The Human Resources Management and Payroll Cycle

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

1. Describe the major business activities, key decisions, and information needs in the HRM/payroll cycle, the general threats to those activities, and the controls that can mitigate those threats.

2. Explain the payroll cycle activities, key decisions and information needs, the threats to those activities, and the controls that can mitigate those threats.

3. Discuss and evaluate the options for outsourcing HRM/payroll cycle activities.

INTEGRATIVE CASE   **Alpha Omega Electronics**

Like many companies, Alpha Omega Electronics (AOE) did not fully implement all modules of its new enterprise resource planning (ERP) system at the same time. It focused first on integrating the revenue and expenditure cycles with the production cycle while continuing to use its existing payroll and HRM systems. Thus, like many companies, AOE currently has separate HRM and payroll systems. The payroll system, which is under the accounting department's control, produces employee paychecks and maintains the related records as required by government regulations. The payroll system uses batch processing because employees are paid biweekly. The HRM system, which the human resources department runs, maintains files on employee job history, skills, and benefits; these files are updated weekly. Each system maintains its own separate files, sometimes storing the same data, such as pay rates, in different formats. This practice makes it difficult for accounting personnel to prepare reports that combine HRM and payroll data.

Peter Wu, the new vice president for human resources at AOE, wants to address several problems with AOE's payroll and HRM activities. Payroll processing costs have risen, and employees are unhappy with the lengthy delays required to obtain information about their benefits and retirement plans. In addition, the current HRM system makes it difficult to accurately track employee skill development, which impedes evaluating the effectiveness of AOE's investment in training and continuing education. Consequently, employees find it difficult and time-consuming to obtain approval to attend professional training classes. In addition, managers have tended to hire externally to meet new staffing needs, rather than

Gary Arbach/123RF

promoting or transferring existing employees. These practices have hurt employee morale. Peter thinks that implementing the payroll and HRM modules of the ERP system will solve these problems.

Peter meets with Elizabeth Venko and Ann Brandt to discuss the process of migrating from AOE's current stand-alone payroll and HRM systems to integration of those functions in the new ERP system. Elizabeth and Ann agree that such a conversion would improve both the efficiency of payroll processing and the effectiveness of HRM. They begin developing a detailed timetable for the system conversions. As you read this chapter, think about the relationships between HRM and payroll activities and how an integrated database can make both functions more efficient and effective.

Introduction

The **human resources management (HRM)/payroll cycle** is a recurring set of business activities and related data processing operations associated with effectively managing the employee workforce. The more important tasks include the following:

1. Recruiting and hiring new employees.
2. Training.
3. Job assignment.
4. Compensation (payroll).
5. Performance evaluation.
6. Discharge of employees due to voluntary or involuntary termination.

human resources management (HRM)/payroll cycle - The recurring set of business activities and data processing operations associated with effectively managing the employee workforce.
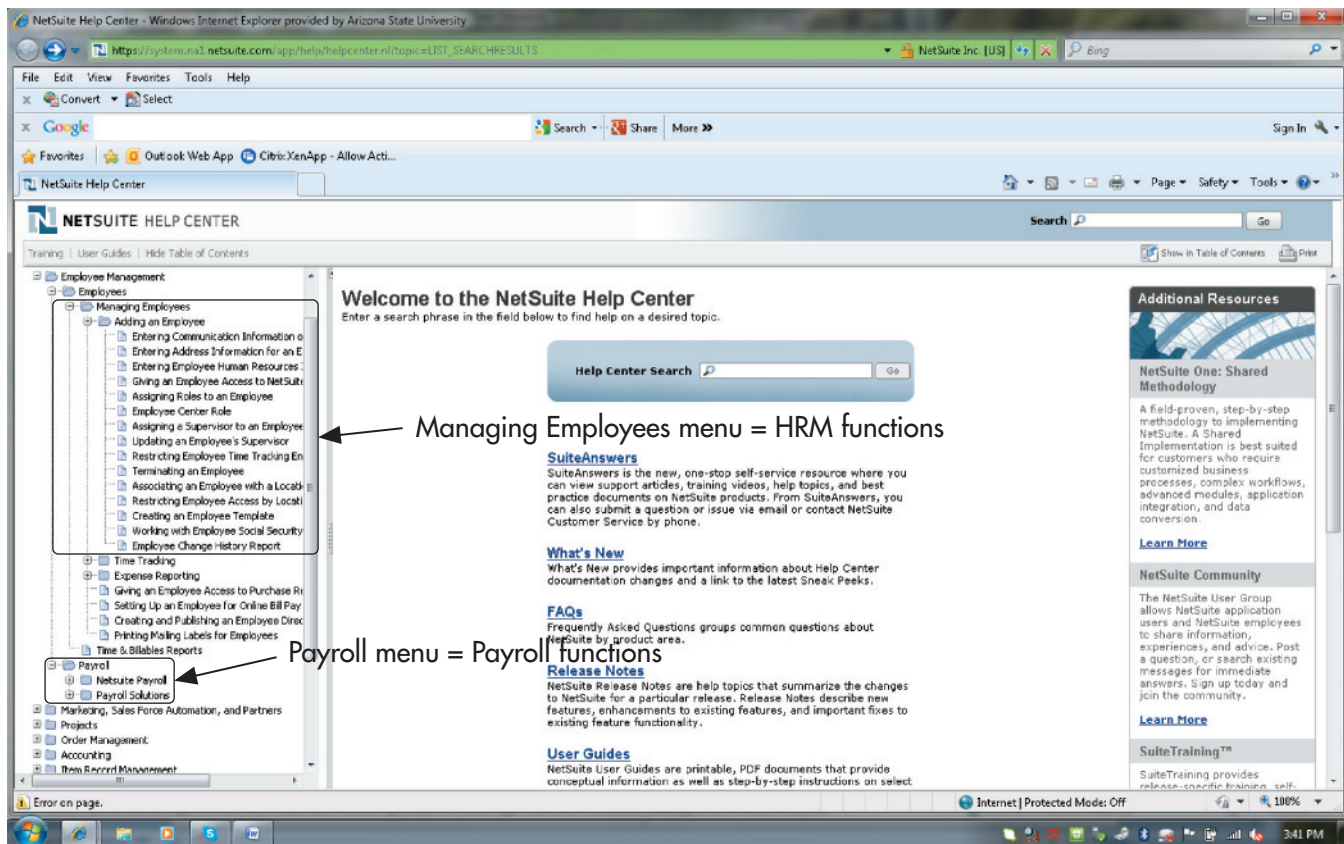
Tasks 1 and 6 are performed only once for each employee, whereas tasks 2 through 5 are performed repeatedly for as long as an employee works for the company. In most companies, these six activities are split between two separate systems. Task 4, compensating employees, is the payroll system's primary function. (In addition, as discussed in Chapter 16, the payroll system also allocates labor costs to products and departments for use in product pricing and mix decisions.) The HRM system performs the other five tasks. In many companies, these two systems are organizationally separate: The HRM system is usually the responsibility of the director of human resources, whereas the controller manages the payroll system. However, as Figure 17-1 shows, ERP systems integrate the two sets of activities.

This chapter focuses primarily on the payroll system because accountants have traditionally been responsible for this function. We begin by describing the design of the integrated HRM/payroll system and discuss the basic controls necessary to ensure that it provides management with reliable information and complies with government regulations. We then describe in detail each of the basic payroll cycle activities. We conclude with a discussion of options for outsourcing both payroll and HRM functions.

FIGURE 17-1
Integration of HRM and Payroll Functions in Typical ERP System
Source: 2010 © NetSuite Inc.

HRM/Payroll Cycle Information System

Figure 17-2 depicts the portion of an ERP system that supports the HRM/payroll cycle. The HRM-related activities (information about hiring, firing, transfers, training, etc.) and the collection of information about the use of employee time occur daily. The actual processing of payroll, however, occurs only periodically because in most organizations employees are paid on a weekly, biweekly, or monthly basis rather than every day. Thus, payroll is one application that continues to be processed in batch mode.

OVERVIEW OF HRM PROCESS AND INFORMATION NEEDS

Organizational success depends on skilled and motivated employees because their knowledge and skills affect the quality of the goods and services provided to customers. Indeed, in professional service organizations, such as accounting and law firms, employees' knowledge and skills *are* the principal component of the company's product, and labor costs represent the major expense incurred in generating revenues. Even in manufacturing firms, where direct labor costs represent only a fraction of total direct costs, employees are a key cost driver in that the quality of their work affects both overall productivity and product defect rates. Thus, it is not surprising to find that some stock analysts believe that employee skills and knowledge may be worth several times the value of a company's tangible assets, such as inventory, property, and equipment.

To effectively utilize the organization's employees, the HRM/payroll system must collect and store the information managers need to answer the following kinds of questions:

