CHAPTER 14

THE HUMAN RESOURCES (HR) MANAGEMENT AND PAYROLL PROCESSES

LEARNING OBJECTIVES

AFTER READING THIS CHAPTER, YOU SHOULD BE ABLE TO:

- DEFINE AND UNDERSTAND THE BASIC FUNCTIONS OF THE HR MANAGEMENT AND PAYROLL PROCESSES.
- DESCRIBE THE RELATIONSHIP BETWEEN THE HR MANAGEMENT AND PAYROLL PROCESSES AND THEIR ENVIRONMENT.
- COMPREHEND THE RELATIONSHIP BETWEEN THE HR MANAGEMENT AND PAYROLL PROCESSES AND MANAGEMENT DECISION MAKING.
- DEPICT THE LOGICAL AND PHYSICAL ELEMENTS OF THE HR MANAGEMENT AND PAYROLL PROCESSES.
- DESCRIBE SOME OF THE TECHNOLOGY USED TO IMPLEMENT THE HR MANAGEMENT AND PAYROLL PROCESSES.
- PREPARE A CONTROL MATRIX FOR A TYPICAL PAYROLL PROCESS, INCLUDING AN EXPLANATION OF HOW BUSINESS PROCESS CONTROL PLANS CAN ACCOMPLISH PAYROLL OPERATIONS AND INFORMATION CONTROL GOALS.

PSS/World Medical is a medical supplies and equipment distributor in Jacksonville, Florida. The company had grown rapidly to $1.7 billion in revenue and nearly 5,000 employees, but its human resources (HR) department remained a paper-based department, processing more than 85,000 HR forms annually. Three employees were dedicated full-time to handle the paperwork.

Jeff Anthony, the senior vice president for corporate development, reported that it took 6 to 7 weeks to get employee benefits-enrollment forms and information to employees and another 8 to 10 weeks to clean up what they passed in. An internal audit revealed that PSS/World Medical had overpaid more than $180,000 in administrative fees to a medical insurer because it listed the wrong number of employees. Some employees were receiving their paychecks days, or even weeks, late. Insurance coverage was denied to new employees because enrollment paperwork was delayed. Paychecks were being cut for employees who had been fired as many as five weeks earlier because proper HR forms to terminate the payments were not processed in a timely manner.

One year, the company paid out approximately $600,000 in unused vacation time to departing employees because it lacked a process to track that information.

To solve this problem, Anthony brought in software vendor Employease®, an HR application service provider, to implement a Web-based HR self-service system. Now, paychecks roll out on time, and enrollments proceed smoothly in less than one hour, thanks in no small part to an employee self-service application. Employee turnover has shrunk to just 8 percent (from a high of nearly 50 percent). Anthony estimates the cost savings at $800,000 annually from reduced payroll processing costs (e.g., canceling checks, next-day air fees to expedite the delivery of late paychecks), reassigned HR employees who were no longer needed for paperwork, increased data accuracy (from 40 to 90 percent), reduced insurance penalties, and reallocated management time from HR administration to primary functions. Anthony gave himself as an example of the last benefit. He now spends more time developing, rather than hiring, personnel.[1]

Synopsis

Human capital management (HCM), the process of managing how people are hired, developed, assigned, motivated, and retained, presumes that employees reflect a strategic investment, rather than an administrative cost. Some estimates place the value of human capital between $500,000 and $5 million per person. At the same time, the costs of such capital, including compensation, benefits, and human resources (HR), represent 43 percent of the average corporation's total operating expense. For companies in the service sector, the percentage is much higher.

The automation of the HR function (sometimes dubbed "e-HR") is positioned to transform HR from a lowly cost center to a highly valued, strategic, mission-critical part of the business. In addition to the changes noted at PSS/World Medical, HR automation will affect evaluation and compensation programs to reflect the changing work patterns, including the graying workforce, virtual teams, telecommuters, consultants, contractors, part-timers, and temporary employees.

In this chapter, we explore three themes. First, we briefly examine the importance of people to the success of any organization. Next, we describe how the HR management and payroll processes assist management in leveraging its human capital. Finally, we introduce some of the technology used to implement modern HR management and payroll processes.

Introduction

This chapter describes the basic roles played by an organization's human resources and payroll functions. The organizational structure of the HR function sets the stage for a discussion of the types of decisions HR managers face. We also look at a physical implementation of the HR management process. Next, we move to the payroll process. The organizational placement of the payroll process is followed by a detailed description of its logical and physical characteristics. Finally, control plans for the payroll process are summarized in a control matrix.

1 Jon Surmacz, "Automating HR," *Darwin Magazine*, http://www.darwinmag.com, October 2002; Paul Krass, "Precious Resources," *CFO.com*, http://www.cfo.com, July 23, 2003.

Process Definition and Functions

Any organization wanting to improve itself must start by improving its people. Recognizing people as the common denominator of progress has resulted in many organizations paying closer attention to their HR policies and practices. In the previous "Synopsis" section, we briefly introduced the concept of *human capital management (HCM)* and the emphasis that this process places on the value of human capital. HCM follows historically from the concept of "personnel management" and then "human resource management." Classic personnel management began with the handling of payroll and personnel administration, and evolved by adding functions to handle recruiting, employee relations, and so on. Human resource management recognized the importance of personnel in achieving organization objectives, but, like personnel management, viewed personnel as something that could be controlled.

The HCM philosophy is based on three major principles:[2]

- An individual's value to an organization is derived from his or her job-related knowledge, skills, attitude, and motivations.
- Human assets include full-time permanent employees, *plus* part-time employees, temporary employees, and independent contractors. Also, with collaborative commerce arrangements such as *supply chain management*, an organization's human assets could include employees of suppliers, sales channel partners, and customers.
- A person's relationship with an organization, from hiring through termination, must be nurtured and managed to obtain maximum lifetime value.

This last point emphasizes the importance of personnel development to maximize the benefits that each individual can provide to the organization, as well as retention of employees to ensure that important skills are not lost. It turns out that, similar to customers, retaining an employee is less expensive than replacing one. It has been estimated that it costs up to 2.5 times an employee's annual salary, plus benefits, to replace an employee. Thus, an effective HCM process is central to the achievement of an organization's objectives.

Although the terms and concepts associated with HCM may represent the contemporary thinking about the HR function within an organization, most organizations still refer to their personnel-related function as human resources (HR). Therefore, in this chapter, we will use HR to refer to the process whose function is to support the HCM concepts and to provide the organization with information with which to manage its personnel (i.e., its human capital).

Definition of the HR Management Process

The **human resources (HR) management process** is an interacting structure of people, equipment, methods, and controls. The primary function of the HR management process is to create information flows that support the following:

- Repetitive work routines of the HR department
- Decision needs of those who manage the HR department

The HR management process supports the work routines of the HR department and provides information for management decisions by doing the following:

- Capturing, recording, and storing data concerning HR activities

2 David A. Williams, "Why Human Capital Management?" http://www.humancapitalmanagement.biz/ArticleWhyHCM.htm, August, 2006.

- Generating a variety of HR forms and documents
- Preparing management reports
- Preparing governmental reports

The first portion of this chapter is devoted to exploring these functions in detail.

Definition of the Payroll Process

The **payroll process** is an interacting structure of people, equipment, methods, and controls that creates information flows to support the repetitive work routines of the payroll department. To that end, the payroll process maintains records containing data for payroll taxes and fringe benefits, attendance reporting, timekeeping, and paying employees for work performed. We explore these functions in detail in the second portion of this chapter.

Payroll represents an events-oriented process that has traditionally been considered separate from the HR management process. However, because of the close relationship of the two processes, we start by discussing why many companies merge the HR management and payroll processes into a single entity. Then we separate the processes so that we can analyze the distinct features of each one. In the course of this analysis, you will notice that the HR management process, more than any other information process, captures, records, and stores data that falls outside the normal accounting-oriented transaction stream. For example, data concerning an employee's health or the level of an employee's skills certainly does not fit the transaction model established by GAAP. However, from a holistic business perspective, it is important for accountants to realize the immense value of human capital and its affect on the long-term financial health of the organization.

Integration of the HR Management and Payroll Processes

ENTERPRISE SYSTEMS

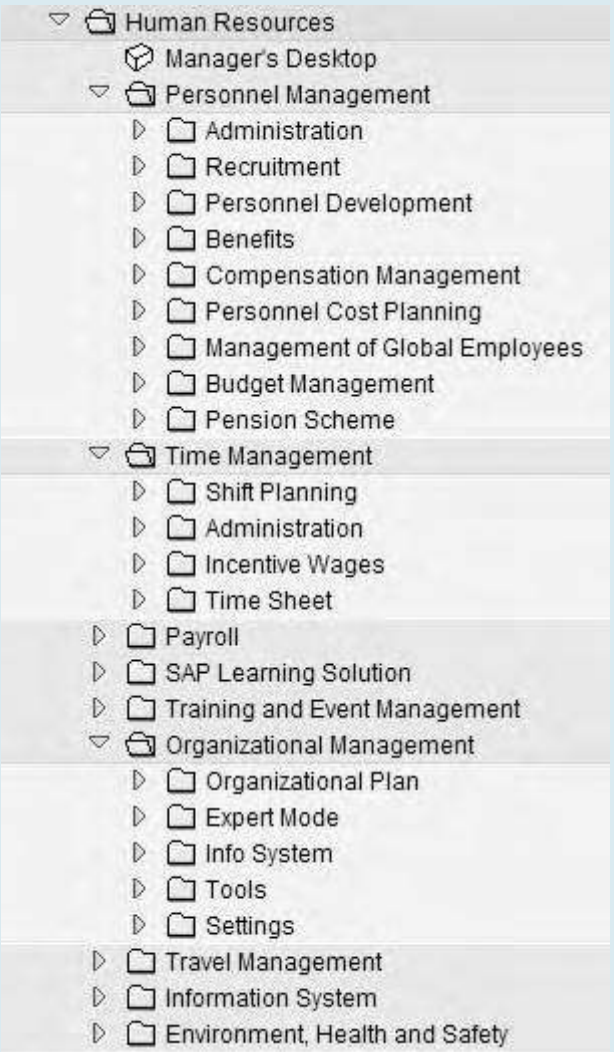
Because of its labor-intensiveness and repetitiveness, the payroll function was one of the first systems within many organizations to be automated. In fact, payroll software was among the first to be commercially developed and marketed. However, the current generation of HR software has far outgrown its payroll roots. These new packages include such applications as cafeteria benefits administration, applicant tracking and processing, skills inventories, and compliance reporting. The menu for the human resources module of the SAP® R/3 system is depicted in Figure 14.1 (pg. 502). Examine the menu options, and notice the variety of functions supported by the HR module.

Because the HR management and payroll processes share so much employee data, the integration of these functions is generally considered necessary. As you can see in Figure 14.1, the HR module includes options for both HR and payroll, among others. The advantages gained by allowing the two processes to share common data include the following:

- Creating a single source for obtaining HR information
- Providing for faster data access
- Minimizing data redundancy
- Ensuring data integrity and consistency
- Facilitating data maintenance
- Improving data accuracy

Having touted the advantages of integration, we'll nevertheless devote the rest of the chapter to separate discussions of the HR management and payroll processes. We do so because the analysis is facilitated by differentiating between the broad HR management process and the narrower accounting event-based payroll process. You will see

FIGURE 14.1 Menu Options in the Human Resources Module of SAP R/3



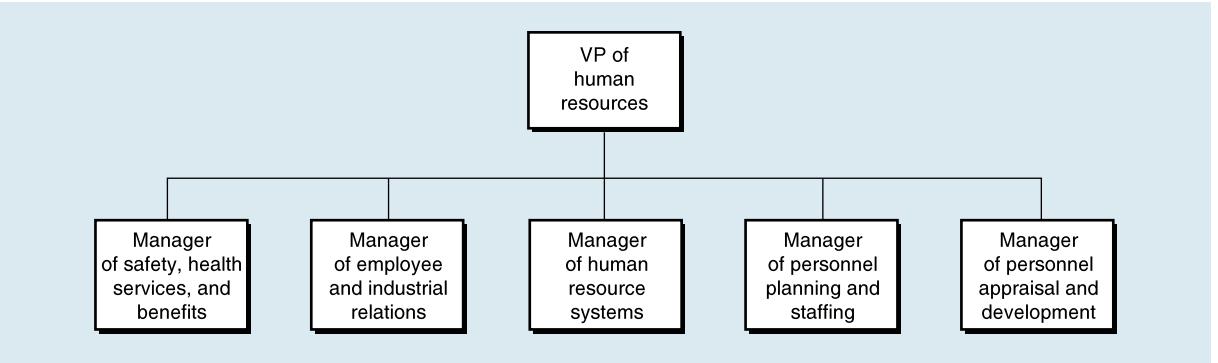
Source: Reprinted with permission from SAP. Copyright SAP AG.

how the two processes are integrated through the shared data contained in the employee/payroll master data and through certain common forms and documents used by both processes.

