HR Cycle & Production Cycle

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- Human Resource Cycle
- Production Cycle

Sumber Materi

- Romney / Steinbart, Accounting Information Systems, 9th Edition ch.11-12, Prentice Hall

The Human Resources Management/Payroll Cycle

Chapter 14

Learning Objectives

1. Describe the major business activities and related data processing operations performed in the human resources management (HRM)/payroll cycle.
2. Identify the major threats in the HRM/payroll cycle, and evaluate the adequacy of various internal control procedures for dealing with them.

Learning Objectives

3. Explain the key decisions that need to be made in the HRM/payroll cycle, and identify the information required to make those decisions.
4. Read and understand a data model (REA diagram) of the HRM/payroll cycle.
5. Create a data model (REA diagram) of the HRM/payroll cycle.

Introduction

- The HRM/payroll cycle is a recurring set of business activities and related data processing operations associated with effectively managing the employee work force.
- Some of the more important activities include the following tasks:
  - recruitment and hiring
  - training

Introduction

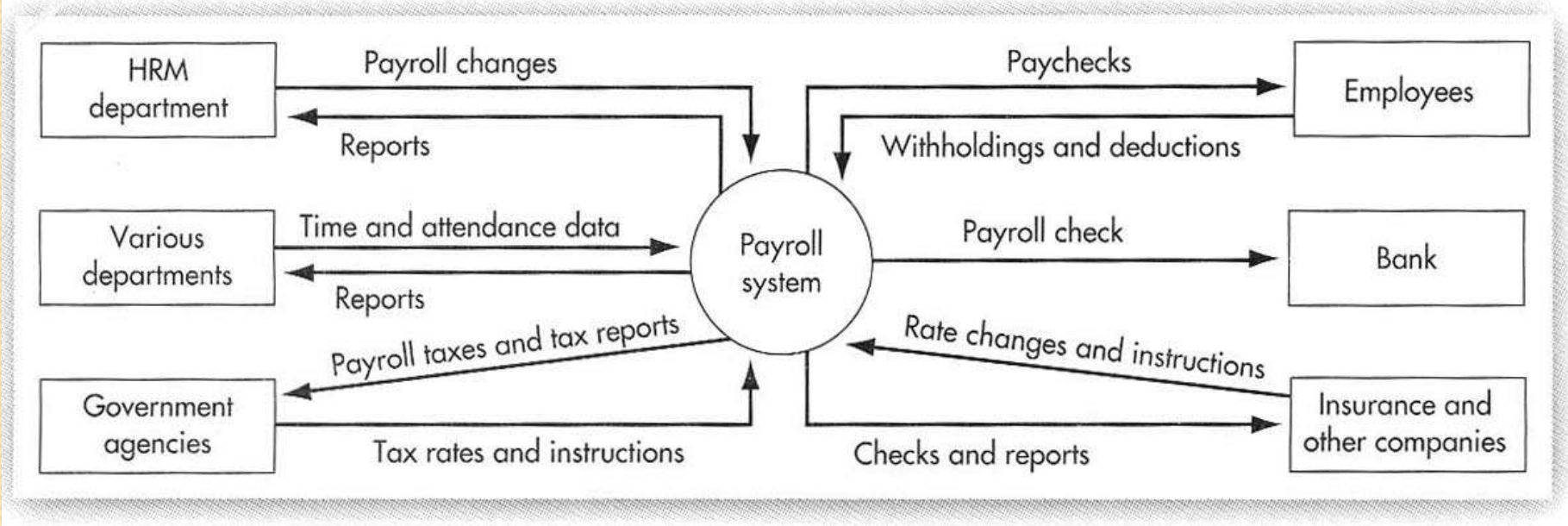
- job assignment
- compensation (payroll)
- performance evaluation
- discharge of employees, due to voluntary or involuntary termination

- This chapter focuses primarily on the payroll system.

Learning Objective 1

Describe the major business activities and related data processing operations performed in the human resources management (HRM)/payroll cycle.