- How many employees does the organization need to accomplish its strategic plans?
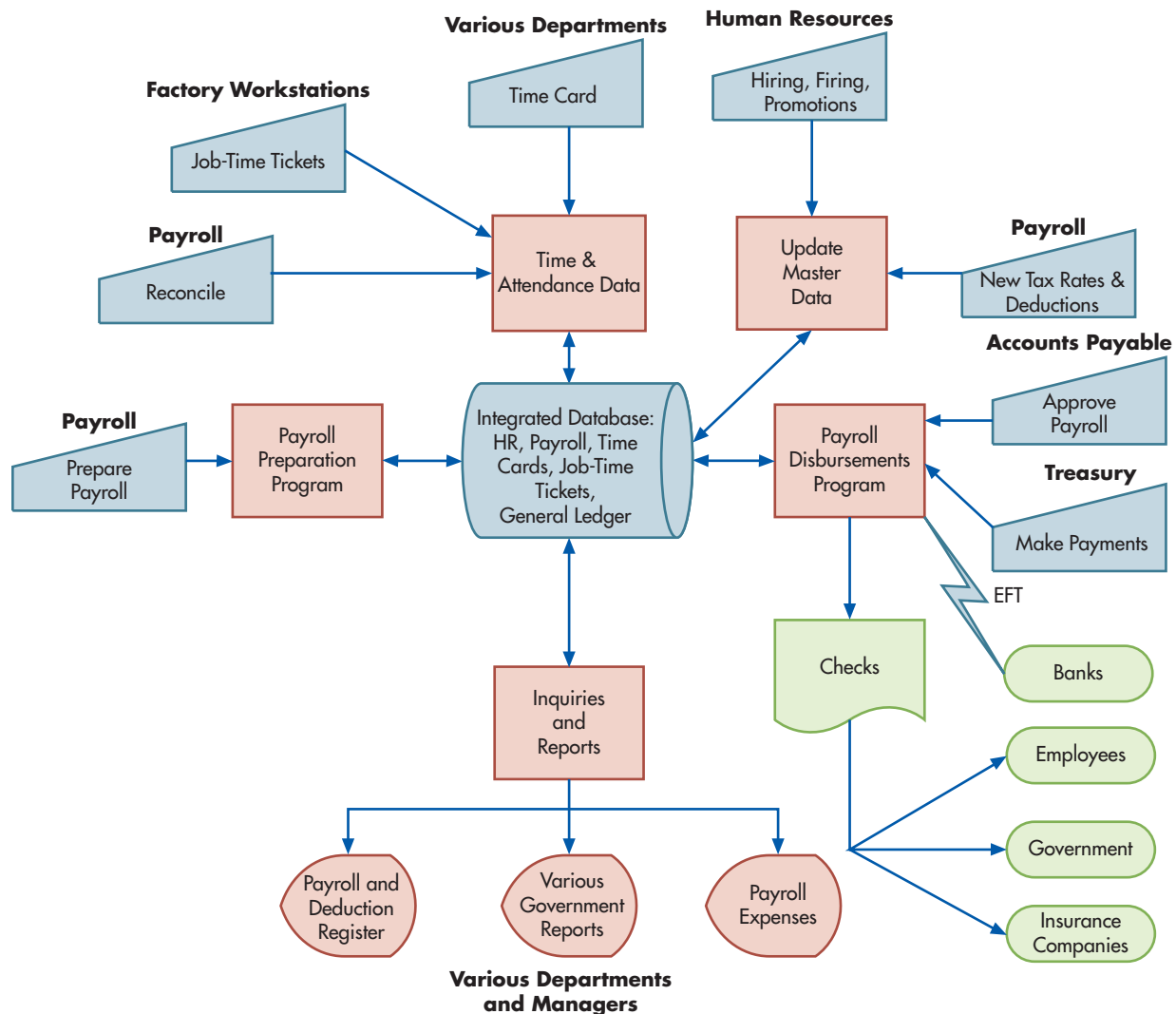- Which employees possess specific skills?

FIGURE 17-2

Portion of ERP System That Supports Human Resources Management and Payroll

- Which skills are in short supply? Which skills are in oversupply?
- How effective are current training programs in maintaining and improving employee skill levels?
- Is overall performance improving or declining?
- Are there problems with turnover, tardiness, or absenteeism?

   The HRM/payroll master database (Figure 17-2) provides some of the information needed to answer those questions. However, it typically contains only descriptive information, such as which employees possess which skills and who has attended various training programs. Although such information enables managers to make staffing-related decisions, it does not help leverage the specific knowledge and expertise possessed by their employees.

   To more effectively use employees' knowledge and skills, many organizations have invested in knowledge management systems. **Knowledge management systems** not only serve as a directory identifying the areas of expertise possessed by individual employees but also capture and store that knowledge so that it can be shared and used by others. Knowledge management systems can significantly improve productivity. For example, professional consulting firms often provide similar services to many different clients. Knowledge management software enables consultants to store their solutions to specific problems in a shared database. Oftentimes, those solutions can be used as a template to address the needs of other clients.

knowledge management systems - Software that stores and organizes expertise possessed by individual employees so the knowledge can be shared and used by others.

Such reuse of knowledge saves time on future engagements. Access to the shared database also enables employees to learn from geographically dispersed colleagues who have had prior experience in addressing a particular issue.

Recognizing the value of employees' knowledge and skills can help companies better understand the true costs associated with excessive turnover. In addition to the direct expenses associated with the hiring process (advertising, background checks, interviewing candidates, etc.), there are also the costs associated with hiring temporary help, training new employees, and the reduced productivity of new employees until they fully learn how to perform their tasks. Thus, estimates place the total costs to replace an employee at about 1.5 times the annual salary. Consequently, organizations that experience below-industry-average turnover rates reap considerable cost savings compared to rivals with higher turnover rates. For example, consider two companies, each with 1,500 employees earning on average $50,000. One company experiences 20% annual turnover, the other only 8%. The company with 20% annual turnover would incur costs of $22.5 million (300 employees times $75,000) to replace employees, compared to only $9 million (120 employees times $75,000) for the company experiencing only 8% annual turnover. Of course, some turnover will always occur and may even be desirable. For example, professional consulting organizations have traditionally encouraged some level of turnover because they believe it provides an important source of new ideas. The key is to control and manage turnover rates so that they are not excessive.

Employee morale is also important. Low employee morale creates financial costs when it results in turnover. Conversely, there is increasing evidence that high employee morale provides financial benefits because it improves the quality of service provided to customers. Indeed, research has found a positive correlation between employee attitudes and financial performance, particularly in highly competitive industries.[1] Thus, it is not surprising that many companies take steps like those described in Focus 17-1 to improve working conditions and morale.

THREATS AND CONTROLS

Figure 17-2 shows that all HRM/payroll cycle activities depend on the integrated database that contains information about employees, payroll, and use of employee time. Therefore, the first general threat listed in Table 17-1 is inaccurate or invalid master data. Inaccurate employee master data could result in over- or understaffing. It can also create inefficiencies due to assigning employees to perform tasks for which they are not fully qualified. Inaccurate payroll master data that results in errors in paying employees can create significant morale issues. In addition, the organization may incur fines for errors made in paying payroll taxes. Errors in data about use of employee time can result in inaccurate performance evaluations and mistakes in calculating the costs of the organization's products and services.

One way to mitigate the threat of inaccurate or invalid master data is to use the various processing integrity controls discussed in Chapter 13 to minimize the risk of data input errors (control 1.1). It is also important to restrict access to that data and configure the system so that only authorized employees can make changes to master data (control 1.2). This requires changing the default configurations of employee roles in ERP systems to appropriately segregate incompatible duties. For example, consider the situation where a payroll clerk types in the name of an employee who is not currently in the database. The default configurations of most integrated ERP systems would respond by asking whether the clerk wants to create a new employee record. This violates segregation of duties by permitting the person who does the recording (payroll) to also authorize the creation of new accounts. Similarly, the default configurations of many systems permit payroll staff not only to read but also to change the salary information in the employee payroll master file. These examples are just some of the many areas that the controller or CFO needs to review to ensure that various employees

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[1]Alex Edmans, "Does the Stock Market Fully Value Intangibles? Employee Satisfaction and Equity Prices" (June 2010), SSRN.com/abstract=985735; Rajiv D. Banker and Raj Mashruwala, "The Moderating Role of Competition in the Relationship between Nonfinancial Measures and Future Financial Performance," Contemporary Accounting Research (24:3, Fall 2007): pp. 763–793.

FOCUS 17-1   The Value of Understanding Employee Jobs and Attitudes

Companies are implementing a number of initiatives to improve employee morale because it can reduce costs and improve productivity. One common technique that can be used whenever output can be clearly measured is to provide employees with more flexibility in terms of when and where they work. For example, Wilkin & Guttenplan PC, a mid-sized firm in New Jersey, has embraced flexible work arrangements and has been listed as one of the top places to work in New Jersey for years. Flexibility works best, however, when performance evaluations are based on results-based measures (e.g., number of tasks completed) rather than time-based measures (e.g., hours billed).

Another morale-boosting action is to improve the transparency of pay-for-performance compensation schemes by publishing the formulas and criteria used to determine raises. Such transparency reduces misunderstandings that can hurt morale and increase turnover.

Firms are also eliminating antiquated policies that prohibit employees from discussing their salaries. However, few companies disclose each employee's compensation, especially when the work requires a high degree of collaboration and team effort, because most people grossly overestimate their own contributions and underestimate that of others.

Another innovation is encouraging employees to take paid time off without fear that doing so will harm career progression. For example, High Rock Accounting, a small firm in Tempe, Arizona, offers financial incentives to encourage staff to take vacations. The firm reimburses employees up to $1,000 for personal travel, but only if the employee "unplugs" by turning off work email during their time off. The firm benefits by having happier and more motivated staff, which translates into overall increases in productivity. Having everyone take time off also forces staff to learn new skills so that they can cover for one another.

are assigned only those privileges necessary to perform their specified job duties. Although the procedures for modifying configurations vary across different software packages, knowing what changes need to be made requires only a sound understanding of proper segregation of duties for different business processes. However, since such preventive controls can never be 100% effective, Table 17-1 also indicates that an important detective control is to regularly produce a report of all changes to master data and review them to verify that the database remains accurate (control 1.3).

A second general threat in the HRM/payroll cycle is unauthorized disclosure of sensitive information, such as salary and performance evaluations for individual employees. Such disclosures can create morale problems if employees learn that their pay differs significantly from co-workers. In addition, unauthorized disclosure of performance evaluations or reasons for firing an employee may subject the organization to lawsuits. The best control procedure for reducing the risk of unauthorized disclosure of payroll data is using multifactor authentication and physical security controls to restrict access to HRM/payroll master data to only those employees who need such access to perform their jobs (control 2.1). It is also important to configure the system to limit employees' ability to use the system's built-in query capabilities to indirectly infer sensitive information. For example, queries about salary averages should be allowed only if the query set is sufficiently large. Otherwise, someone could infer another employee's salary by writing a query that calculates the average salary for two people: the query writer and the employee of interest. Encrypting the database (control 2.2) provides additional protection by making the information unintelligible to anyone who succeeds in obtaining unauthorized access to the database. Encryption also prevents information technology (IT) employees who do not have access to the ERP system from using operating system utilities to view sensitive information. Tokenization (control 2.3) of employee IDs or Social Security Numbers further protects payroll data from "snooping" by the employees who are authorized to run payroll.

A third general threat in the HRM/payroll cycle concerns the loss or destruction of master data. The best way to mitigate the risk of this threat is to employ the backup and disaster recovery procedures (control 3.1) that were discussed in Chapter 13.

