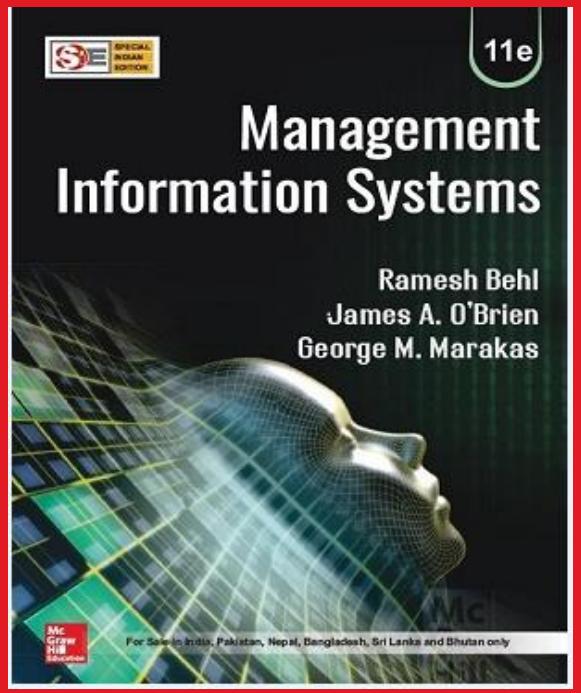
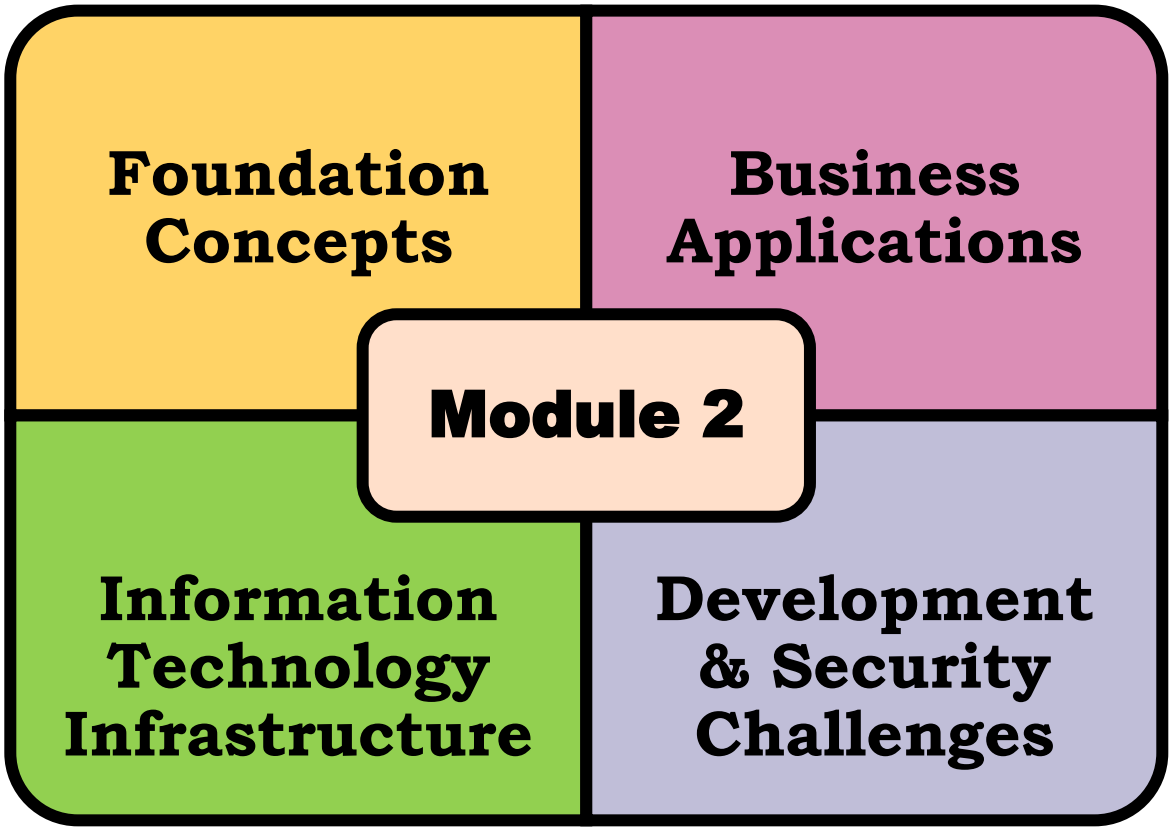
Because learning changes everything.®

Management Information Systems

Eleventh Edition



Chapter 5 : E-Commerce Systems


Foundation Concepts
Business Applications
Module 2
Information Technology Infrastructure
Development & Security Challenges

Learning Objectives

Understand the concept of a system and how it relates to information system.