Figure 14-1 Context diagram of the payroll portion of the HRM/payroll cycle



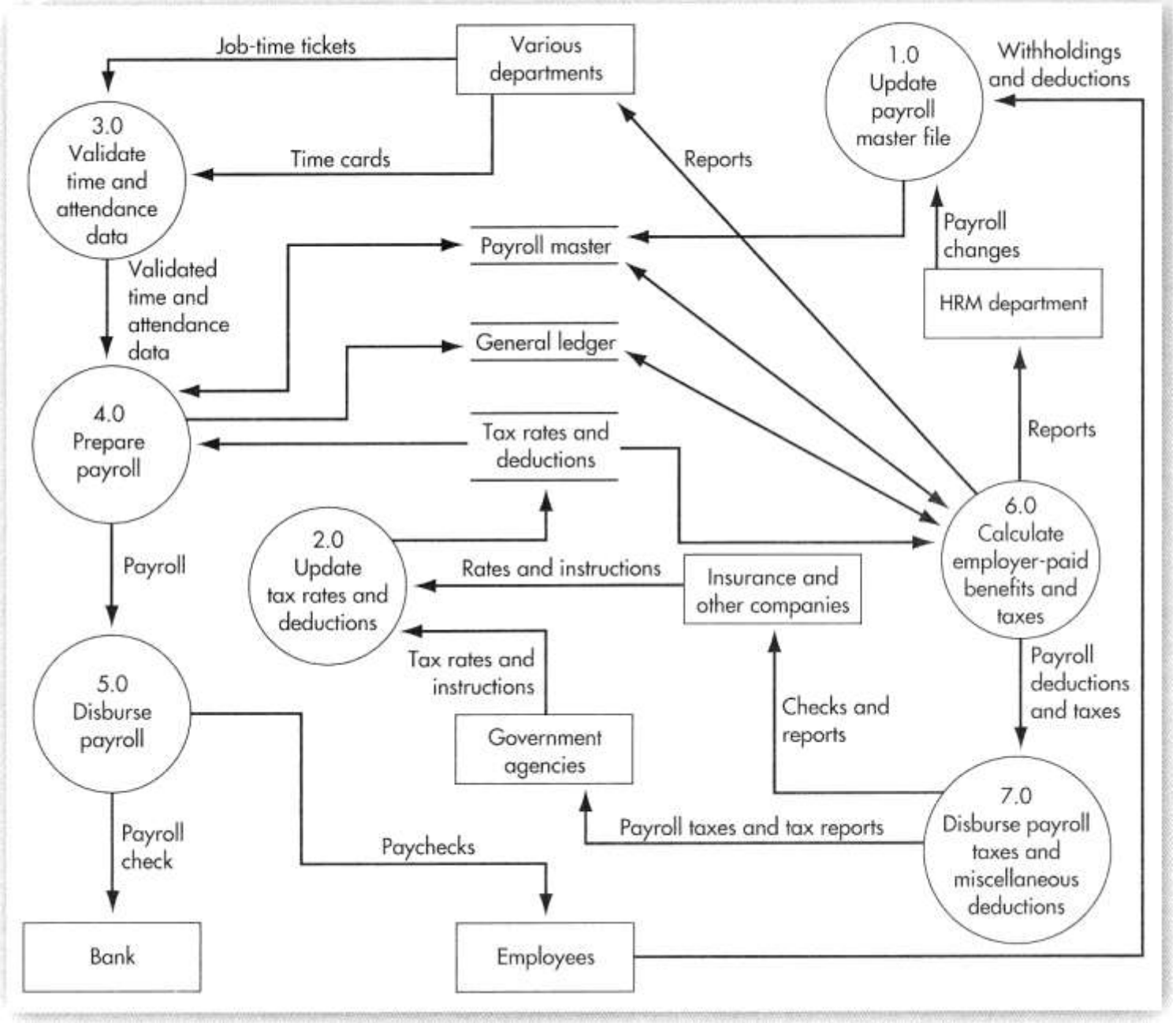
Payroll Cycle Activities

- The *first function* of the AIS is processing transactional data.
- Why is payroll processed in batch mode?
  - Paychecks are prepared periodically.
  - Most employees are paid at the same time.

Payroll Cycle Activities

- What are the basic activities performed in the payroll cycle?
  1. Update master payroll file
  2. Update tax rates and deductions
  3. Validate time and attendance data
  4. Prepare payroll
  5. Disburse payroll
  6. Calculate employer-paid benefits and taxes
  7. Deduct payroll taxes and other deductions

Figure 14-2 Level 0 DFD for the payroll cycle



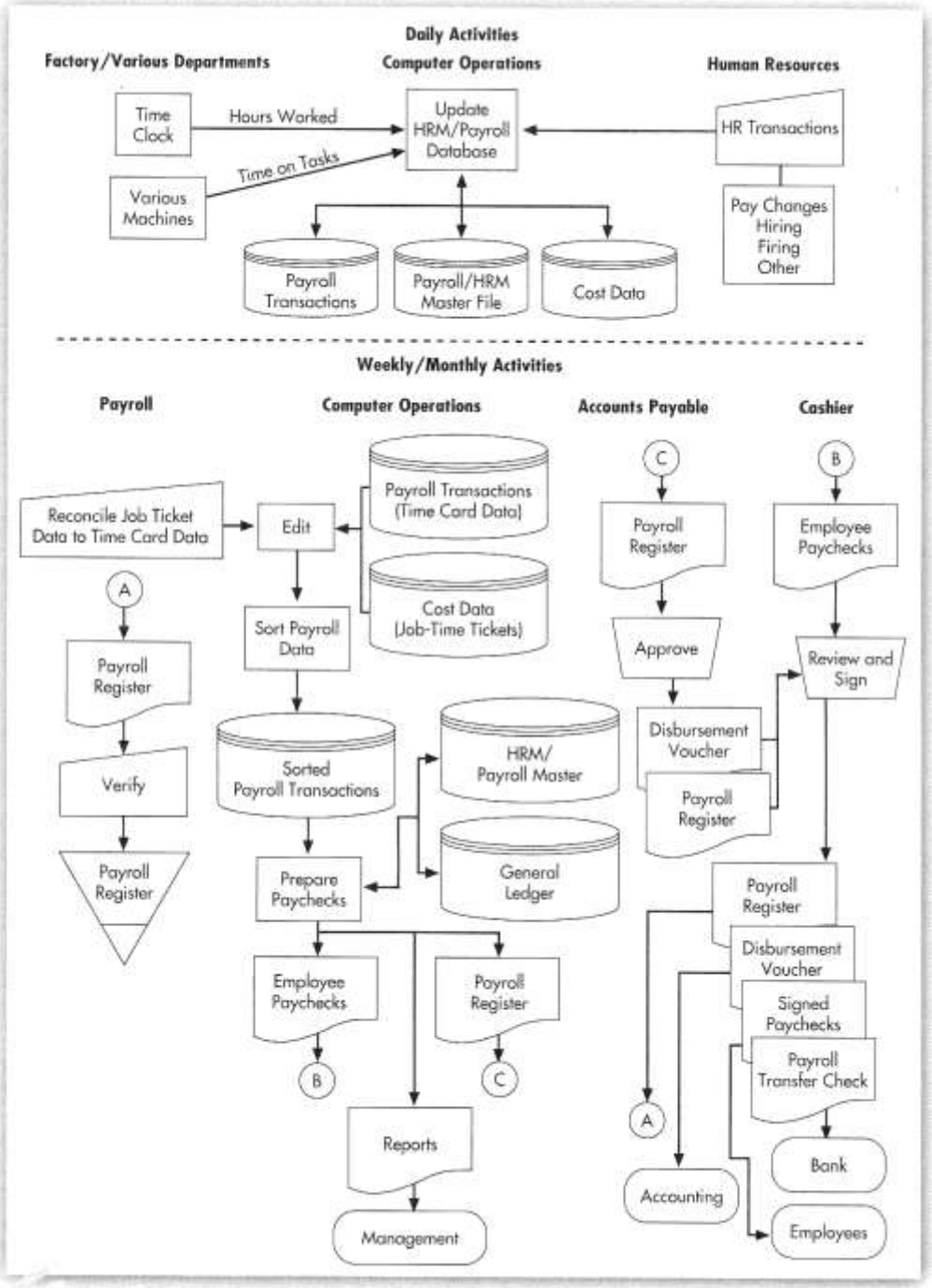


Figure 14-3 HRM/payroll flowchart

Update Master Payroll File (Activity 1)

