Chapter 4
The Revenue Cycle

Accounting Information Systems, 6th edition

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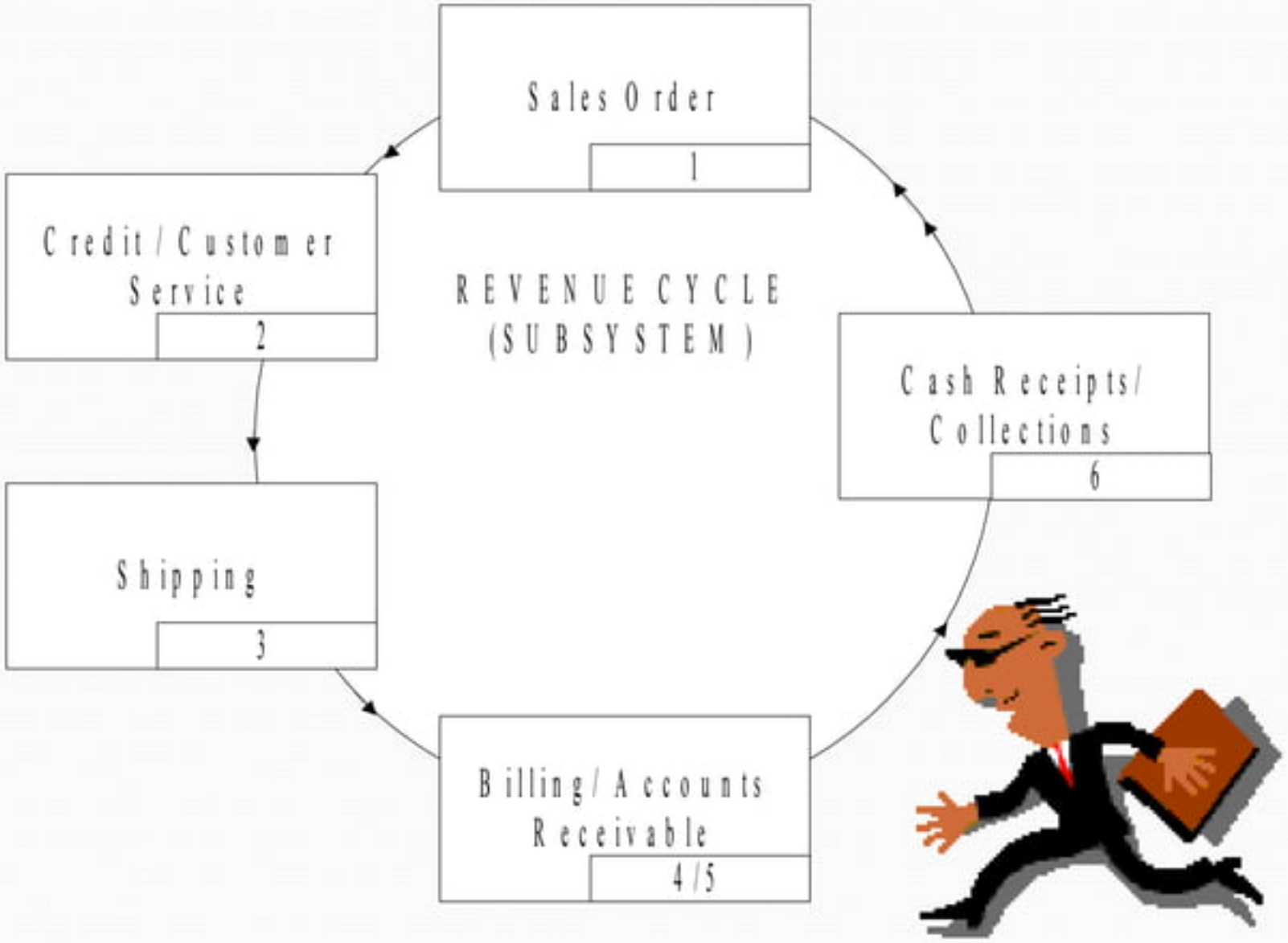
Objectives for Chapter 4

- *Tasks performed in the revenue cycle, regardless of the technology used*
- *Functional departments in the revenue cycle and the flow of revenue transactions through the organization*
- *Documents, journals, and accounts needed for audit trails, records, decision making, and financial reporting*
- *Risks associated with the revenue cycle and the controls that reduce these risks*
- *The operational and control implications of technology used to automate and reengineer the revenue cycle*


Sales Order
1
Credit / Customer Service
2
REVENUE CYCLE
(SUBSYSTEM)
Cash Receipts/ Collections
6
Shipping
3
Billing/ Accounts Receivable
4/5

Journal Vouchers/Entries How do we get them?

- Billing Department prepares a journal voucher:

Accounts Receivable	***DR***	
Sales		***CR***

- Inventory Control Dept. prepares a journal voucher:

Cost of Goods Sold	***DR***	
Inventory		***CR***

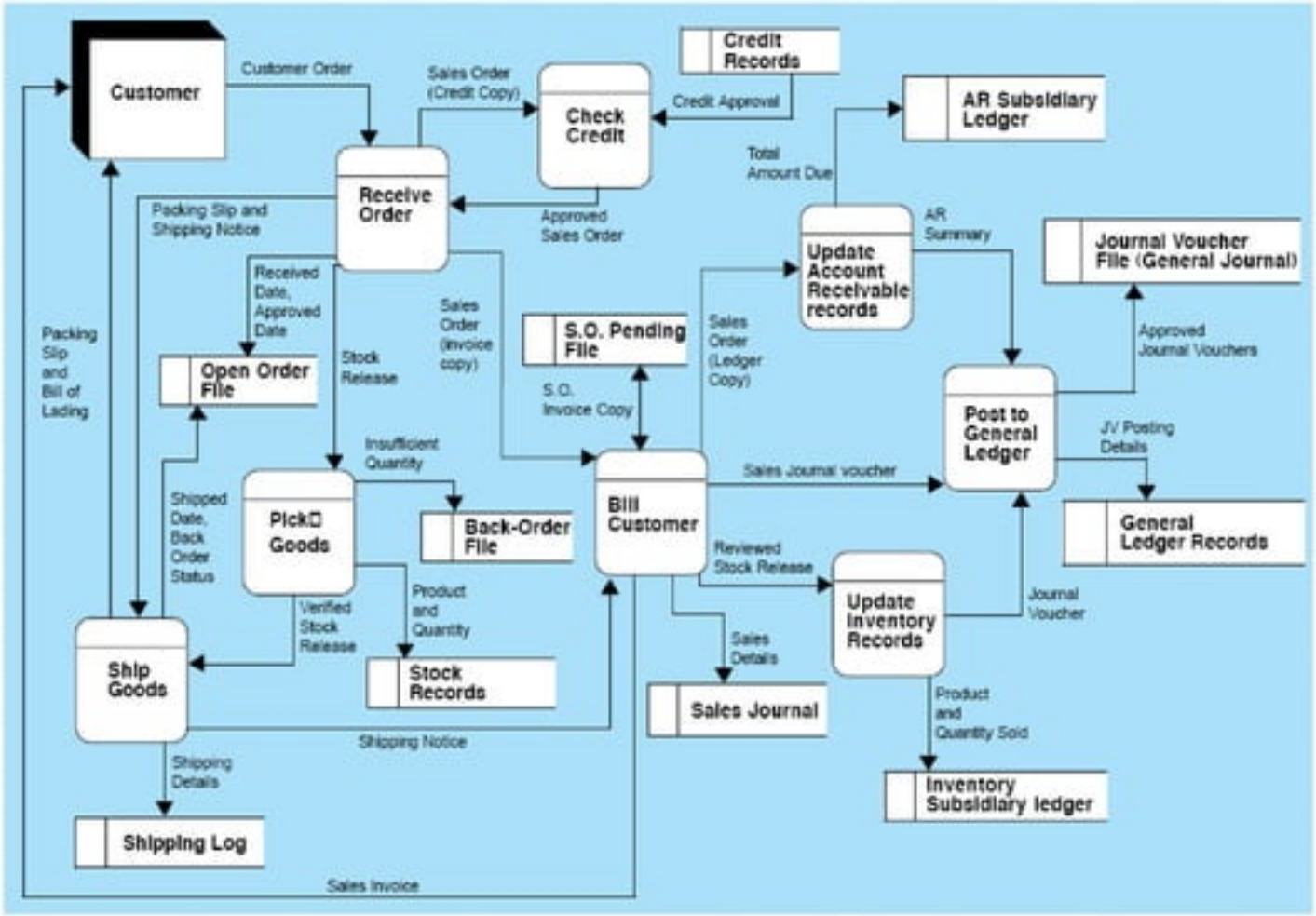
- Cash Receipts prepares a journal voucher:

Cash	***DR***	
Accounts Receivable		***CR***

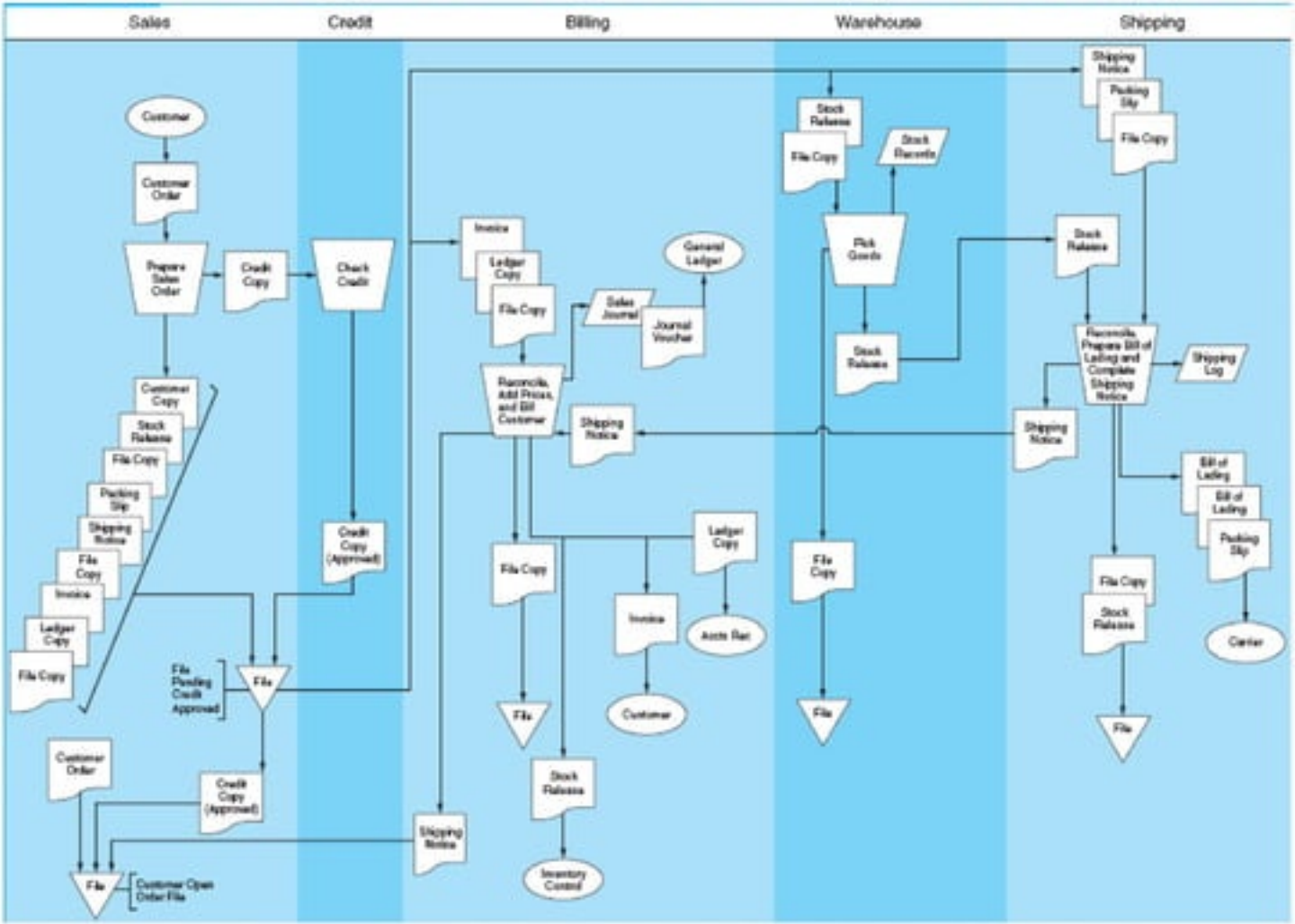
Revenue Cycle Databases

- Master files
  - customer master file
  - accounts receivable master file
  - merchandise inventory master file
- Transaction and Open Document Files
  - sales order transaction file
    - open sales order transaction file
  - sales invoice transaction file
  - cash receipts transaction file
- Other Files
  - shipping and price data reference file
  - credit reference file (may not be needed)
  - salesperson file (may be a master file)
  - Sales history file
  - cash receipts history file
  - accounts receivable reports file