A fourth general threat in the HRM/payroll cycle is hiring unqualified or larcenous employees. Hiring unqualified employees can increase production expenses, and hiring

TABLE 17-1 Threats and Controls in the Payroll/HRM Cycle

Activity	Threat	Controls (first number refers to the corresponding threat)
General issues throughout entire HRM/ payroll cycle	1. Inaccurate or invalid master data 2. Unauthorized disclosure of sensitive information 3. Loss or destruction of data 4. Hiring unqualified or larcenous employees 5. Violations of employment laws	1.1 Data processing integrity controls 1.2 Restriction of access to master data 1.3 Review of all changes to master data 2.1 Access controls 2.2 Encryption 2.3 Tokenization 3.1 Backup and disaster recovery procedures 4.1 Sound hiring procedures, including verification of job applicants' credentials, skills, references, and employment history 4.2 Criminal background investigation checks of all applicants for finance-related positions 5.1 Thorough documentation of hiring, performance evaluation, and dismissal procedures 5.2 Continuing education on changes in employment laws
Update payroll master data	6. Unauthorized changes to payroll master data 7. Inaccurate updating of payroll master data	6.1 Segregation of duties: HRM department updates master data, but only payroll department issues paychecks 6.2 Access controls 7.1 Data processing integrity controls 7.2 Regular review of all changes to master payroll data
Validate time and attendance data	8. Inaccurate time and attendance data	8.1 Source data automation for data capture 8.2 Biometric authentication 8.3 Segregation of duties (reconciliation of job-time tickets to time cards) 8.4 Supervisory review
Prepare payroll	9. Errors in processing payroll	9.1 Data processing integrity controls: batch totals, cross-footing of the payroll register, use of a payroll clearing account and a zero-balance check 9.2 Supervisory review of payroll register and other reports 9.3 Issuing earnings statements to employees 9.4 Review of IRS guidelines to ensure proper classification of workers as either employees or independent contractors
Disburse payroll	10. Theft or fraudulent distribution of paychecks	10.1 Restriction of physical access to blank payroll checks and the check signature machine 10.2 Restriction of access to the EFT system 10.3 Prenumbering and periodically accounting for all payroll checks and review of all EFT direct deposit transactions 10.4 Require proper supporting documentation for all paychecks 10.5 Use of a separate checking account for payroll, maintained as an imprest fund 10.6 Segregation of duties (cashier versus accounts payable; check distribution from hiring/firing; independent reconciliation of the payroll checking account) 10.7 Restriction of access to payroll master database 10.8 Verification of identity of all employees receiving paychecks 10.9 Redepositing unclaimed paychecks and investigating cause
Disburse payroll taxes and miscellaneous deductions	11. Failure to make required payments 12. Untimely payments 13. Inaccurate payments	11.1 Configuration of system to make required payments using current instructions from IRS (Publication Circular E) 12.1 Same as 11.1 13.1 Processing integrity controls 13.2 Supervisory review of reports 13.3 Employee review of earnings statement

a larcenous employee can result in the theft of assets. Both problems are best dealt with by appropriate hiring procedures (control 4.1). Skill qualifications for each open position should be stated explicitly in the position control report. Candidates should be asked to sign a statement on the job application form that confirms the accuracy of the information being submitted and provides their consent to a thorough background check

of their credentials and employment history. Independent verification of an applicant's credentials is important because résumés often contain false or embellished information. For example, the *Wall Street Journal* has reported a number of cases where résumés for senior executives at companies contained information that could not be verified; in some cases, the executive resigned or was fired. To reduce the risk of hiring larcenous employees, organizations should hire a professional firm to perform thorough background checks (control 4.2) of all applicants for positions that involve access to financial data and assets to identify applicants with a prior criminal record.

The fifth general threat in the HRM/payroll cycle is violation of applicable laws and regulations concerning the proper hiring and dismissal of employees. The government imposes stiff penalties on firms that violate provisions of employment law. In addition, organizations can also be subject to civil suits by alleged victims of employment discrimination. Table 17-1 shows that the best control procedure to mitigate these potential problems is to carefully document all actions relating to advertising for, recruiting, and hiring new employees and to the dismissal of employees (control 5.1); this will demonstrate compliance with the applicable government regulations. Continued training (control 5.2) to keep current with employment law is also important.

Payroll Cycle Activities

Figure 17-3 presents a context diagram of the payroll system. It shows that there are five major sources of inputs to the payroll system. The HRM department provides information about hirings, terminations, and pay-rate changes due to raises and promotions. Employees initiate changes in their discretionary deductions (e.g., contributions to retirement plans). The various departments provide data about actual hours employees work. Government agencies provide tax rates and instructions for meeting regulatory requirements. Similarly, insurance companies and other organizations provide instructions for calculating and remitting various withholdings.

Figure 17-3 shows that checks (which may be electronic) are the payroll system's principal output. Employees receive individual *paychecks* in compensation for their services. A *payroll check* is sent to the bank to transfer funds from the company's regular accounts to its payroll account. Checks also are issued to government agencies, insurance companies, and other organizations to meet company obligations (e.g., taxes, insurance premiums). In addition, the payroll system produces a variety of reports, which we discuss later, for internal and external use.

Figure 17-4 shows the basic activities performed in the payroll cycle. We now discuss each of those activities. For each activity, we describe how the information needed to perform and manage the activity is collected, processed, and stored. We also explain the controls necessary to ensure not only the reliability of that information but also the safeguarding of the organization's resources.
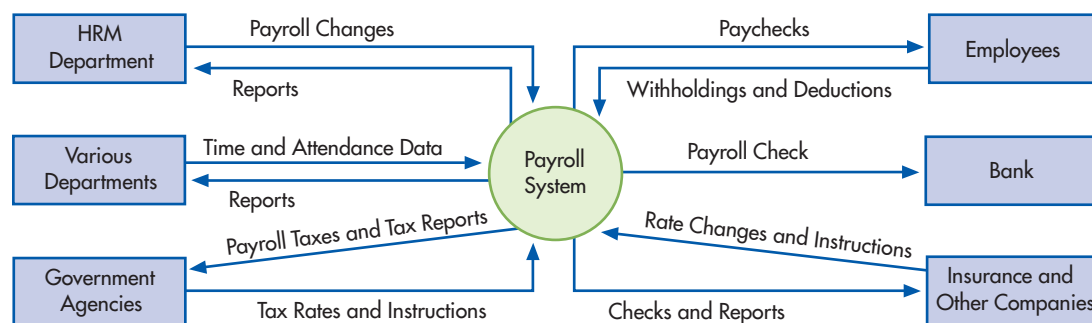

FIGURE 17-3

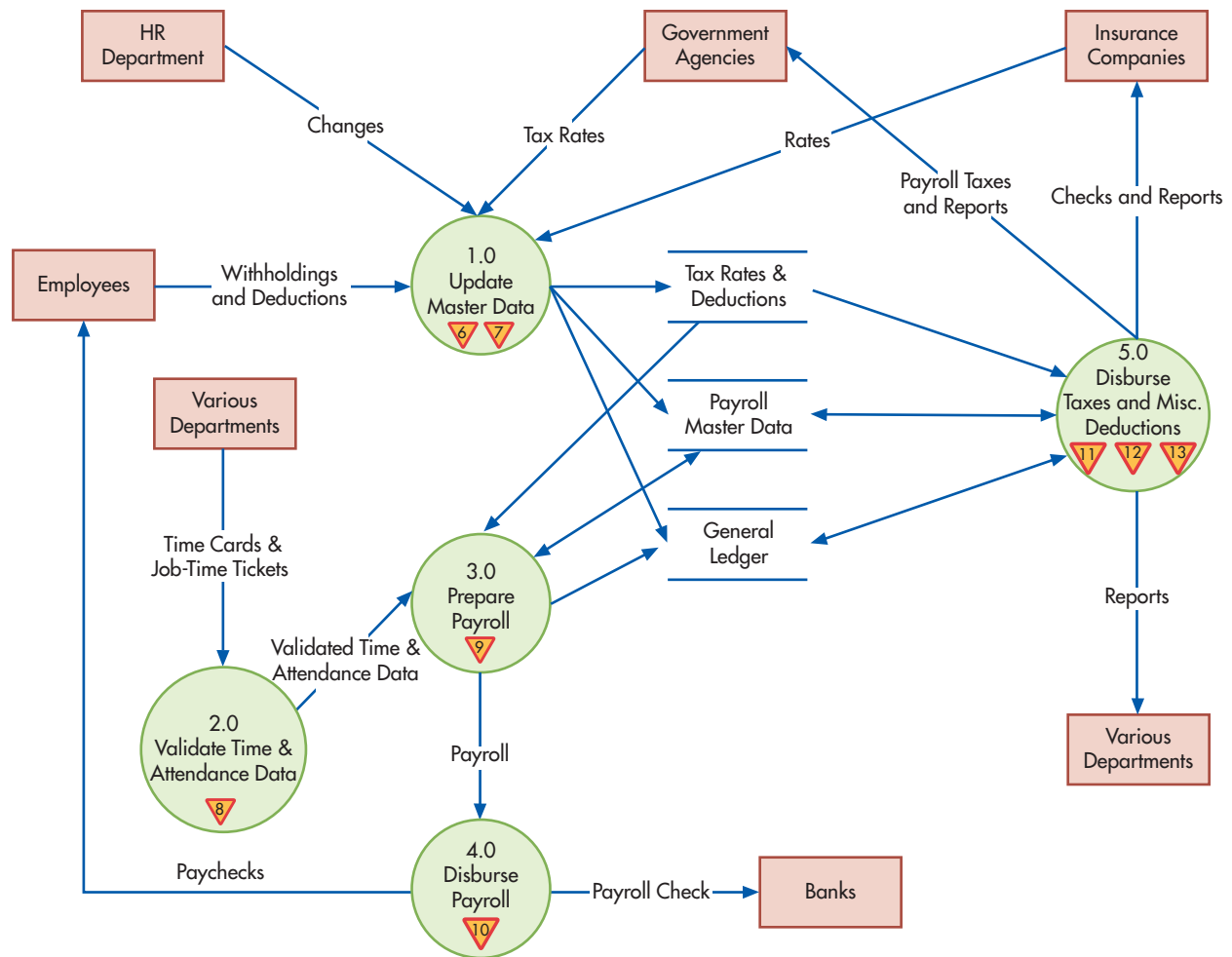Context Diagram of the Payroll Portion of the HRM/Payroll Cycle

FIGURE 17-4

Level 0 Data Flow Diagram for the Payroll Cycle

UPDATE PAYROLL MASTER DATABASE

The first activity in the HRM/payroll cycle involves updating the payroll master database to reflect various types of internally initiated changes: new hires, terminations, changes in pay rates, or changes in discretionary withholdings (circle 1.0 in Figure 17-4). In addition, periodically the master data needs to be updated to reflect changes in tax rates and deductions for insurance.

PROCESS Figure 17-2 shows that the HRM department is responsible for updating the payroll master database for internally initiated changes related to employment, whereas the payroll department updates information about tax rates and other payroll deductions when it receives notification of changes from various government units and insurance companies. Although payroll is processed in batch mode, the HRM department has online access to update the payroll master database so that all payroll changes are entered in a timely manner and are properly reflected in the next pay period. Records of employees who quit or are fired should not be deleted immediately, however, because some year-end tax reports, including W-2 forms, require data about all employees who worked for the organization at any time during the year.