The HR Management Process

In this section, we look at the imprint of the HR function on the organization and illustrate some of the decisions HR managers must confront. Our examination will reveal that the HR and payroll functions are profoundly different in terms of their organizational significance. In some organizations, for example, the HR function is large enough to support a separate organizational unit, headed by a vice president of human

FIGURE 14.2 Organization Chart of the HR Function



resources.[3] On the other hand, the payroll function is typically housed within the controller's area and is placed at the same organizational level as the billing and accounts receivable functions.

Organizational Setting and Managerial Decision Making

Figure 14.2 identifies the key players in the HR function. For each manager shown in Figure 14.2, Table 14.1 (pgs. 504–505) describes the manager's key functions, types of decisions made, and some of the information needed to make those decisions. Today, the broadening scope of HR management requires decision making that directly affects an organization's internal policies and strategic plans. Table 14.1 should help you understand the various informational needs of HR managers. Obviously, we can only introduce the topic here.

In addition to supporting the HR managers shown in Figure 14.2, the HR management process supports the various departmental managers (other than HR and payroll) who have direct managerial responsibility over those employees assigned to them. These responsibilities may include the assignment of tasks, the coordination of departmental activities, and the monitoring and evaluating of employee performance. Although departmental managers rely on observation and personal experience for much of their information, the HR management process supplies them with certain types of useful information. For example, the rate of absenteeism, quality of work performed, and level of skills an employee possesses represent information provided by a typical HR management process.

Technology Trends and Developments

As noted in the story about PSS/World Medical at the start of this chapter, information technology, in particular, HR self-service systems, have greatly improved the efficiency and effectiveness of HR management processes. Technology Summary 14.1 (pg. 506) describes these self-service systems. These systems are often part of an HR portal that allows employees to access personal as well as business-related information and functions. E-BUSINESS

In addition to employee self-service systems, organizations might outsource other functions to support HR management processes. For example Technology Application 14.1 E-BUSINESS

3 Some organizations are not large enough to support a separate organizational unit for HR. In smaller companies, a director of HR is often housed within an organizational unit headed by a vice president of administration.

TABLE 14.1 Key Functions, Decisions, and Information Needs of HR Managers

HR Manager	Key Functions[a]	Types of Decisions Made[a]	Information Needs[a]
Manager of safety, health services, and benefits	Ensures workers' health and safety. Promotes a work environment that supports an acceptable ''quality'' of work life Develops new programs for improving existing work conditions Monitors and administers employee benefits plans	Assesses the adequacy of employee-benefits packages Addresses the problem of rising insurance costs Determines ways to improve the physical work environment (e.g., should new overhead lights be installed?) Investigates ways to improve the quality of work life (e.g., should factory workers have more input into the design of new products?)	Status of existing work conditions Employee attitudes and morale Governmental regulations concerning worker safety, health, and benefits Emerging trends in employee-benefits packages—features, costs, and the like Industry and specific competitors' innovations
Manager of employee and industrial relations	Handles employee complaints Negotiates with organizations, such as unions, that represent employees	Defines the nature and extent of employee influence in management's decision-making process (e.g., what role should seniority and other criteria play in deciding which employees to terminate, transfer, or promote?) Settles employee complaints and grievances (e.g., allegations of job discrimination, sexual harassment)	Current economic statistics Outcome of grievance proceedings Governmental laws and regulations on handling grievances
Manager of HR systems	Ensures that the information needs of personnel managers and staff workers are satisfied Serves as liaison between the IT department and the personnel department	Discovers how information technology can assist personnel managers in performing their day-to-day activities (e.g., helping managers to choose software packages) Ascertains the nature and timing of training needed for HRM users	New and evolving HR management process technology developments Information needs of personnel managers and staff workers User feedback on their experience(s) in working with the HR management process
Manager of personnel planning and staffing	Plans and forecasts an organization's short- and long-term human resource needs Analyzes jobs to determine the skills necessary to perform them Assists in recruiting job applicants, screening candidates, and helping new hires adjust to their work environment	Projects an organization's future personnel needs and anticipates how to meet these needs Decides the ways positions will be filled (i.e., outside hiring or internal promotion) Selects the means for recruiting and screening job applicants	Labor force staffing forecasts Job descriptions Skills possessed by current employees Sources of potential job candidates (e.g., college placement departments, search firms) Government laws and regulations concerning equal employment opportunity, affirmative action, and the like

TABLE 14.1 Key Functions, Decisions, and Information Needs of HR Managers (*continued*)

HR Manager	Key Functions[a]	Types of Decisions Made[a]	Information Needs[a]
Manager of personnel appraisal and development	Assists line managers in assessing how well employees are performing Cooperates with line managers in setting rewards for good performance Helps line managers to provide training or take disciplinary action in cases of substandard performance Reduces employee turnover by helping workers achieve their career goals	Chooses the means of training and developing employees Determines the methods for charting employees' careers	Data on employee performance Employee job experience, training, and salary histories Economic statistics on general employment conditions, supply and demand of job candidates, salary levels, and so forth

[a] Examples only. A complete listing is beyond the scope of this chapter.

describes a Web-based collaboration that helps Shell Oil Products of Houston obtain qualified temporary labor. Technology Application 14.2 (pg. 507) describes the outsourcing to Fidelity® Investments of the management of employee benefits at General Motors.

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In addition to the best of breed and outsourced services previously described, *enterprise systems* play a major role in implementing required HR and payroll functionality. For example, systems from vendors such as SAP® (see Figure 14.1 on pg. 502 for the HR-related menu options within SAP® R/3) include employee master data to support both HR management and payroll processes. They contain employee self-services for employees to maintain their own data and for managers to maintain and monitor data related to subordinate employees. Figure 14.3 (pg. 508) depicts a screen from the SAP® R/3 system that is used to maintain employee data. Notice that tabs are used to access basic personal data, payroll data, organizational assignment, and personnel planning data.

CONTROLS

When an organization chooses to implement its HR management process with an enterprise system, they can recognize the benefits of integration of the HR management process with other enterprise systems modules such as financial accounting, logistics, and sales and distribution. In addition, the organizational assignment data in the HR module can join with the workflow module of the enterprise system to facilitate the routing and proper authorization of daily work. For example, this joined functionality can ensure the proper authorization of purchase requisitions, purchase orders, and payroll.

Implementing the HR Management Process

This section offers a physical view of the HR management process. Using a systems flowchart as the framework for discussion, we will examine the inputs, processes, and outputs, in that order. The presentation also describes several of the operational and control aspects of a typical HR management process. The section concludes with an examination of what key data the process uses and how those data support decision making by HR managers.

ENTERPRISE SYSTEMS

E-BUSINESS

CONTROLS

Figure 14.4 (pg. 509) presents a systems flowchart of a typical HR management process. This physical implementation employs much of the technology previously described, including employee self-service systems, employee access to these systems via Web browsers or kiosks, and *enterprise systems* with workflow modules. Let's start by looking

TECHNOLOGY SUMMARY 14.1

HUMAN RESOURCES SELF-SERVICE SYSTEMS

It was not that long ago that it was pretty difficult for an employee to make changes to his HR records. An employee might need to update his emergency contact information, change the number of payroll exemptions, or change the beneficiaries for his insurance policies. He would need to submit a form—a handwritten form, no doubt—to his HR department to make such changes. And, it would take days, or even weeks, for those changes to take place. Performing job-related functions also was difficult. Authorizing pay raises for employees or recording performance reviews also were challenging and inefficient.

Fast-forward to today, and you will find that many employees can make such changes from their offices and even from the comfort of their homes. HR self-service systems, using convenient, easy-to-use Web browser interfaces, can be used to view and change HR records. These systems automate manually intensive processes and can reduce the cost of some HR processes by as much as 80 percent (see the following table).

Typically, an employee would open his Web browser and point it to his organization's HR Web site (or computer kiosk on the factory floor, for example). After inputting a user name and password, the employee would then be able to view his records and make changes. A typical self-service system might have the following features:

- HR manuals, policies, and procedures that might include employee handbooks, codes of conduct, explanation of benefits programs, harassment policies, and procedures for travel reimbursement
- Helpful information such as how to get a social security number for a new member of the family
- Calculators for retirement income based on retirement age and investment choices
- Personal profile containing job, payroll (e.g., check stubs), and benefits data
- Forms for enrolling in health, retirement, and other programs
- Places to make changes to existing programs, for example, to change payroll deductions, elections for pretax withholding of supplement retirement, and health care choices
- Links to other important Web sites, such as the administrator of the 401(k) program

Some of the changes that an employee might make will require a signature. In those cases the employee might fill out the form online and follow up, through interoffice mail, with a signed form.

Both the employee and the employer benefit from HR self-service systems. The employee gains ready access to his records and can easily make changes to them. Employees typically view such systems as substantive and responsive. The employer gets to provide a higher level of service and increase the validity and accuracy of HR records, while reducing its own operating costs. The following table summarizes some of these cost savings.

The Lower Cost of Self-Service

Business Process/Task	Manual Cost	Self-Service Cost	Savings
Enroll in benefits	$109.48	$21.79	80%
Change contact info	$12.86	$3.39	74%
Enroll in training	$17.77	$4.87	73%
Approve a promotion	$48.64	$18.26	71%
Create job requisition	$36.89	$11.11	70%
Change salary	$44.67	$18.26	59%
Apply for a job	$21.31	$11.85	44%

Source: Peter Kraus, "Precious Resources," *CFO.Com* (July 23, 2003).

TECHNOLOGY APPLICATION 14.1

CONTINGENT WORKFORCE MANAGEMENT SYSTEMS

Contingent workforce management systems automate management processes related to contingent labor, including labor supplier qualifications, requests for proposals, time and expense entries, and invoicing.

By implementing a Web-based workforce management system from IQNavigator, Inc., adopting a set of process improvements, and reducing the number of labor suppliers, Shell Oil Products of Houston was able to significantly reduce (the target of 8 percent annual savings was exceeded in just two months) contingent workforce spending. For example, with these changes, Shell receives volume and early payment discounts from suppliers.

Best of all, the IQNavigator system is paid for by Shell's labor suppliers. It is the norm in the industry for labor suppliers to pay for contingent workforce management systems with access fees ranging from 3 to 5 percent of an invoice.

Source: Thomas Hoffman, ''Managing Temporary Players,'' *Computerworld* (June 30, 2003): 42.

TECHNOLOGY APPLICATION 14.2

BENEFITS MANAGEMENT: THE OUTSOURCING OF HR FUNCTIONS

General Motors Corp. hired Fidelity® Investments to administer its health, pension, and other HR operations. Under the agreement, Fidelity will manage GM's pension plan, which covers 700,000 active and retired employees, and its health and welfare plans, which cover 1.2 million employees, retirees, and their dependents. To manage these programs, Fidelity will use many of the same computer systems that it uses to manage 401(k) programs for GM and other organizations. Currently, Fidelity Human Resources Services Company (FHRS) manages benefits programs for more than 12 million employees in more than 750 plans. As of June 30, 2006, FHRS was administering more than $400 billion in assets.

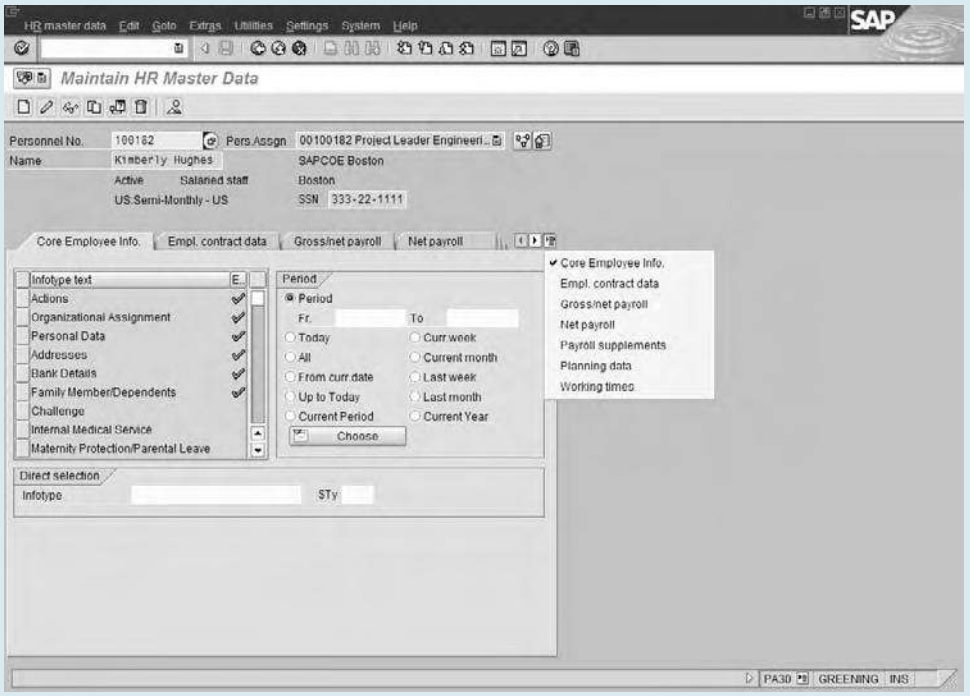
Source: John Hechinger, ''Fidelity to Handle GM's Health, Pension Plans,'' *The Wall Street Journal* (August 7, 2003): A2, and http://www.fidelity.com, September 2006.

at the type of processing depicted. It generally is considered essential to record HR actions as soon as they are approved. A number of reasons exist for immediately recording changes affecting employees, including the need to ensure that each employee's paycheck reflects the employee's current status. As noted in the story about PSS/World Medical at the start of this chapter, paychecks that fail to reflect recent pay hikes can have a demoralizing effect on a workforce. To achieve this type of immediacy, many HR management processes use some form of *immediate mode* of processing, implemented with *online* technology. The process depicted in Figure 14.4 entails immediate recording of data, immediate updating of master data, and immediate generation of output. Let's take some time to walk through the flowchart, keeping an eye open for operational, technological, and control features.