Explain fundamental role and importance of information system in business.

What are the new trends in information systems?

Provide examples of several major types of information systems from business organizations in the real world.

Learning Objectives

Understand the major categories of e-Commerce applications and the trends associate with these categories.

Explain the essential processes of an e-Commerce system with examples.

Discuss the key factors and web store requirements needed to succeed in e-Commerce.

Know the business value of different types of e-Commerce marketplaces.

Analyze the benefits and challenges of different e-Commerce clicks-and-bricks alternatives.

Introduction to e-Commerce

Electronic commerce encompasses the entire online process of

- Developing
- Marketing
- Selling
- Delivering
- Servicing
- Paying for products and services

Relies on Internet and information technologies

Differences between E-Commerce and traditional commerce

E-Commerce	Traditional Commerce
• Using internet or other network communication technology • Automated processing of business transactions • Individual involved in all stages of transactions • Pulls together all activities of business transactions, marketing and advertising as well as service and customer support	• Face-to-face, telephone lines, or mail systems • Manual processing of traditional business transactions • Individual involved in all stages of business transactions • Separated activities of business transactions.

RWC 1: Mobile Shopping

Mobile shopping increasing

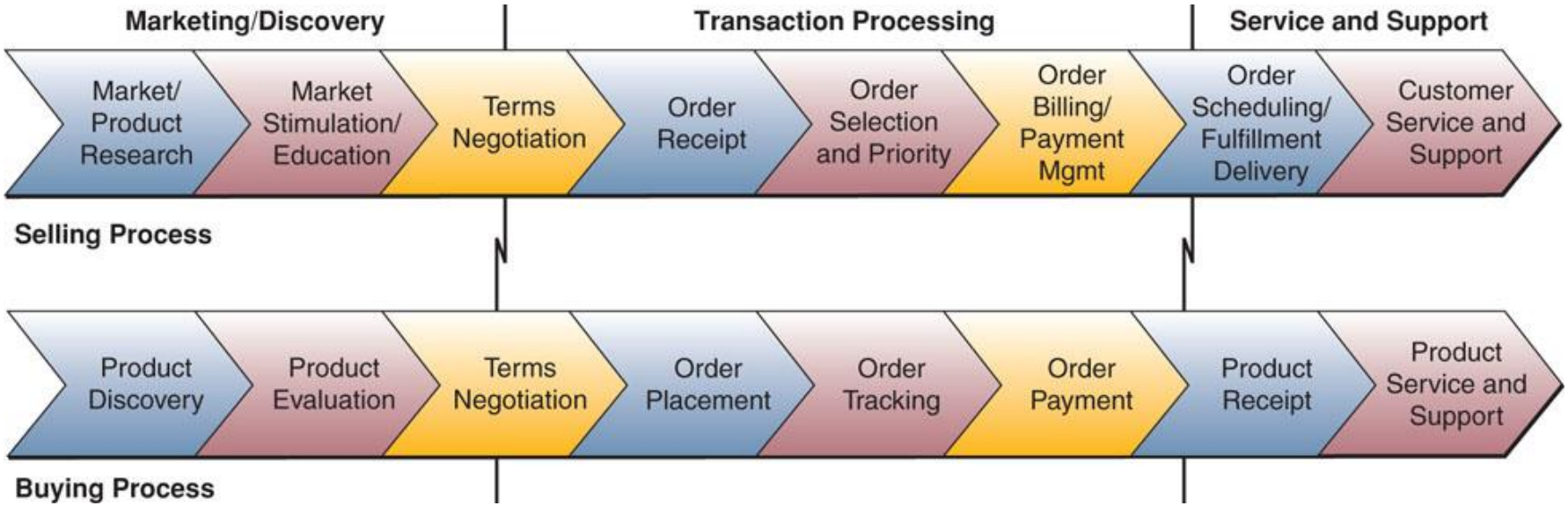
Social networking

- Web sites and e-mail too many steps
- Sales pitches on social networks increasing
  - Birthday prompts ad for 1-800-Flowers
- Impulsive buyers

Cell phones

- Starbucks Mobile Card App
  - Preloaded spending money
  - Scannable bar code
- Last minute game tickets

Scope of e-Commerce



Categories of e-Commerce

Business-to-Consumer (B2C):

- Involves transactions between businesses (sellers) and individual consumers (buyers).
- Consumers browse and purchase products or services directly from the business's website or online store.
- Examples include online retail stores like Amazon, eBay, and online food delivery services.

