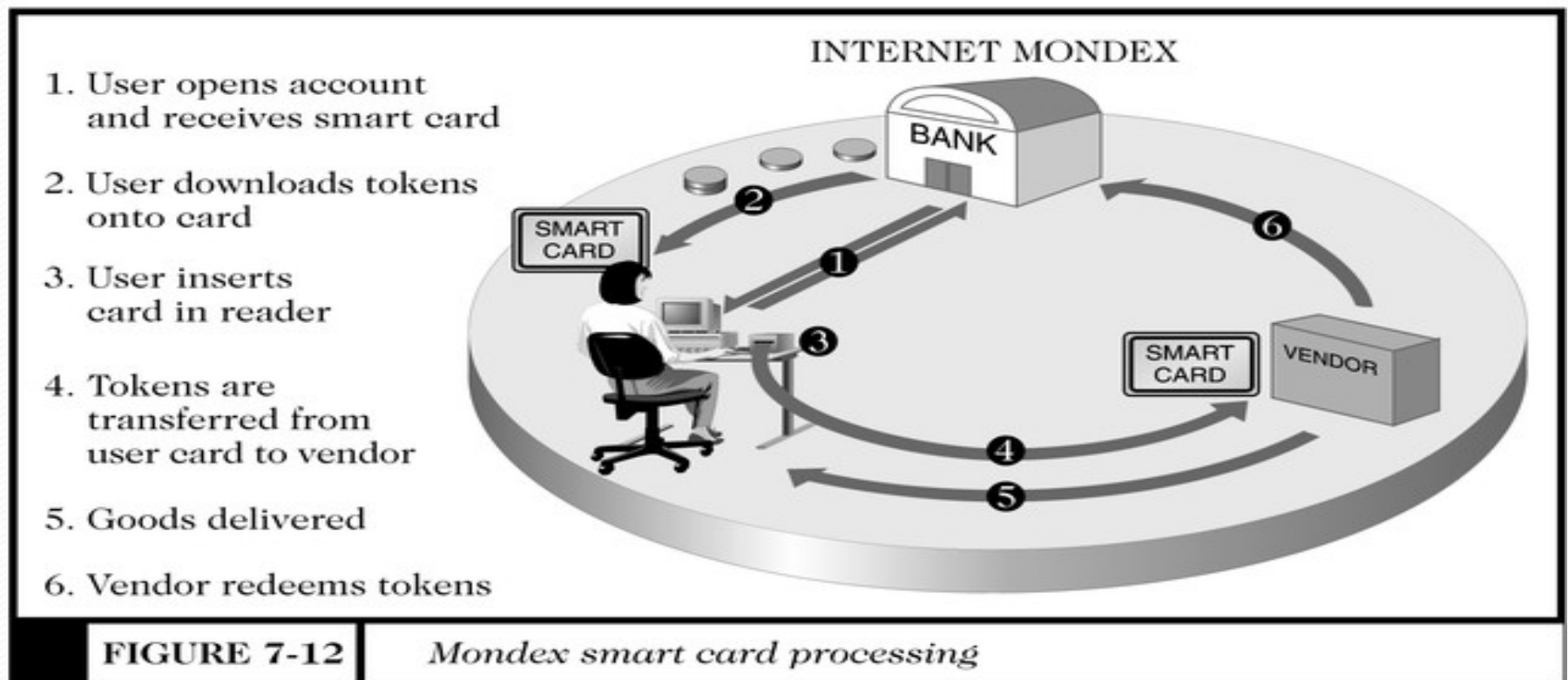
1. Decide on an online site where you would like to shop.
3. Download a wallet from the merchant's website.
5. Fill out personal information such as your credit card number, name, address and phone number, and where merchandise should be shipped.
7. When you are ready to buy, click on the wallet button, the buying process is fully executed.