Processing Inputs

As shown in the "Various Department" column of the flowchart, actions taken by departmental managers or supervisors are captured in a variety of online forms (i.e., enterprise

FIGURE 14.3 Maintaining Employee Master Data in the SAP R/3 System



Source: Reprinted with permission from SAP. Copyright by SAP AG.

system screens); these forms are discussed in more detail in the following paragraphs. In general, the HR forms in the figure capture information about three HR-related events: (1) selecting employees, (2) evaluating employees, and (3) terminating employees.

Selecting Employees. *Selecting* employees may be initiated in one of two ways. First, departmental supervisors and managers (outside the HR department) may initiate the process to satisfy their immediate hiring needs. The needs request screen illustrates this type of initiation. Second, the selection process may be started by the system automatically. For example, the system may be programmed to predict an organization's employment needs. In projecting this need, the program might correlate labor-force requirements (stored in the labor-force planning data) with such factors as expanding sales or production statistics.

The actual selection and hiring of employees can be accomplished by several means. First, candidates for an open or new position could be selected from the population of workers currently employed by the company. These candidates might be identified from (1) recommendations set forth in the needs request form, (2) recommendations based on the results of scanning the employee/payroll master data, or (3) recommendations based on the results of scanning the skills inventory data. Second, applications could be received from candidates outside the organization; the request for employment in the "Employees (and prospective employees)" column of the flowchart illustrates this interface.

Evaluating Employees. *Evaluating* employees involves a multitude of activities. Departmental managers and supervisors (again, outside the HR function) usually initiate actions affecting employees via the supervisor review screen shown in the flowchart.

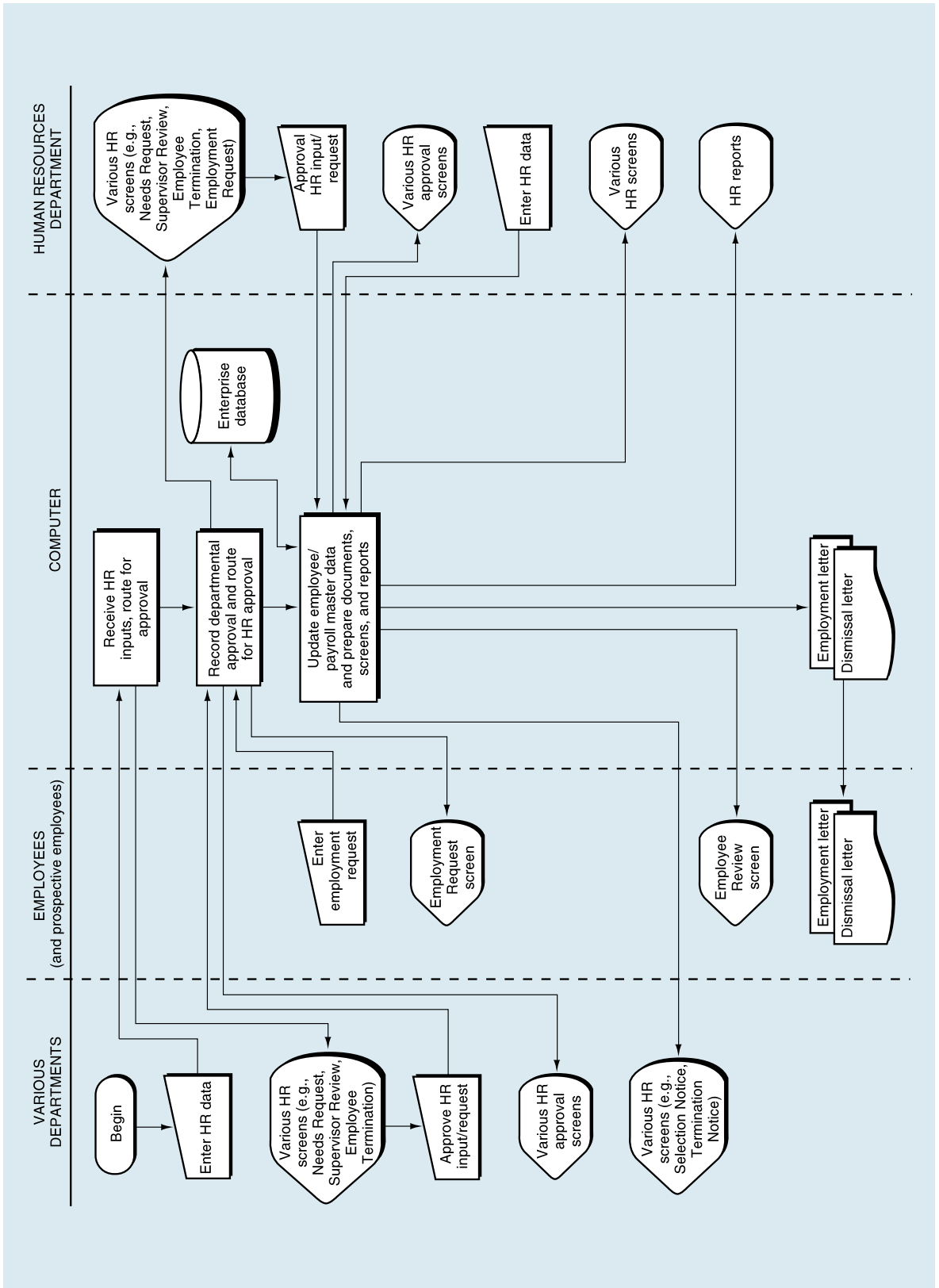


FIGURE 14.4 Human Resources Management Process—Systems Flowchart

Then the manager of personnel appraisal and development (in HR) typically approves the review and implements such changes.

Terminating Employees. *Terminating* employees closes the employment process loop. Periodically, departmental managers and supervisors (in concert with HR managers) must make difficult decisions about the retention of employees. If a termination seems to be in order, the employee change screen is used to initiate the process of changing an employee's status from current employee to terminated employee.

The decision to terminate an employee is usually based on both qualitative and quantitative data. The HR management process assists the decision process by keeping track of certain kinds of quantitative data. For example, data concerning the number of absences during a given period, the number of times tardy, or the number of poor performance reviews an employee has received may be maintained in the employee/payroll master data. In addition, data supplied by the labor force planning table may indicate a need to reduce the size of the workforce. In addition to termination, any other changes in the employee's status, such as changes in salary or skill levels, also are transmitted through the employee change form.

Processing Logic and Process Outputs

Let's take some time now to follow the processing logic and review the process' outputs. HR requests initiated outside of the HR department must be approved within that department and then routed to HR for approval. Some data may be entered within HR (e.g., inputs from unions, government agencies) and may or may not need approval within HR (no such approval is shown on Figure 14.4). Once approved in HR, the employee/payroll master data, skills inventory data, and labor force planning data within the enterprise database are updated, and various reports are made available to HR and other interested parties.

As you can see from the flowchart in Figure 14.4, several outputs are also produced. In the case of a new hire, an employment letter is sent to the employee, and a selection notice is sent to the department manager or supervisor. Feedback to employees concerning their job performance is provided through an employee review form (paper, online, or both), which may be just a copy of the supervisor review form with some additional comments and notes added by the manager of personnel appraisal and development. Also, employees are notified of a dismissal action through a dismissal letter, with a termination notice being sent to the operating department manager.

In addition to the outputs shown on the flowchart, an HR management process must prepare reports for a variety of government and nongovernment entities. For example, the payroll process must send reports concerning employee federal, state, and local taxes. These payroll reports are discussed later in the chapter. HR-type reports might include those provided to the following:

- Unions
- Equal Employment Opportunity (EEO)
- Occupational Safety and Health Administration (OSHA)
- Department of Labor

E-BUSINESS

Also not shown in the flowchart are the numerous communications to employees of HR-related information. This information might take the form of job opening announcements, training information, phone books, benefits literature, policy and procedure manuals, and the like. Many companies have found that such materials can be disseminated effectively and efficiently through an HR portal, which serves as a central data source for such information.

Key Data Tables

CONTROLS

Several tables of data are used by the HR and payroll processes. In an enterprise system, these tables are included within the enterprise database. Although these tables don't appear as separate data stores in Figure 14.4, we will discuss each next.

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The *employee/payroll master data* will be defined and illustrated when we cover the payroll process. For now, let's consider how that data facilitates the HR function. Employee/payroll master data can help management determine the total cost of its workforce. It also aids in setting hiring policies in the context of providing information for compliance with affirmative action measures. Projected hiring needs may be influenced by seniority profiles. In addition, management may be given some sense of how well it is retaining employees; whether sick leave and vacation leave patterns are shifting; and, in conjunction with sales and productivity reports, how well performance matches workforce experience levels.

The **labor-force planning data** maintains data concerning an organization's short- and long-term staffing requirements. It includes data about various job specifications, with the specifications delineating the training and experience necessary to perform each job. The data also may contain statistical information regarding employee attrition by department, overall employee turnover, and so forth.

The **skills inventory data** catalogs each employee's set of relative skills. As employees gain new experience through on-the-job training or formal educational channels, the skills data is updated. When a job opening becomes available, HR managers will often consult the skills inventory data in search of qualified internal candidates. Management also may refer to this data in assigning employees to specific job tasks.

Although not discussed here, several other data stores are commonly found in an HR management process. Coverage of these data stores is beyond the scope of the chapter, but an end-of-chapter discussion question will ask you to speculate on what these data stores might be.

The Payroll Process

In this section, we first look at the imprint of the payroll function on the organization, and then we describe the logic and data of the payroll process. We follow that with a description of a typical physical implementation of the payroll process and an analysis of the internal controls in that process.

Organizational Setting

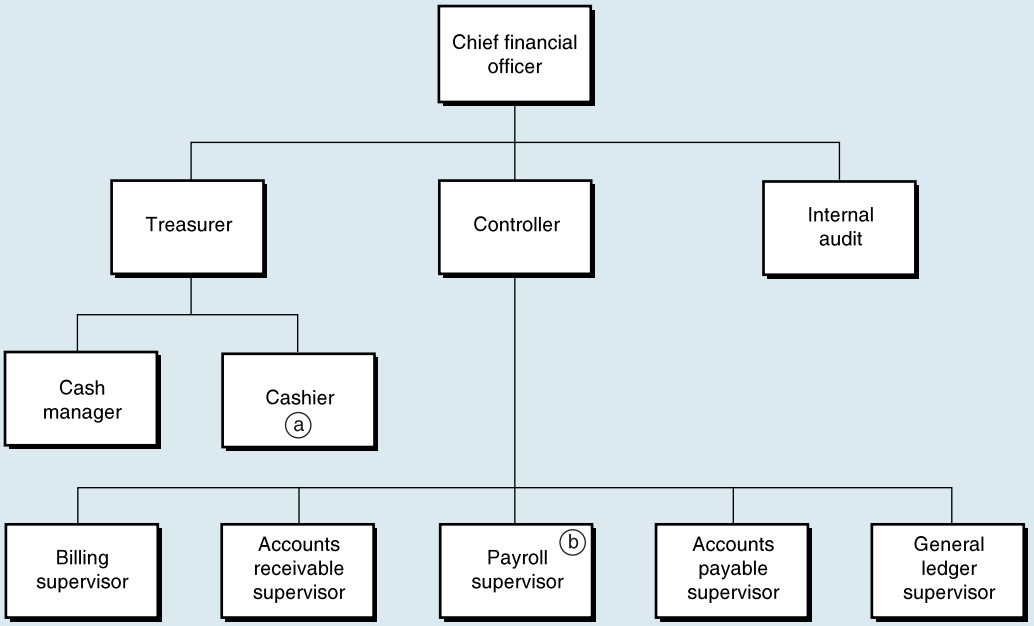
Let's look briefly at the organizational structure of the payroll function. The discussion here is limited to an examination of *structure* only; we do not discuss the role of the controller or the other positions related to the payroll function. The organizational significance of the controller's area (where payroll resides) has been covered in earlier chapters.

