Strategic business objectives of information systems

- Operational excellence
- New products, services and business models
- Customer and supplier intimacy
- Improved decision making
- Competitive advantage
- Survival

Functions of an information system

- Input
- Processing
- Output
- Feedback

Major business functions

- Sales and marketing
- Human resources
- Financial and accounting
- Manufacturing and production
- Procurement and distribution

Complementary assets

- Organizational assets
- Managerial assets
- Social assets

Four major enterprise applications

- Enterprise systems
- Supply chain management systems
- Customer relationship management systems
- Knowledge management systems

Functional business processes

Functional area	Business processes
Manufacturing & processing	• Assembling the product • Checking for quality • Producing bills of materials
Sales & marketing	• Identifying customers • Selling the product • Making promotions
Finance & accounting	• Paying credits • Managing cash accounts
Human resources	• Hiring employees • Benefit management • Performance evaluation

Systems from a functional perspective

- Sales and marketing systems
- Manufacturing and production systems
- Finance and accounting systems
- Human resources systems

Main categories of Information Systems for different organizational levels

- Operational level
- Management level
- Strategic level

Many systems to support different levels of management

- Transaction processing systems (Operational level)
- Management information systems (Management level)
    - *Provides reports based on TPS data*
- Decision support systems (Management level)
    - *May use external information, TPS and MIS data*
    - *Data driven (Marketing Analysis) / Model driven (Voyage estimating)*
- Execute support systems (Strategic level)

Mediating factors between organizations & information technology

- Environment
- Culture
- Structure
- Politics
- Business process
- Management decisions

Organization,

- A stable, formal social structure that takes resources from the environment and processes them to produce outputs

Features of organization

- Routines (SOP-standard operating procedures) & business processes
- Organizational politics
- Organizational culture
- Organizational environments

Disruptive technologies

- Substitute products
- Market extends products

Five basic parts of the organization

- Strategic apex
- Middle line
- Operating core
- Techno structure
- Support staff

Mintzberg's classification structure

1. Simple / Entrepreneurial structure – small startups – strategic apex
2. Machine bureaucracy – large firms, govt agencies - technostructure
3. Divisional bureaucracy – large corporations – middle line
4. Professional bureaucracy – hospitals, universities – operating core
5. Adhocracy – tech companies, consulting firms – support stuff

Transaction cost theory

- It's about saving money by deciding what to make or buy, with IT helping reduce the hassle and cost of working with outside partners

Agency Theory

- It's about owners (principles) and workers (agents) having different goals, and using tools like IS to keep everyone aligned and cut the cost of oversight

Michael Porter's competitive forces model

1. Traditional competitors
2. New market entrants
3. Substitute products and services
4. Bargain power of customers
5. Bargain power of suppliers

1. **How does UPS demonstrate the strategic objective of operational excellence through its information systems?** *Answer*: UPS uses ORION routing software and DIAD handheld devices to optimize driver routes, reducing mileage by 1 mile per route daily, saving $50 million yearly in fuel and time—boosting efficiency and profitability.
2. **In what ways does UPS exemplify the emerging digital firm?** *Answer*: UPS digitally enables relationships (e.g., real-time tracking with customers), processes (e.g., automated label scanning and rerouting), and assets (e.g., global computer network), allowing rapid responses to traffic/weather for flexible operations.
3. **Explain how UPS's package tracking system supports improved decision making.** *Answer*: The system provides real-time data (e.g., via DIAD and website) so managers can monitor packages, reroute if needed, and respond to queries in under 60 seconds—avoiding delays or errors from guesses.
4. **How does UPS achieve competitive advantage using information systems?** *Answer*: By investing $1B+ yearly in IT for low-cost, high-service delivery (e.g., efficient routes, instant tracking), UPS outperforms rivals like FedEx, retaining customers with better performance and real-time responses.
5. **Identify a cross-functional business process in the UPS case and explain how IS supports it.** *Answer*: Order fulfillment (from label creation to delivery) spans sales (customer scheduling), manufacturing/logistics (routing via ORION), and finance (cost calculations)—supported by integrated tracking for coordination across functions.

6. **How does UPS's DIAD device function as a Transaction Processing System (TPS)?** *Answer*: It records daily routine transactions like pickups, deliveries, and signatures in real-time, feeding data to central systems for storage—ensuring accurate, structured operational records without failure risks.
7. **Describe how UPS uses enterprise applications for customer relationship management.** *Answer*: Tools like the website and mobile apps let customers track packages, print labels, and embed UPS functions in their sites—integrating sales, service, and tracking to enhance customer interactions across the firm.
8. **How does UPS leverage e-business and collaboration tools?** *Answer*: Through the website and apps for e-commerce (scheduling pickups, rate calculations) and collaboration (sharing data with customers/suppliers for transparency), speeding up info-sharing and decisions.
9. **Using transaction cost theory, explain how UPS's supplier network and IT investments reduce costs.** *Answer*: High investments in fuel/rail suppliers create switching costs, but IT (e.g., tracking) lowers transaction costs like monitoring contracts or info gathering, enabling efficient outsourcing over vertical integration.
10. **How does UPS's IT flatten its organizational structure?** *Answer*: DIAD and central networks push real-time decisions to drivers (e.g., route adjustments), reducing management layers and broadening spans of control—making the org more flexible despite 454,000 employees.
11. **Apply Porter's competitive forces model to UPS's rivalry with FedEx and U.S. Postal Service.** *Answer*: UPS counters traditional competitors (FedEx) with superior IT for low costs/high service; reduces buyer power (customers) via tracking/transparency; and limits substitutes (postal) by efficient global delivery.
12. **How do disruptive technologies like mobile apps impact UPS's strategy?** *Answer*: Apps extend the market with simpler access (e.g., smartphone tracking), helping UPS adapt as a first mover in digital logistics, gaining advantage over slower rivals while extending services to more users.