PRINCIPLES OF ACCOUNTING

CHAPTER 5

Accounting Systems

Dr Abenet Yohannes, Ph.D.

Chapter Introduction

Businesses need organized systems for:

- Collecting transaction data
- Classifying financial information
- Recording transactions
- Processing accounting data
- Summarizing account balances
- Preparing financial reports
- Supporting management decisions

An accounting system connects daily business activities with financial statements.

Why This Chapter Matters

As a business grows, a single general journal and general ledger may become inefficient. A larger business may process:

- Hundreds of customer invoices
- Numerous supplier purchases
- Daily cash collections
- Frequent cash payments
- Thousands of customer and supplier balances

Accounting systems organize these transactions efficiently.

Central Accounting Question

THE CENTRAL QUESTION

How can a business design and operate an accounting system that records large volumes of transactions accurately, efficiently and in a form useful to managers and external users?

Learning Objectives

By the end of this chapter, students will be able to:

1. Define and describe an accounting system.
2. Journalize and post transactions using special journals and subsidiary ledgers.
3. Describe the use of computerized accounting systems.
4. Explain the basic features of e-commerce.
5. Apply vertical and horizontal analysis to revenue segments.

> *These objectives correspond to the chapter's verified learning structure.*

Chapter Roadmap

1. Meaning of an accounting system
2. Accounting-system development
3. Manual accounting systems
4. Special journals
5. Subsidiary ledgers
6. Revenue journal
7. Cash receipts journal

1. Purchases journal
2. Cash payments journal
3. Computerized accounting systems
4. E-commerce
5. Segment analysis
6. Practical application

Opening Reflection

A growing consulting business records all of the following in one general journal:

- 1,500 customers
- 600 monthly credit transactions
- 250 suppliers
- Daily cash collections
- Frequent electronic payments

DISCUSSION QUESTIONS

What problems could develop? How could the system be improved? Which records should be separated?

What Is an Accounting System?

An accounting system consists of the methods and procedures used to:

- Collect information
- Classify transactions
- Record financial data
- Summarize results
- Report financial and operating information

Its purpose is to transform transaction data into useful information.

Accounting-System Model

Inputs

- Sales invoices
- Receipts
- Purchase invoices
- Payment documents
- Payroll records
- Bank records

Processing

- Classifying
- Journalizing
- Posting
- Summarizing
- Calculating

Outputs

- Financial statements
- Account balances
- Management reports
- Customer statements
- Supplier reports

Objectives of an Accounting System

An effective accounting system should:

- Record transactions accurately
- Produce timely reports
- Protect business assets
- Maintain an audit trail
- Support internal control
- Meet user-information needs
- Operate efficiently
- Adapt to business growth

Users of Accounting-System Information

Internal Users

- Managers
- Department heads
- Accountants
- Supervisors
- Owners
- Internal auditors

External Users

- Investors
- Creditors
- Banks
- Tax authorities
- Regulators
- External auditors

Three Stages of System Development

The chapter presents accounting-system development as a three-stage process:

1. Analyze user-information needs

2. Design the accounting system

3. Implement the system

User feedback should then support continued improvement.

Stage 1 — Analyze Information Needs

The business should determine:

- Who needs accounting information
- What decisions users make
- Which reports they require
- How frequently reports are needed
- How detailed the information should be
- Which legal requirements apply

Questions for User-Needs Analysis

- What information do managers need?
- Which customer balances must be monitored?
- Which supplier obligations must be tracked?
- What reports are required daily?
- What information is required monthly?
- Which information is confidential?
- Which information is required by law?

Stage 2 — Design the System

System design determines:

- Which source documents will be used
- Which accounts will be created
- Which journals will be maintained
- Which ledgers will be required
- How transactions will be processed
- Which reports will be generated
- Which controls will be implemented

System-Design Decisions

Designers must decide whether to use:

- Manual records
- Computerized records
- A combination of both
- General journals only
- Special journals
- Subsidiary ledgers
- Integrated accounting software

Internal-Control Considerations

A well-designed system should support:

- Authorization
- Segregation of duties
- Document control
- Independent review
- Asset protection
- Error detection
- Restricted system access
- Reliable backup procedures

Audit Trail

An audit trail allows a transaction to be traced in both directions:

Forward

- From the original source document
- Through the journals and ledgers
- To the financial statements

Backward

- From a financial-statement amount
- To the underlying transaction
- To its source document

Stage 3 — Implement the System

Implementation may involve:

- Installing the system
- Creating accounts
- Entering opening balances
- Training employees
- Testing transactions
- Establishing controls
- Converting old records
- Producing initial reports

System Evaluation and Improvement

After implementation, the business should evaluate:

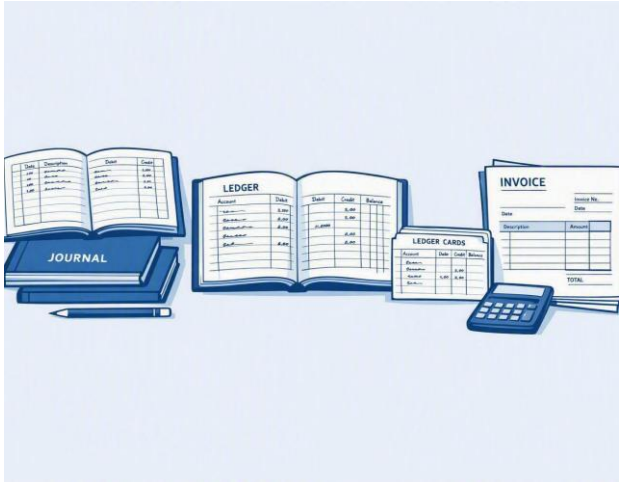
- Accuracy
- Timeliness
- User satisfaction
- Processing efficiency
- Internal-control effectiveness
- Report usefulness
- System capacity
- Required modifications

> *The chapter's system-development exercises emphasize using feedback to improve system efficiency.*

What Is a Manual Accounting System?

A manual accounting system uses physical or manually prepared records such as:

- Paper source documents
- Printed journals
- Ledger cards
- Manual account balances
- Hand-prepared reports



Advantages of Manual Systems

- Relatively inexpensive for small businesses
- Easy to establish
- Requires limited technology
- Records are physically visible
- Suitable for low transaction volumes
- Simple systems may be easy to understand

Limitations of Manual Systems

- Slow transaction processing
- Greater risk of calculation errors
- Repeated recording of information
- Difficult report preparation
- Limited real-time information
- Physical storage requirements
- Difficulties processing high transaction volumes

Flow of Information in a Manual System

1. Source document
2. Journal
3. General or subsidiary ledger
4. Trial balance
5. Adjustments
6. Financial statements

What Is a Special Journal?

A special journal is designed to record a specific category of frequently occurring transactions. Special journals reduce:

- Repeated journal-entry descriptions
- Posting time
- General-journal congestion
- Processing duplication

Why Special Journals Are Used

Assume a business makes 500 credit sales each month. Recording every sale separately in the general journal would require:

- 500 debit entries
- 500 credit entries
- 1,000 individual postings

A special journal summarizes similar transactions and removes this duplication.

Four Common Special Journals

1. Revenue journal
2. Cash receipts journal

1. Purchases journal
2. Cash payments journal

Transactions not appropriate for these journals are recorded in the general journal.

> *The chapter's manual-system objective covers all four journals and their related subsidiary ledgers.*

Special-Journal Classification

Transaction	Journal
Services provided on account	Revenue journal
Cash received	Cash receipts journal
Purchases made on account	Purchases journal
Cash paid	Cash payments journal
Other transaction	General journal

Purpose of the Revenue Journal

The revenue journal records revenue earned on account. Examples:

- Credit sales
- Services provided on account
- Fees earned on account
- Rent earned on account

Cash revenue is not recorded here — it is recorded in the cash receipts journal.

Source Document for Credit Revenue

The common source document is a sales invoice, which may contain:

- Invoice number
- Customer name
- Date
- Description
- Amount
- Payment terms

Revenue-Journal Columns

A basic revenue journal may include the following columns:

Date	Invoice No.	Customer	Post. Ref.	Accounts Receivable Dr.	Revenue Cr.

The debit and credit amounts in a revenue journal are usually equal.

Revenue-Journal Example

On March 5, services worth ETB 25,000 are provided on account to Alpha Trading.

Date	Invoice	Customer	Accounts Receivable Dr.	Fees Earned Cr.
Mar. 5	301	Alpha Trading	25,000	25,000

Individual Posting from the Revenue Journal

The ETB 25,000 is posted individually to the accounts receivable subsidiary ledger:

Alpha Trading account — Debit ETB 25,000

This allows the business to determine the amount owed by each individual customer.

Periodic Posting of Revenue-Journal Totals

At the end of the period, column totals are posted to the general ledger:

- Accounts Receivable control account — Debit
- Fees Earned or Sales Revenue — Credit

This avoids posting every transaction separately to the general ledger.