The payroll function generally falls under the authority of the controller's office. Although the controller's office usually has line responsibility over the payroll function, it is important to note that certain activities, such as distributing paychecks, are influenced by the treasury function. Figure 14.5 (pg. 512) is an organization chart illustrating the location of the payroll function.

Logical Description of the Payroll Process

This section describes and illustrates the logical characteristics of a typical payroll process. Once again, we use data flow diagrams (DFDs) to explain the process logic. In

FIGURE 14.5 Organization Chart Illustrating the Payroll Function



addition, the section includes a discussion of the employee/payroll master data as it relates to the payroll process. We conclude this section by presenting the accounting events that are generated by the payroll process.

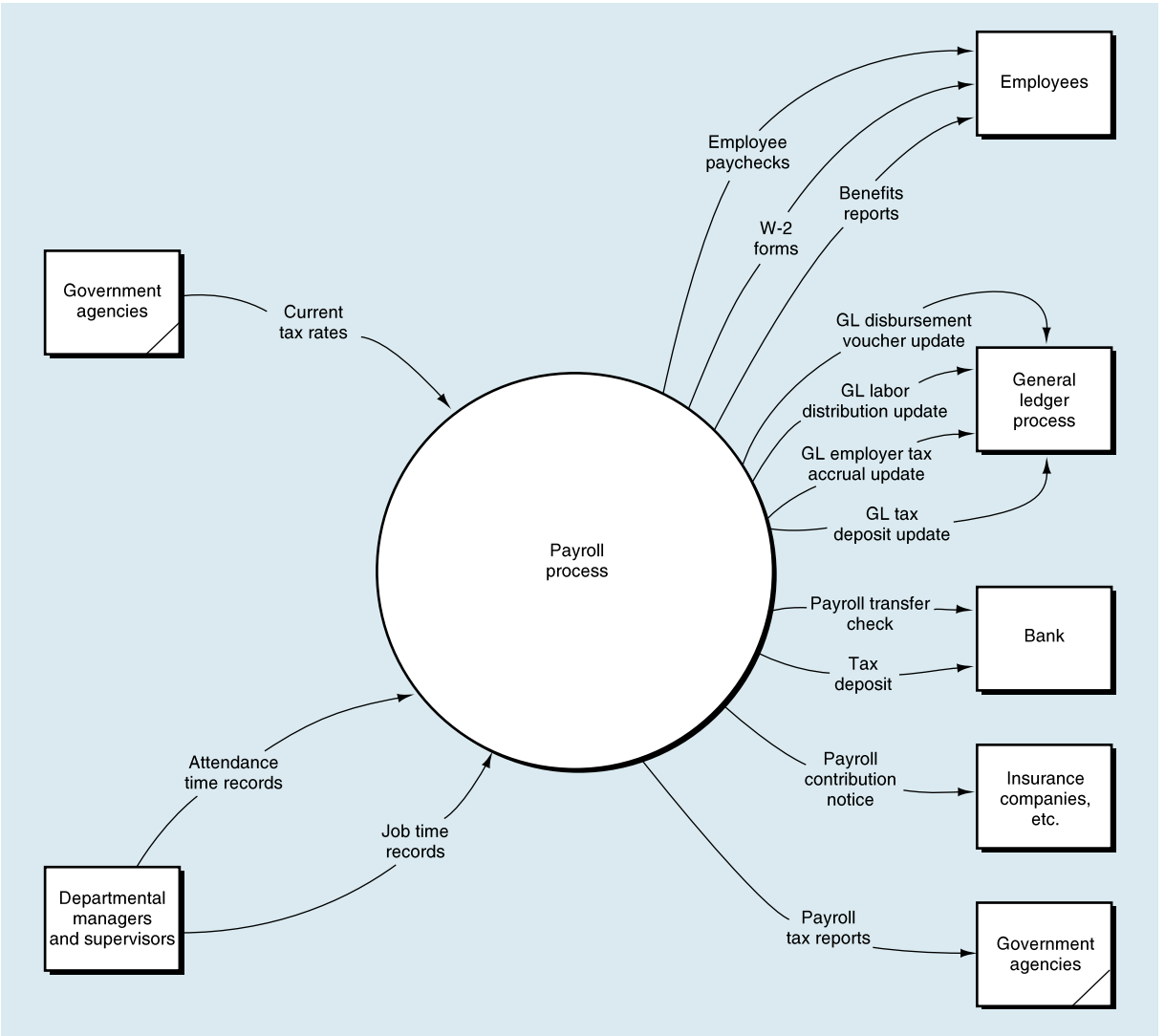
Figure 14.6 is a context diagram of the payroll process. Study the diagram now to gain a broad overview of the process' major inputs, outputs, and interfaces. Figure 14.7 presents a level 0 DFD of the payroll process. This figure shows seven major activities carried out by the process; they are discussed and illustrated next.

To begin, process 1.0 (Perform data maintenance) periodically updates the *tax rates data* to ensure that current tax rates (federal, state, county, and city) are being used in preparing employee paychecks. Using a separate tax rates table (data store) rather than storing the rates in the employee/payroll master data, allows for easier data maintenance whenever tax rates change.

Two data flows enter the payroll process from departmental managers and supervisors: attendance time records and job time records. **Attendance time records** show the time periods that employees are in attendance at the job site and available for work. These records are used to calculate the gross amount of each employee's pay. **Job time records**, on the other hand, reflect the start and stop times on specific jobs. Their purpose is to allow the distribution of payroll costs to jobs in process (or to other accounts).[4] Attendance time records are maintained near the entrance of the

4 For simplicity, we have limited the discussion to the preparation of paychecks for factory workers. Additional data flows would be necessary to deal with payroll for clerical, sales, and salaried employees.

FIGURE 14.6 Payroll Process—Context Diagram



workplace and often take the physical form of time cards that are punched as employees come and go. Increasingly, however, employees "punch" in and out of work by swiping an employee identification card through or by a magnetic card reader. Job time records are prepared at the worksite by employees entering the time each job is started and stopped.

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Process 2.0 (Reconcile hours worked) compares the total hours of each worker as shown by the attendance record with the hours reflected on the job time records for that employee. The hours should agree. This reconciliation is one of the payroll process *control* plans, which is discussed in a subsequent section. Validated job time records are sent to process 3.0, which distributes labor costs to individual jobs, projects, or departments. Process 3.0 (Distribute labor costs) interfaces with the general ledger process to provide necessary journal entries for the distribution of labor charges.

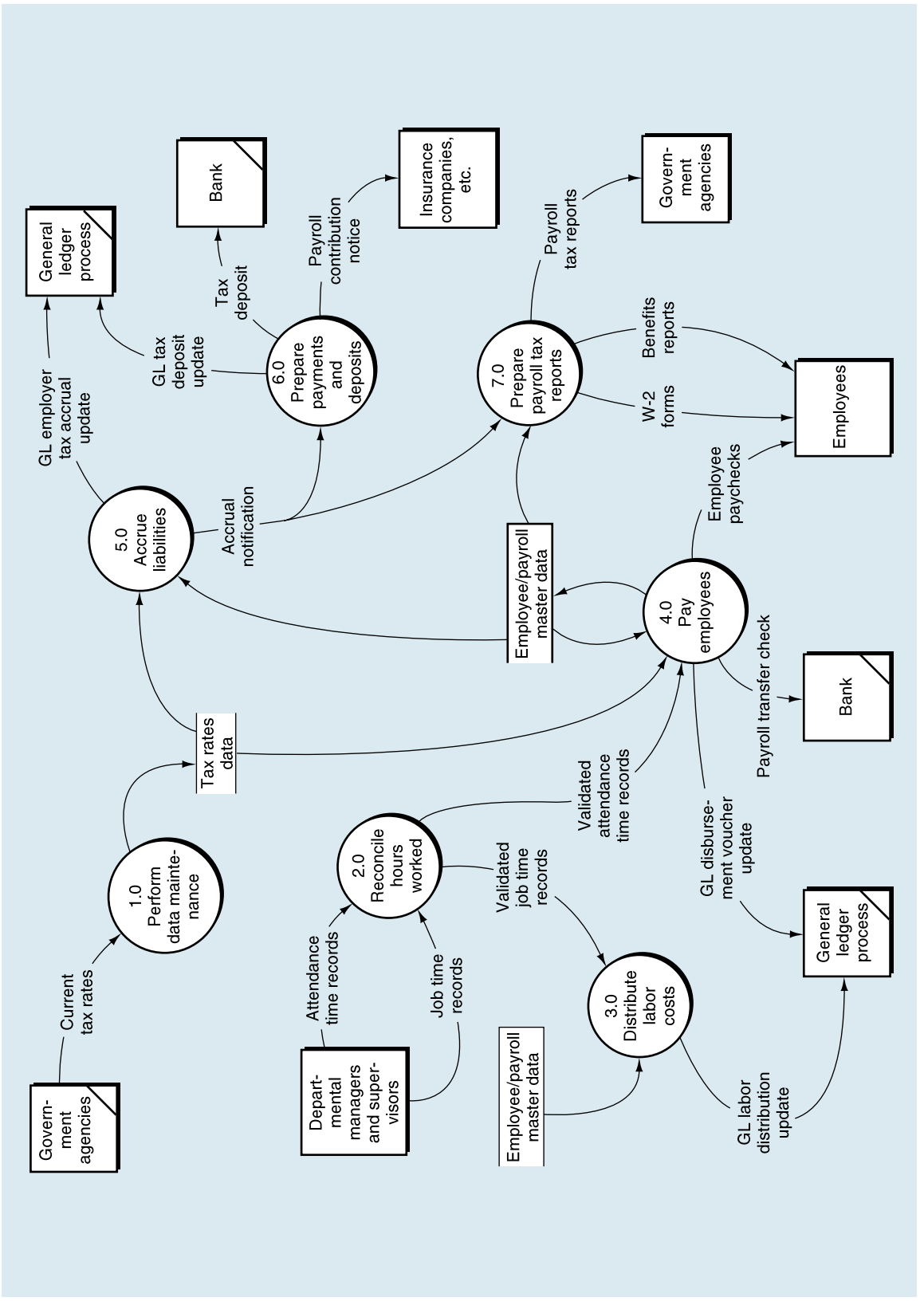
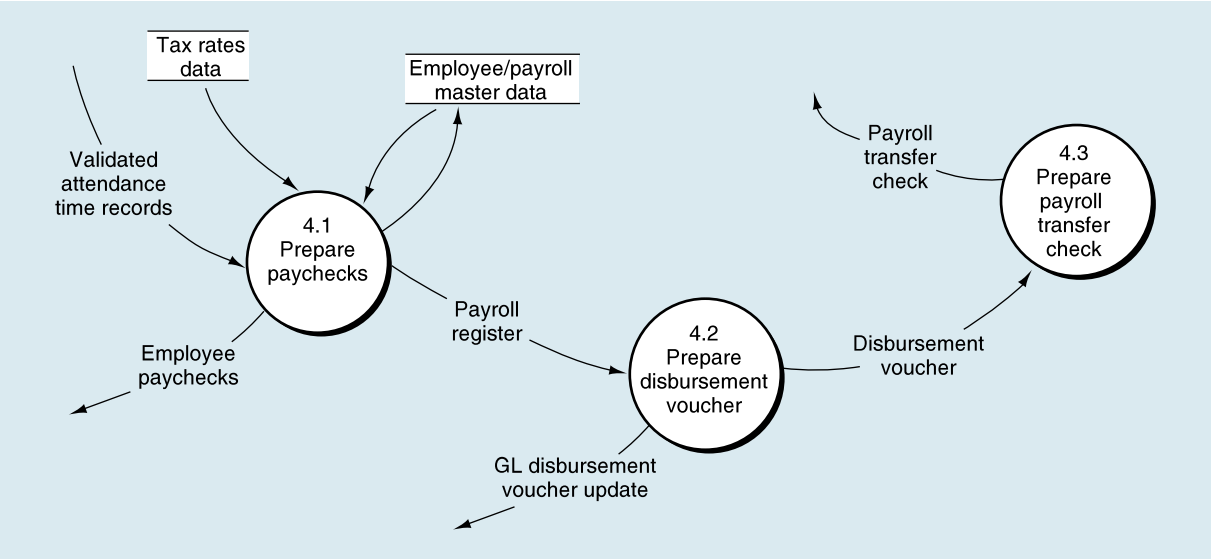


FIGURE 14.7 Payroll Process—Level 0 Diagram

FIGURE 14.8 Payroll Process—Diagram 4



Validated attendance time records initiate the payment to workers in process 4.0 (Pay employees). Figure 14.8 explodes process 4.0 down to its next lower level. Let's discuss it next.

In calculating employees' gross and net pay, process 4.1 (Prepare paychecks) retrieves data from both the employee/payroll master data and the tax rates data. Data retrieved from the employee/payroll master data includes the employee identification code; employee status (active, inactive, etc.); employee name and address; employee tax status (single or married, number of exemptions, etc.); employee payment code (wage, salary, or commission employee); employee wage, salary, or commission rate; employee overtime rate; employee vacation accrual rate; and employee sick leave accrual rate. In addition, various kinds of payroll deductions, such as IRA or 401(k) deductions, union dues, and life insurance, are retrieved from the employee/payroll master data when an employee's gross and net pay is calculated.