THREATS AND CONTROLS Unauthorized changes to payroll master data (threat 6 in Table 17-1) can result in increased expenses from unjustified payments to employees. Proper segregation of duties (control 6.1) is the key control procedure for dealing with this threat. As shown in Figure 17-2, only the HRM department should be able to update the payroll master file for hirings, firings, pay raises, and promotions. HRM department employees in turn should not

directly participate in payroll processing or paycheck distribution. This segregation of duties prevents someone with access to paychecks from creating fictitious employees or altering pay rates and then intercepting those fraudulent checks. In addition, all changes to the payroll master file should be reviewed and approved by someone other than the person recommending the change. To facilitate this review, the system should be configured to produce a report listing all payroll-related changes and send the report to each affected department supervisor for review.

Controlling access to the payroll system (control 6.2) is also important. The system should be configured to compare user IDs and passwords with an access control matrix that (1) defines what actions each employee is allowed to perform and (2) confirms what files each employee is allowed to access.

Another threat is inaccurate updating of payroll master data, which can result in errors in paying employees and fines for not remitting proper amounts of payroll taxes to the government. To mitigate this threat, appropriate processing integrity controls discussed in Chapter 13, such as validity checks on employee number and reasonableness tests for the changes being made, should be applied to all payroll change transactions (control 7.1). In addition, having department managers review (control 7.2) reports of all changes to employees in their department provides a timely way to detect errors.

VALIDATE TIME AND ATTENDANCE DATA

The second step in the payroll cycle is to validate each employee's time and attendance data (circle 2.0 in Figure 17-4).

PROCESS How employee time and attendance data is collected differs depending on the employee's pay status. For employees paid on an hourly basis, many companies use a **time card** to record the employee's daily arrival and departure times. Employees who earn a fixed salary (e.g., managers and professional staff) seldom record their labor efforts on time cards. Instead, their supervisors informally monitor their presence on the job.

time card - A document that records the employee's arrival and departure times for each work shift.

As discussed in Chapter 16, manufacturing companies also use job-time tickets to record detailed data about how employees use their time (i.e., which jobs they perform). The job-time ticket data are used to allocate labor costs among various departments, cost centers, and production jobs. Professionals in such service organizations as accounting, law, and consulting firms similarly track the time they spend performing various tasks and for which clients, recording that data on a **time sheet** (see Figure 17-5 for an example of a data entry screen to track time). Their employers use the time sheets to assign costs and accurately bill clients for services provided.

time sheet - A data entry screen (or paper document) used by salaried professionals to record how much time was spent performing various tasks for specific clients.

Employee enters hours worked each day for each customer, location, and nature of work

FIGURE 17-5

Example of Data Entry Screen to Track Time (Time Sheet)
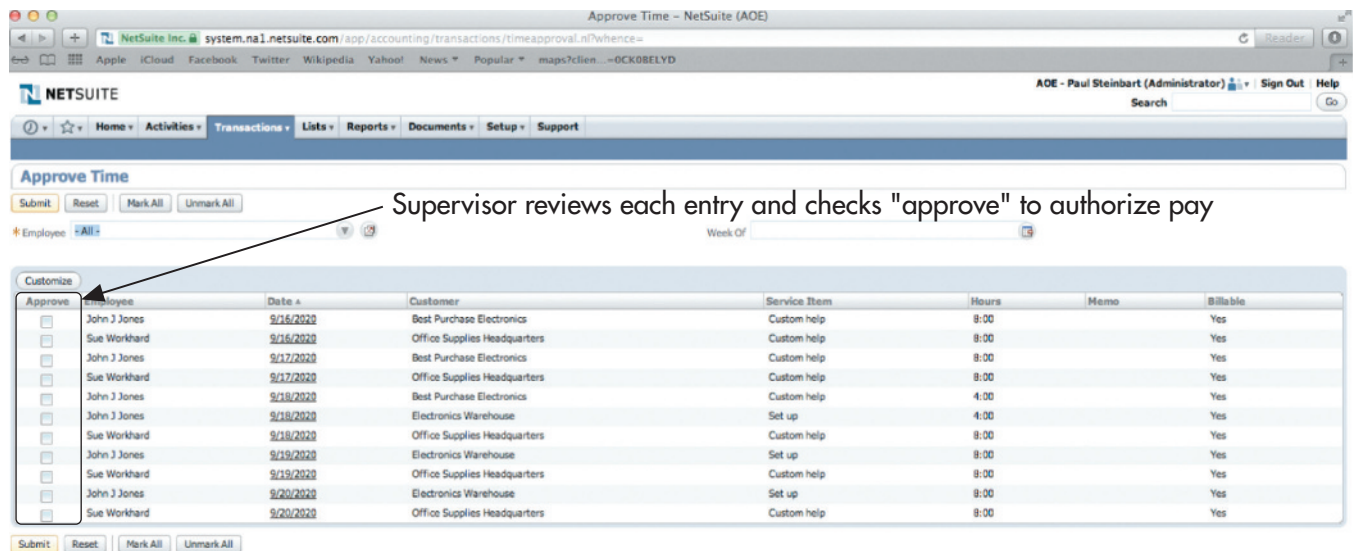*Source*: 2010 © NetSuite Inc.

Sales staff often are paid either on a straight commission or on a salary plus commission basis. This requires the staff to carefully record the amount of their sales. In addition, some sales staff are paid bonuses for exceeding targets. An increasing number of companies in the United States are extending such incentive bonuses to employees other than sales staff, to motivate employees to improve their productivity and work quality. For example, Nucor Corporation, one of the largest steel producers in the United States, pays its steelworkers an hourly rate plus a bonus based on the tons of steel they produce and ship. Companies have long used stock options to reward executives; in recent years, many companies have extended this practice to their nonexecutive employees as well. The argument is that stock options motivate employees to actively look for ways to improve service and cut costs so that the value of their compensation package rises.

Using incentives, commissions, and bonuses requires linking the payroll system and the information systems of sales and other cycles to collect the data used to calculate bonuses. Moreover, the bonus/incentive schemes must be properly designed with realistic, attainable goals that can be objectively measured. It is also important that goals be congruent with corporate objectives and that managers monitor goals to ensure that they continue to be appropriate. Indeed, poorly designed incentive pay schemes can result in undesirable behavior. For example, an auto repair business experienced unintended negative effects from implementing a new incentive plan that paid its repair staff a commission based on the amount of parts sold and number of hours worked. The intent was to focus employees' attention on how their efforts affected the company's bottom line. The result, however, was a scandal in which it was alleged that employees recommended unnecessary repairs to boost their own pay. The alleged abuses reduced public trust in the company and led to lower revenues. Although the company discontinued use of this incentive system, it took years to fully regain the consumer trust it had lost. Besides the possibility of creating unintended and undesirable behaviors, poorly designed incentive pay schemes can also run afoul of legal, tax, and regulatory requirements. For example, members of the Board of Directors compensation committee may not understand all the details of tax regulations, such as the Employee Retirement Income Security Act (ERISA), which limit the allowable differences between the benefit packages offered to executives and those offered to other employees. Thus, accountants should be involved in reviewing a company's compensation practices.

THREATS AND CONTROLS The main threat to this payroll activity is inaccurate time and attendance data. Inaccuracies in time and attendance records can result in increased labor expenses and erroneous labor expense reports. Moreover, inaccuracies can either hurt employee morale (if paychecks are incorrect or missing) or result in payments for labor services not rendered.

Source data automation (control 8.1) can reduce the risk of *unintentional* errors in collecting time and attendance data. For example, badge readers can be used to collect job-time data for production employees and automatically feed the data to the payroll processing system. Using technology to capture time and attendance data can also improve productivity and cut costs. For example, the retail chain Meijer, Inc. installed fingerprint readers at its cash registers so that employees could log in and immediately begin working. The company estimates that this eliminated several minutes of wasted time spent walking from the time clock in the back of the store to the register. Saving a few minutes per employee may not sound dramatic, but when multiplied across thousands of employees in an industry with a profit margin of less than 1%, the effect on the bottom line can be significant. Source data automation can also be used to collect time and attendance data for professional service staff. For example, AT&T's internal service staff uses touch-tone telephones to log in time spent on various tasks, thereby eliminating the use of paper time sheets. Various data processing integrity checks discussed in Chapter 13, such as a limit check on hours worked and a validity check on employee number, ensure the accuracy of that information.

IT can also reduce the risk of *intentional* inaccuracies in time and attendance data. For example, some manufacturing companies now use biometric authentication techniques (control 8.2), such as hand scans, to verify the identity of the employee who is clocking in and out

FIGURE 17-6

Example of Supervisory Approval of Time Worked Screen
Source: 2010 © NetSuite Inc.

of work. The objective is to prevent an employee from leaving work early but having a friend falsely record that person as being at work. Segregation of duties (control 8.3) is also important. Time card data, used for calculating payroll, should be reconciled to the job-time ticket data, used for costing and managerial purposes, by someone not involved in generating that data. The total time spent on all tasks, as recorded on the job-time tickets, should not exceed the attendance time indicated on an employee's time card. Conversely, all time spent at work should be accounted for on the job-time tickets.

In addition, requiring departmental supervisors to review and approve time cards and job-time tickets (see Figure 17-6, which illustrates one way to implement control 8.4) provides a detective control on the accuracy of time and attendance data. Supervisory review is particularly important for employees who telecommute. Analysis of system logs can provide assurance that telecommuters are truly working the amount of time for which they are getting paid and that they are not operating a personal business on the side, using company-provided assets.

PREPARE PAYROLL

The third step in the payroll cycle is preparing payroll (circle 3.0 in Figure 17-4).

PROCESS   Figure 17-7 shows the sequence of activities in processing payroll. First, payroll transaction data is edited, and the validated transactions are then sorted by employee number. If the organization is processing payrolls from several divisions, each of these payroll transaction files must also be merged. The sorted payroll transactions file is then used to prepare employee paychecks. For each employee, the payroll master file record and corresponding transaction record are read, and gross pay is calculated. For hourly employees, the number of hours worked is multiplied by the wage rate, and then any applicable premiums for overtime or bonuses are added. For salaried employees, gross pay is a fraction of the annual salary, where the fraction reflects the length of the pay period. For example, salaried employees paid monthly would receive one-twelfth of their annual salary each pay period. Any applicable commissions, bonuses, and other incentives are also included in calculating gross pay.