Revenue-Journal Posting Principle

Individual Amounts

- Posted to customer accounts
- In the accounts receivable subsidiary ledger
- Posted throughout the period

Column Total

- Posted to the related general-ledger control accounts
- Posted at the end of the period

The chapter's exercises require posting revenue-journal amounts to both subsidiary and general ledgers.

What Is a Subsidiary Ledger?

A subsidiary ledger contains separate accounts supporting the balance of a related general-ledger control account.

It provides detailed information about individual customers or suppliers without overcrowding the general ledger.

Accounts Receivable Subsidiary Ledger

The accounts receivable subsidiary ledger contains one account for each credit customer. Examples:

- Alpha Trading
- Beta Construction
- Gamma Consulting
- Delta Stores

Accounts Receivable Control Account

The general ledger contains one summary account:

Accounts Receivable (control account)

Its balance should equal the total of all individual customer balances in the subsidiary ledger.

Accounts Receivable Reconciliation

Control Balance = Sum of Individual Customer Balances

Customer	Balance
Alpha Trading	ETB 25,000
Beta Stores	18,000
Gamma Services	12,000
Total	ETB 55,000

The control-account balance should also be ETB 55,000.

Benefits of the Receivable Subsidiary Ledger

- Shows each customer's balance
- Supports collection follow-up
- Allows customer statements
- Helps identify overdue accounts
- Divides accounting responsibilities
- Supports error detection
- Keeps the general ledger concise

Purpose of the Cash Receipts Journal

The cash receipts journal records all transactions involving cash received. Examples:

- Cash sales
- Cash service revenue
- Collection of customer accounts
- Owner investments
- Loan proceeds
- Interest received
- Rent received

Cash Receipts Source Documents

Possible source documents include:

- Cash-register records
- Official receipts
- Bank-deposit slips
- Electronic payment confirmations
- Customer-remittance advice
- Bank-transfer notices

Cash Receipts Journal Columns

A cash receipts journal may include the following columns:

Date	Account Credited	Post. Ref.	Other Accounts Cr.	Accounts Receivable Cr.	Cash Dr.

Collection from a Customer

Alpha Trading pays ETB 15,000 on account. The effect is:

- Cash increases — Debit ETB 15,000
- Accounts Receivable decreases — Credit ETB 15,000
- Alpha Trading's subsidiary account balance decreases

Cash Receipts Journal Entry

Date	Account Credited	Accounts Receivable Cr.	Cash Dr.
Mar. 20	Alpha Trading	15,000	15,000

Cash is debited and the customer's receivable is credited for the same amount.

Posting Cash Collections

Individual Posting

- The customer payment is posted to the customer's subsidiary account

Periodic Posting

- Cash control account
- Accounts Receivable control account

The chapter connects customer collections in the cash receipts journal with the accounts receivable subsidiary ledger.

Purpose of the Purchases Journal

The purchases journal records purchases made on account. Examples:

- Supplies purchased on account
- Inventory purchased on account
- Equipment purchased on account
- Advertising services obtained on account
- Other assets or expenses acquired on credit

Source Document for Credit Purchases

The common source document is a supplier invoice containing:

- Supplier name
- Invoice number
- Date
- Description
- Quantity
- Amount
- Credit terms

Purchases-Journal Columns

A purchases journal may include the following columns:

Date	Supplier	Post. Ref.	Accounts Payable Cr.	Supplies Dr.	Other Accounts Dr.

Purchases-Journal Example

The business purchases office supplies costing ETB 12,000 on account from Horizon Supplies.

Date	Supplier	Accounts Payable Cr.	Supplies Dr.
Apr. 4	Horizon Supplies	12,000	12,000

Individual Posting from the Purchases Journal

The ETB 12,000 is posted individually to the accounts payable subsidiary ledger:

Horizon Supplies — Credit ETB 12,000

This shows the amount owed to each individual supplier.

Periodic Posting of Purchases Totals

At the end of the period:

- The Accounts Payable column total is credited to the control account
- The Supplies column total is debited to Supplies
- Other accounts are posted according to their classifications

Accounts Payable Subsidiary Ledger

This ledger contains a separate account for each supplier. Examples:

- Horizon Supplies
- City Office Equipment
- National Advertising
- Prime Technologies

Accounts Payable Control Account

The general ledger contains one summary account:

Accounts Payable (control account)

Its balance should equal the total amount owed to all individual suppliers.