- The first activity in the HRM/payroll cycle involves updating the payroll master file to reflect payroll changes such as new hires, terminations, changes in pay rates, or changes in discretionary withholdings.
- It is important that all payroll changes are entered in a timely manner and are properly reflected in the next pay period.

Update Tax Rates and Deductions (Activity 2)

- The second activity in the HRM/payroll cycle involves updating information about tax rates and other withholdings.
- These changes happen whenever updates about changes in tax rates and other payroll deductions are received from various government units and insurance companies.

Validate Time and Attendance Data (Activity 3)

- The third activity in the payroll cycle is to validate each employee's time and attendance data.
- This information comes in various forms, depending on an employee's status.
- What are some pay schemes?
  - time cards for those paid on an hourly basis
  - self report for professionals

Validate Time and Attendance Data (Activity 3)

  - straight commission or salary plus commission
  - incentives and bonuses
- *Procedures:*
- The payroll department is responsible for validating employee time records.
- For factory workers, validation involves comparing the total time worked with the time spent on each job.

Validate Time and Attendance Data (Activity 3)

- The payroll clerk calculates batch totals and enters them along with the time data.
- The batch totals are recalculated by the computer after subsequent processing steps.
- Payroll transaction data are entered through online terminals.
- Edit checks are performed on each time and attendance record.

Opportunities for Using Information Technology

- What are some opportunities of using information technology *to validate time and attendance data (Activity 3)?*
  - collecting employee time and attendance data electronically, instead of on paper documents
  - using badge readers
  - using electronic time clocks

Prepare Payroll (Activity 4)

- The fourth activity in the payroll cycle involves preparing payroll.
- Data about the hours worked are provided by the department in which the employee works.
- Pay rate information is obtained from the payroll master file.
- The person responsible for preparing paychecks cannot add new records to this file.

Prepare Payroll (Activity 4)

- *Procedures:*
- Payroll processing is performed in the computer operations department.
- The payroll transaction file is sorted by employee number.
- The sorted time data file is used to prepare employee paychecks.

Prepare Payroll (Activity 4)

- All payroll deductions are summed and the total is subtracted from gross pay to obtain net pay.
- What are types of payroll deductions?
  - withholdings
  - voluntary deductions
- Finally, the payroll register and employee paychecks are printed.

Alpha Omega Electronics		PAYROLL REGISTER					Period Ended 12/03/2003		
					Deductions				
Employee No.	Name	Hours	Pay Rate	Gross Pay	Fed. Tax	FICA	State Tax	Misc.	Net Pay
37884	Jarvis	40.0	6.25	250.00	35.60	18.75	16.25	27.60	151.80
37885	Burke	43.6	6.50	295.10	42.40	22.13	19.18	40.15	171.24
37886	Lincoln	40.0	6.75	270.00	39.20	20.25	17.55	27.90	165.10
37887	Douglass	44.2	7.00	324.10	46.60	24.31	21.07	29.62	202.50

Alpha Omega Electronics		DEDUCTION REGISTER					Period Ended 12/03/2003
		Miscellaneous Deductions					
Employee No.	Name	Health Ins.	Life Ins.	Retirement	Union Dues	Savings Bond	Total Misc.
37884	Jarvis	10.40	5.50	7.50	4.20	0.00	27.60
37885	Burke	11.60	5.50	8.85	4.20	10.00	40.15
37886	Lincoln	10.40	5.20	8.10	4.20	0.00	27.90
37887	Douglass	10.20	5.50	9.72	4.20	0.00	29.62

Figure 14-4 Sample payroll deduction registers

Opportunities for Using Information Technology

- What are some opportunities of using information technology *to prepare payroll (Activity 4)?*
  - produce and distribute payroll reports electronically rather than on paper
  - online terminals
  - corporate intranets

Disburse Payroll (Activity 5)

- The fifth activity is actual disbursement of paychecks to employees.
- Most employees are paid either by check or by direct deposit of the net pay amount into the employee's bank account.

Disburse Payroll (Activity 5)

- *Procedures:*
- Once paychecks have been prepared, the payroll register is sent to the accounts payable department for review and approval.
- A disbursement voucher is then prepared.
- The disbursement voucher and payroll register are then sent to the cashier.

Opportunities for Using Information Technology

- What are some opportunities of using information technology *to disburse payroll (Activity 5)?*
  - direct deposit
  - outsourcing to a payroll service bureau

Calculate Employer-Paid Benefits and Taxes (Activity 6)

- Some payroll taxes and employee benefits are paid directly by the employer.
- Federal and state laws require employers to contribute a specified percentage of each employee's gross pay to federal and state unemployment compensation insurance funds.
- Employers often contribute to health, disability, and insurance premiums.

Calculate Employer-Paid Benefits and Taxes (Activity 6)

- Many companies also offer their employees flexible benefit plans.
- Many employees are offered and contribute toward a choice of retirement savings plans.

Disburse Payroll Taxes and Other Deductions (Activity 7)

- The final activity in the payroll process involves paying the payroll tax liability and the other voluntary deductions of each employee.
- An organization must periodically prepare checks or use electronic transfer to pay the various tax liabilities incurred.