Next, all payroll deductions are summed, and the total is subtracted from gross pay to obtain net pay. Payroll deductions fall into two broad categories: payroll tax withholdings and
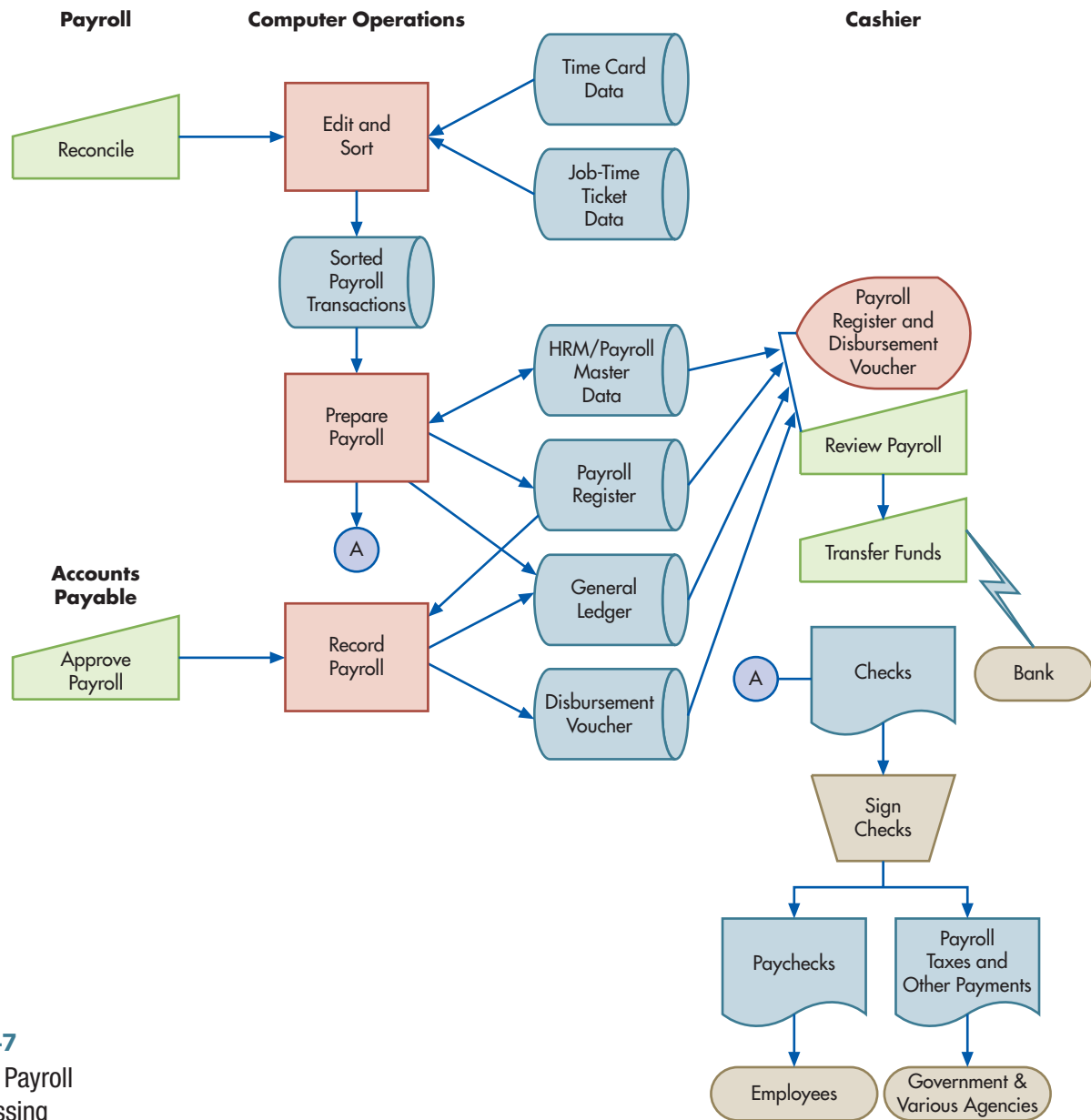
FIGURE 17-7

Flowchart of Payroll
Batch Processing

voluntary deductions. The former includes federal, state, and local income taxes, as well as So-
cial Security taxes. Voluntary deductions include contributions to a pension plan; premiums for
group life, health, and disability insurance; union dues; and contributions to various charities.

Once net pay is calculated, the year-to-date fields for gross pay, deductions, and net pay in
each employee's record in the payroll master file are updated. Maintaining accurate cumula-
tive earnings records is important for two reasons. First, because Social Security tax withhold-
ings and other deductions have cutoffs, the company must know when to cease deductions
for individual employees. Second, this information is needed to ensure that the appropriate
amounts of taxes and other deductions are remitted to government agencies, insurance com-
panies, and various charitable organizations. This information also must be included in the
various reports filed with those agencies.

Next, the payroll and deduction registers are created. The **payroll register** lists each em-
ployee's gross pay, payroll deductions, and net pay in a multicolumn format. It also serves
as the supporting documentation to authorize transferring funds to the organization's payroll
checking account. The **deduction register** lists the miscellaneous voluntary deductions for
each employee. Figure 17-8 presents examples of these two reports.

payroll register - A listing of
payroll data for each employee
for a payroll period.

deduction register - A report
listing the miscellaneous vol-
untary deductions for each
employee.

Alpha Omega Electronics				PAYROLL REGISTER					Period Ended 12/03/2020	
					Deductions					
Employee No.	Name	Hours	Pay Rate	Gross Pay	Fed. Tax	FICA	State Tax	Misc.	Net Pay	
37884	Jarvis	40.0	6.25	250.00	35.60	18.75	16.25	27.60	151.80	
37885	Burke	43.6	6.50	295.10	42.40	22.13	19.18	40.15	171.24	
37886	Lincoln	40.0	6.75	270.00	39.20	20.25	17.55	27.90	165.10	
37887	Douglass	44.2	7.00	324.10	46.60	24.31	21.07	29.62	202.50	

Alpha Omega Electronics				DEDUCTION REGISTER			Period Ended 12/03/2020	
		Miscellaneous Deductions						
Employee No.	Name	Health Ins.	Life Ins.	Retirement	Union Dues	Savings Bond	Total Misc.	
37884	Jarvis	10.40	5.50	7.50	4.20	0.00	27.60	
37885	Burke	11.60	5.50	8.85	4.20	10.00	40.15	
37886	Lincoln	10.40	5.20	8.10	4.20	0.00	27.90	
37887	Douglass	10.20	5.50	9.72	4.20	0.00	29.62	

FIGURE 17-8

Examples of Payroll and Deduction Registers

Finally, the system prints employee paychecks (or facsimiles, in the case of direct deposit). These also typically include an **earnings statement**, which lists the amount of gross pay, deductions, and net pay for the current period and year-to-date totals for each category.

> **earnings statement** - A report listing the amount of gross pay, deductions, and net pay for the current period and the year-to-date totals for each category.

As each payroll transaction is processed, the system also allocates labor costs to the appropriate general ledger accounts by checking the code on the job-time ticket record. The system maintains a running total of these allocations until all employee payroll records have been processed. These totals, and the column totals in the payroll register, form the basis for the summary journal entry, which is posted to the general ledger after all paychecks have been printed.

The payroll system also produces a number of detailed reports. Table 17-2 describes the content of the most common reports. Some of these are for internal use, but many are required by various government agencies. Consequently, as Figure 17-9 shows, the HRM/payroll portion of ERP systems provides extensive support for meeting the reporting requirements of federal, state, and local governments.

THREATS AND CONTROLS The complexity of payroll processing, especially the various tax law requirements, makes it susceptible to errors (threat 9 in Table 17-1). Errors obviously can hurt employee morale, particularly if paychecks are late. In addition to incorrect payroll expense records and reports, processing errors can lead to penalties if the errors result in failure to remit the proper amount of payroll taxes due the government. Similarly, failure to accurately implement garnishments on employees' wages and remit those funds to the appropriate party can also lead to financial penalties.

Table 17-1 lists three types of data processing integrity controls (control 9.1) that can mitigate the threat of payroll errors:

1. *Batch totals.* Even advanced HRM/payroll systems continue to use batch processing for payroll. Consequently, batch totals should be calculated at the time of data entry and then checked against comparable totals calculated during each stage of processing. Hash totals of employee numbers, for example, are particularly useful. If the original and subsequent hash totals of employee numbers agree, it means that (1) all payroll records have been processed, (2) data input was accurate, and (3) no bogus time cards were entered during processing. If the batch totals do not agree, the organization has timely evidence of a payroll error (most likely a failure to generate a paycheck for an employee) so that the problem can be promptly corrected.