Types of e-commerce

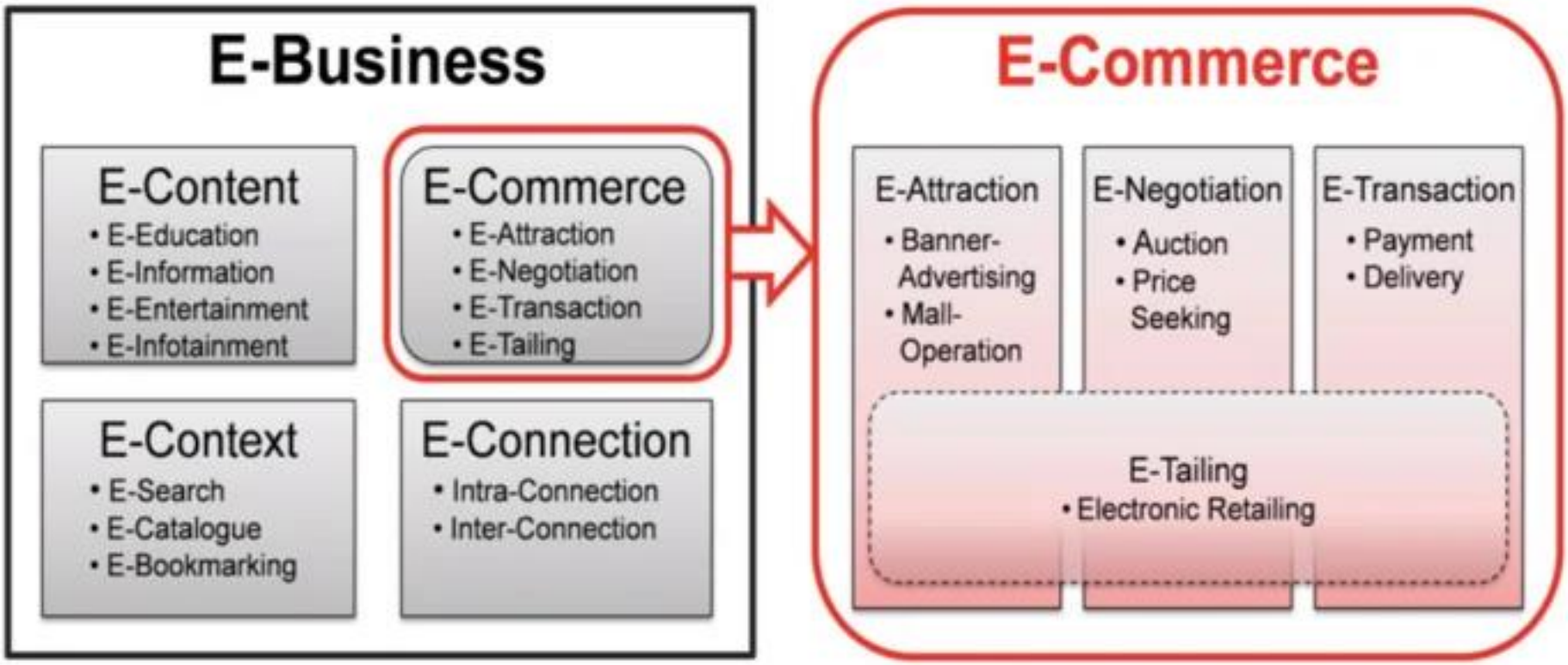
Consumer-to-Consumer (C2C):

- Involves transactions between individual consumers.
- Individuals buy and sell products or services directly to each other through online platforms.
- Online marketplaces and auction websites facilitate C2C transactions, such as eBay, Hamrobazar.