Disburse Payroll Taxes and Other Deductions (Activity 7)

- The timing of these payments is specified by the respective government agencies.
- The funds voluntarily withheld from each employee's paycheck for various benefits must be disbursed to the appropriate organizations.

Learning Objective 2

Identify the major threats in the HRM/payroll cycle, and evaluate the adequacy of various internal control procedures for dealing with them.

Control Objectives, Threats, and Procedures

- The *second function* of the AIS in the HRM/payroll cycle is to provide adequate internal controls to ensure meeting the following objectives:

1. payroll transactions are properly authorized
2. recorded payroll transactions are valid
3. authorized payroll transactions are recorded
4. payroll transactions are accurately recorded

Control Objectives, Threats, and Procedures

5. applicable government regulations regarding remittance of taxes and filing of payroll and HRM reports are met
6. assets (both cash and data) are safeguarded from loss or theft
7. HRM/payroll cycle activities are performed efficiently and effectively

Control Objectives, Threats, and Procedures

- What are some *threats?*
  1. hiring of unqualified or larcenous employees
  2. violation of employment law
  3. unauthorized changes to the master payroll file
  4. inaccurate time data
  5. inaccurate processing of payroll
  6. theft or fraudulent distribution of paychecks
  7. loss or unauthorized disclosure of payroll data
  8. poor performance

Control Objectives, Threats, and Procedures

- What are some *exposures?*
  - increased expenses
  - lower productivity
  - theft
  - fines and civil suits
  - inaccurate records and reports
  - over/underpayment of employees
  - reduced morale

Control Objectives, Threats, and Procedures

- What are some *control procedures?*
  - sound hiring practices (verification of job applicant's skills, references, and employment history)
  - thorough documentation of hiring procedures
  - segregation of duties
  - batch totals and other application controls

Control Objectives, Threats, and Procedures

- direct deposit
- paycheck distribution by someone independent of payroll process
- investigation of all unclaimed paychecks
- separate payroll checking account
- access control
- backup procedures
- encryption

Table 14-2 Threats and Controls in the Payroll/HRM Cycle

Process/Activity	Threat	Applicable Control Procedures
Hiring and recruiting	1. Hiring unqualified or larcenous employees	Sound hiring procedures, including verification of job applicant's skills, references and employment history
	2. Violation of employment law	Thorough documentation of hiring procedures; training on current developments in employment law
Payroll processing	3. Unauthorized changes to payroll master file	Segregation of duties: HRM versus payroll and paycheck distribution; access controls; review of all changes
	4. Inaccurate time data	Automation of data collection; various edit checks; reconciliation of time card data with job-time ticket data
	5. Inaccurate processing of payroll	Batch totals and other application controls; payroll clearing account; review of IRS regulations
	6. Theft or fraudulent distribution of paychecks	Direct deposit; paycheck distribution by someone independent of payroll process; investigation of unclaimed pay-

		controls; review of all changes
	4. Inaccurate time data	Automation of data collection; various edit checks; reconciliation of time card data with job-time ticket data
	5. Inaccurate processing of payroll	Batch totals and other application controls; payroll clearing account; review of IRS regulations
	6. Theft or fraudulent distribution of paychecks	Direct deposit; paycheck distribution by someone independent of payroll process; investigation of unclaimed paychecks; restricted access to blank paychecks; prenumbering and periodic accounting for all paychecks; use of separate payroll checking account, maintained as an imprest fund; reconciliation of payroll bank account by someone not involved in payroll processing
General	7. Loss or unauthorized disclosure of data	Backup procedures; disaster recovery plans; physical and logical access controls; encryption of data
	8. Poor performance	Development and periodic review of appropriate performance metrics; training programs

Learning Objective 3

Explain the key decisions that need to be made in the HRM/payroll cycle, and identify the information required to make those decisions.

Information Needs and Procedures

- The *third function* of the AIS is to provide information useful for decision making.
- The payroll system must be designed to collect and integrate cost data with other types of information in order to enable management to make the following kinds of decisions:

Information Needs and Procedures

1. Future work force staffing needs
2. Employee performance
3. Employee morale
4. Payroll processing efficiency and effectiveness

Information Needs and Procedures

- Some of the information has traditionally been provided by the payroll system.
- Other information, such as data about employee skills, had normally been provided and maintained by the HRM system.
- Other information, such as data about employee morale, has traditionally not been collected.

Table 14-1 Examples of Commonly Generated HRM/Payroll Cycle Reports

Report Name	Contents	Purpose
Cumulative earnings register	Cumulative year-to-date gross pay, net pay, and deductions for each employee	Used for employee information and annual payroll reports
Workforce inventory	List of employees by department	Used in preparing labor-related reports for government agencies
Position control report	List of each authorized position, job qualifications, budgeted salary, and position status (filled or vacant)	Used in planning future workforce needs
Skills inventory report	List of employees and current skills	Useful in planning future workforce needs and training programs
Form 941	Employer's quarterly federal tax return (showing all wages subject to tax and amounts withheld for income tax and FICA)	Filed quarterly
Form W-2	Report of wages and withholdings for each employee	Sent to each employee for use in preparing their individual tax returns; due by January 31
Form W-3	Summary of all W-2 forms	Sent to federal government along with a copy of all W-2 forms; due by February 28
Form 1099-Misc.	Report of income paid to independent contractors	Sent to recipients of income for use in filing their income tax returns; due by January 31

The Production Cycle

Chapter 13

Learning Objectives

1. Describe the major business activities and related data processing operations performed in the production cycle.
2. Explain how a company's cost accounting system can help it achieve its manufacturing goals.
3. Identify major threats in the production cycle, and evaluate the adequacy of various control procedures for dealing with those threats.