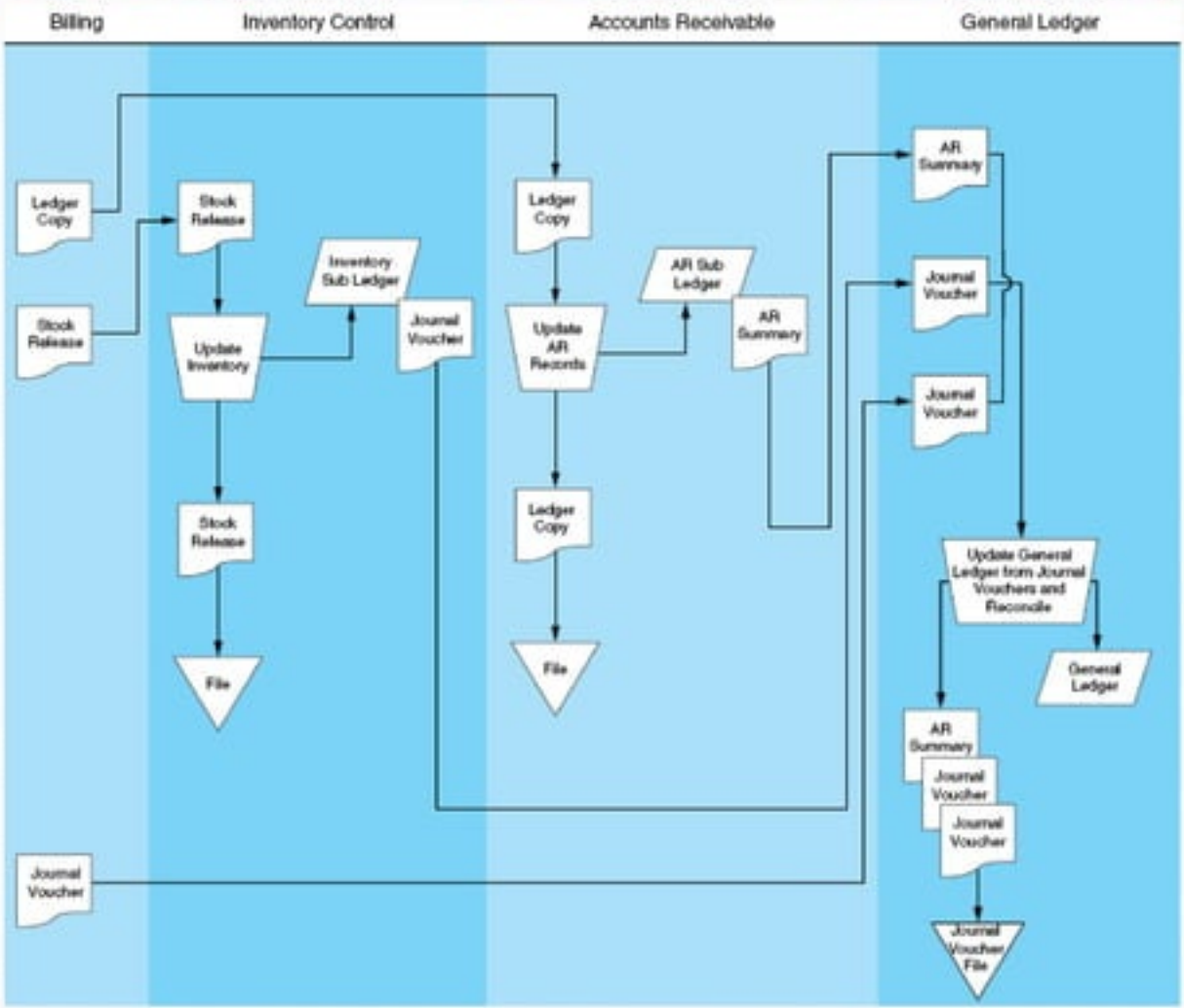
DFD of Sales Order Process



Sales Order Process Flowchart



Sales Order Process Flowchart



Manual Sales Order Processing

- Begins with a customer placing an order
  - The sales department captures the essential details on a sales order form.
- The transaction is authorized by obtaining credit approval by the credit department.
- Sales information is released to:
  - Billing
  - Warehouse (stock release or picking ticket)
  - Shipping (packing slip and shipping notice)

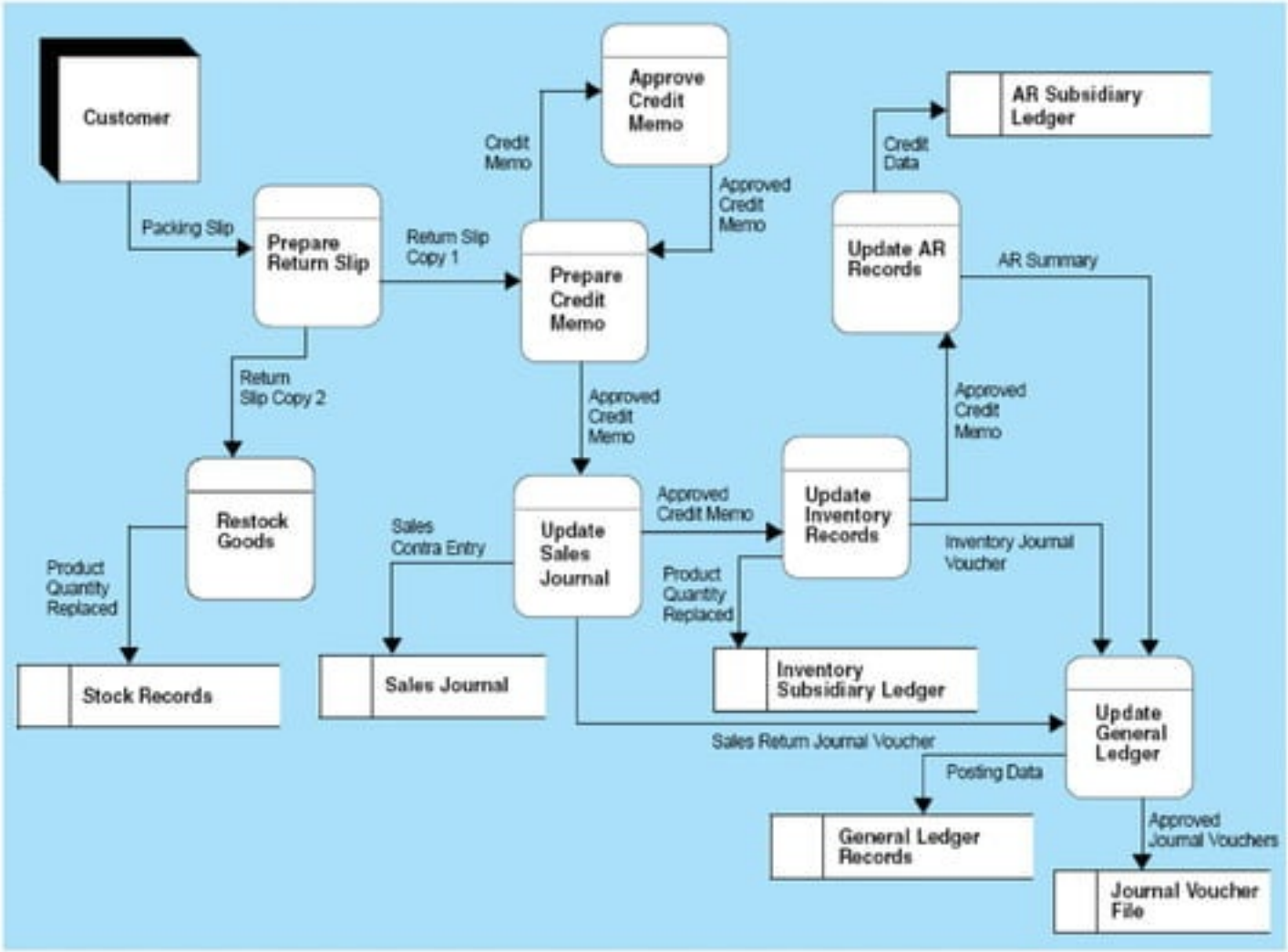
Manual Sales Order Processing

- The merchandise is picked from the Warehouse and sent to Shipping.
  - Stock records are adjusted.
- The merchandise, packing slip, and bill of lading are prepared by Shipping and sent to the customer.
  - Shipping reconciles the merchandise received from the Warehouse with the sales information on the packing slip.
- Shipping information is sent to Billing. Billing compiles and reconciles the relevant facts and issues an invoice to the customer and updates the sales journal. Information is transferred to:
  - Accounts Receivable (A/R)
  - Inventory Control