Smart Cards

- A **smart card**, is any pocket-sized card with embedded integrated circuits which can process data
- This implies that it can receive input which is processed and delivered as an output



Smart card Processing

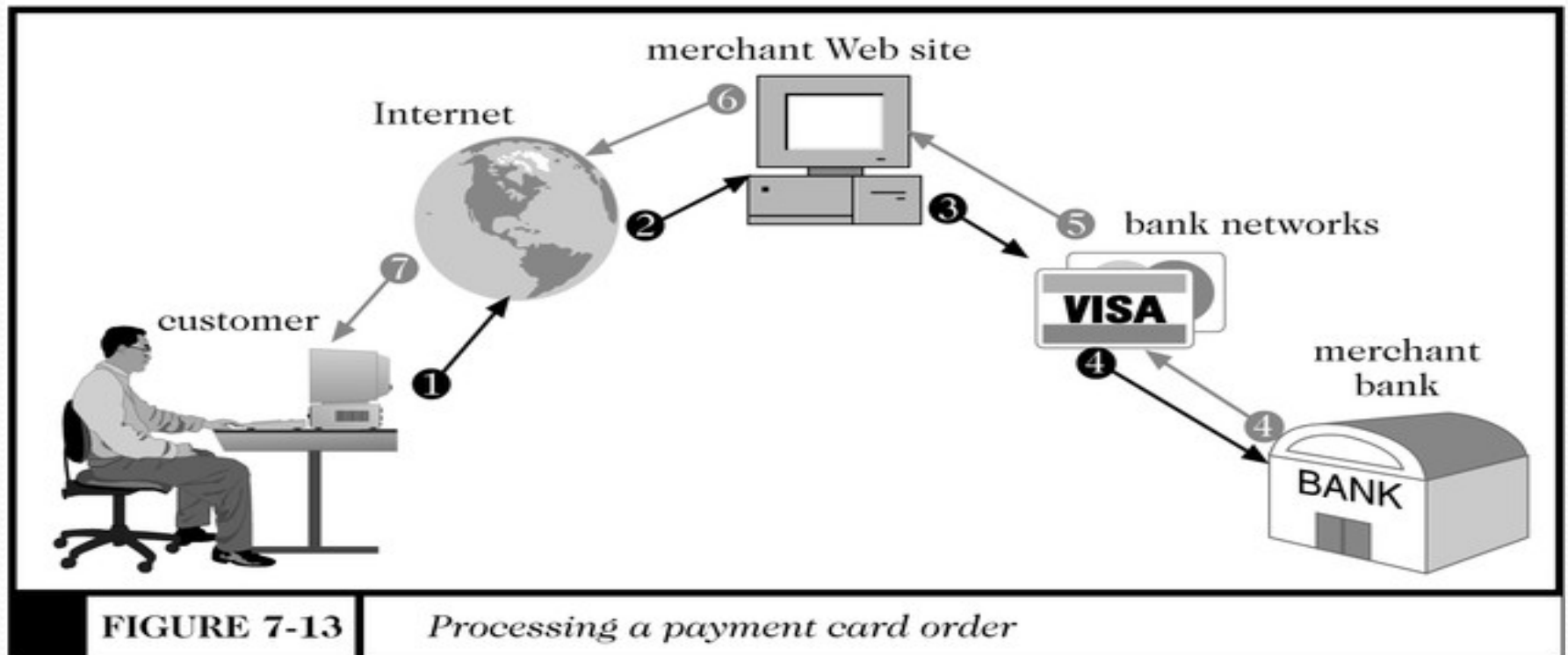


Credit cards

- It is a Plastic Card having a Magnetic Number and code on it.
- It has Some fixed amount to spend.
- Customer has to repay the spend amount after sometime.