Learning Objectives

4. Discuss the key decisions that need to be made in the production cycle, and identify the information needed to make those decisions.
5. Read and understand an REA data model of the production cycle.
6. Develop an REA data model for the production cycle.

Learning Objective 1

Describe the major business activities and related data processing operations performed in the production cycle.

Production Cycle Activities

- The production cycle is a recurring set of business activities and related data processing operations associated with the manufacturing of products.
- The *first function* of the AIS is to support the effective performance of the organization's business activities.

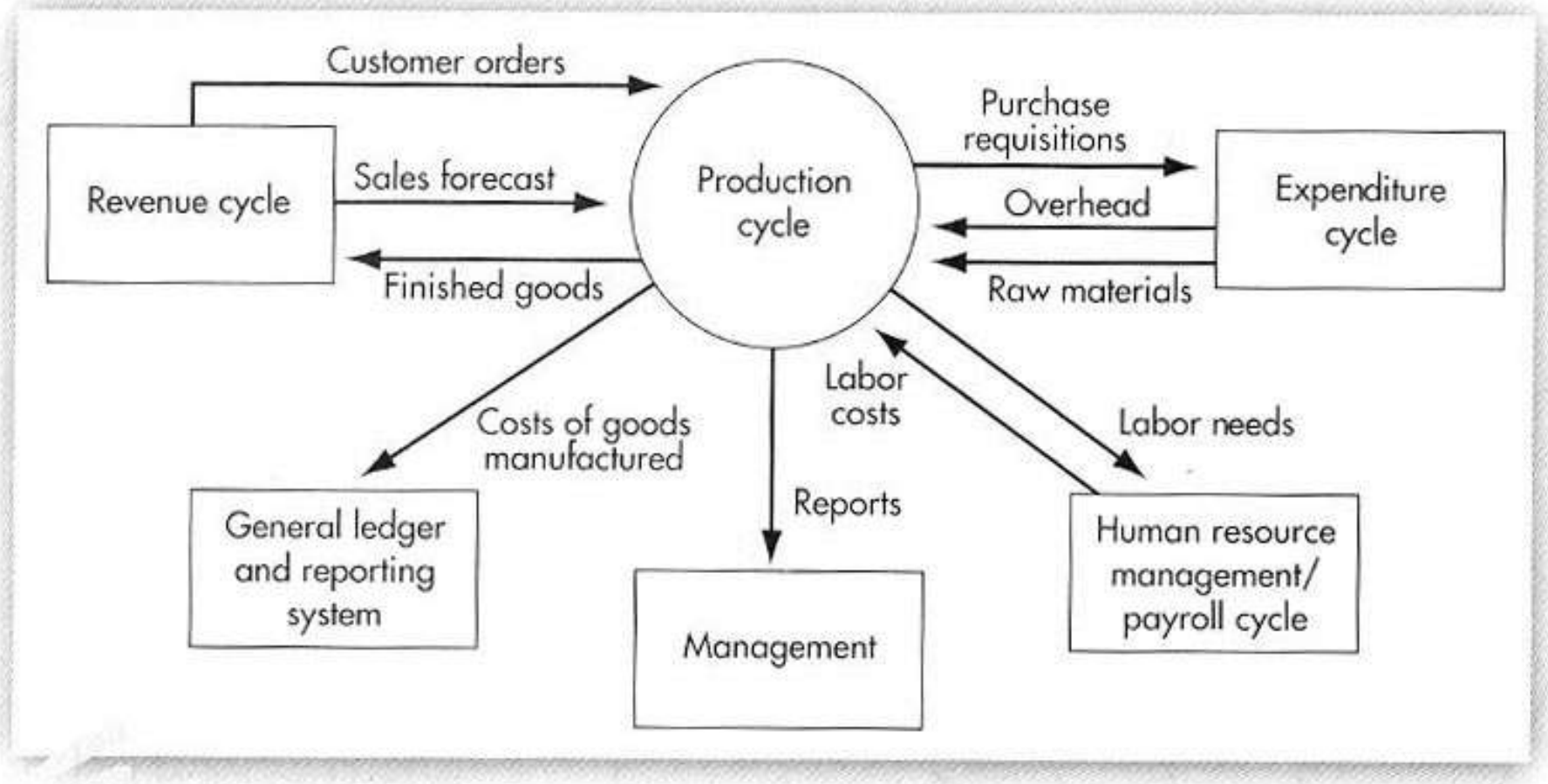


Figure 13-1 Context diagram of the production cycle

Production Cycle Activities

- What are the four basic activities in the production cycle?
  1. Product design
  2. Planning and scheduling
  3. Production operations
  4. Cost accounting