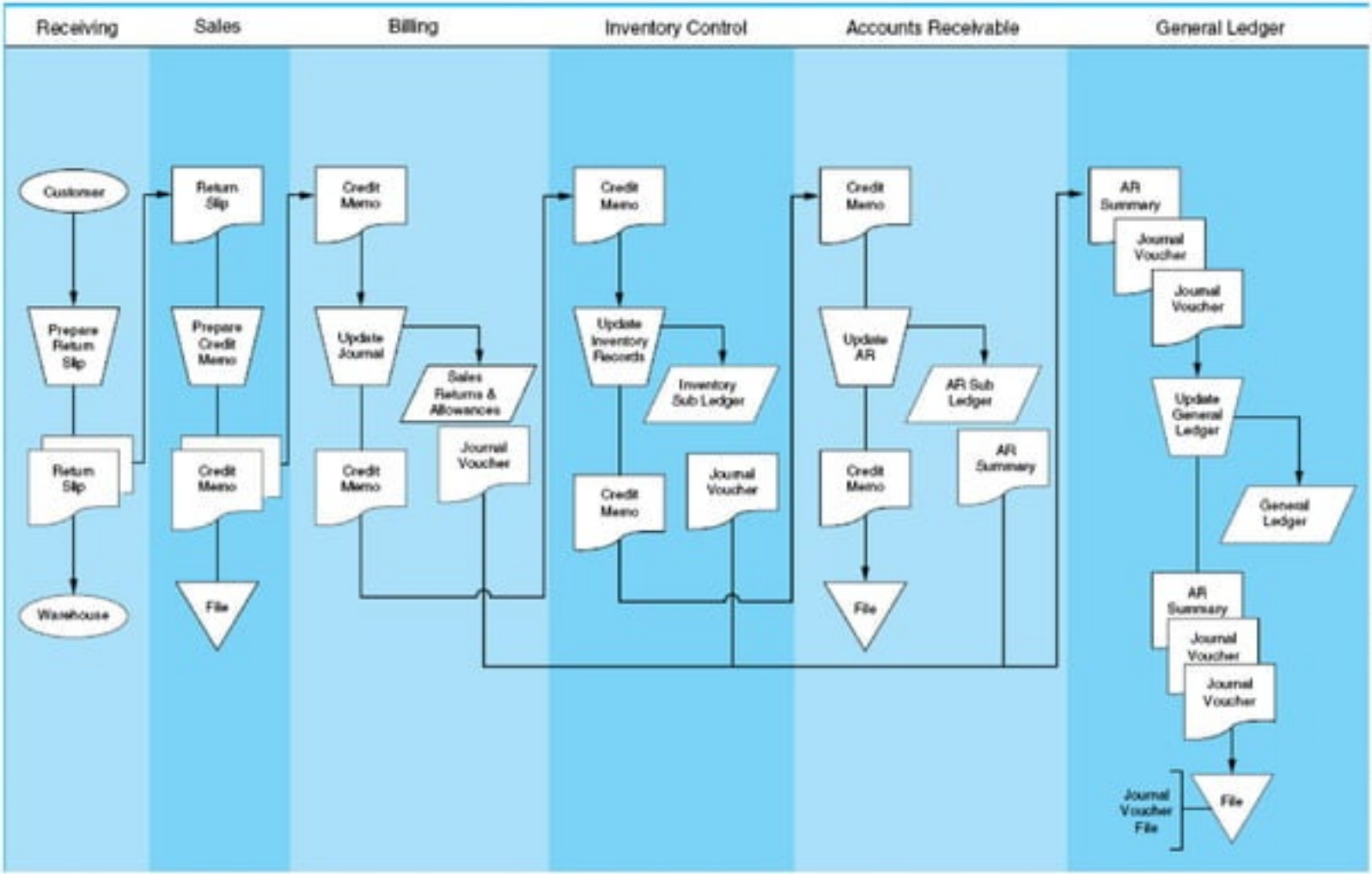
Manual Sales Order Processing

- A/R records the information in the customer's account in the accounts receivable subsidiary ledger.
- Inventory Control adjusts the inventory subsidiary ledger.
- Billing, A/R, and Inventory Control submits summary information to the General Ledger dept., which then reconciles this data and posts to the control accounts in the G/L.