Categories of e-commerce

- **Business-to-Business (B2B) e-Commerce** where businesses develop attractive electronic marketplaces to sell products and services to businesses.
- Focuses on transactions between businesses as both buyers and sellers.
- Businesses purchase goods or services from other businesses to support their operations or resale.
- Often involves larger quantities, contracts, and negotiated pricing.
- Example:
  - Company: XYZ Electronics (Buyer)
    - XYZ Electronics is a manufacturer of consumer electronic devices, such as smartphones and tablets. They need to purchase electronic components in large quantities to assemble their products.
  - Company: ABC Electronics (Seller)
    - ABC Electronics is a specialized supplier of electronic components, including processors, memory chips, and display screens.

E-commercevs e-business



Difference Between e-Commerce and e-Business

eCommerce	eBusiness
Ecommerce involves commercial **transactions** done over internet.	Ebusiness is conduct of **business processes** on the internet.
Ecommerce is use of electronic transmission medium that caters for **buying and selling** of products and services.	In addition, Ebusiness also includes the **exchange of information** directly related to buying and selling of products.
Thus, Those activities which essentially involve monetary transactions are termed as "e-commerce".	In addition it includes activities like procurement of raw materials or goods, customer education, looking for suppliers etc.
Ecommerce usually requires the use of just a **Website**.	Ebusiness involves the **use of CRM's**, ERP's that connect different business processes.
Ecommerce involves the mandatory use of **internet**.	Ebusiness can involve the use of **internet, intranet or extranet**.

Pros of e-commerce

- **Personalization**: E-commerce platforms can use customer data to personalize recommendations and offers, enhancing the shopping experience.
- **Diverse Product Range:** Online stores can showcase a wider variety of products, accommodating different tastes and preferences.
- **Comparative Shopping:** Customers can easily compare prices, features, and reviews of products, leading to informed purchasing decisions.
- **Data Insights**: E-commerce generates valuable data on customer behavior, allowing businesses to make data-driven decisions and refine strategies.
- **Reduced Paperwork:** Digital transactions and record-keeping reduce the need for extensive paperwork.
- **Direct Interaction:** E-commerce enables direct interaction between businesses and customers, fostering better relationships and feedback.

Pros of E-commerce:

- **Global Reach**: E-commerce enables businesses to reach a global audience, breaking down geographical barriers and expanding market potential.

- **Convenience:** Customers can shop anytime, anywhere, eliminating the need to visit physical stores and providing a seamless shopping experience.

- **Cost Efficiency:** Operating an online store can be more cost-effective than a brick-and-mortar store due to lower overhead, rent, and staffing costs.

- **24/7 Availability:** E-commerce stores are accessible round the clock, allowing customers to browse and purchase at their convenience.