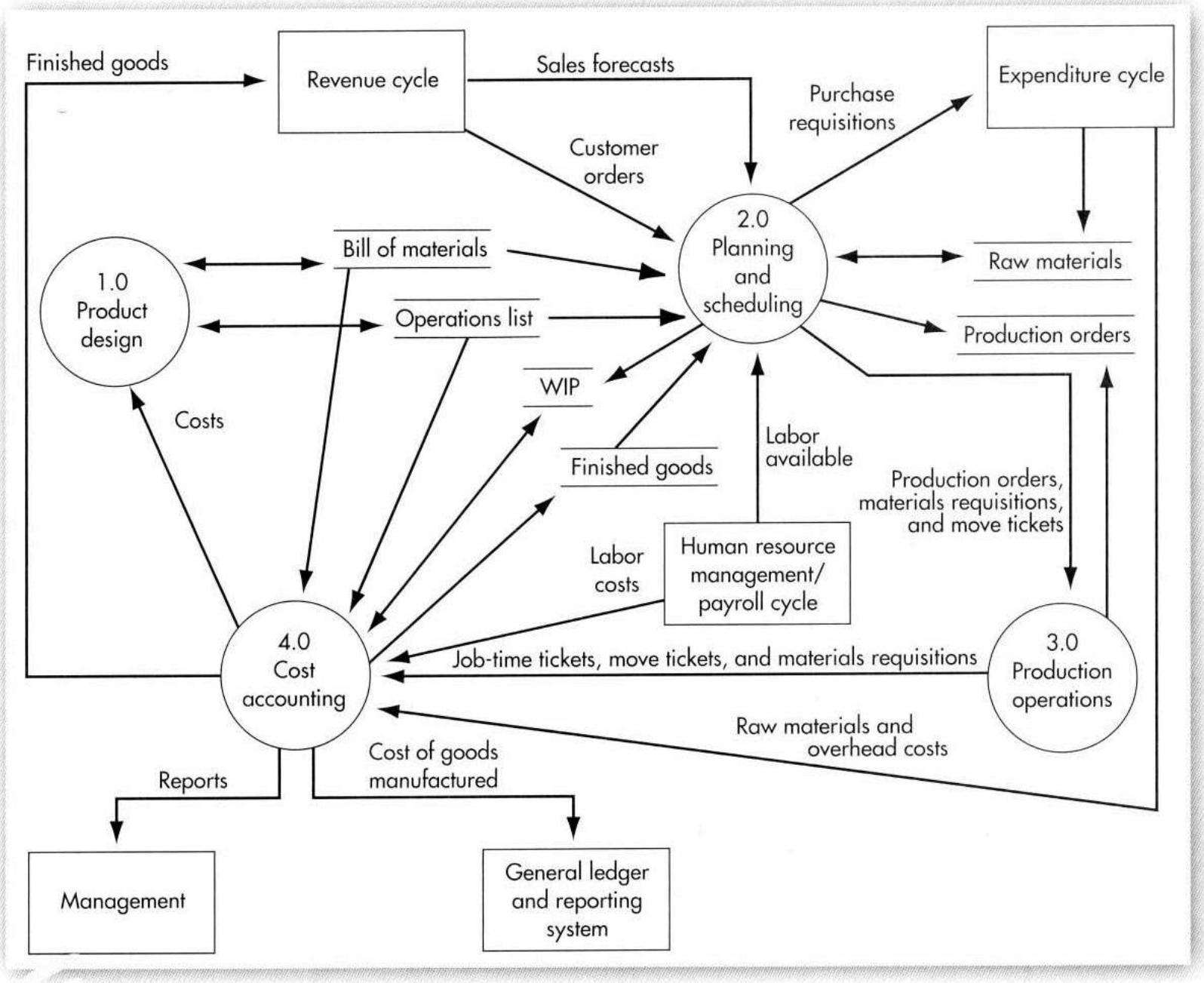


Figure 13-2 Level 0 DFD of the production cycle

Product Design (Activity 1)

- The first step in the production cycle is product design.
- The objective of this activity is to design a product that meets customer requirements for quality, durability, and functionality while simultaneously minimizing production costs.

Product Design (Activity 1)

- *Documents and procedures:*
- The product design activity creates two main documents:

1. Bill of materials
2. Operations list

Product Design (Activity 1)

- How can accountants be involved in product design?
  - by showing how various design trade-offs affect production costs and thereby profitability
  - by ensuring that the AIS is designed to collect and provide information about the machine setup and materials handling costs associated with alternative product designs
  - by providing data about repair and warranty costs associated with existing products

Planning and Scheduling (Activity 2)

- The second step in the production cycle is planning and scheduling.
- The objective of this step is a production plan efficient enough to meet existing orders and anticipate short-term demand without creating excess finished goods inventories.

Planning and Scheduling (Activity 2)

- What are two common methods of production planning?
  1. Manufacturing resource planning (MRP-II)
  2. Just-in-time (JIT) manufacturing systems
     - MRP-II is an extension of materials resource planning that seeks to match existing production capacity and raw materials needs with forecasted sales demands.
     - The goal of JIT is to minimize inventories of raw materials, work in process, and finished goods.

Planning and Scheduling (Activity 2)

- *Documents and procedures:*
- The master production schedule (MPS) specifies how much of each product is to be produced during the planning period and when that production should occur.
- A production order authorizes manufacturing.
- A materials requisition authorizes removal of materials from the storeroom to the factory.

Figure 13-3 Sample master production schedule (MPS)

MASTER PRODUCTION SCHEDULE								
Product Number 120				**Description:** VCR				
Lead time:[a]	**Week Number**							
1 week	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Quantity on hand	500	350[b]	350	300	350	300	450	300
Scheduled production	150[c]	300	250	300	250	400	250	300
Forecasted sales	300	300	300	250	300	250	400	250
Net available	350[d]	350	300	350	300	450	300	350

[a] *Time to manufacture product (1 week for VCR).*
[b] *Ending quantity on hand (net available) from prior week.*
[c] *Calculated by subtracting quantity on hand from sum of this week's and next week's forecasted sales, plus a 50-unit buffer stock. For example, begin week 1 with 500 units. Projected sales for weeks 1 and 2 total 600 units. Adding 50-unit desired buffer inventory yields 650 units needed by end of week 1. Subtracting beginning inventory of 500 units results in planned production of 150 units during week 1.*
[d] *Beginning quantity on hand plus scheduled production less forecasted sales.*

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Alpha Omega Engineering

PRODUCTION ORDER

Order No. 2289	**Product No.** 4430	**Description:** Cabinet Side Panel		**Production Quantity** 1000
Approved by: PJS	**Release Date:** 02/24/2003	**Issue Date:** 02/25/2003	**Completion Date:** 03/09/2003	**Deliver to:** Assembly Department