DFD of Sales Returns



Sales Returns Flowchart

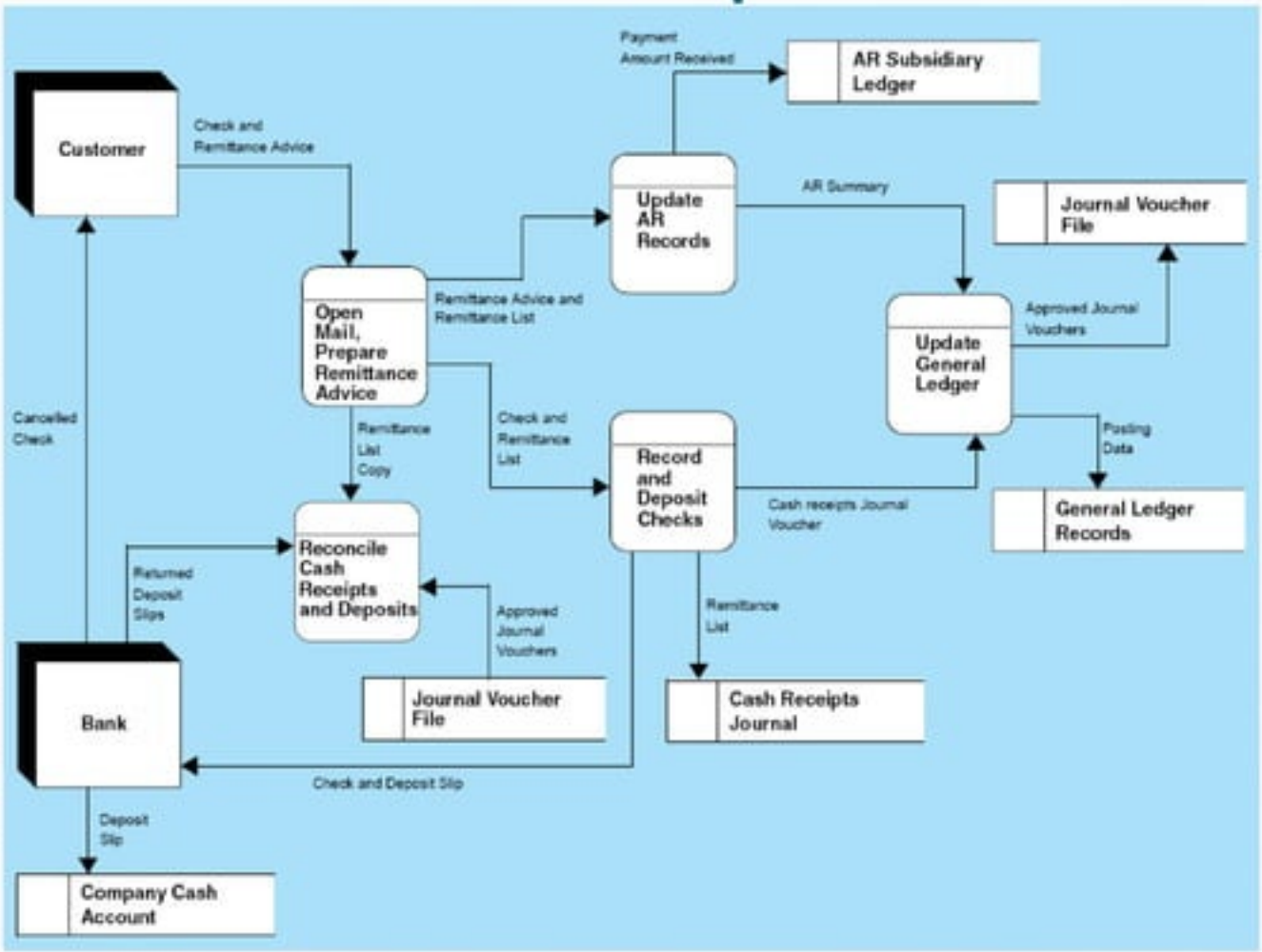


Sales Return Journal Entry

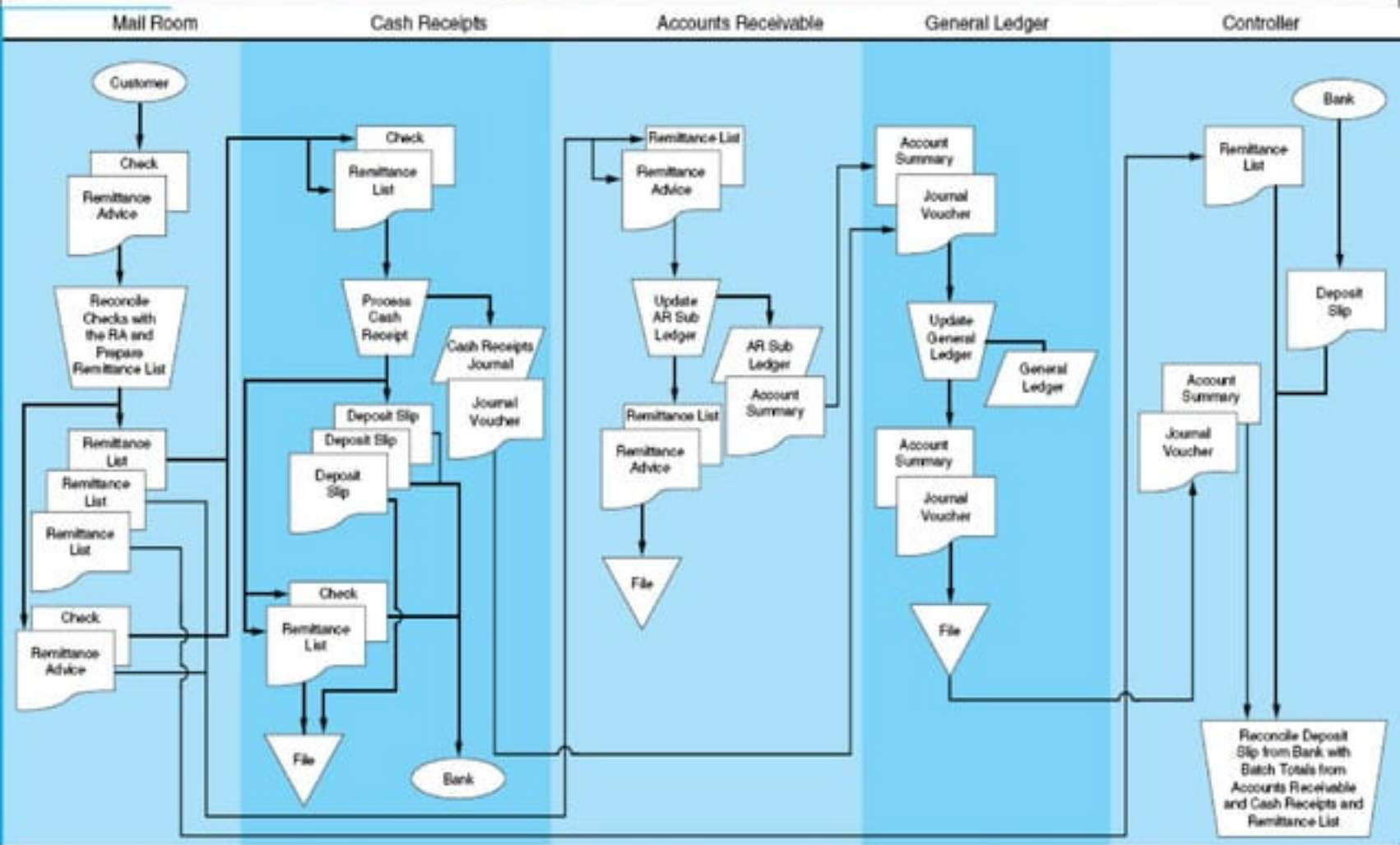
G/L posts the following to control accounts:

Inventory—Control	*DR*	
Sales Returns and Allowances	*DR*	
Cost of Goods Sold		*CR*
Accounts Receivable—Control		*CR*

DFD of Cash Receipts Processes



Cash Receipts Flowchart



Manual Cash Receipts Processes

- Customer checks and remittance advices are received in the Mail Room.
  - A mail room clerk prepares a cash prelist and sends the prelist and the checks to Cash Receipts.
  - The cash prelist is also sent to A/R and the Controller.
- Cash Receipts:
  - verifies the accuracy and completeness of the checks
  - updates the cash receipts journal
  - prepares a deposit slip
  - prepares a journal voucher to send to G/L

Manual Cash Receipts Processes

- A/R posts from the remittance advices to the accounts receivable subsidiary ledger.
  - Periodically, a summary of the postings is sent to G/L.
- G/L department:
  - reconciles the journal voucher from Cash Receipts with the summaries from A/R
  - updates the general ledger control accounts
- The Controller reconciles the bank accounts.

Summary of Internal Controls

	CONTROL POINTS IN THE SYSTEM	
Control Activity	**Sales Processing**	**Cash Receipts**
Transaction authorization	Credit check Return policy	Remittance list (cash prelist)
Segregation of duties	Credit is separate from processing; inventory control is separate from warehouse; AR subsidiary ledger is separate from general ledger	Cash receipts are separate from AR and cash account; AR subsidiary ledger is separate from GL
Supervision		Mail room
Accounting records	Sales orders, sales journals, AR subsidiary ledger, AR control (general ledger), inventory subsidiary ledger, inventory control, sales account (GL)	Remittance advices, checks, remittance list, cash receipts journal, AR subsidiary ledger, AR control account, cash account
Access	Physical access to inventory; access to accounting records above	Physical access to cash; access to accounting records above
Independent verification	Shipping department, billing department, general ledger	Cash receipts, general ledger, bank reconciliation

Authorization Controls

- Proper authorization of transactions (documentation) should occur so that only valid transactions get processed.
- Within the revenue cycle, authorization should take place when:
  - a sale is made on credit (authorization)
  - a cash refund is requested (authorization)
  - posting a cash payment received to a customer's account (cash pre-list)

Segregation of Functions Three Rules

1. Transaction authorization should be separate from transaction processing.
2. Asset custody should be separate from asset record-keeping.
3. The organization should be so structured that the perpetration of a fraud requires collusion between two or more individuals.

Segregation of Functions

- **Sales Order Processing**
  - credit authorization separate from SO processing
  - inventory control separate from warehouse
  - accounts receivable sub-ledger separate from general ledger control account
- **Cash Receipts Processing**
  - cash receipts separate from accounting records
  - accounts receivable sub-ledger separate from general ledger

Supervision

- Often used when unable to enact appropriate segregation of duties.
- Supervision of employees serves as a deterrent to dishonest acts and is *particularly important in the mailroom*.

Accounting Records

- With a properly maintained audit trail, it is possible to track transactions through the systems and to find where and when errors were made:
  - pre-numbered source documents
  - special journals
  - subsidiary ledgers
  - general ledger
  - files

Access Controls

- Access to assets and information (accounting records) should be limited.
- Within the revenue cycle, the assets to protect are *cash* and *inventories* and access to records such as the *accounts receivable subsidiary ledger* and *cash journal* should be restricted.

Independent Verification

- Physical procedures as well as record-keeping should be independently reviewed at various points in the system to check for accuracy and completeness:
  - shipping verifies the goods sent from the warehouse are correct in type and quantity
  - warehouse reconciles the stock release document (picking slip) and packing slip
  - billing reconciles the shipping notice with the sales invoice
  - general ledger reconciles journal vouchers from billing, inventory control, cash receipts, and accounts receivable

Automating the Revenue Cycle

- Authorizations and data access can be performed through computer screens.
- There is a decrease in the amount of paper.
- The manual journals and ledgers are changed to disk or tape transaction and master files.
- Input is still typically from a hard copy document and goes through one or more computerized processes.
- Processes store data in electronic files (the tape or disk) or prepare data in the form of a hardcopy report.