Processing a Credit cards payment



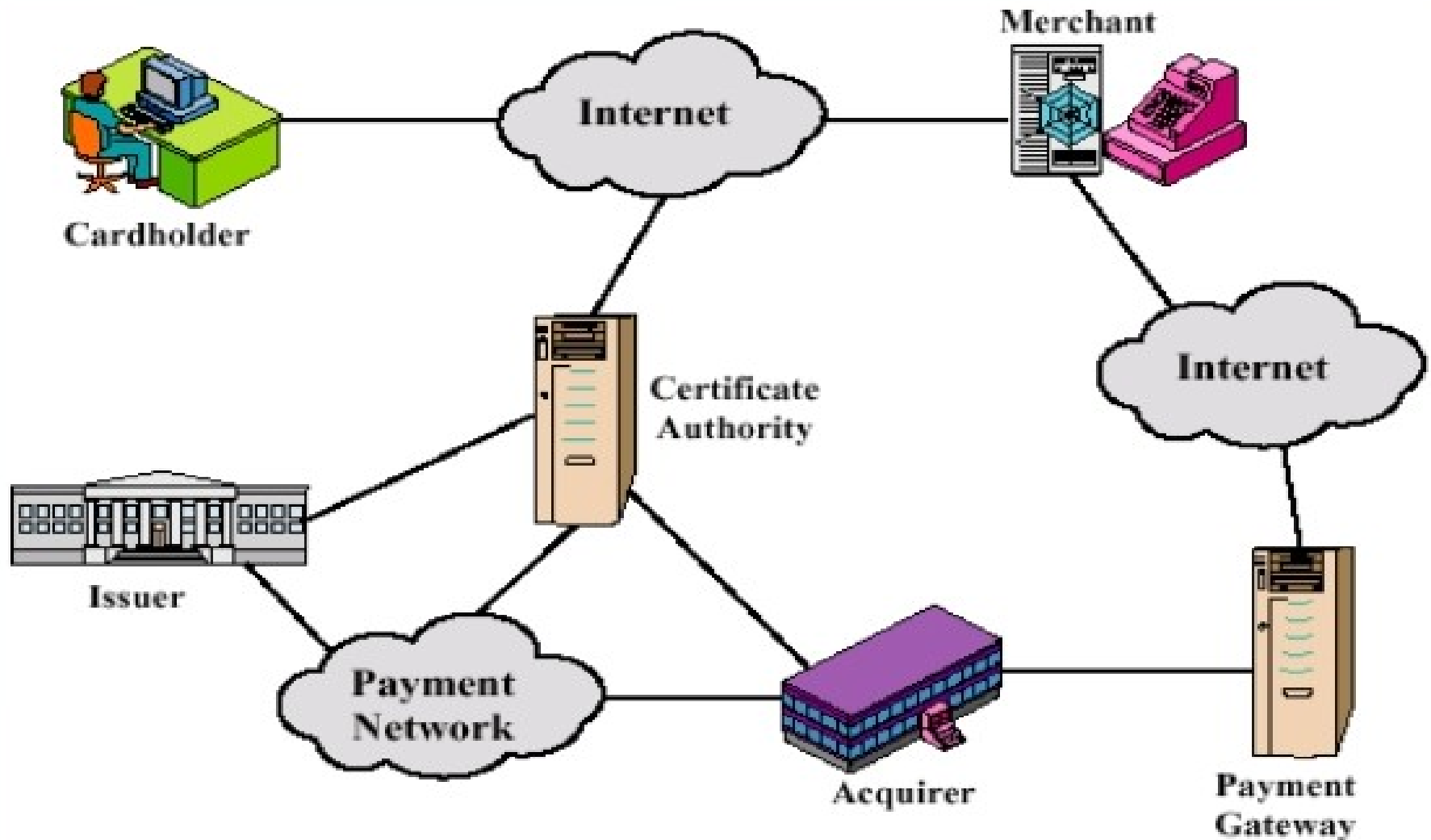
Risk in using Credit cards

- Operational Risk
- Credit Risk
- Legal Risk

Secure Electronic Transaction (SET) Protocol

- Jointly designed by MasterCard and Visa with backing of Microsoft, Netscape, IBM, GTE, SAIC, and others
- Designed to provide security for card payments as they travel on the Internet
 - Contrasted with Secure Socket Layers (SSL) protocol, SET validates consumers and merchants in addition to providing secure transmission
- SET specification
 - Uses public key cryptography and digital certificates for validating both consumers and merchants
 - Provides privacy, data integrity, user and merchant authentication, and consumer nonrepudiation