Work Station No.	**Product Operation No.**	**Quantity**	**Operation Description**	**Start Date & Time**		**Finish Date & Time**	
MH25	100	1,003	Transfer from stock	02/28	0700	02/28	0800
ML15-12	105	1,003	Cut to shape	02/28	0800	02/28	1000
ML15-9	106	1,002	Corner cut	02/28	1030	02/28	1200
S28-17	124	1,002	Turn & shape	02/28	1300	02/28	1700
F54-5	142	1,001	Finish	03/01	0800	03/01	1100
P89-1	155	1,001	Paint	03/01	1300	03/02	1300
QC94	194	1,001	Inspect	03/02	1400	03/02	1600
MH25	101	1,000	Transfer to assembly	03/02	1600	03/02	1700

Explanation of numbers in Quantity column:

1. *Total of 1,003 sheets of raw material used to produce 1,000 good panels and 3 rejected panels.*
2. *One panel not cut to proper shape, thus only 1,002 units had operations 106 and 124 performed on them.*
3. *One panel not properly turned and shaped; hence only 1,001 panels finished, painted, and received final inspection.*
4. *One panel rejected during final inspection; thus only 1,000 good panels transferred to assembly department.*

Figure 13-4 Sample production order for AOE

Table 13-1 Example of "Exploding" a Bill of Materials

Step 1: Multiply the component requirements for ONE product by the number of products to be produced next period (from the MPS).

Components in Each VCR

Part No.	Description	Quantity	Number of VCRs	Total Requirements
105	Control Unit	1	2,000	2,000
125	Back Panel	1	2,000	2,000
148	Side Panel	4	2,000	8,000
173	Timer	1	2,000	2,000
195	Front Panel	1	2,000	2,000
199	Screw	6	2,000	12,000

Components in Each CD Player

Part No.	Description	Quantity	Number of CD Players	Total Requirements
103	Control Unit	1	3,000	3,000
120	Front Panel	1	3,000	3,000
121	Back Panel	1	3,000	3,000
173	Timer	1	3,000	3,000
190	Side Panel	4	3,000	12,000
199	Screw	4	3,000	12,000

Step 2: Calculate total component requirements by summing products.

Part No.	VCR	CD Player	Total
103	0	3,000	3,000
105	2,000	0	2,000
120	0	3,000	3,000
121	0	3,000	3,000
125	2,000	0	2,000
148	8,000	0	8,000
173	2,000	3,000	5,000
190	0	12,000	12,000
195	2,000	0	2,000
199	12,000	12,000	24,000

Step 3: Repeat steps 1 and 2 for each week during planning horizon.

Part No.	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
103	3,000	2,000	2,500	3,000	2,500	3,000
105	2,000	2,000	2,500	2,500	2,000	3,000
120	3,000	2,000	2,500	3,000	2,500	3,000
121	3,000	2,000	2,500	3,000	2,500	3,000
125	2,000	2,000	2,500	2,500	2,000	3,000
148	8,000	8,000	10,000	10,000	8,000	12,000
173	5,000	4,000	5,000	5,500	4,500	6,000
190	12,000	12,000	10,000	12,000	10,000	12,000
195	2,000	2,000	2,500	2,500	2,000	3,000
199	24,000	20,000	25,000	27,000	22,000	30,000

Planning and Scheduling (Activity 2)

- How can accountants be involved in planning and scheduling?
  - by ensuring that the AIS collects and reports costs in a manner consistent with the production planning techniques used by the company
  - by helping to choose whether MRP-II or JIT is more appropriate

Production Operations (Activity 3)

- The third step in the production cycle is the actual manufacture of products.
- The manner in which this activity is accomplished varies greatly across companies.
- What is computer-integrated manufacturing (CIM)?
  - It is the use of information technology in the production process.

Production Operations (Activity 3)

- Every firm needs to collect data about the following four facets of its production operations:
  1. Raw materials used
  2. Labor-hours expended
  3. Machine operations performed
  4. Other manufacturing overhead costs incurred

Learning Objective 2

Explain how a company's cost accounting system can help it achieve its manufacturing goals

Cost Accounting (Activity 4)

- The final step in the production cycle is cost accounting.
- What are the three principal objectives of the cost accounting system?
  1. To provide information for planning, controlling, and evaluating the performance of production operations
  2. To provide accurate cost data about products for use in pricing and product mix decisions
  3. To collect and process the information used to calculate the inventory and cost of goods sold values

Cost Accounting (Activity 4)

- What are two types of cost accounting systems?
  1. Job-order costing
  2. Process costing
  - Job-order costing assigns costs to specific production batches or to individual jobs.
  - Process costing assigns costs to each process, and then calculates the average cost for all units produced.

Cost Accounting (Activity 4)

- The choice of job-order or process costing affects only the method used to assign costs to products, not the method used for data collection.
- *Raw Materials:*
  - When production is initiated, the issuance of a materials requisition triggers the journal entry.

No. 2345

MATERIALS REQUISITION

Issued To: Assembly

Issue Date: 08/15/2003

Production Order Number: 62913

Part Number	Description	Quantity	Unit Cost $	Total Cost $
115	Calculator Unit	2,000	2.95	5,900.00
135	Lower Casing	2,000	.45	900.00
198	Screw	16,000	.02	320.00
178	Battery	2,000	.75	1,500.00
136	Upper Casing	2,000	.80	1,600.00
199	Screw	12,000	.02	240.00
				10,460.00

Issued by: AKL

Received by: GWS Costed by: ZBD

Note: Cost information is entered when the materials requisition is turned in to the cost accounting department. Other information, except for signatures, is printed by the system when the document is prepared.

Figure 13-5 Sample materials requisition for AOE

Figure 13-6 Sample move ticket for AOE

MOVE TICKET				No. 8753
Production Order Number: 2345		**Date Transferred:** 08/18/2003		
From: Assembly *KLS*		**To:** Finishing *NRC*		
Operation to Perform		**Completed**	**Date**	**Time**
Clean		X	08/19/2003	0900
Polish				
Package				
Comments:				

Cost Accounting (Activity 4)

- Assume that $15,000 of raw materials were issued.
- What is the journal entry?
  - Work in Process 15,000

    Raw Materials Inventory 15,000 To record issuance of raw materials
- Assume that $1,000 of raw materials were returned to inventory.