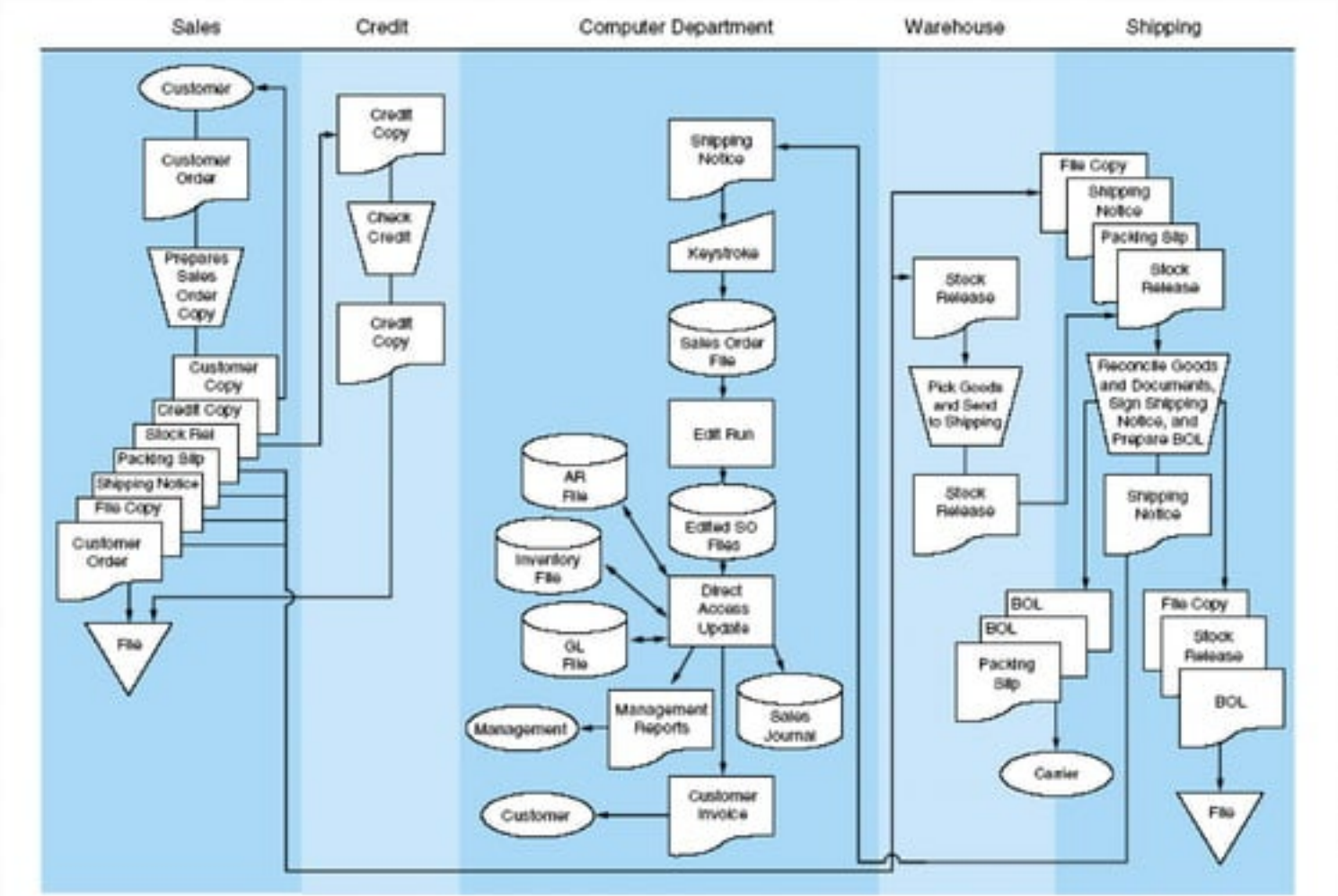
Automating the Revenue Cycle

- Revenue cycle programs can include:
  - formatted screens for collecting data
  - edit checks on the data entered
  - instructions for processing and storing the data
  - security procedures (passwords or user IDs)
  - steps for generating and displaying output
- To understand files, you must consider the record design and layout.
- The documents and the files used as input sources must contain the data necessary to generate the output reports.

Computer-Based Accounting Systems

- CBAS technology can be viewed as a continuum with two extremes:
  - **automation** - use technology to improve efficiency and effectiveness
  - **reengineering** – use technology to restructure business processes and firm organization

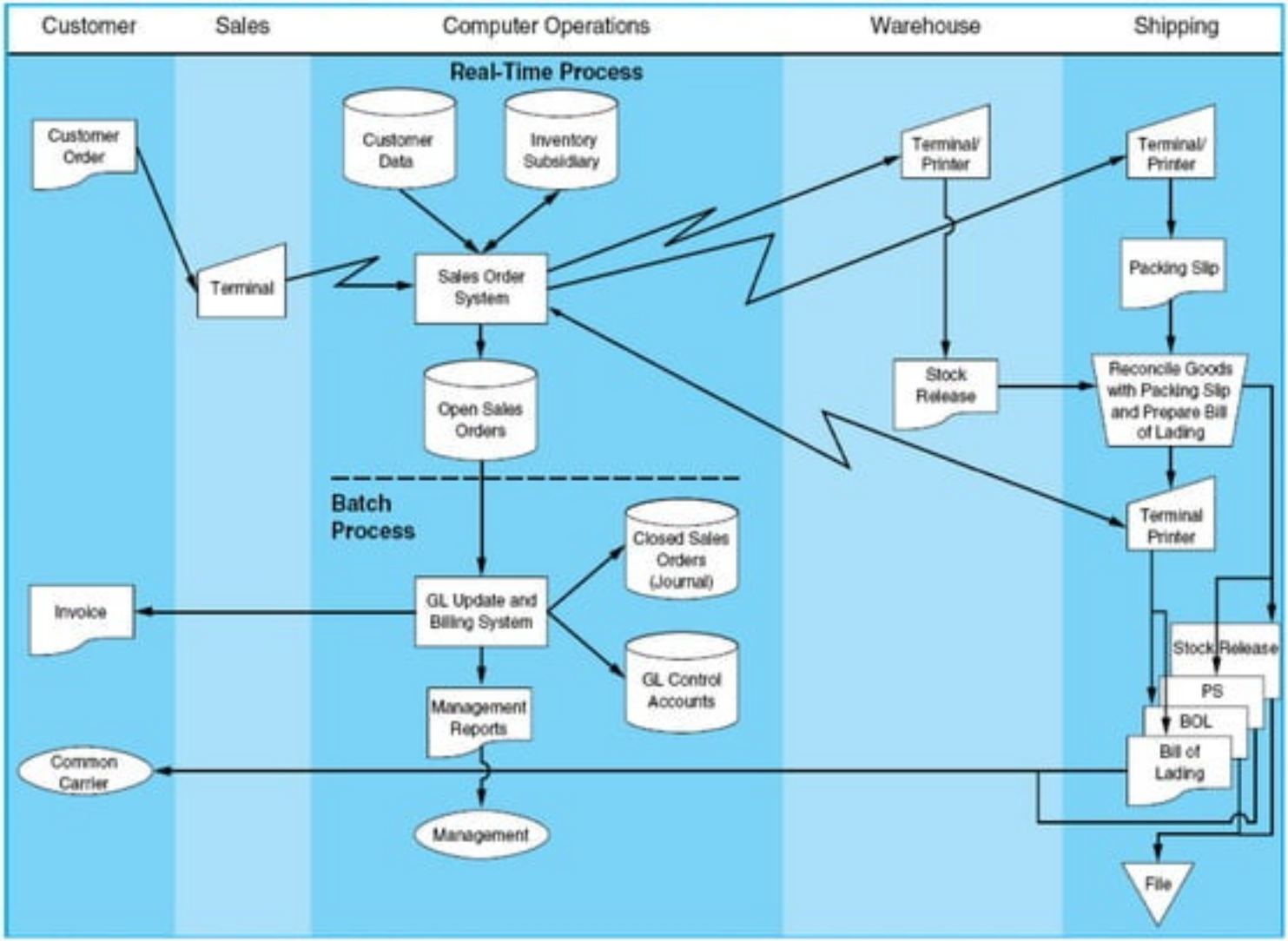
Example: Automated Batch Sales



Reengineering Sales Order Processing Using Real-Time Technology

- Manual procedures and physical documents are replaced by interactive computer terminals.
- Real time input and output occurs, with some master files still being updated using batches.
  - **Real-time** - entry of customer order, printout of stock release, packing slip and bill of lading; update of credit file, inventory file, and open sales orders file
  - **Batch** - printout of invoice, update of closed sales order (journal), accounts receivable and general ledger control account