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Additions, deletions, and adjustments of various kinds to the employee/payroll master data represent another class of data necessary for processing an organization's payroll. This category of adjustments includes changes in salary or wage rates, address, department, tax exemptions, deduction authorizations, and so forth. For *control* reasons, personnel in the *HR function* enter these data items in the data table.

Process 4.1 accumulates current, quarter-to-date, and year-to-date totals for each employee and reports this information via the data flow "Payroll register." This information also is used to update the employee/payroll master data. Finally, process 4.1 prints and distributes paychecks to employees as reflected in the "Employee paychecks" data flow.

The data flow "Payroll register" triggers process 4.2 (Prepare disbursement voucher). As we discussed in Chapter 13, many organizations use a disbursement voucher as documentation to recognize their payroll liability and to authorize the preparation of the payroll transfer check. Process 4.3 (Prepare payroll transfer check) then prepares the transfer check and sends it to the bank to cover the organization's periodic net payroll.

Having walked through the details of process 4.0, let's now return to Figure 14.7 (pg. 514). Process 5.0 (Accrue liabilities) accrues employer and withheld liabilities, including social security tax (Federal Insurance Contributions Act [FICA]), state and federal unemployment insurance taxes, insurance premiums, and pension plan

contributions. These accruals are reported to the general ledger process. On receipt of the accrual notification data flow, process 6.0 (Prepare payments and deposits) then prepares the tax and other deposits (such as insurance premium payments) and notifies the general ledger process of the deposit.

Finally, process 7.0 (Prepare payroll tax reports) provides assistance in satisfying government regulations regarding employees by preparing the following payroll tax reports:

- Form 941 (report of wages taxable under FICA)
- Form W-2 (wage and tax statement)
- Form 1099-R (annuities, pensions, or retired pay)
- Employee Retirement Income Security Act (ERISA) reports

The Employee/Payroll Master Data

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The **employee/payroll master data** is the central repository of data about people who work for an organization. This data table combines data that originates in two functional areas: HR and payroll. As depicted in Figure 14.3 (pg. 508), each record contains employee identification data (e.g., personal data) as well as data used for the computation of employee paychecks (i.e., payroll data). The periodic preparation of the company payroll is greatly simplified by having both personal and payroll data available on each employee record. However, this situation has the potential of raising some *control* problems because staffs in two departments have the capability of making changes to the data. Furthermore, having both departments participate in the review of exception reports may result in duplication of effort and, in the case of accepting responsibility for errors, can lead to interdepartmental conflict. The solution to these problems is to restrict online access for the purposes of making data updates and reviewing errors so that each department can alter only those data fields over which it has predetermined authority. Such features are easily implemented with *enterprise systems* through organizational assignments in the employee/payroll master data.

Employee payroll records are keyed by an employee identification code, such as a social security number or other identifier. The employee code can be designed to reflect certain employee attributes, such as department, factory, and position. Such code numbers can be used to provide management with labor-cost distributions.

Payroll data usually is recorded currently as well as on a quarterly and year-to-date basis. This technique greatly reduces the effort necessary to meet periodic government reporting requirements and to produce ad hoc summary information for internal use. In addition, accumulating totals facilitates filing reports of amounts withheld for state and federal income taxes, unemployment insurance taxes, and social security taxes. At year-end, W-2 statements can be easily produced.

Accounting Entries Related to the Payroll Process

Exhibit 14.1 illustrates the four primary accounting entries recorded by the payroll process. The exhibit shows the source of each entry by cross-referencing the entry to the corresponding logical process in either Figure 14.7 or Figure 14.8. Take some time to study Exhibit 14.1. We assume you are already familiar with the entries from other accounting courses. In the "Application of the Control Framework" section, we'll have more to say about the use of the "Payroll clearing" account in entries 1 and 2 of the exhibit.

Implementing the Payroll Process

This section provides a physical view of the *payroll process*. Again, we use a systems flowchart as the basis for discussion. The presentation also describes various operational

EXHIBIT 14.1 Accounting Entries Related to the Payroll Process

1. PAY EMPLOYEES		
A. ESTABLISH VARIOUS PAYROLL LIABILITIES[a]		
(from process 4.2 in Figure 14.8):		
Payroll clearing	XXXXX	
FIT withholdings payable		XXXXX
SIT withholdings payable		XXXXX
FICA tax withholdings payable		XXXXX
Accrued payroll		XXXXX
B. RECORD THE DISBURSEMENT OF CASH		
(from process 4.3 in Figure 14.8):		
Accrued payroll	XXXXX	
Cash		XXXXX
2. DISTRIBUTE PAYROLL TO VARIOUS ACCOUNTS		
(from process 3.0 in Figure 14.7):		
Work in process (direct labor)	XXXXX	
Manufacturing overhead (indirect labor)	XXXXX	
General and administrative expense	XXXXX	
Selling expense	XXXXX	
Payroll clearing		XXXXX
3. ACCRUE EMPLOYER PAYROLL TAXES[a]		
(from process 5.0 in Figure 14.7):		
Manufacturing overhead (tax on factory workers)	XXXXX	
General and administrative expense	XXXXX	
Selling expense	XXXXX	
FICA taxes payable		XXXXX
SUT taxes payable		XXXXX
FUTA taxes payable		XXXXX
4. RECORD TAX DEPOSITS[a]		
(from process 6.0 in Figure 14.7):		
FIT withholdings payable	XXXXX	
SIT withholdings payable	XXXXX	
FICA tax withholdings payable	XXXXX	
FICA taxes payable	XXXXX	
SUT taxes payable	XXXXX	
FUTA taxes payable	XXXXX	
Cash		XXXXX

[a] Entries 1A, 3, and 4 would typically include deductions or accruals for nontax items, such as health insurance premiums, pension plan contributions, and union dues.

and control aspects of a typical payroll process. Selected process outputs will be discussed as well.

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Figure 14.9 on shows a systems flowchart for a typical payroll process. Unlike its counterpart, Figure 14.4 (pg. 509), in which HR activities were processed in the *immediate mode*, Figure 14.9 shows payroll events being entered in real-time but processed in batches. In most organizations, payroll processing is generally done on a periodic basis. The process shown in Figure 14.9 reflects periodic recording of data, periodic updating of master data, and immediate generation of output.

This physical implementation employs much of the technology described earlier in this chapter, including employee self-service systems, employee access to these systems via Web browsers or kiosks, and enterprise systems with workflow modules. In addition, employee inputs to record attendance and work on specific jobs are made into an **electronic time management system**, a computer-based system that captures, stores, and reports time. Inputs to such systems are via the reading of magnetic strips on employee identification badges, *bar code* readers, and key entry. Payments to employees are made through a **payroll direct deposit system** whereby employee net pay is sent electronically through the banking system and deposited directly to the employees' bank accounts. One technology that is not utilized here is a **payroll service bureau**, a company that specializes in rendering payroll services to client companies for a fee. By using a service bureau, an organization can *outsource* much of the process depicted in Figure 14.9, including payroll calculation, paycheck preparation and direct deposit, payroll tax reporting and payments, and payments to insurance and retirement programs.[5]

Let's take some time now to follow the process logic. For now, please ignore the control annotations (P-1, P-2, etc.); we'll return to them in the "Application of the Control Framework" section. The process begins with factory workers recording attendance and job time in an *electronic time management system*.[6]

Periodically (i.e., weekly, bi-weekly) the time data and a batch total are downloaded from the *electronic time management system* and sent to the payroll system, where the batch totals are reconciled to ensure the integrity of the data transfer. The data are then sent to the appropriate supervisory personnel for approval. Once approved, the total hours worked for a pay period are reconciled (attendance time hours and job time hours). The payroll system then does the following:

- Updates the employee/payroll master data and distributes the labor costs
- Prepares the *employee paychecks* (i.e., electronic payments) and sends the payments to the bank for deposit into employee accounts
- Prepares various outputs, including the employee *pay stubs* that are posted to the HR portal
- Sends the *payroll register* to the accounts payable department where a disbursement voucher is prepared for the amount of the payroll, including employee payments for taxes, insurance, and so on

The disbursement voucher is sent to the cashier where a transfer is made for the amount of the payroll from the general checking account to the imprest payroll account. Finally, several items are sent to the general ledger department so that they can reconcile

5 Organizations typically employ payroll service bureaus. We depict our payroll system without one so that you can more easily see all of the steps in the payroll process.

6 Remember that the procedures shown in Figure 14.9 relate to factory workers only. However, many of the steps illustrated could apply to payroll processing for many other employee categories. Generally, all employees are required to record their attendance and job time via some online time sheet.

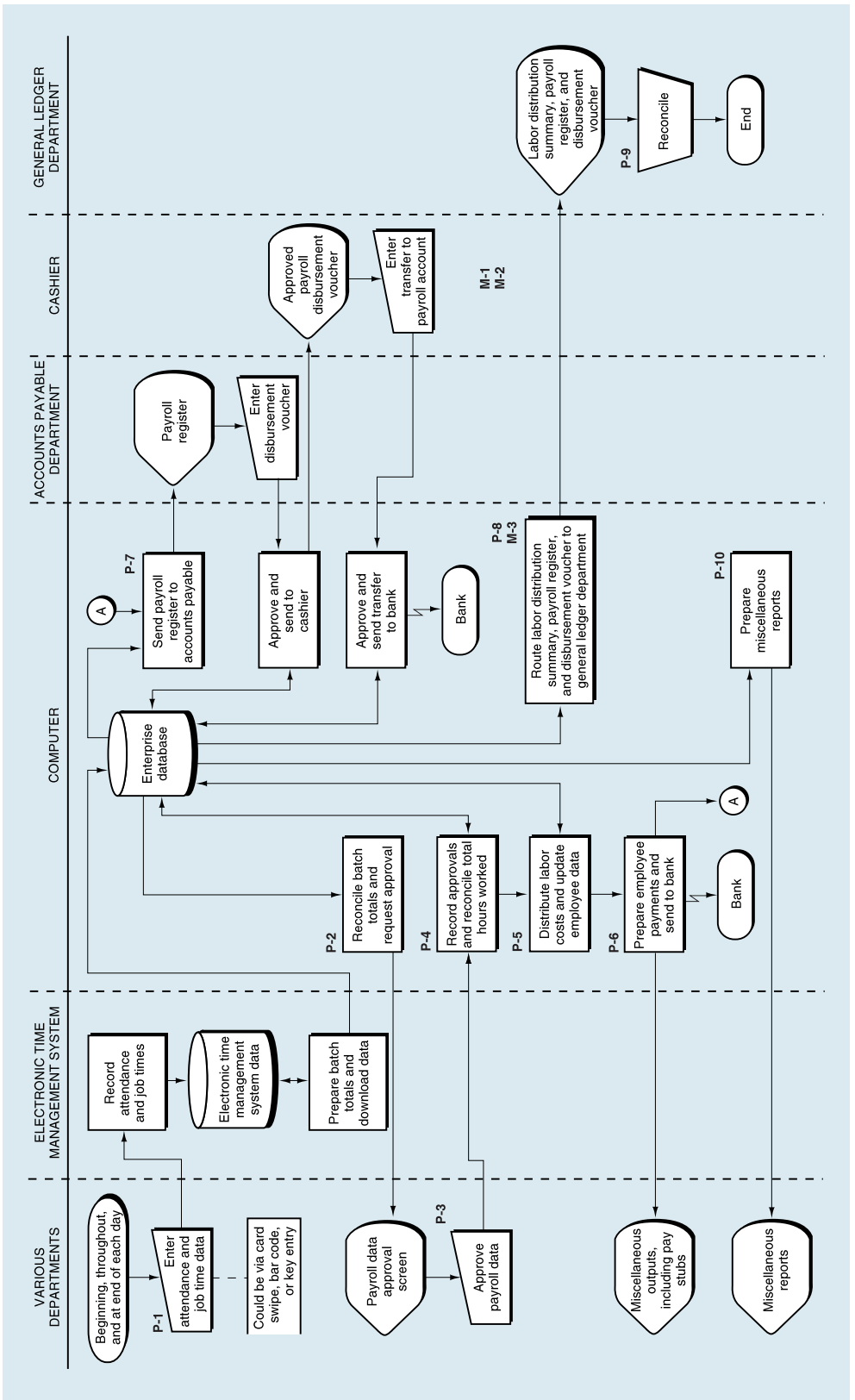

FIGURE 14.9 The Payroll Process—Systems Flowchart

the amount to be paid (the *payroll register*), the job time incurred (the *labor distribution summary*), and the amount disbursed from the bank (the *disbursement voucher*).[7]

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In addition to the outputs previously discussed, many management reports can be produced for online viewing (paper outputs also may be available) from the *enterprise database* to manage and *control* the enterprise's operations. They become more meaningful and powerful if the data can be aggregated across the entire enterprise. These reports include the *deduction and benefits register*, the *state and local tax register*, the employees' *W-2 withholdings statements*, and a variety of reports and forms for government agencies. Several other reports and analyses may be generated from payroll processing. These could include reports of absenteeism and tardiness by employee and analyses of indirect labor by type of cost—supervision, materials handling, inspection, and so on. Also valuable in staff planning are certain aggregate statistics accumulated during payroll processing, such as total number of employees, total hours worked, total labor costs, average wage rate, rate of absenteeism, rate of turnover, and average cost of total fringe benefits. These statistics are most meaningful when trends in their values are analyzed and correlated with one another and with other factors. For example, useful management information may be obtained from correlating the rate of turnover with average hours worked per employee or the rate of absenteeism with the number of units that fail to pass quality control inspection.