TABLE 17-2   Contents and Purpose of Commonly Generated HRM/Payroll Reports

Report Name	Contents	Purpose
Cumulative earnings register	Cumulative year-to-date gross pay, net pay, and deductions for each employee	Used for employee information and annual payroll reports
Workforce inventory	List of employees by department	Used in preparing labor-related reports for government agencies
Position control report	List of each authorized position, job qualifications, budgeted salary, and position status (filled or vacant)	Used in planning future workforce needs
Skills inventory report	List of employees and current skills	Useful in planning future workforce needs and training programs
Form 941	Employer's quarterly federal tax return (showing all wages subject to tax and amounts withheld for income tax and FICA)	Filed quarterly to reconcile monthly tax payments with total tax liability for the quarter
Form W-2	Report of wages and withholdings for each employee	Sent to each employee for use in preparing individual tax returns; due by January 31
Form W-3	Summary of all W-2 forms	Sent to federal government along with a copy of all W-2 forms; due by February 28
Form 1099-Misc.	Report of income paid to independent contractors	Sent to recipients of income for use in filing their income tax returns; due by January 31
Various other reports to government agencies	Data on compliance with various regulatory provisions, state and local tax reports, etc.	To document compliance with applicable regulations
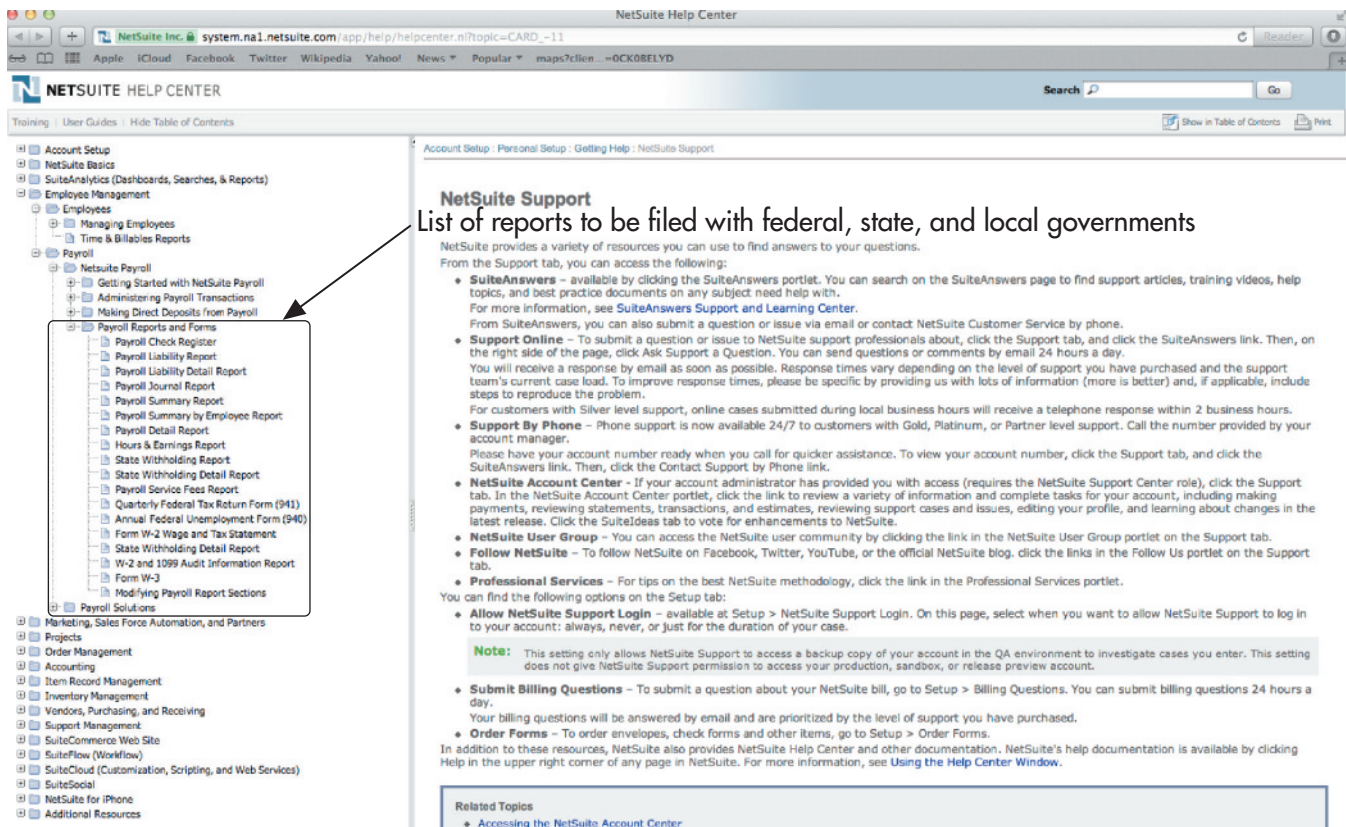
FIGURE 17-9

Screenshot Showing Typical ERP System Support for Payroll-Related Reports Required for Federal, State, and Local Governments

Source: 2010 © NetSuite Inc.

2. *Cross-footing the payroll register.* The total of the net pay column should equal the total of gross pay less total deductions. If it does not, an error occurred in processing that needs to be promptly investigated and corrected.

3. *A payroll clearing account.* The **payroll clearing account** is a general ledger account used in a two-step process to check the accuracy and completeness of recording payroll costs and their subsequent allocation to appropriate cost centers. First, the payroll clearing account is debited for the amount of gross pay; cash is credited for the amount of net pay, and the various withholdings are credited to separate liability accounts. Second, the cost accounting process distributes labor costs to various expense categories and credits the payroll clearing account for the sum of these allocations. The amount credited to the payroll clearing account should equal the amount that was previously debited when net pay and the various withholdings were recorded. This particular internal check is an example of a *zero-balance check* (discussed in Chapter 13) because the payroll clearing account should equal zero once both entries have been posted.

> **payroll clearing account** - A general ledger account used to check the accuracy and completeness of recording payroll costs and their subsequent allocation to appropriate cost centers.

In addition, supervisory review (control 9.2) of the payroll register and other reports serves as a detective control to identify payroll processing errors. Issuing employees an earnings statement (control 9.3) provides another layer of detective controls because employees are likely to report obvious errors.

It is also important to properly classify workers as either employees or independent contractors because misclassification can cause companies to owe substantial back taxes, interest, and even penalties. This issue often arises when department managers attempt to circumvent a general hiring freeze by using independent contractors. The HRM department always should review any decisions to hire temporary or outside help. The Internal Revenue Service (IRS) provides a checklist of questions that can be used to determine whether a worker should be classified as an employee or an independent contractor (control 9.4).

DISBURSE PAYROLL

The next step is the actual disbursement of paychecks to employees (circle 4.0 in Figure 17-4). Most employees are paid either by check or by direct deposit of the net pay amount into their personal bank account. Unlike cash payments, both methods provide a means to document the amount of wages paid.

PROCESS   After paychecks have been prepared, accounts payable reviews and approves the payroll register. A disbursement voucher is then prepared to authorize the transfer of funds from the company's general checking account to its payroll bank account. The disbursement voucher is then used to update the general ledger.

After reviewing the payroll register and disbursement voucher, the cashier then prepares and signs a check (or initiates an electronic funds transfer [EFT] transaction) transferring funds to the company's payroll bank account. If the organization still issues paper checks, the cashier also reviews, signs, and distributes the employee paychecks. The cashier promptly redeposits any unclaimed paychecks in the company's bank account. A list of unclaimed paychecks is then sent to the internal audit department for further investigation.

Direct deposit is one way to improve the efficiency and reduce the costs of payroll processing. Employees who are paid by direct deposit generally receive a copy of the paycheck indicating the amount deposited along with an earnings statement. The payroll system must generate a series of payroll deposit files, one for each bank through which payroll deposits are made. Each file contains a record for each employee whose account is maintained at a particular bank. Each record includes the employee's name, Social Security number, bank account number, and net pay amount. These files are sent electronically to each participating bank. The funds are then electronically transferred from the employer's bank account to the employee's account. Direct deposit thus eliminates the need for the cashier to sign individual payroll checks. The cashier does, however, still have to authorize the release of funds from the organization's regular checking account.

Direct deposit provides savings to employers by eliminating the cost of purchasing, processing, and distributing paper checks. It also reduces bank fees and postage expenses. Consequently, most companies now offer their employees the option of direct deposit payment and encourage them to elect this form of payment. Some employees, however, may not have bank accounts and, therefore, cannot elect direct deposit. Organizations can still eliminate the need to issue paper payroll checks by paying such employees with payroll debit cards. Payroll debit cards are stored value cards that cannot be overdrawn, but they can be replenished with additional funds each payday. Employees can use payroll debit cards to make purchases and can withdraw available cash at ATM machines.

THREATS AND CONTROLS As Table 17-1 indicates, another major threat in the payroll process is the theft of paychecks or the issuance of paychecks to fictitious or terminated employees. This can result in increased expenses and the loss of cash.

Applying to payroll the controls related to other cash disbursements, discussed in Chapter 15, can mitigate this threat. Specifically:

- Access to blank payroll checks and to the check signature machine should be restricted (control 10.1). Similarly, ability to authorize EFT transactions should be restricted (control 10.2) and controlled through the use of strong multifactor authentication.
- All payroll checks should be sequentially prenumbered and periodically accounted for (control 10.3). If payroll is made via direct deposit, all EFT transactions should be reviewed.
- The cashier should sign all payroll checks only when supported by proper documentation (the payroll register and disbursement voucher—control 10.4).

In addition, payroll checks should not be drawn on the organization's regular bank account. Instead, for control purposes, a separate payroll bank account should be used (control 10.5). Doing so limits the company's loss exposure to the amount of cash in the separate payroll account. It also makes it easier to reconcile payroll and to detect paycheck forgery. Like petty cash, the payroll account should be operated as an imprest fund. Each payday, the amount of the check written (or EFT funds transfer) to replenish the payroll checking account should equal the amount of net pay for that period. Thus, when all paychecks have been cashed, the payroll account should have a zero balance. A separate payroll checking account also makes it easier to spot any fraudulent checks when the account is reconciled. As with the other cash disbursements discussed in Chapter 15, segregation of duties (control 10.6) is another important control. Thus, accounts payable has responsibility for recording payroll, but the cashier is responsible for distributing paychecks. It is also important that the person who distributes paychecks or authorizes EFT transactions for direct deposit has no other payroll or HRM-related duties. To see why this segregation of duties is so important, assume that the person responsible for hiring and firing employees also distributes paychecks. This combination of duties could enable that person to conveniently "forget" to report an employee's termination and subsequently keep that employee's future paychecks. In addition, the payroll bank account should be reconciled by someone who performs no other payroll or HRM duties.

Use of multifactor authentication and other controls to restrict access to the payroll master database (control 10.7) reduces the risk of creating checks for nonexistent employees. In addition, the person responsible for distributing paychecks should be required to positively identify each person picking up a paycheck (control 10.8). Further control is provided by having the internal audit department periodically observe, on a surprise basis, the paycheck distribution process to verify that all paychecks are picked up by valid employees. Internal audit should also use data analytics to identify signs of payroll fraud. For example, "ghost" (i.e., fake) employees typically have no deductions for taxes or other withholdings because if the firm remitted those monies to the government or insurance entity, the recipient would inform the company that it does not have a record of that person. Publicizing that such tests are regularly applied may deter fraudsters from attempting to create such employees.

Special procedures should be used to handle unclaimed paychecks because they indicate the possibility of a problem, such as a nonexistent or terminated employee. Unclaimed paychecks should be returned to the treasurer's office for prompt redeposit (control 10.9). They should then be traced back to time records and matched against the employee payroll master file to verify that they are indeed legitimate.

CALCULATE AND DISBURSE EMPLOYER-PAID BENEFITS, TAXES, AND VOLUNTARY EMPLOYEE DEDUCTIONS

The final payroll activity is to calculate and remit payroll taxes and employee benefits to the appropriate government or other entity (circle 5.0 in Figure 17-4).

PROCESS Employers must pay Social Security taxes in addition to the amounts withheld from employee paychecks. Federal and state laws also require employers to contribute a specified percentage of each employee's gross pay, up to a maximum annual limit, to federal and state unemployment compensation insurance funds.

In addition to mandatory tax-related disbursements, employers are responsible for ensuring that other funds deducted from employee paychecks are correctly calculated and remitted in a timely manner to the appropriate entity. Such deductions include court-ordered payments for alimony, child support, or bankruptcy. Many employers also contribute some or all of the amounts to pay for their employees' health, disability, and life insurance premiums as well as making matching contributions to retirement plans.