Real-time Sales Order



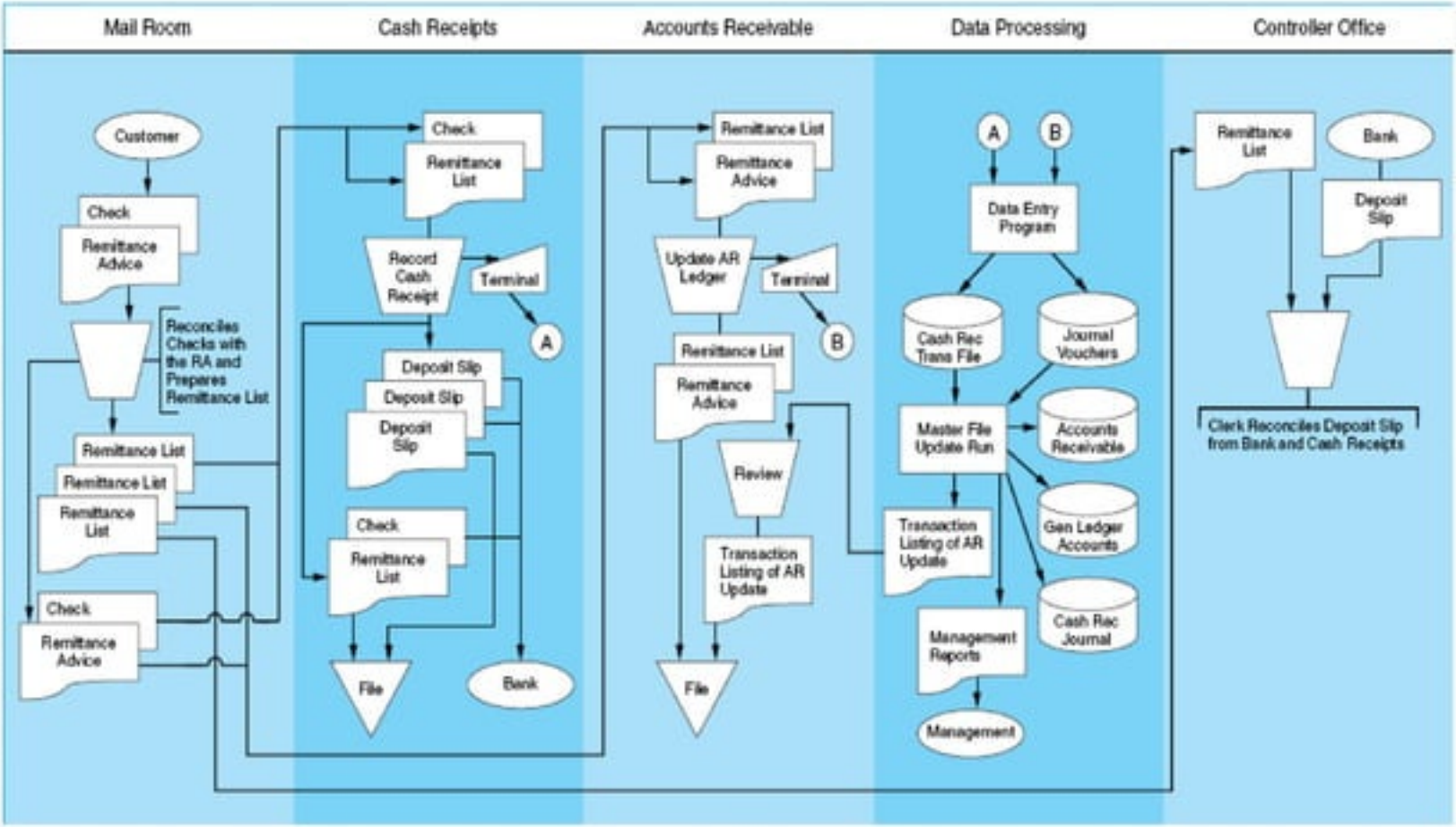
Advantages of Real-Time Processing

- Shortens the cash cycle of the firm by reducing the time between the order date and billing date
- Better inventory management which can lead to a competitive advantage
- Fewer clerical errors, reducing incorrect items being shipped and bill discrepancies
- Reduces the amount of expensive paper documents and their storage costs

Reengineered Cash Receipts

- The mail room is a frequent target for reengineering.
- Companies send their customers preprinted envelopes and remittance advices.
- Upon receipt, these envelopes are scanned to provides a control procedure against theft.
- Machines are open the envelopes, scan remittance advices and checks, and separate the checks.
- Artificial intelligence may be used to read handwriting, such as remittance amounts and signatures.

Automated Cash Receipts



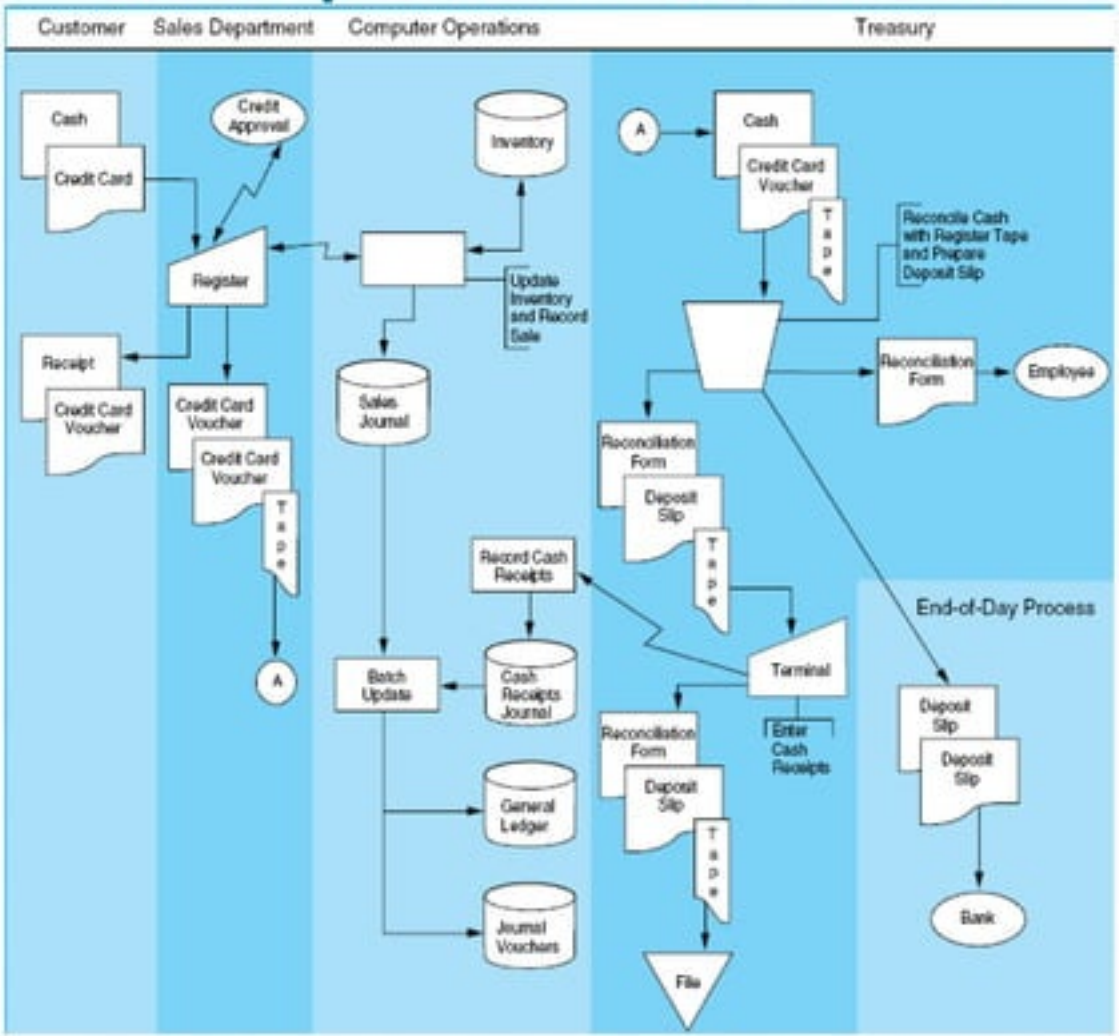
Point-of-Sale Systems

- Point of sale systems are used extensively in retail establishments.
  - *Customers pick the inventory from the shelves and take them to a cashier.*
- The clerk scans the universal product code (UPC). The POS system is connected to an inventory file, where the price and description are retrieved.
  - *The inventory levels are updated and reorder needs can immediately be detected.*