Cost Accounting (Activity 4)

- What is the journal entry?
  - Raw Materials Inventory 1,000
    Work in Process 1,000
    To record return of raw materials to inventory
- Most raw materials are bar-coded.
- Inventory clerks use online terminals to enter usage data for those items that are not bar-coded.

Cost Accounting (Activity 4)

- *Direct Labor:*
- A job-time ticket is a paper document used to collect data about labor activity.
- This document records the amount of time a worker spent on each specific job task.
- Workers can enter this data using online terminals at each factory workstation.

Cost Accounting (Activity 4)

- Workers can use code identification cards that run through a badge reader or bar-code scanner when they start and finish any task.
- *Manufacturing Overhead:*
- What is manufacturing overhead?
  - all manufacturing costs that are not economically feasible to trace directly to specific jobs or processes

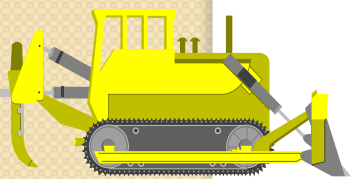
Cost Accounting (Activity 4)

- *Accounting for Fixed Assets:*
- The AIS also needs to collect and process information about investment in the property, plant, and equipment used in the production cycle.
- Fixed assets should be bar-coded.

Cost Accounting (Activity 4)

o What minimum information should organizations keep about their fixed assets?

- identification number
- serial number
- location
- cost
- date of acquisition
- vendor name and address
- expected life
- expected salvage value
- depreciation method
- depreciation charges to date
- improvements
- maintenance services performed



Learning Objective 3

Identify major threats in the production cycle, and evaluate the adequacy of various control procedures for dealing with them.

Control Objectives, Threats, and Procedures

- The *second function* of a well-designed AIS is to provide adequate controls to ensure that the following objectives are met:
  1. All production and fixed asset acquisitions are properly authorized.
  2. Work-in-process inventories and fixed assets are safeguarded.
  3. All valid, authorized production cycle transactions are recorded.

Control Objectives, Threats, and Procedures

4. All production cycle transactions are recorded accurately.
5. Accurate records are maintained and protected from loss.
6. Production cycle activities are performed efficiently and effectively.

Table 13-2 Threats and Controls in the Production Cycle

Process/Activity	Threat	Applicable Control Procedures
Product design	1. Poor product design	Improved information about the effects of product design on costs Detailed data about warranty and repair costs
Planning and scheduling	2. Overproduction or underproduction	Better production planning systems
	3. Suboptimal investment in fixed assets	Review and approval of fixed asset acquisitions; budgetary controls
Production operations	4. Theft or destruction of inventories and fixed assets	Restrict physical access to inventories and fixed assets Document all movements of inventory through the production process Identification of all fixed assets Periodic physical counts of inventory and fixed assets Proper documentation and review of all transactions involving disposal of fixed assets Adequate insurance
Cost accounting	5. Recording and posting errors resulting in inaccurate cost data	Data entry edit controls; use of bar code scanning where feasible; reconciliation of recorded amounts with periodic physical counts
General threats	6. Loss of data	Backup and disaster recovery planning; restricting access to cost data
	7. Poor performance	Improved and timelier reporting

Control Objectives, Threats, and Procedures

- What are some *threats?*
  - unauthorized transaction
  - theft or destruction of inventories and fixed assets
  - recording and posting errors
  - loss of data
  - inefficiencies and quality control problems

Control Objectives, Threats, and Procedures

- What are some *exposures?*
  - overproduction and excess inventories
  - obsolescence
  - underproduction, stockouts, and lost sales
  - excess investment in fixed assets
  - loss of assets
  - overstated inventory records

Control Objectives, Threats, and Procedures

- ineffective scheduling and planning
- decision errors
- increased expenses and taxes on fixed assets that are incorrectly valued
- ineffective decision making
- loss of customer goodwill and future sales

Control Objectives, Threats, and Procedures

- What are some *control procedures?*
  - accurate sales forecasts and inventory records
  - authorization of production
  - restricted access to production planning program and to blank production order documents
  - review and approval of capital asset expenditures

Control Objectives, Threats, and Procedures

- documentation of all internal movements of inventory
- proper segregation of duties
- source data automation
- online data entry edit controls
- backup and disaster recovery procedures
- regular performance reports
- cost of quality control measurement

Learning Objective 4

Discuss the key decisions that need to be made in the production cycle, and identify the information needed to make those decisions.

Information Needs and Procedures

- The *third function* of the AIS is to provide information useful for decision making.
- In the production cycle, cost information is needed by internal and external users.
- Traditionally, most cost accounting systems have been designed primarily to meet financial reporting requirements.

Information Needs and Procedures

- What are two major criticisms of traditional cost accounting systems?
  1. Inappropriate allocation of overhead costs
  2. Inaccurate performance measures

  What is a potential solution to the first criticism?
  - activity-based costing

Information Needs and Procedures

- *Activity-Based Costing (ABC):*
- ABC attempts to trace costs to the activities that create them and only subsequently allocates those costs to products or departments.
- ABC systems distinguish three separate categories of overhead.

Information Needs and Procedures

1. Batch-related overhead
2. Product-related overhead
3. Company-wide overhead

- The bases used to allocate manufacturing overhead are the cost drivers.
- What is a cost driver?
  - anything that has a cause-and-effect relationship on costs

Information Needs and Procedures

- What are some benefits of ABC?
  - better decisions
  - improved cost management
- More accurate cost data results in better product mix and pricing decisions.
- More detailed cost data improves management's ability to control and manage total costs.

Information Needs and Procedures

- What is the potential solution to the second criticism?
  - Integrated production cycle data model