The Fraud Connection

Payroll, similar to cash disbursements, is an area ripe with fraud potential. After all, large organizations will make thousands of payments to employees for payroll and expense account reimbursements every payroll period (e.g., weekly, bi-weekly). Here are some of the types of payroll frauds that are committed, along with the median loss for each to an employer.[8]

- *Ghost employees (median loss $275,000):* Employees who don't actually work for the company but receive paychecks. These can be recently departed employees or fictitious persons.
- *Falsified hours and salary (median loss $30,000):* Employees exaggerate the time that they work or are able to increase the salary in their employee data.
- *Commission schemes (median loss $200,000):* Employees falsify the sales on which commissions are based or increase the commission rate in their employee data.
- *False workers' compensation claims (median loss $155,000):* Employees fake injuries to collect disability payments.

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Some of the procedures that can be used to prevent or detect these schemes include the following:

- *Segregation of duties* among personnel data creation and modification (HR), payroll preparation (payroll), and disbursement (AP, and distribution [cashier]).
- *Direct deposit* of payroll to eliminate alteration, forgery, and theft of paper check. (Diversion of deposits into unauthorized accounts is not affected.)
- Check for *duplicate names*, *addresses*, and *social security* numbers in the employee data.
- Compare actual to budgeted payroll.

---

7 The procedures performed by accounts payable, the cashier, and the general ledger department could be automated. We show them here as manual procedures so that you might see the entire process more clearly. To simplify the flowchart, we have not shown the *exception routines* that would be needed wherever there is an approval or reconciliation.

8 Joseph T. Wells, "Keeping Ghosts Off the Payroll," *Journal of Accountancy* (December 2002): 77–81.

Other than compensation for work performed, as depicted in Figure 14.9 (pg. 519), employees are reimbursed for expenses incurred while conducting business for their employer. Employees may record such expenses online, in a manner similar to that used to record attendance and job times. Documentation of the expenses must then be sent to the accounts payable department so that they might verify the legitimacy of the expenses. Employee reimbursement may then take place much as it would for regular payroll.

These reimbursements, often termed *expense accounts*, are often an area of fraud and abuse. Employee fraud schemes include the following:[9]

- Using legitimate documentation from personal expenses for a business expense
- Overstating expenses by altering receipts
- Submitting fictitious expenses by producing fake receipts
- Obtaining multiple reimbursements for one expense by submitting copies of invoices

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Such abuses can be minimized by formulating reasonable policies that compensate employees for their out-of-pocket expenses. Copies of invoices should only be accepted in extreme circumstances. Finally, expense account activities should be monitored on a regular basis to detect unusual patterns. In the next section, we describe *controls* to prevent these abuses, as well as other typical payroll controls.

Application of the Control Framework

In this section, we apply the control framework from Chapter 7 to the payroll process. Figure 14.10 (pgs. 522–523) presents a completed *control matrix* for the annotated systems flowchart shown in Figure 14.9 (pg. 519).

Control Goals

The control goals listed across the top of the matrix are similar to those presented in Chapters 7 and 9 through 13 except they have been tailored to the specifics of the purchasing process.

The *operations process control goals* that are typical of the payroll process include:

- *Effectiveness of operations:* Three *representative effectiveness* goals are listed within this goal: A, *Provide employees with timely paychecks*; B, *Provide timely filing of tax returns and other reports to government agencies*;[10] and C, *Comply with the requirements of payroll tax laws and regulations.*[11]
- *Efficient employment of resources:* As noted in Chapter 9 and reinforced in Chapters 10 through 13, people and computers are the resources found in most business processes.
- *Resource security:* The resources of interest include cash and the information resources residing on the employee/payroll master data. Control plans should be in

9 Joseph T. Wells, "The Padding That Hurts," *Journal of Accountancy* (February 2003): 67–69.

10 Both effectiveness goals B and C are "compliance" goals as called for by the COSO report on internal control, which was discussed in Chapter 7. Whereas goal B speaks to ensuring the timeliness of complying with such laws and regulations, goal C covers all other aspects of compliance, such as who must report, what wages are subject to payroll taxation, and so on.

11 In the interest of simplicity, we have not included goal columns in the matrix to show compliance with other laws and regulations related to the payroll process, such as compliance with Equal Employment Opportunity (EEO), Occupational Safety and Health Administration (OSHA), and Employee Retirement Income Security Act (ERISA) provisions. Many of these provisions apply more to the *HR* function than to the *payroll* function.

FIGURE 14.10 The Payroll Process—Control Matrix

	Control Goals of the Payroll Business Process									
	Control goals of the operations process					Control goals of the information process				
Recommended control plans	Ensure effectiveness of operations			Ensure efficient employment of resources (people and computers)	Ensure security of resources (cash, employee/ payroll master data)	For time data inputs, ensure:			For employee/ payroll master data, ensure:	
	A	B	C			IV	IC	IA	UC	UA
Present Controls										
P-1: Enter time data close to the data's originating source	P-1			P-1			P-1	P-1		
P-2: Computer agreement of batch totals									P-2	P-2
P-3: Approve attendance time data and job time data						P-3		P-3		
P-4: Reconcile attendance time data and job time data	P-4			P-4		P-4	P-4	P-4		
P-5: Distribute labor costs						P-5	P-5	P-5		
P-6: Independent paycheck distribution					P-6	P-6				
P-7: Approve payroll transfer check					P-7					
P-8: Accumulate payroll data for reconciliation of the payroll clearing account						P-8	P-8	P-8	P-8	P-8
P-9: Use a payroll clearing account						P-9	P-9	P-9	P-9	P-9
P-10: Prepare miscellaneous reports		P-10	P-10							
Missing Controls										
M-1: Independent reconciliation of payroll bank account					M-1					

FIGURE 14.10 The Payroll Process—Control Matrix (*continued*)

	Control Goals of the Payroll Business Process									
	Control goals of the operations process					Control goals of the information process				
Recommended control plans	Ensure effectiveness of operations			Ensure efficient employment of resources (people and computers)	Ensure security of resources (cash, employee/ payroll master data)	For time data inputs, ensure:			For employee/ payroll master data, ensure:	
M-2: Use an imprest payroll bank account				M-2	M-2			M-2		M-2
M-3: Computer agreement of batch totals (agree run-to-run totals)					M-3	M-3	M-3	M-3	M-3	M-3

Possible effectiveness goals include the following:

A — Provide employees with timely paychecks.

B — Provide timely filing of tax returns and other reports to government agencies.

C — Comply with requirements of payroll and tax laws and regulations

See Exhibit 14.2 (pg. 525) for a complete explanation of control plans and cell entries.

IV = Input validity

IC = Input completeness

IA = Input accuracy

UC = Update completeness

UA = Update accuracy

place to prevent unauthorized accessing, copying, changing, selling, or destruction of the employee/payroll master data. Equally, plans should be in place to prevent theft or any unauthorized use of cash.

The *information process* control goals, as adapted to the payroll process, are the following:

- *Input validity (IV)*[12] from the viewpoint of the payroll process, *valid* time data include those that reflect services performed by real employees.
- *Input completeness (IC)* and *input accuracy (IA)* for the time data.
- *Update completeness (UC)* and *update accuracy (UA)* for the employees/payroll master data.

Recommended Control Plans

Recall that application control plans include both those that are characteristic of a particular AIS business process and those that relate to the technology used to

12 To focus our discussion, we have limited our coverage of process inputs to time data. Tax rates and job time data inputs have been ignored in the control matrix to simplify the illustration. Furthermore, neither of those two inputs is used to update the employee/payroll master data.

implement the application. Here, you are introduced to some of the new plans that are particular to the payroll business process. We first define and explain these controls and then summarize, in Exhibit 14.2, each cell entry in Figure 14.10, the control matrix:

- *Enter time data close to the data's originating source* (see Exhibit 14.2 and Figure 14.10, P-1): Capture data automatically, if possible, when an event occurs. As time passes, it is more difficult to capture accurate, complete data.
- *Approve attendance time data and job time data* (see Figure 14.2 and Figure 14.10, P-3): Even when time data entry is automatic, there should be a review and approval of the time worked by a department supervisor.
- *Reconcile attendance time data and job time data* (see Exhibit 14.2 and Figure 14.10, P-4): An automatic reconciliation of attendance data with job time data makes sure that time is recorded in both segments of the system, ensuring that time worked (attendance) is available for billing (job time), and time available for billing is included as time worked for an employee.
- *Independent paycheck distribution* (see Exhibit 14.2 and Figure 14.10, P-6): Periodically, paychecks should be distributed by someone other than the supervisor of an employee to ensure that everyone being paid is actually a working employee.
- *Use a payroll clearing account* (see Figure 14.2 and Figure 14.10, P-9): A **payroll clearing account** is a separate bank account used solely for payroll purposes.
- *Use an imprest payroll bank account* (see Exhibit 14.2 and Figure 14.10, M-2): In an **imprest payroll bank account**, the fund (account) is reimbursed for the *exact amount* of the disbursements made from the fund, rather than being reimbursed for round amounts. When applied to payroll, an imprest system requires that the transfer of cash from the general cash account to the payroll bank account is in the amount of the total of paychecks issued—no more, no less.

Each of the recommended control plans listed in the matrix in Figure 14.10 (pg. 522–523) is discussed in Exhibit 14.2. We have intentionally limited the number of plans to avoid redundancy with presentations in previous chapters. Study Exhibit 14.2's explanations of the cell entries appearing in the control matrix. As you know from your studies in prior chapters, understanding how the recommended control plans relate to specific control goals is the most important aspect of applying the control framework.

EXHIBIT 14.2 Explanation of Cell Entries for the Control Matrix in Figure 14.10

P-1: *Enter time data close to the data's originating source.*

- *Effectiveness goal A:* By having time information captured automatically and eliminating the keying in of data, the timeliness of paycheck preparation is improved.
- *Efficient employment of resources:* Entering time data directly into the computer system as that time is worked eliminates several payroll processing steps and the associated costs, making for a more *efficient* employment of resources.
- *Time data input completeness:* Eliminating hard copy time sheets and job time tickets removes the possibility that these documents could be lost or misplaced. As a result, real-time data capture should help to ensure input completeness.
- *Time data input accuracy:* Because input errors can be corrected immediately, input accuracy should be improved. Additionally, automation of input entry reduces the opportunity for input errors to enter the process.

EXHIBIT 14.2 Explanation of Cell Entries for the Control Matrix in Figure 14.10 (*continued*)

P-2: *Computer agreement of batch totals.*

- *Employee/payroll master data update completeness and accuracy:* The attendance time data and batch totals—let's assume hash totals are used—are received from the *electronic time management system*. The computer calculates comparable hash totals for all attendance time data that were successfully updated to the employee/payroll master data. The computer-calculated totals are then compared to the input totals and discrepancies are reconciled (the reconciliation process is not shown). Assuming that differences are promptly investigated and corrected, the control plan addresses both the goals of update completeness and update accuracy (UC and UA).

P-3: *Approve attendance time data and job time data.*

- *Time data input validity:* Before they are forwarded to the payroll department for processing, time sheets and job time tickets are approved by operating department supervisors. These written approvals help to ensure input validity by assuring that time sheets are submitted only by bona fide employees and that these employees actually worked the time for which they will be paid.
- *Time sheet input accuracy:* Because we assume that the supervisors also check that the hours reflected by the time sheets are correct, a cell entry is made in the input accuracy column.

P-4: *Reconcile attendance time data and job time data.*

- *Effectiveness goal A:* By performing the reconciliation prior to undertaking further processing steps, we prevent errors from entering the process, thereby helping ensure that employee paychecks are prepared on a timely basis.
- *Efficient employment of resources:* By performing the reconciliation, we preclude the wasted effort (inefficiency) that could result from detecting and correcting errors after the fact.
- *Time data input validity, completeness, and accuracy:* If this control plan were not in place, discrepancies between the two data sets could result in employees being paid for work not performed. For example, if the number of hours captured on an employee's time record exceeds the total number of hours he or she has charged to various jobs throughout the week, then the company might pay this employee for services that he or she did not perform. This plan also addresses input completeness because we should have a valid attendance time record for every employee who has submitted job time tickets (and vice versa).