Limitations of e-commerce

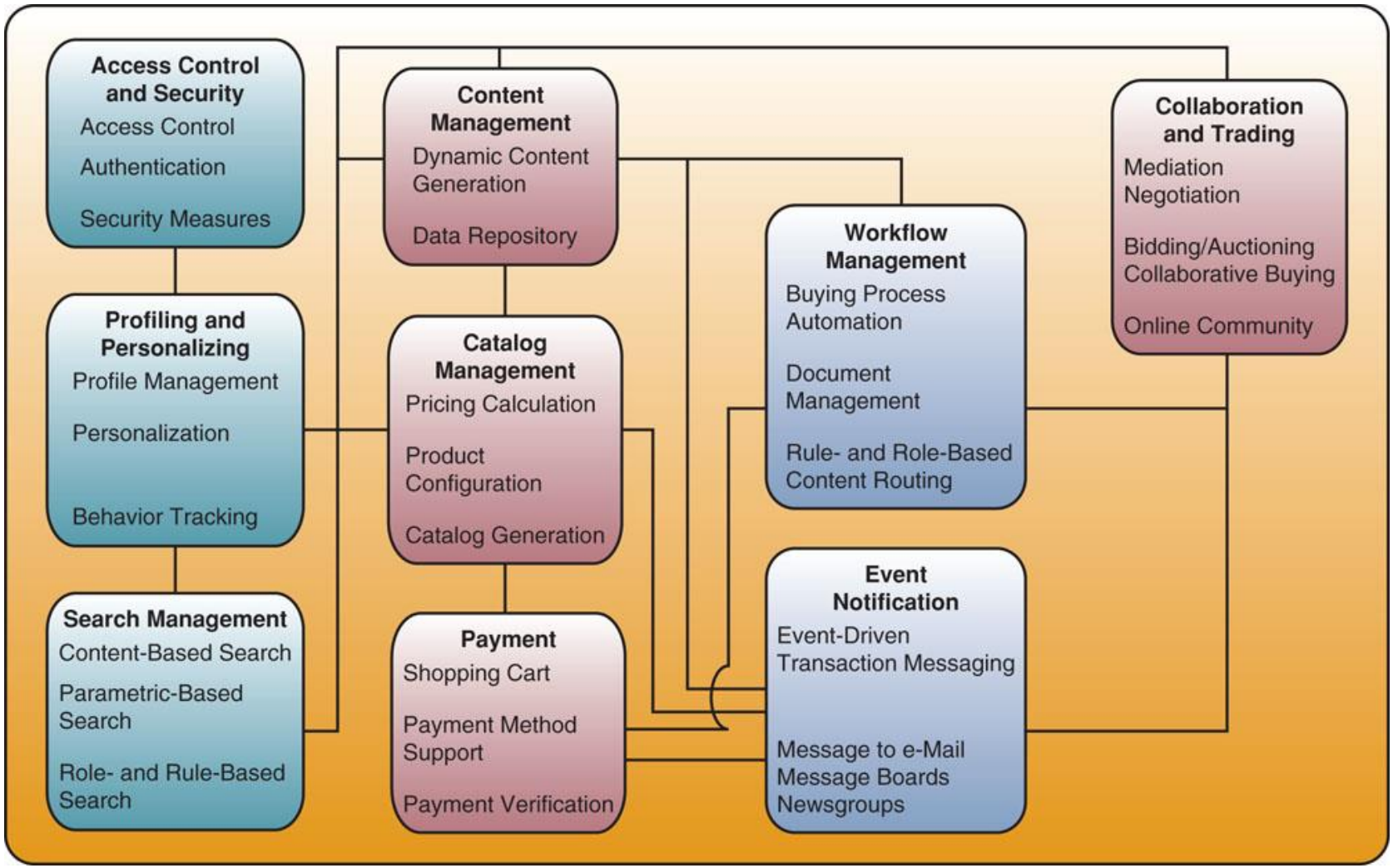
- **Competition:** The ease of entry into e-commerce can lead to intense competition, making it challenging for small businesses to stand out.
- **Digital Divide:** Not all customers have reliable internet access, limiting the reach of e-commerce in certain regions.
- **Returns and Refunds:** Managing product returns and providing refunds can be more complex in the online environment.
- **Dependency on Technology**: Businesses are reliant on technology infrastructure; technical issues can disrupt operations.
- **Customer Trust:** Establishing trust in online transactions is essential; customers may be hesitant due to concerns about fraud and privacy.

Limitations of e-commerce

- **Security Concerns:** Online transactions pose security risks, including data breaches and unauthorized access to personal information.
- **Lack of Physical Experience**: Customers miss the tactile experience of physically inspecting and trying products before purchasing.
- **Technical Issues:** Glitches, website downtime, and technical errors can lead to a frustrating shopping experience.
- **Logistics Challenges**: Efficient shipping and delivery management is crucial; delays or damages can negatively impact customer satisfaction.
- **CRegulatory Compliance:** E-commerce businesses must adhere to various legal and regulatory requirements, which can be complex.

Essential e-Commerce Architecture

9 components



Access Control and Security

E-commerce requires mutual trust and secure access

- User names and passwords
- Encryption key
- Digital certificates and signatures

Restricted access areas

- Other people’s accounts
- Restricted company data
- Webmaster administration areas

Profiling and Personalizing

Profiling captures behavior and choices

- User registration
- Cookie files and tracking software
- User feedback

Profiling is used for

- Personalized (one-to-one) marketing
- Authenticating identity for account management and payment purposes
- gather data for Customer relationship management
- Marketing planning
- Website management

Search Management

Find specific product or service that customer want

- Website search engine
  - Google or Requisite Technology
- Search on content(eg. a product description) or by parameters(e.g. above, below, or between a range of values for multiple properties of product)