Many employers also offer their employees **flexible benefits plans**, under which each employee chooses some minimum coverage in medical insurance, retirement plans, and charitable contributions. Flexible benefit plans place increased demands on a company's HRM/payroll system. For example, the HRM staff of a large company with thousands of employees can spend a considerable amount of time just responding to 401(k) plan inquiries. Moreover, employees want to be able to make changes in their investment decisions on a timely basis. Organizations can satisfy employee demands for such services without increasing costs by providing access to HRM/payroll information on the company's intranet.

flexible benefits plans - Plans under which each employee receives some minimum coverage in medical insurance and pension contributions, plus additional benefit "credits" that can be used to acquire extra vacation time or additional health insurance. These plans are sometimes called *cafeteria-style benefit plans* because they offer a menu of options.

THREATS AND CONTROLS The primary threats in this activity are failing to make the necessary remittances, untimely remittances, or errors in those remittances (threats 11–13 in Table 17-1). These problems can result in fines from government agencies and employee complaints if the errors adversely affect their retirement or other benefits.

Circular E, *Employer's Tax Guide*, published by the IRS, provides detailed instructions about an employer's obligations for withholding and remitting payroll taxes and for filing various reports. To mitigate the threats of omitted or untimely remittances, the information in Circular E should be used to configure the payroll system to automatically disburse the funds when payroll is processed (controls 11.1 and 12.1). Processing integrity controls (control 13.1), such as cross-footing checks and batch totals, minimize the risk of inaccuracies. Regular supervisory review (control 13.2) of payroll reports provides a detective control. In addition, providing employees with earnings statements (control 13.3) enables them to timely detect and report any problems.

Outsourcing Options: Payroll Service Bureaus and Professional Employer Organizations

payroll service bureau - An organization that maintains the payroll master file for each of its clients and performs their payroll processing activities for a fee.

In an effort to reduce costs, many organizations outsource their payroll and HRM functions to payroll service bureaus and professional employer organizations. A **payroll service bureau** maintains the payroll master data for each of its clients and processes payroll for them. A **professional employer organization (PEO)** not only processes payroll but also provides HRM services such as employee benefit design and administration. Because they provide a narrower range of services, payroll service bureaus are generally less expensive than PEOs.

professional employer organization (PEO) - An organization that processes payroll and also provides human resource management services such as employee benefit design and administration.

When organizations outsource payroll processing, they send time and attendance data along with information about personnel changes to the payroll service bureau or PEO at the end of each pay period. The payroll service bureau or PEO then uses that data to prepare employee paychecks, earnings statements, and a payroll register. The payroll processing service also periodically produces employee W-2 forms and other tax-related reports.

Payroll service bureaus and PEOs are especially attractive to small and midsized businesses for the following reasons:

- *Reduced costs.* Payroll service bureaus and PEOs benefit from the economies of scale associated with preparing paychecks for a large number of companies. They can charge fees that are typically less than the cost of doing payroll in-house. A payroll service bureau or PEO also saves money by eliminating the need to develop and maintain the expertise required to comply with the constantly changing tax laws.
- *Wider range of benefits.* PEOs pool the costs of administering benefits across all their clients. Consequently, a PEO enables smaller companies to offer the same wide range of benefits that large companies typically provide.
- *Freeing up of computer resources.* A payroll service bureau or PEO eliminates one or more accounting information system (AIS) applications (payroll and benefits management). The freed-up computing resources can then be used to improve service in other areas, such as sales order entry.

As the basis for competitive advantage increasingly hinges on employees' skills and knowledge, the effective and efficient management of the payroll and HRM functions becomes increasingly important. Outsourcing may provide a way to reduce costs. However, companies need to be sure to carefully monitor service quality to ensure that the outsourced system effectively integrates HRM and payroll data in a manner that supports effective management of employees.

Summary and Case Conclusion

The HRM/payroll cycle information system consists of two related, but separate, subsystems: HRM and payroll. The HRM system records and processes data about the activities of recruiting, hiring, training, assigning, evaluating, and discharging employees. The payroll system records and processes data used to pay employees for their services.

The HRM/payroll system must be designed to comply with a myriad of government regulations related to both taxes and employment practices. In addition, adequate controls must exist to prevent (1) overpaying employees due to invalid (overstated) time and attendance data and (2) disbursing paychecks to fictitious employees. These two threats can be best minimized by proper segregation of duties, specifically by having the following functions performed by different individuals:

1. Authorizing and making changes to the payroll master file for such events as hirings, firings, and pay raises.
2. Recording and verifying time worked by employees.
3. Preparing paychecks.
4. Distributing paychecks.
5. Reconciling the payroll bank account.

Although the HRM and payroll systems have traditionally been separated, many companies, including AOE, are trying to integrate them to manage their human resources more effectively and to provide employees with better benefits and service. Elizabeth Venko and Ann Brandt showed Peter Wu how AOE's new ERP system would facilitate integrating these two functions. Peter was impressed with how easily he could retrieve data about employee skills and attendance at training classes from this database. He agreed that this would satisfy the needs of department managers for quick and easy access to such information. Peter also realized that the HRM staff could similarly use this query capability to provide a quick response to employee requests for information about their benefits, deductions, or retirement plans. He was

even more impressed when Elizabeth and Ann explained that another recently implemented add-on feature would also allow employees to make direct changes in their retirement savings allocations, medical plan choices, and other benefit options. Peter realized that freeing the HRM staff from these routine clerical tasks would allow them to devote more time to helping him organize the information needed to make strategic decisions, such as planning for future workforce needs, career counseling, employee development, and negotiations with service providers to improve benefits.

Elizabeth explained that payroll processing itself could continue to be performed in batch mode because there is no need for online processing (employees would continue to be paid only at periodic intervals). However, she wants to require employees to either sign up for direct deposit of their paychecks or receive payroll debit cards, thereby eliminating the need to issue paychecks. An access control matrix would be created to maintain adequate segregation of duties in the new system and protect the integrity of the HRM/payroll database. For example, only HRM employees would add new employees, and only from terminals located in the HRM department.

Linda Spurgeon was pleased with Elizabeth and Ann's work on improving the company's HRM/payroll systems. She indicated that their next task would be to work with Stephanie Cromwell, AOE's chief financial officer, to improve the financial closing process and to help develop reports that would provide better insight into AOE's performance.

KEY TERMS

human resources management (HRM)/payroll cycle 563

knowledge management systems 565

time card 571

time sheet 571

payroll register 574

deduction register 574

earnings statement 575

payroll clearing account 577

flexible benefits plans 579

payroll service bureau 579

professional employer organization (PEO) 579

AIS in Action

CHAPTER QUIZ

1. Which of the following is not a task performed in the human resource management (HRM)/payroll cycle?
   a. recruiting and hiring new employees
   b. training
   c. job assignment
   d. access right management

2. Which of the following is not a general threat to the HRM/payroll cycle?
   a. inaccurate employee master data
   b. unauthorized disclosure of sensitive information
   c. loss or destruction of master data
   d. poor product design

3. Which of the following is used to track time spent performing tasks for specific clients?
   a. time sheet
   b. earnings statement
   c. job-time ticket
   d. time card

4. HRM department is responsible for updating the payroll master database for internally initiated changes related to employment.
   a. True
   b. False

5. Which of the following functions should be performed by the same employee?
   a. adding new employees to payroll master file and updating pay raise information
   b. verifying time worked by an employee and reconciling the payroll bank account
   c. preparing and distributing paychecks
   d. recording time worked by employees and authorizing changes to the payroll master file

6. Many companies use a _____ to record daily arrival and departure times of the employees who are paid on an hourly basis.
   a. time card
   b. time sheet
   c. punch card
   d. entry card

7. Which of the following are not problems related to inaccuracies in time and attendance data?
   a. inaccurate labor expense reports
   b. decreased staff morale
   c. decreased labor expenses
   d. payments for labor services not received

8. To maximize effectiveness of internal controls over payroll, which of the following persons should be responsible for distributing employee paychecks?
   a. departmental secretary
   b. payroll clerk
   c. controller
   d. departmental supervisor

9. Where should unclaimed paychecks be returned?
   a. HRM department
   b. cashier
   c. payroll department
   d. absent employee's supervisor

10. Which technique can be used to ensure that telecommuting employees are actually working the hours for which they are being paid?
    a. biometric authentication techniques
    b. source data automation
    c. earning statements for such employees
    d. analysis of system logs

DISCUSSION QUESTIONS

17.1 Many organizations outsource their HRM functions to reduce organizational overhead, have access to a wider range of benefits, and free up computing resources. What are the potential pitfalls that organizations need to be aware of before deciding to outsource HRM functions?

17.2 An important step in the payroll cycle is to validate each employee's time and attendance data. How an employee's time and attendance data is collected differs depending on her pay status. Explain how IT can reduce the risk of intentional inaccuracies in time and attendance data. (For example, some manufacturing companies now use biometric authentication techniques, such as hand scans, to verify the identity of the employee who is clocking in and out of work.)

17.3 You are responsible for implementing a new employee performance measurement system that will provide factory supervisors with detailed information about each of their employees on a weekly basis. In conversation with some of these supervisors, you are surprised to learn they do not believe these reports will be useful. They explain that they can already obtain all the information they need to manage their employees simply by observing the shop floor. Comment on that opinion. How could formal reports supplement and enhance what the supervisors learn by direct observation?

17.4 Sales staff are often paid in a different manner compared to other employees. Explain how the payment of sales staff can differ from the other staff, such as secretarial staff.

17.5 How would you respond to the treasurer of a small charity who tells you that the organization does not use a separate checking account for payroll because the benefits are not worth the extra monthly service fee?

17.6 This chapter discussed how the HR department should have responsibility for updating the HRM/payroll database for hiring, firing, and promotions. What other kinds of changes may need to be made? What controls should be implemented to ensure the accuracy and validity of such changes?