The SET protocol



Security Requirements of EPS

Authentication

Integrity

Non-repudiation

Privacy

Safety

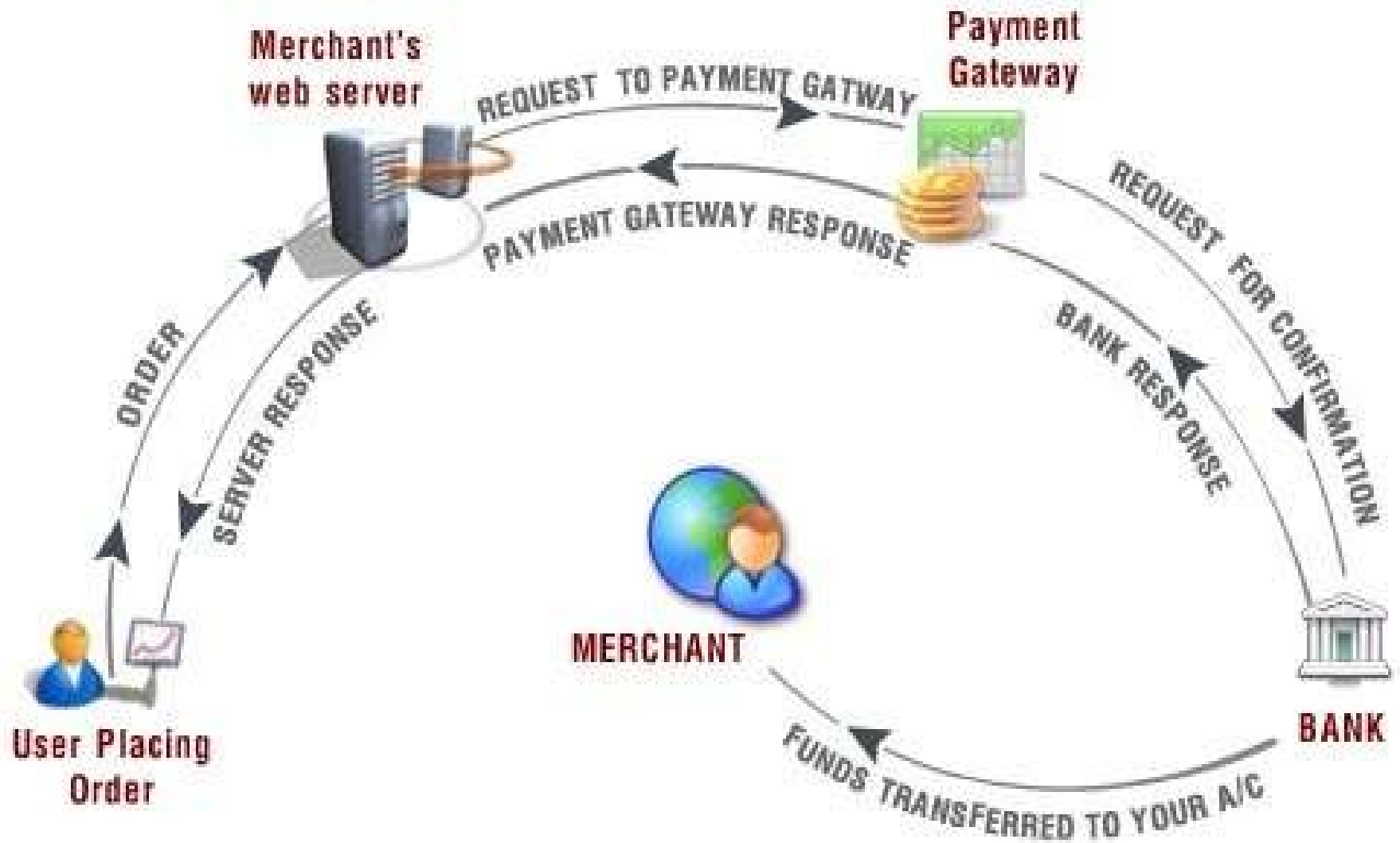


What Is payment Gateways??

- A **payment gateway** is an e-commerce application service provider service that authorizes payments for e-businesses, online Shopping, etc.
- Payment gateway protects credit cards details encrypting sensitive information, such as credit card numbers, to ensure that information passes securely between the customer and the merchant and also between merchant and payment processor.



How It works??



CONCLUSION

- ❑ Expand Market beyond Traditional geographic market
- ❑ Override traditional marketing system into digital marketing system.
- ❑ Made human life convenient as a person can pay his payments online while he is taking rest.