Accounts Payable Reconciliation

Control Balance = Sum of Individual Supplier Balances

Supplier	Balance
Horizon Supplies	ETB 12,000
Prime Technologies	35,000
National Advertising	8,000
Total	ETB 55,000

Benefits of the Payable Subsidiary Ledger

- Shows the amount owed to each supplier
- Supports payment scheduling
- Helps avoid duplicate payments
- Supports supplier reconciliation
- Tracks credit terms
- Supports cash forecasting
- Keeps the general ledger concise

Purpose of the Cash Payments Journal

The cash payments journal records all transactions involving cash paid. Examples:

- Payments to suppliers
- Cash purchases
- Expense payments
- Loan repayments
- Asset purchases for cash
- Owner withdrawals
- Refunds paid

Cash Payments Source Documents

Possible source documents include:

- Cheques
- Payment vouchers
- Bank-transfer instructions
- Electronic payment confirmations
- Supplier invoices
- Approved expense documents

Cash Payments Journal Columns

A cash payments journal may include the following columns:

Date	Cheque No.	Account Debited	Post. Ref.	Other Accounts Dr.	Accounts Payable Dr.	Cash Cr.

Payment to a Supplier

The business pays Horizon Supplies ETB 7,000 on account. The effect is:

- Accounts Payable decreases — Debit
- Cash decreases — Credit
- Horizon Supplies' subsidiary balance decreases

Cash Payments Journal Entry

Date	Account Debited	Accounts Payable Dr.	Cash Cr.
Apr. 20	Horizon Supplies	7,000	7,000

Accounts Payable is debited and Cash is credited for the same amount.

Posting Cash Payments

Individual Posting

- Payments to suppliers are posted to the individual supplier accounts

Periodic Posting

- Cash control account
- Accounts Payable control account
- Other applicable general-ledger accounts

The chapter's exercises require posting cash payments to both general and supplier subsidiary ledgers.

The General Journal

The general journal records transactions not suited to a special journal. Examples:

- Adjusting entries
- Closing entries
- Correction entries
- Asset exchanges
- Non-cash transactions
- Occasional unusual transactions

Special-Journal Decision Table

Transaction	Correct Journal
Services provided on account	Revenue
Customer pays account	Cash receipts
Supplies purchased on account	Purchases
Supplier paid	Cash payments
Cash service revenue	Cash receipts
Equipment purchased for cash	Cash payments
Depreciation adjustment	General journal
Owner invests cash	Cash receipts

What Is a Computerized Accounting System?

A computerized accounting system uses software to:

- Capture transaction data
- Process debits and credits
- Update accounts
- Maintain customer and supplier records
- Produce reports
- Store accounting information

Computerized Processing Sequence

1. Enter transaction data using an electronic form
2. The system processes the transaction
3. Related accounts and ledgers are updated
4. Reports are produced for users

The chapter's computerized-system exercises focus on electronic forms, transaction entry and report generation.

Electronic Forms

Computerized systems may use:

- Electronic invoices
- Purchase-order forms
- Cash-receipt forms
- Payment forms
- Expense forms
- Payroll forms
- Inventory forms

Once entered, data may update several accounting records simultaneously.

Automatic Processing

When a credit invoice is entered, the system may automatically update:

- Customer account
- Accounts Receivable control account
- Revenue account
- Sales report
- Customer aging report
- General ledger

Computerized-System Outputs

Possible reports include:

- Trial balance
- General ledger
- Customer balances
- Supplier balances
- Revenue by customer
- Cash-receipt report
- Accounts-receivable aging
- Financial statements

Advantages of Computerized Systems

- Faster processing
- Improved calculation accuracy
- Automatic posting
- Real-time balances
- Rapid report preparation
- Reduced duplication
- Easier transaction searching
- Greater data-processing capacity

Risks and Limitations

- Unauthorized access
- Incorrect data entry
- System failure
- Cybersecurity threats
- Loss of data
- Weak password control
- Incorrect software configuration
- Dependence on technical support

KEY PRINCIPLE
Automation processes incorrect data faster when input controls are weak.

What Is E-Commerce?