P-5: *Distribute labor costs.*

- *Time data input validity, completeness, and accuracy:* See accounting entry 2 in Exhibit 14.1. This process distributes all of the labor costs to the appropriate expense categories. When this entry balances, as it should, we will detect and correct any discrepancies between the attendance time and job time. Therefore, in a manner similar to control P-4, this process ensures that only valid, complete, and accurate time data are input to the payroll process.

P-6: *Independent paycheck distribution.*

- *Security of resources:* This plan entails having paychecks distributed to employees by an entity not otherwise involved in payroll processing (i.e., by an independent party such as a paymaster, a bursar, or via direct deposit to an employee's bank account). Of course, as part of this control plan, a paycheck would be released only if the employee presented proper identification. By *preventing* fraudulent payments, this plan protects the cash resource.
- *Time data input validity:* The plan ensures that cash is expended only to employees who actually exist. In other words, this plan *detects* invalid inputs.

P-7: Approve payroll transfer check.

- *Security of resources:* To transfer funds from the company's general account to its payroll bank account, the payroll register is sent to the accounts payable department, a disbursement voucher is prepared and *approved* in accounts payable and by the cashier, and the transfer is sent to the bank electronically. P-7 in Figure 14.9 (pg. 519) corresponds to these steps. Approval of the payroll bank transfer helps to ensure that the cash asset is disbursed only for authorized expenditures.

(continued)

EXHIBIT 14.2 Explanation of Cell Entries for the Control Matrix in Figure 14.10 (*continued*)

P-8: *Accumulate payroll data for reconciliation of the payroll clearing account.*

- *Time data input validity, completeness, and accuracy:* This plan accumulates the data from the enterprise database and presents it for reconciliation. Therefore, as described for plan P-9, matrix entries are appropriate in the input validity (IV), input completeness (IC), and input accuracy (IA).
- *Payroll master data update completeness and accuracy:* Because plan P-9 is exercised *after* updates to the employee/payroll master data have occurred, the plan also meets the goals of update completeness (UC) and update accuracy (UA).

P-9: *Use a payroll clearing account.*

- *Time data input validity, completeness, and accuracy:* Funds are transferred into the account prior to the generation of payroll checks. The net of the transfer to the clearing account and payroll disbursements should zero out each pay period. Effectively, then, this plan does for gross labor *dollars* what plan P-4 did for labor *hours*—it reconciles the dollars that were calculated from two different input sources. Therefore, as in the case of plan P-4, matrix entries are appropriate in the input validity (IV), input completeness (IC), and input accuracy (IA).
- *Payroll master data update completeness and update accuracy:* Because plan P-9 is exercised *after* updates to the employee/payroll master data have occurred, the plan also meets the goals of update completeness (UC) and update accuracy (UA).

P-10: *Prepare miscellaneous reports.*

- *Effectiveness goals B and C:* Various reports can be prepared, electronically or on paper, to comply in a timely manner with tax and other government regulations. These reports can be prepared and sent automatically or by request of appropriate individuals.

M-1: *Independent reconciliation of payroll bank account.*

- *Security of resources:* Implementation of this control plan would help ensure the safety of resources (cash) by identifying missing or unusual items entered into the account.

M-2: *Use an imprest payroll bank account.*

- *Efficient employment of resources:* The plan helps ensure efficiency of resource use because reconciling the payroll bank account is simpler when it is operated on an imprest basis.
- *Security of resources:* Safety of the cash asset is ensured because fraudulent checks drawn on the payroll account should be readily detected. Losses due to fraudulent events would be limited to the amount of funds transferred to the account.
- *Time data input accuracy and employee/payroll master data update accuracy:* Using an imprest payroll bank account helps check the accuracy of payroll processing (IA and UA) because the bank transfer prepared from the disbursement voucher must agree with the total net pay reflected by the payroll register.

M-3: *Agree run-to-run totals (computer agreement of batch totals).*

- *Security of resources, input validity:* By determining that updates to the employee/payroll master data reflect actual hours worked (attendance and jobs), we reduce the possibility of recording an invalid payroll event and dispensing cash for work that was not performed.
- *Input completeness, input accuracy, update completeness, update accuracy:* By comparing totals prepared before the input to those produced after the update, we would ensure that all events were input (*input completeness*), all events were input correctly (*input accuracy*), all events were updated to the master data (*update completeness*), and all events were updated correctly to the master data (*update accuracy*).

Summary

Although not described as such in Chapters 10 through 13, the HR management and payroll processes are an integral part of all the order-to-cash and the purchase-to-pay processes. As a member of the *purchase-to-pay process* in a merchandising organization, the HR management and payroll processes focus on business events and reports data related to employee expenses. As a member of the *order-to-cash process* in a service organization, the HR management and payroll processes assist in managing a service firm's major resource—people. In addition, the HR management and payroll processes capture employee work-related activities and use that data to bill customers for services rendered and to analyze service-related activities. As a member of the *purchase-to-pay process* in a manufacturing organization, the HR management and payroll processes capture and analyze data related to a major component of a manufactured product—employee labor.

Let's leave you with one final note about the HR management and payroll processes. We have emphasized the importance of these processes to the success of an organization and the significant resources dedicated to their operation. Here are six guidelines that should help an organization optimize the operation of these processes. At the same time, these guidelines provide us some criteria to assess the *efficiency* and *effectiveness* of the operation of these processes:

1. Integrate payroll with other related processes such as HR management, electronic time and attendance recording, tax reporting, retirement, and general ledger, and then use the Web (i.e., HR portal) to connect these processes.
2. Customize pay delivery to meet the organization goals. Typical options include paper checks, direct deposit, payroll debit cards (pay is loaded on the card), and cash. Recognize that when cash payments are made, compensating controls must be in place to reduce misappropriation risks.
3. Understand each organization's culture and develop strategies to increase the adoption of secure payroll options, such as direct deposit.
4. Consolidate related processes such as payroll, HR, and expense reimbursement, and minimize pay cycles. For example, moving from bi-weekly to monthly payroll can reduce costs by 30 to 50 percent.
5. Because payroll and HR management are not key competencies, it typically makes sense to outsource these processes.
6. Build effective reporting and analytics. Analysis of labor costs can provide a powerful tool to improve the efficiency and effectiveness of operations.

Key Terms

human capital management (HCM)

human resources (HR) management process

payroll process

labor-force planning data

skills inventory data

attendance time records

job time records

employee/payroll master data

electronic time management system

payroll direct deposit system

payroll service bureau

payroll clearing account

imprest payroll bank account

Review Questions

RQ 14-1 What is human capital management (HCM)?

RQ 14-2 The HCM philosophy is based on what three major principles?

RQ 14-3 What is the human resources management process? What functions and activities does the process perform?

RQ 14-4 What is the payroll process? What functions and activities does the process perform?

RQ 14-5 What is the relationship between the HR process and the payroll process?

RQ 14-6 What role does each HR manager listed in Figure 14.2 (pg. 503) play?

RQ 14-7 What key decisions do the HR managers shown in Figure 14.2 make?

RQ 14-8 Describe an employee self-service system.

RQ 14-9 What are the principal inputs and outputs of the HR management process as reflected in the systems flowchart in Figure 14.4 (pg. 509)?

RQ 14-10 What data does the HR management process use? Describe the purpose of each.

RQ 14-11 How are the tax rates data and the employee/payroll master data used by the payroll process?

RQ 14-12 What are an attendance time record and a job time record? How is each used by the payroll process?

RQ 14-13 What are the major logical functions the payroll process performs? Be sure to consult the logical DFDs presented in the chapter.

RQ 14-14 What classes of general ledger journal entries are generated by the payroll process?

RQ 14-15 What are four major types of payroll fraud schemes?

RQ 14-16 What are four procedures that can be used to prevent or detect payroll fraud schemes?

RQ 14-17 What is the purpose of each control plan listed in the control matrix (Figure 14.10 on pgs. 522–523)?

Discussion Questions

DQ 14-1 In this chapter, we stated that many organizations view their human capital as an important variable in the formula of economic success. Discuss the role the HR management process plays in optimizing an organization's human capital.

DQ 14-2 Discuss the significance of having a separate organizational unit for the HR function (reporting to the vice president of HR), as opposed to having the HR function housed within an administrative organizational unit (reporting to a manager of HR).

DQ 14-3 Examine the placement of the manager of HR systems in the organization chart of Figure 14.2 (pg. 503) and review the typical functional responsibilities of this manager, decisions made, and information needs as shown in Table 14.1 (pgs. 504–505). Describe possible alternatives for the placement of this function in the formal organization chart, and discuss the relative advantages for each placement. Consider the variables of centralized versus decentralized organizational structures.

DQ 14-4 Discuss the role unions and government agencies play in the design of procedures for the HR management process.

DQ 14-5 A number of organizations have recently instituted a position called ''manager of human resource systems.'' Speculate about why this position may become strategically important to organizations in the future.

DQ 14-6 Discuss the significance of the employee/payroll master data in relation to the HR function and the payroll function.

DQ 14-7 Without redrawing the figures, discuss *how,* if at all, the DFDs shown in Figures 14.6 (pg. 513), 14.7 (pg. 514), and 14.8 (pg. 515) would change as a result of the following *independent* situations (be specific in describing the changes):

a. Paying a worker for vacation or sick pay, as opposed to paying her for hours actually worked.

b. Paying some workers on a piecework basis.

c. Paying some workers a commission based on sales.

d. Preparing and distributing a paycheck ''early'' (i.e., in advance of the customary pay date).

e. Having a work environment where all employees are salaried (i.e., none are paid hourly).

DQ 14-8 a. List several *effectiveness* goals for the HR management process.

b. List some of the additional data stores that a typical HR management process might have.

c. Discuss the significance of the data stores in part b in relation to achieving the effectiveness goals of the HR management process (part a).

DQ 14-9 Tax rates data is depicted in both the logical DFDs and the physical implementation systems flowchart for the payroll process in this chapter. Discuss the advantages of maintaining a separate data store versus incorporating such data into ''master'' data, such as the employee master data. Support your argument by constructing an analogy between the tax rates data and pay rates data (i.e., one containing hourly pay rates) for employees who are compensated for the hours actually worked.

DQ 14-10 Consult the systems flowcharts in Figures 14.4 (pg. 509) and 14.9 (pg. 519). Discuss how these processes implement the concept of segregation of duties discussed in Chapter 8. Be specific as to which entity (or entities) performs each of the four functions depicted in Table 8.2 (pg. 255). Limit your discussion to the process of preparing employee paychecks.

Problems

Note: As with the other business process chapters, the first few problems are based on the processes of specific companies. Therefore, the problem material starts with case narratives of those processes.

Case Studies

Case A: University Products

University Products is a division of a large manufacturing company. University makes a variety of collegiate branded products, sold on campuses worldwide. Most employees are paid on an hourly basis. Employees receive yearly reviews to evaluate performance and to determine an appropriate pay increase. University's payroll is processed by the corporate payroll department from

input documents prepared by University. The following *HR and payroll* procedures are related to the hourly payroll employees at University.

Department supervisors initiate requests for additional employees by filling out a three-part employee requisition form. After a requisition is completed, the department supervisor signs it, files a copy by date, and gives the remaining two copies to the production supervisor. The production supervisor reviews and signs the copies and gives them to the HR manager. The HR manager reviews the request with the division controller. They both sign the requisition. The pay rate for the job also is determined at that time and included on the requisition. If the requisition is approved, the HR manager initiates hiring procedures by placing advertisements in local papers and announcing the opening internally. The HR manager and the supervisor interview the applicants together. They then evaluate the applicants and make a selection. The HR manager and the employee fill out the two-part wage and deduction form. The HR manager files a copy of the wage and deduction form and the personnel requisition by employee name. The remaining copies of each form are given to the division accountant.

The HR manager selects and reviews the records from the personnel file for employees who are due for their annual review. The HR manager puts some basic employee information on a three-part review form and gives it to the appropriate supervisor for his evaluation. The supervisor completes and signs the form, files a copy, and gives the remaining copies to the production supervisor, who reviews and signs the evaluation. The production supervisor returns it to the HR manager. The HR manager reviews it with the controller. They assign a new rate and sign the review form, which is given to the division accountant.

The division accountant uses the new employee information and the employee review form to prepare payroll action notices. The accountant signs the payroll action notices and files them with the other related forms by date. Each week, a clerk in the corporate payroll department retrieves the payroll forms from the division accountant, checks the signature on all payroll action notices, and processes the payroll. The forms, checks, and reports are sent back to the division accountant. He refiles the forms and gives the checks to the production supervisor, who in turn distributes them to the employees.

Case B: Tech Services, Inc.

Tech Services, Inc. is an independent contractor that provides technical support services under contract to government and nongovernment entities. The following process is used by Tech Services to process weekly payroll for hourly support and service personnel. Tech Services has a legacy computer system to which payroll personnel have online access from PCs located on their desks.