Content and Catalog Management

Content Management Software helps e-commerce companies to

- Maintain text and multimedia for e-commerce websites

Catalog Management Software

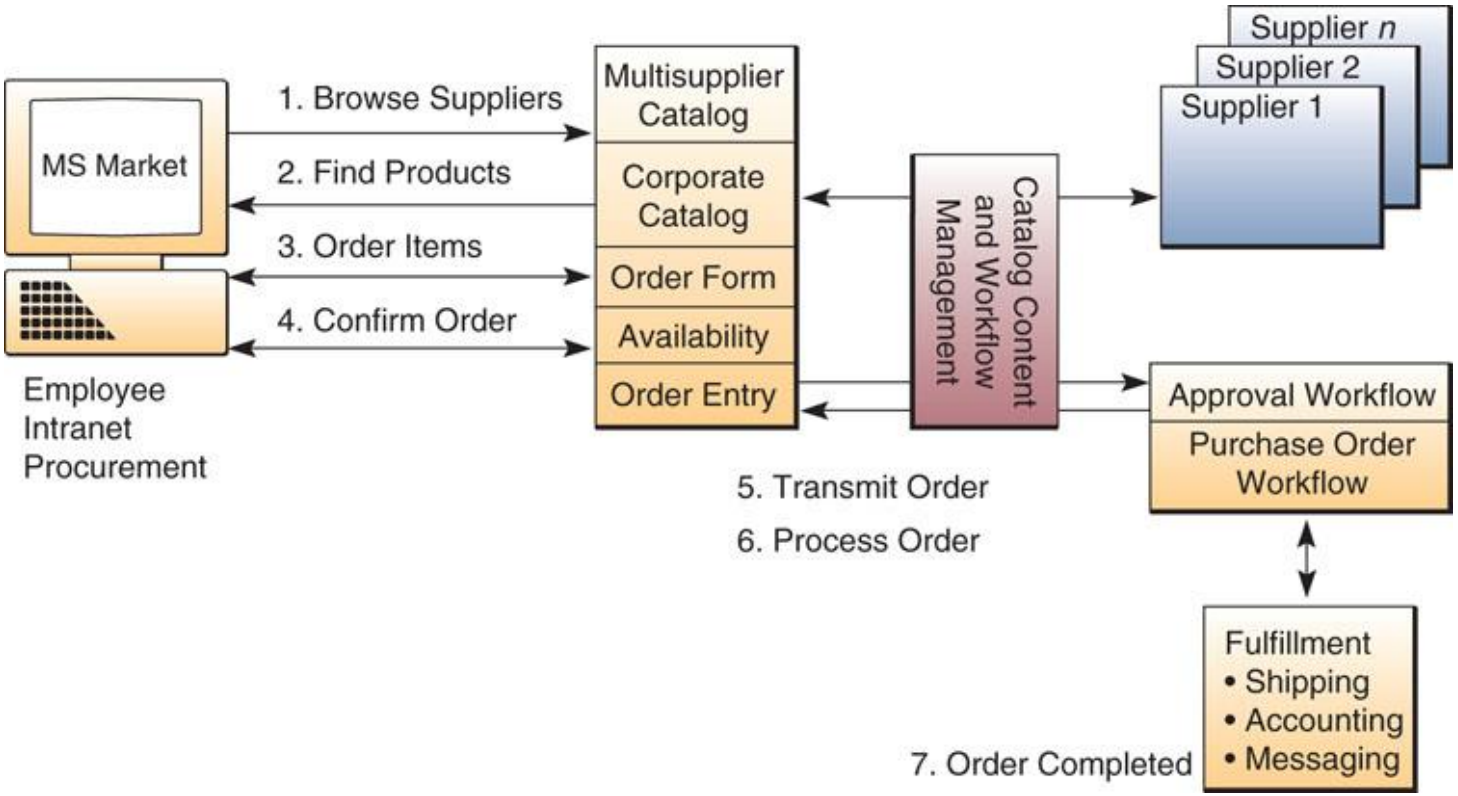
- Maintain catalog content

Catalog and content management software

- personalize the content of web pages seen by individual users

Workflow Management

- The workfolw models express the predefined sets of business rules, roles of stakeholders, authorization requirements, routing alternatives, databases used, and **sequence of tasks required for e-commerce process.**
- ensures that the proper transactions, decisions, and work activities are performed and correct data and documents are routed to the right employees, supplirs, and other business stakeholders.
- eg: e-commerce procurement process(fig)



Event Notification

Monitors e-commerce processes

Records relevant events

- First website
- Payments
- Problem situations

Notifies involved stakeholders

Works with user-profiling software to notify all involved stakeholders automatically of important transaction events.

Collaboration and Trading

Processes needed by customers, suppliers, and other stakeholders

Online communities of interest

- E-mail, chat, discussion groups
- Enhances customer service
- Builds loyalty

Electronic Payment Processes

- Payment in e-commerce refers to the process of transferring money electronically from a customer to a merchant in exchange for products or services purchased online.
- It involves the various methods and systems used to securely handle financial transactions over the internet, allowing customers to pay for their orders conveniently and businesses to receive payment for their goods or services.

common methods of electronic payment processes in e-commerce:

1. Credit Cards: Customers can enter their credit card information, including card number, expiration date, CVV, and cardholder's name, to make a purchase. The payment gateway securely processes the transaction, and funds are charged to the customer's credit card account.