Point-of-Sale Systems

- The system computes the amount due. Payment is either cash, check, ATM or credit card in most cases.
  - No accounts receivables
- If checks, ATM or credit cards are used, an on-line link to receive approval is necessary.
- At the end of the day or a cashier's shift, the money and receipts in the drawer are reconciled to the internal cash register tape or a printout from the computer's database.
  - Cash over and under must be recorded

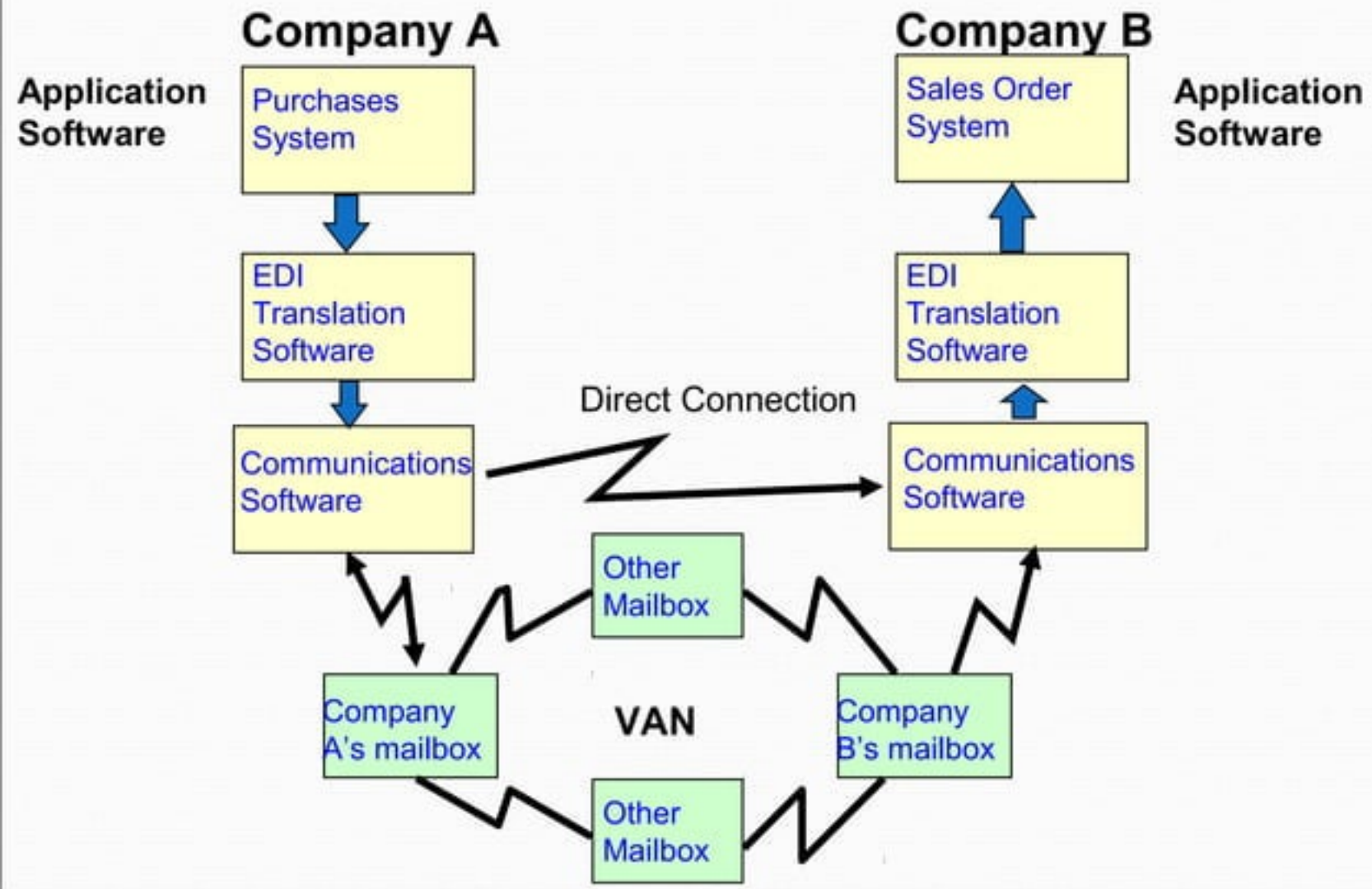
Computerized POS



Reengineering Using EDI

- EDI helps to expedite transactions.
- The customer's computer:
  - determines that inventory is needed
  - selects a supplier with whom the business has a formal business agreement
  - dials the supplier's computer and places the order
- The exchange is completely automated.
  - No human intervention or management

EDI System


Company A
Company B
Application Software
Purchases System
EDI Translation Software
Communications Software
Direct Connection
Sales Order System
EDI Translation Software
Communications Software
Application Software
Other Mailbox
Company A's mailbox
VAN
Company B's mailbox
Other Mailbox

Reengineering Using the Internet

- Typically, no formal business agreements exist as they do in EDI.
- Most orders are made with credit cards.
- Mainly done with e-mail systems, and thus a turnaround time is necessary
  - Intelligent agents are needed to eliminate this time lag.
- Security and control over data is a concern with Internet transactions.

CBAS Control Considerations

- Authorization - in real-time systems, authorizations are automated
  - Programmed decision rules must be closely monitored.
- Segregation of Functions - consolidation of tasks by the computer is common
  - Protect the computer programs
  - Coding, processing, and maintenance should be separated.

CBAS Control Considerations

- Supervision - in POS systems, the cash register's internal tape or database is an added form of supervision
- Access Control - magnetic records are vulnerable to both authorized and unauthorized exposure and should be protected
  - Must have limited file accessibility
  - Must safeguard and monitor computer programs

CBAS Control Considerations

- **Accounting Records** - rest on reliability and security of stored digitalized data
  - Accountants should be skeptical about the accuracy of hard-copy printouts.
  - **Backups** - the system needs to ensure that backups of all files are continuously kept
- **Independent Verification** – consolidating accounting tasks under one computer program can remove traditional independent verification controls. To counter this problem:
  - perform batch control balancing after each run
  - produce management reports and summaries for end users to review

PC-Based Accounting Systems

- Used by small firms and some large decentralized firms
- Allow one or few individuals to perform entire accounting function
- Most systems are divided into modules controlled by a menu-driven program:
  - general ledger
  - inventory control
  - payroll
  - cash disbursements
  - purchases and accounts payable
  - cash receipts
  - sales order

PC Control Issues

- **Segregation of Duties** - tend to be inadequate and should be compensated for with increased supervision, detailed management reports, and frequent independent verification
- **Access Control** - access controls to the data stored on the computer tends to be weak; methods such as encryption and disk locking devices should be used
- **Accounting Records** - computer disk failures cause data losses; external backup methods need to be implemented to allow data recovery