

Information Systems for Business-434C3A

Case Studies with Questions

UNIT I: Introduction to Information Systems

Case Study: DataStream Retail's Information Crisis

DataStream Retail is a mid-sized retail chain with 50 stores across India. The company has been experiencing declining profitability despite increasing sales. CEO Ramesh Kumar discovers that each department operates independently with different systems: Sales uses spreadsheets, Inventory relies on paper records, Finance has an outdated accounting package, and HR maintains employee data in multiple formats.

When Ramesh requests a report on best-selling products by region, it takes three weeks to compile manually. Inventory managers frequently discover stockouts of popular items while excess stock of slow-moving products accumulates. Store managers make pricing decisions without access to competitor information or demand patterns. The finance team struggles to generate timely reports for strategic planning.

During a board meeting, Ramesh realizes that the company lacks a proper information system to support management decisions at operational, tactical, and strategic levels. Information flows are disrupted, feedback mechanisms are absent, and data is scattered across silos with no systematic input-output processes.

Questions:

1. Identify and explain the different types of management decisions (operational, tactical, strategic) that DataStream Retail needs to make and what specific information is needed for each type.

2. Analyze the current situation using system elements (input, output, process, feedback). What elements are missing or dysfunctional?
3. Classify the information sources and needs for different management levels at DataStream Retail. What should be the structure of an integrated information system?

UNIT II: Information System Types

Case Study: TechManufacturing's Multi-Level System Challenge

TechManufacturing produces electronic components with 2,000 daily transactions including purchase orders, production records, quality checks, and shipments. Their Transaction Processing System (TPS) captures all transactions but generates massive data that nobody analyzes. The operations team drowns in reports while strategic insights remain hidden.

Knowledge workers in R&D need access to research databases, design tools, and collaboration platforms but lack a proper Knowledge Worker System (KWS). The Office Automation System (OAS) is limited to email, with no document management or workflow automation. Production managers need a Management Information System (MIS) for routine reporting but currently compile reports manually.

Middle managers require a Decision Support System (DSS) to analyze scenarios like make-or-buy decisions, capacity planning, and pricing strategies. However, they have no tools for what-if analysis or modeling. The executive team needs an Executive Information System (EIS) with dashboards showing KPIs, market trends, and competitive intelligence, but instead receives 100-page monthly reports they never read.

Questions:

1. Differentiate between TPS, OAS, and KWS in the context of TechManufacturing. What specific functions should each system perform?
2. Compare MIS and DSS requirements for TechManufacturing's middle managers. Provide examples of decisions each system would support.
3. Design the key features of an Executive Information System (EIS) for TechManufacturing's C-suite. What KPIs and intelligence should it provide?

UNIT III: Functional Management Information Systems

Case Study: GlobalPharma's Integration Challenge

GlobalPharma is a pharmaceutical company struggling with disconnected functional systems. The Production/Operations system tracks manufacturing but doesn't communicate with the Marketing Information System, causing production of drugs with declining demand while high-demand products face shortages.

The Accounting Information System processes transactions accurately but provides no real-time cost data to Operations for decision-making. The Financial Information System forecasts cash flows without considering actual production schedules or sales pipeline data from Marketing. HR Information System maintains employee records but lacks integration with Operations for workforce planning during peak production seasons.

Marketing launches campaigns without inventory visibility, promising deliveries that Operations cannot fulfill. Finance approves budgets without understanding operational constraints. HR hires staff during expansion plans that Finance later cuts due to cash flow issues. Each function optimizes locally while overall company performance suffers.

Questions:

1. Analyze how Production/Operations Information System should integrate with Marketing Information System at GlobalPharma to prevent demand-supply mismatches.
2. Explain the relationship between Accounting Information System and Financial Information System. How should these systems exchange data for better decision-making?
3. Design the key information flows between HR Information System and other functional systems (Operations, Finance, Marketing) to enable integrated planning and decision-making.

UNIT IV: System Development and Emerging Technologies

Case Study: FinSecure Bank's Digital Transformation

FinSecure Bank needs to develop a new mobile banking application with advanced security features. The system analyst team faces a dilemma: use the traditional Waterfall Model for comprehensive documentation and control, or adopt Agile methodology for faster delivery and iterative development. The project involves customer data migration, blockchain-based transaction verification, AI-powered fraud detection, and IoT integration for branch automation.

The bank's existing database is a legacy system with redundant data, inconsistent formats, and no data warehousing capability for analytics. The IT head proposes implementing Big Data analytics for customer behavior prediction, but lacks expertise in data mining techniques. Security concerns are paramount—recent cyber attacks on competitor banks have exposed

vulnerabilities. The bank needs RSA encryption, cryptographic security, and comprehensive cyber safety measures.

Management wants an e-commerce platform for selling financial products, considering E-Business models like B2C and B2B. The innovation team suggests using RFID for document tracking, artificial intelligence for customer service chatbots, expert systems for loan approval, and blockchain technology for secure transactions. However, nobody knows how to integrate these technologies or which SDLC model to use.

Questions:

1. Compare Waterfall, Agile, Spiral, and RAD models for FinSecure Bank's mobile app development. Which model would you recommend and why? Include considerations for requirement analysis and DFD development.
2. Explain how FinSecure can implement a comprehensive cyber security strategy including cryptography, RSA encryption, and blockchain technology to protect customer data and transactions.
3. Design a data warehousing and data mining solution for FinSecure that leverages Big Data, Business Intelligence, and Artificial Intelligence to improve customer insights and decision-making.

UNIT V: ERP and Enterprise Management

Case Study: AutoParts Manufacturing's ERP Dilemma

AutoParts Manufacturing operates with fragmented systems across departments. Production, Finance, HR, Sales, and Supply Chain use different software packages that don't communicate. Order processing involves manual data re-entry across five systems, leading to errors and delays. Management

lacks real-time visibility into operations, making strategic decisions based on week-old data.

The board approves an ERP implementation but faces challenges: selecting the right ERP package among multiple vendors (SAP, Oracle, Microsoft Dynamics), understanding how ERP differs from their conventional packages, justifying the investment, and managing the implementation process. The IT team lacks experience with ERP components like modules for finance, manufacturing, supply chain, and CRM.

Customer Relationship Management is virtually non-existent—sales teams maintain personal Excel sheets of customer interactions with no centralized system. The company needs better information classification, understanding the cost versus value of information, and establishing proper channels for information flow throughout the organization. E-Governance requirements for regulatory compliance add another layer of complexity. The CFO questions whether the benefits of ERP justify its high cost and disruption.

Questions:

- 1.Explain the benefits of ERP for AutoParts Manufacturing and how it differs from their current conventional packages. What are the key ERP components needed for their business?
- 2.Outline the ERP selection criteria and implementation process for AutoParts. What factors should influence their package selection, and what are the critical success factors for implementation?
- 3.Analyze how Customer Relationship Management (CRM) integration with ERP would benefit AutoParts. Additionally, explain the importance of information system audit, control mechanisms, and E-Governance compliance in their new ERP environment.



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