2. **Debit Cards:** Similar to credit cards, customers can use their debit card details to make payments. The difference is that debit card transactions directly deduct funds from the customer's bank account.

common methods of electronic payment processes in e-commerce:

3. Digital Wallet

- A digital wallet, also known as an e-wallet or mobile wallet, is a virtual tool that allows users to securely store and manage various types of financial information for electronic transactions. It serves as a digital version of a physical wallet, enabling users to make online purchases, store payment details, and even conduct in-person transactions using their smartphones or other devices.
- Example: eSewa, Khalti, Prabhu Pay, IME Pay,

common methods of electronic payment processes in e-commerce:

Digital Wallet

Pros:

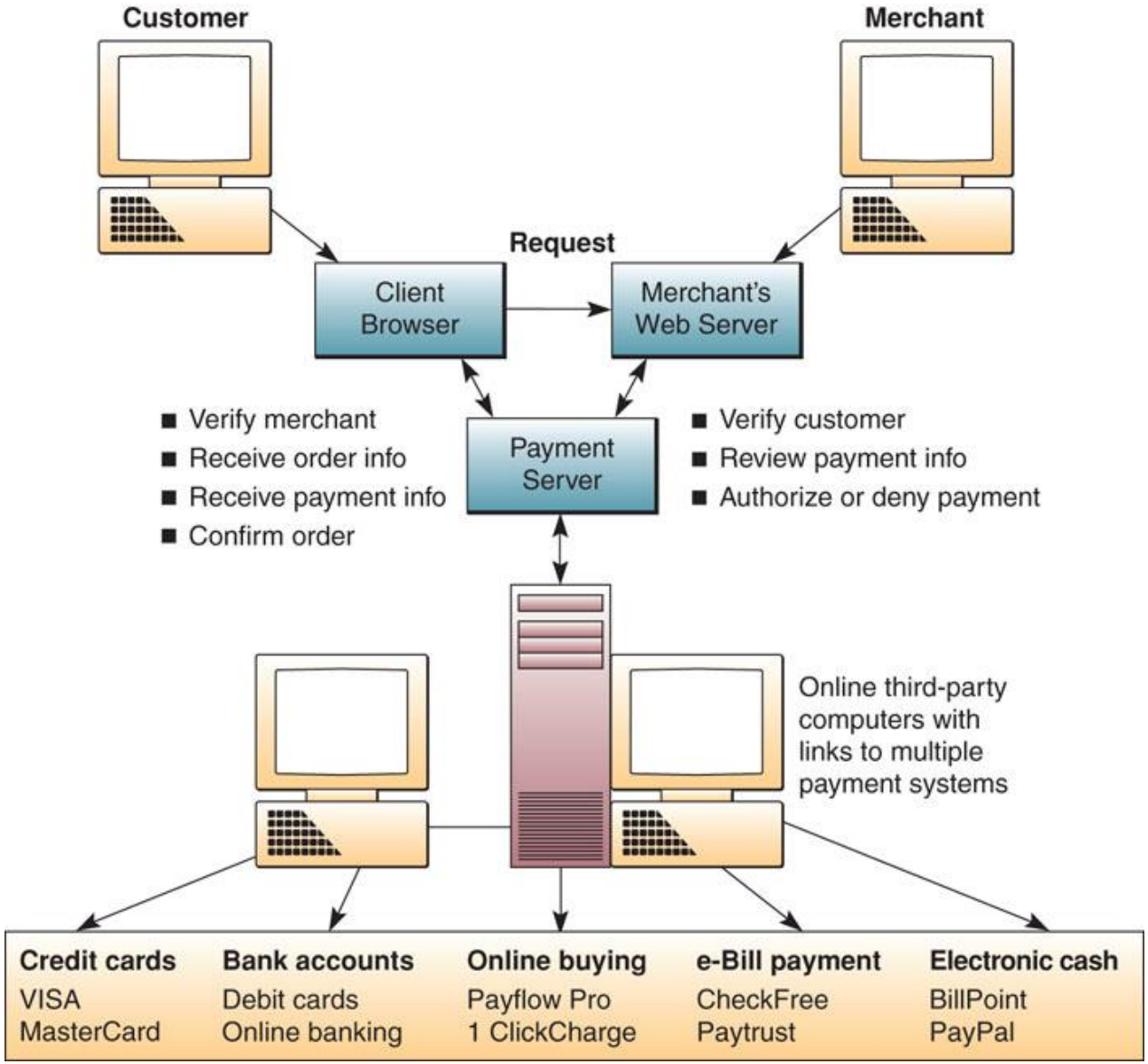
- **Convenience:** Convenient way to make payments without carrying physical cards or cash.
- **Quick Transactions:** Payments are processed rapidly, reducing checkout times.
- **Security:** Advanced security features and encryption protect sensitive payment data.
- **Reduced Fraud Risk:** Transactions are more secure due to limited data sharing.
- **Organization:** Store payment methods, loyalty cards, and coupons in one place.
- **Contactless Payments:** Enable contactless payments using smartphones or wearables.
- **P2P Payments:** Facilitate easy peer-to-peer payments among friends and family.