E-commerce involves conducting business transactions electronically through networks such as the internet. It may involve:

- Product ordering
- Service purchasing
- Electronic invoicing
- Online payments
- Customer communication
- Supplier transactions

Business-to-Business E-Commerce

Business-to-business, or B2B, involves transactions between businesses. Examples:

- A retailer ordering goods from a wholesaler
- A hotel purchasing supplies online
- A manufacturer ordering raw materials
- A business using electronic banking services

Business-to-Consumer E-Commerce

Business-to-consumer, or B2C, involves transactions between a business and individual customers. Examples:

- A customer buying a book online
- A consumer booking a hotel room
- A student paying for an online course
- A shopper ordering clothing from a retailer

> *The chapter distinguishes B2B and B2C transactions through practical classification exercises.*

Accounting Implications of E-Commerce

E-commerce systems must capture:

- Customer orders
- Sales revenue
- Receivables
- Cash collections
- Sales returns
- Delivery costs
- Taxes
- Electronic transaction evidence

E-Commerce Controls

Important controls include:

- User authentication
- Transaction authorization
- Data encryption
- Sequential transaction numbers
- Electronic confirmations
- Access restrictions
- Backup procedures
- Reconciliation with bank records

What Is a Revenue Segment?

A revenue segment is a distinguishable source or category of business revenue. Examples:

- Service fees
- Rental revenue
- Product sales
- Consulting revenue
- Interest revenue
- Geographic markets
- Customer groups

> *Segment analysis helps identify which activities contribute most to total revenue.*

Vertical Segment Analysis

Vertical analysis expresses each revenue segment as a percentage of total revenue.

$$\text{Segment \%} = (\text{Segment Revenue} \div \text{Total Revenue}) \times 100$$

Example	Amount
Consulting revenue	ETB 300,000
Total revenue	ETB 500,000
Consulting share (300,000 ÷ 500,000 × 100)	60%

> *The chapter requires vertical analysis to evaluate the contribution of individual revenue segments.*

Horizontal Analysis of Revenue Segments

Horizontal analysis measures the change between periods.

$$\% \text{ Change} = (\text{Current} - \text{Prior}) \div \text{Prior} \times 100$$

Revenue Segment	2026	2025	Change	% Change
Consulting	ETB 330,000	ETB 300,000	+30,000	+10.0%
Training	150,000	120,000	+30,000	+25.0%
Other services	70,000	80,000	−10,000	−12.5%
Total	550,000	500,000	+50,000	+10.0%

The chapter combines horizontal and vertical analysis to assess segment growth and contribution.

Practical Classification Exercise

Identify the correct journal for each transaction:

Transaction	Journal
Services provided on account	Revenue journal
Cash collected from customer	Cash receipts journal
Office equipment purchased on account	Purchases journal
Rent paid in cash	Cash payments journal
Depreciation recorded	General journal
Owner invests cash	Cash receipts journal
Supplier paid on account	Cash payments journal

Subsidiary-Ledger Exercise

The Accounts Receivable control balance is ETB 75,000. Customer balances are:

Customer	Balance
Alpha Trading	ETB 30,000
Beta Stores	25,000
Gamma Services	18,000
Subsidiary total	ETB 73,000

Difference: 75,000 − 73,000 = ETB 2,000

FINDING
The accountant should investigate the ETB 2,000 difference rather than force the records to agree.

Chapter Summary (1 of 2)

- An accounting system collects, classifies, records and reports information.
- System development includes needs analysis, design and implementation.
- Manual systems use source documents, journals and ledgers.
- Special journals process recurring transactions efficiently.
- The revenue journal records revenue earned on account.
- The cash receipts journal records all cash received.
- The purchases journal records purchases made on account.

Chapter Summary (2 of 2)

- The cash payments journal records all cash paid.
- Subsidiary ledgers provide detailed customer and supplier balances.
- Control accounts summarize subsidiary-ledger information.
- Computerized systems automate recording, posting and reporting.
- E-commerce includes B2B and B2C transactions.
- Vertical analysis measures each segment's contribution to total revenue.
- Horizontal analysis measures changes between periods.

The Accounting-System Flow

1. Analyze user needs
2. Design the system
3. Implement controls and procedures
4. Capture transactions

1. Process and post information
2. Reconcile records
3. Prepare reports
4. Evaluate and improve the system

KEY MESSAGE

An effective accounting system does more than record transactions. It organizes information, supports internal control, provides detailed accountability and produces timely reports for business decisions.

Questions and Discussion

Thank You

As transaction volume grows, accounting systems must become more structured. Special journals, subsidiary ledgers and computerized processing allow businesses to record information efficiently while preserving accuracy, detail and accountability.

Dr Abenet Yohannes, Ph.D.
Principles of Accounting · abenetyohannes@gmail.com