Each week, the computer prints time sheets using the employee/payroll master data. After receiving the time sheets from IT, the payroll department distributes them to the various department supervisors who give them to employees. The employees fill in the time sheets each day and give them to their supervisors at the end of each week. Department supervisors review and sign the time sheets and return them to the payroll department. Payroll clerks key the time sheets into the current week's payroll activity data and then file them alphabetically by department.

At the start of the weekly payroll process, the computer creates the current week's pay data using the employee/payroll master and the current week's activity data. The following items are then printed from the pay data: checks with attached stubs, stubs for directly deposited checks, bank deposit slips for directly deposited checks (one deposit slip for each bank, which lists all the accounts to be credited), a single check for each bank receiving direct deposits, a check register, and various payroll reports. The computer operator gets the check-signing machine from the cashier and signs the checks. The checks, stubs, direct deposit slips, and check register are given to the cashier. The payroll reports are given to the payroll department.

The cashier checks the total and the number of checks against the payroll register. She sends the checks with attached stubs and the stubs for direct deposits to the department supervisors, who give them to the employees. She then mails the direct deposit slips and checks to the banks.

PQ 14-1 For the company assigned by your instructor, complete the following requirements:

a. Prepare a table of entities and activities.

b. Draw a context diagram.

c. Draw a *physical* data flow diagram (DFD).

d. Prepare an annotated table of entities and activities. Indicate on this table the groupings, bubble numbers, and bubble titles to be used in preparing a level 0 logical DFD.

e. Draw a level 0 logical DFD.

P 14-2 For the company assigned by your instructor, complete the following requirements:

a. Draw a systems flowchart.

b. Prepare a control matrix, including explanations of how each recommended existing control plan helps to accomplish—or would accomplish in the case of missing plans—each related control goal.

c. Annotate the flowchart prepared in part a to indicate the points where the control plans are being applied (codes P-1 ….P-*n*) or the points where they could be applied but are not (codes M-1 ….M-*n*).

P 14-3 For the company assigned by your instructor, redraw the systems flowchart assuming that the company uses an enterprise system, an electronic time management system, an employee self-service system, and an HR Web portal.

P 14-4 Ace Manufacturing has several large divisions. The flowchart shown in Figure 14.11 describes the termination and exit interview procedures used by each division.

Required

(Make and state any assumptions that you think are necessary.) For the Ace Manufacturing process:

a. Prepare a table of entities and activities.

b. Draw a context diagram.

c. Draw a physical data flow diagram (DFD).

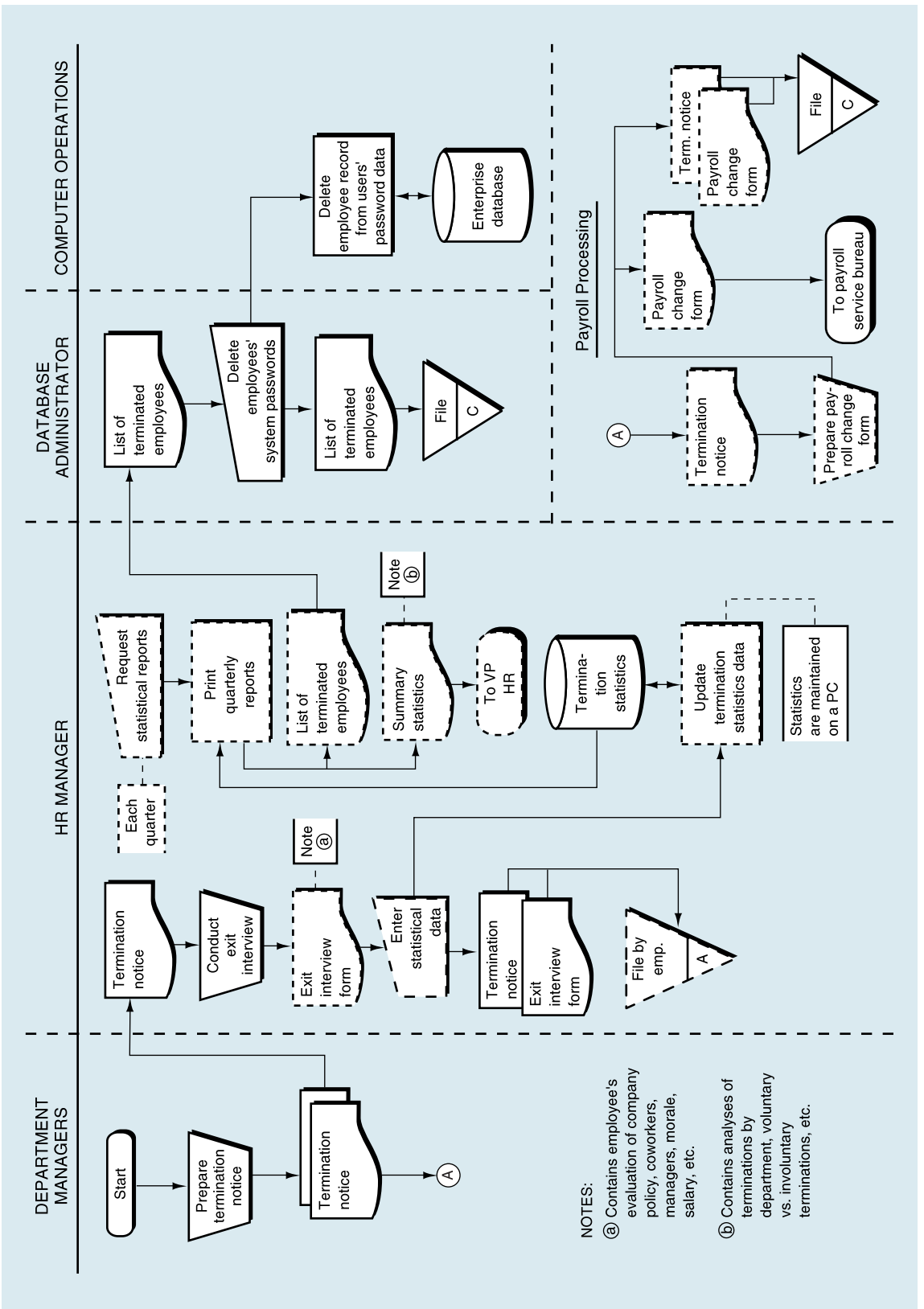

FIGURE 14.11 Ace Manufacturing: Divisional Employee Termination/Exit Interview Procedures for Problem 14-4

d. Prepare an annotated table of entities and activities. Indicate on this table the groupings, bubble numbers, and bubble titles to be used in preparing a level 0 logical DFD.

e. Draw a level 0 logical DFD.

f. Identify the principal weaknesses in the process from the standpoint of both operational effectiveness/efficiency and the generic information process control goals of validity, completeness, and accuracy.

P 14-5 Bubble 4.1 in Figure 14.8 (pg. 515) is called ''Prepare paychecks.''

Required:

a. Explode that bubble down to the next level (i.e., prepare diagram 4.1.1) to show the detailed steps involved in this process. *Hint:* Recognize that each employee paycheck also would include a pay stub. Also note, in Figure 14.8, that the data flows out of bubble 4.1 include a payroll register.

b. In your solution to part a, you should have some data flows out of data stores to process bubbles and other data flows from bubbles to data stores. For each data flow to or from data stores, *specify* the nature of the data that is being accessed or stored.

P 14-6 Following is a list of 10 control plans from this chapter (or from earlier chapters and tailored to the HR management and payroll processes of this chapter):

Control Plans

A. Specific approval of HR/payroll changes

B. One-for-one checking of hours per attendance time data and hours shown on pay stubs

C. Reconciling total hours per attendance time data with total hours per job time data

D. Imprest payroll bank account

E. Computer agreement of batch totals

F. Hash totals of employee ID numbers

G. Electronic time management system

H. Personnel termination procedures

I. Computer matching of employee ID numbers

J. Independent reconciliation of payroll bank account

Required:

Listed next are eight process failures that have control implications. Write the numbers 1 through 8 on your solution sheet. Next to each number insert *one* letter from the preceding list indicating the control plan that would *best* prevent the process failure from occurring. Also, give a brief, one- to two-sentence explanation of your choice. A letter should be used only once, with two letters left over.

Process Failures

1. A computer operator was fired for incompetence. During the two-week notice period, the operator ''fired a parting shot'' by destroying several computer files.
2. A novice data entry clerk had an error rate ranging from 10 to 20 percent during the first few weeks on the job. These errors resulted in several overpayments and underpayments to employees.
3. A payroll clearing account in the general ledger is debited for the gross pay amount paid to employees and is credited for the gross pay amount distributed to jobs in process or to expense categories. In theory, the clearing account should reflect a zero balance, but it consistently shows either a debit or credit balance.
4. The supervisor of an operating department prepared a fictitious attendance time record for a nonexistent employee and then deposited the bogus paycheck to her personal bank account.
5. An employee in the HR department prepared a bogus change of pay form to increase his salary by $25 per week. The form was submitted for processing and was entered into the system without being challenged.
6. Attendance time data is often not entered, not entered in a timely manner, or not accurate.
7. Each weekly pay period, a check is drawn on the general cash account and deposited to the payroll bank account in an amount ''estimated'' to be sufficient to cover the actual total of payroll checks issued that week. As a result, the payroll account runs a balance of several thousand dollars (noninterest-bearing), a situation that the newly hired treasurer has questioned.
8. In entering attendance time data, the data entry clerk misread all 7s as 9s. Although some time data were rejected, other data were processed against wrong employees, who happened to have a 9 instead of a 7 in the comparable position in their employee ID number.

P 14-7 Following is a list of 10 control plans from this chapter (or from earlier chapters and tailored to the HR management and payroll processes of this chapter).

Control Plans

A. Fidelity bonding

B. Periodic performance reviews

C. Preformatted HR/payroll screens

D. Online data entry of HR/payroll data

E. Automatic preparation of attendance time sheets for the next pay period (i.e., turnaround documents)

F. Review of all HR changes for compliance with union and government regulations

G. Use of a skills inventory data
H. Programmed edits—reasonableness checks
I. Preformatted screens
J. Computer calculations of gross pay, deductions, and so on

Required:

Listed next are eight statements describing either the achievement of a control goal (i.e., a process success) or a process deficiency (i.e., a process failure). Write the numbers 1 through 8 on your solution sheet. Next to each item insert *one* letter from the preceding list indicating the *best* control to achieve the desired goal or to address the process deficiency described. A letter should be used only once, with two letters left over.

Control Goals or Process Deficiencies

1. Should have prevented a data entry error of keying all hours worked with an extra digit (40 hours entered as 400, 45 hours as 450, etc.)
2. Helps to achieve efficiency of resource use (i.e., by reducing time needed for data entry) and accuracy of data entry
3. Should have prevented the organization's being sanctioned for failure to abide by Equal Employment Opportunity (EEO) guidelines
4. Should have prevented a data entry error of keying all zeroes as the letter *o* (40 entered as 4o, ID# 3062 entered as 3o62, etc.)
5. Would not have prevented employee dishonesty but would have helped the organization ''recover'' from such dishonesty
6. Helps in assigning employees to particular jobs
7. Precludes time card input errors by having certain data preprinted on the attendance time sheet
8. Helps ensure employee job satisfaction by providing employees with appropriate feedback

P 14-8 Use the DFDs in Figures 14.7 (pg. 514) and 14.8 (pg. 515) to solve this problem.

Required:

Prepare a four-column table that summarizes the payroll processes, inputs, and outputs. In the first column, list the seven processes shown in the level 0 diagram (Figure 14.7). In the second column for bubble 4.0 only, list the subsidiary functions shown in the lower-level diagram (Figure 14.8). For bubbles other than 4.0, there will be no subsidiary functions shown in column 2. For each process shown in column 1 (or subsidiary process listed in column 2), list the data flow names or the data stores that are inputs to that process (column 3) or outputs of that process (column 4). The following table has been started for you to indicate the format for your solution.

Solution Format Summary of the Payroll Processes, Inputs, and Outputs

Process	Subsidiary Functions	Inputs	Outputs
1.0 Perform data maintenance	None diagrammed in this chapter	Current tax rates	Tax rates data
2.0 Reconcile hours worked	None diagrammed in this chapter	Attendance Time records	. . . Continue solution . . .

P 14-9 The chapter mentions that frequently, companies outsource the payroll function. Using the Internet, locate at least one company that provides payroll services and a software package (or module of an enterprise system) that may be used for in-house payroll processing. Write a paper on the positive and negative aspects of in-house versus outsourced payroll processing. (The length of the paper is at the discretion of your instructor.)

P 14-10 Interview an HR manager (either by phone or in person). You should ask about the interviewee's job functions, types of decisions that are made, and information needs. Write a paper describing what you find out, and how it compares to the information from Table 14.1.

P 14-11 Find and describe an instance of payroll fraud (you may use the Internet, newspapers, or other news sources). How was the fraud committed? How was it detected? What was the control weakness that allowed the fraud to happen? What were the monetary losses associated with the fraud?