common methods of electronic payment processes in e-commerce:

Digital Wallet: Cons

- **Limited Acceptance:** Not all merchants or regions support digital wallet payments.
- **Dependency on Technology:** Require a compatible device, and device loss could be problematic.
- **Security Concerns:** Vulnerable to cyber threats and phishing attacks.
- **Vendor Lock-In**: Tied to specific platforms, limiting options upon switching.
- **Privacy Considerations:** May involve sharing transaction data with third parties.
- **Transaction Limits:** Some wallets have transaction limits, especially for P2P payments.
- **Network Dependency:** Require network connectivity for use.
- **Learning Curve:** Users unfamiliar with technology may find it challenging to use.

Electronic Payment Example



Securing Electronic Payments

Sniffers easily recognize credit card formats

Protection

- Encrypt data
  - Between customer and merchant
  - Between customer and financial institution
- Take sensitive information off-line

Different ways to secure electronic payment

Here are effective methods to ensure secure payments

- **Use Trusted Platforms:** Choose reputable and well-known payment platforms, banks, and e-commerce websites that prioritize security.
- **Strong Passwords:** Create strong and unique passwords for your accounts. Use a mix of upper and lower case letters, numbers, and special characters.
- **Two-Factor Authentication (2FA):** Enable 2FA wherever possible. This adds an extra layer of security by requiring a second verification method, such as a text message or authentication app.
- **Biometric Authentication**: If available, use biometric authentication methods like fingerprint or facial recognition for added security.

Different ways to secure electronic payment

- **Secure Networks**: Make payments on secure and encrypted networks, preferably using your private Wi-Fi network instead of public hotspots.
- **Check URLs**: Ensure websites' URLs start with "https://" and display a padlock icon. This indicates a secure connection.
- **Use Virtual Private Networks (VPNs):** When making payments on public networks, use a VPN to encrypt your internet connection and protect your data.
- **Avoid Public Computers**: Refrain from making payments on public computers or devices, as they may have malware or keyloggers that could compromise your information.
- **Regularly Update Software**: Keep your devices' operating systems, browsers, and security software up to date with the latest patches.
- **Use Encrypted Payment Methods:** Opt for payment methods that offer end-to-end encryption, such as digital wallets and secure online banking.

Different ways to secure electronic payment

- **Check for Card Skimmers**: When using physical payment terminals, check for any suspicious devices attached that could be card skimmers.
- **Avoid Phishing:** Be cautious of emails, texts, or calls asking for your payment details. Always verify the source before sharing information.
- **Secure Storage**: Avoid saving payment information in your browser or device, and don't use auto-fill for sensitive data.
- **Review Statements:** Regularly review your payment and bank statements to spot any unauthorized transactions.
- **Protect Personal Information:** Never share your payment information, account details, or passwords with anyone.
- **Set Transaction Alerts:** Set up alerts with your bank or payment provider to receive notifications for any account activity.
- **Limit Data Sharing:** Provide only the necessary information during checkout. Avoid sharing excessive personal data.

Different ways to secure electronic payment

Use Strong Antivirus Software: Install reputable antivirus software to detect and prevent malware that could compromise your financial data.

Be Wary of Public Wi-Fi: Avoid making payments or accessing sensitive accounts on public Wi-Fi networks, where data can be intercepted.

Educate Yourself: Stay informed about the latest security threats and best practices for safe online transactions.