PROBLEMS

17.1 Match the terms with their definitions.

___	**1.** payroll service bureau	a. List of each employee's gross pay, payroll deductions, and net pay in a multicolumn format
___	**2.** payroll clearing account	b. Records activities performed by a salaried professional for various clients
___	**3.** earnings statement	c. Records time worked by an hourly-wage employee
___	**4.** payroll register	d. Organization that processes payroll and provides other HRM services
___	**5.** time card	e. Organization that processes payroll
___	**6.** time sheet	f. List of all the deductions for each employee
		g. Document given to each employee that shows gross pay and net pay and itemizes all deductions for the current pay period and for the year-to-date
		h. Special general ledger account for payroll processing

17.2 What internal control procedure(s) would be most effective in preventing the following errors or fraudulent acts?

a. The company was fined by the governmental tax authorities for incorrect tax payments.

b. A retired employee was not removed as current employee from the payroll master file. The retired employee's payment method was changed to EFT and the banking details updated to reflect that of a payroll clerks' friend.

c. The cashier signed a second payroll check to be paid from the organization's regular bank account for a friend in debt.

d. A senior staff member on the assembly line is responsible for checking time card data for all assembly line workers on the production floor. When overtime is calculated, several of his friends receive higher wages than the other workers.

e. Productivity during the first 15 minutes and the last 15 minutes of every shift was found to be much lower than the productivity during the remainder of the shift. Employees indicated that there was often a bottleneck at the time clock, which caused them to waste time.

f. When overtime hours worked over the weekend were captured from the time cards that were submitted, an error occurred and one employee was not paid overtime while another was overpaid due to a data entry error where two digits were transposed in the employee number: 17682 was entered as 17862, causing employee 17682 to not receive overtime payment and employee 17862 receiving his overtime as well as employee 17682's overtime.

g. An organization installed a new payroll system and hired a payroll clerk. When the new payroll clerk entered an employee's name (assuming she was an existing employee), the payroll system prompted the payroll clerk whether a new employee record should be created. The payroll clerk created a new record.

h. An employee managed to use the query function of the employee database to determine the salary of another employee in her department.

i. The payroll master file was corrupted and when the on-site backup copy was restored, it also turned out to be corrupt.

j. A company needed to find a suitable candidate to fill their Chief Security Officer position. An employee in HR managed to get the father of his best friend appointed to this position. The friend's father had a criminal record.

17.3   The Casters Company is a newly established manufacturing company that manufactures aluminum equipment such as ladders, trolleys, castors, and wheels. The company has a few inexperienced members in their staff, and you are asked to answer their questions regarding some of the HR and payroll processes.

a. What actions or activities will initiate changes in the payroll master database?

b. Which payroll master database changes are the responsibility of the HR department, and which are the responsibility of the payroll department?.

c. Should the payroll records of employees that leave the company be removed in the month in which they leave to prevent fraudulent paychecks being issued?

d. Why does management say that unexpected high employee turnover results in additional costs to the company?

e. Why are there differences in the processes of determining employee remuneration? What are these differences?

f. Why is it important to link the goals of incentive schemes, bonuses, and commissions to the objectives of the company?

g. Why do companies invest in source data automation if information can simply be entered manually?

17.4   Although most medium and large companies have implemented sophisticated payroll and HRM systems like the one described in this chapter, many smaller companies still maintain separate payroll and HRM systems that employ many manual procedures. Typical of such small companies is the Kowal Manufacturing Company, which employs about 50 production workers and has the following payroll procedures:

- The factory supervisor interviews and hires all job applicants. The new employee prepares a W-4 form (Employee's Withholding Exemption Certificate) and gives it to the supervisor. The supervisor writes the hourly rate of pay for the new employee in the corner of the W-4 form and then gives the form to the payroll clerk as notice that a new worker has been hired. The supervisor verbally advises the payroll department of any subsequent pay raises.

- A supply of blank time cards is kept in a box near the entrance to the factory. All workers take a time card on Monday morning and fill in their names. During the week they record the time they arrive and leave work by punching their time cards in the time clock located near the main entrance to the factory. At the end of the week the workers drop the time cards in a box near the exit. A payroll clerk retrieves the completed time cards from the box on Monday morning. Employees are automatically removed from the payroll master file when they fail to turn in a time card.

- The payroll checks are manually signed by the chief accountant and then given to the factory supervisor, who distributes them to the employees. The factory supervisor arranges for delivery of the paychecks to any employee who is absent on payday.

- The payroll bank account is reconciled by the chief accountant, who also prepares the various quarterly and annual tax reports.

REQUIRED

a. Identify weaknesses in current procedures, and explain the threats that they may allow to occur.

b. Suggest ways to improve the Kowal Manufacturing Company's internal controls over hiring and payroll processing.

c. Draw a BPMN diagram that shows Kowal Manufacturing Company's payroll process redesigned to implement your suggestions in step b. (*CPA Examination, adapted*)

17.5   Arlington Industries manufactures and sells engine parts for large industrial equipment. The company employs more than 1,000 workers for three shifts, and most employees

work overtime when necessary. Figure 17-10 depicts the procedures followed to process payroll. Additional information about payroll procedures follows:

- The HRM department determines the wage rates of all employees. The process begins when a form authorizing the addition of a new employee to the payroll master file is sent to the payroll coordinator for review and approval. Once the information about the new employee is entered in the system, the computer automatically calculates the overtime and shift differential rates for that employee.
- A local accounting firm provides Arlington with monthly payroll tax updates, which are used to modify the tax rates.
- Employees record their time worked on time cards. Every Monday morning, the previous week's time cards are collected from a bin next to the time clock, and new time cards are left for employees to use. The payroll department manager reviews the time cards to ensure that hours are correctly totaled; the system automatically determines whether overtime has been worked or a shift differential is required.
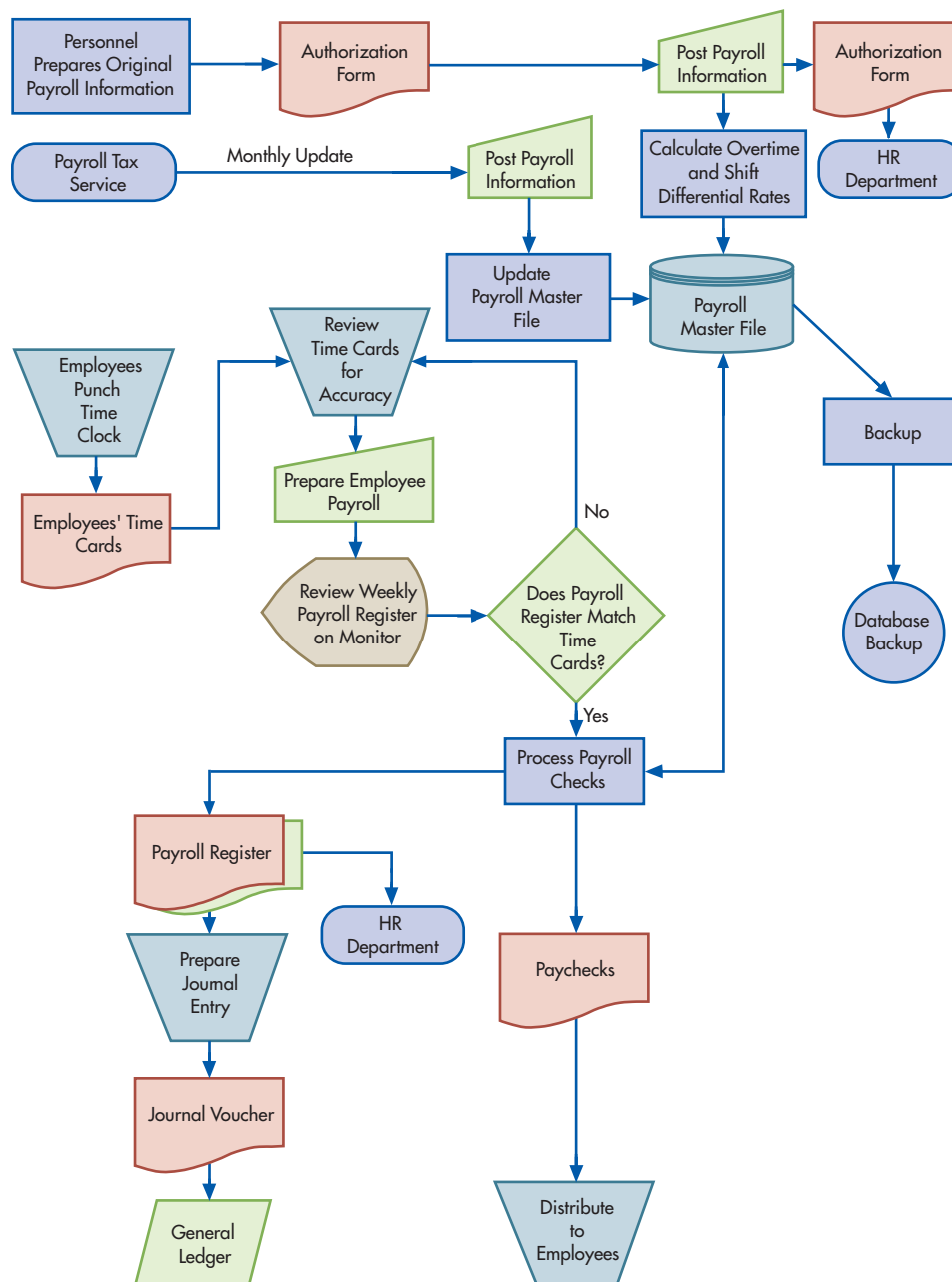

FIGURE 17-10

Arlington Industries Flowchart for Problem 17.5

- The payroll department manager performs all the other activities depicted in Figure 17-10.
- The system automatically assigns a sequential number to each payroll check. The checks are stored in a box next to the printer for easy access. After the checks are printed, the payroll department manager uses an automatic check-signing machine to sign the checks. The signature plate is kept locked in a safe. After the checks have been signed, the payroll manager distributes the paychecks to all first-shift employees. Paychecks for the other two shifts are given to the shift supervisor for distribution.
- The payroll master file is backed up weekly, after payroll processing is finished.

REQUIRED

a. Identify and describe at least three weaknesses in Arlington Industries' payroll process.
b. Identify and describe at least two different areas in Arlington's payroll processing system where controls are satisfactory. (*CMA Examination, adapted*)

17.6 Excel Problem*

Objective: Learn how to find and correct errors in spreadsheets used for payroll.

REQUIRED

a. Download the worksheet for this problem from the website.
b. Create formulas in columns K–O that would display an error message if that payroll record violated any of the following rules:
   1. All employees must be paid at least the minimum wage of $15.
   2. Overtime only exists if the employee has worked 40 hours of regular time.
   3. Maximum regular hours is 40.
   4. Net pay does not equal gross pay minus all deductions (overtime pay is 1.5 times regular pay rate).
   5. An employee has zero deductions.

17.7 Excel Problem*

Objective: Learn how to use VLOOKUP.

REQUIRED

a. Download the worksheet for this problem from the website.
b. Create a formula to calculate taxes, using the following rate table:
   - If gross pay is less than $500, taxes are 12%.
   - If gross pay is at least $500 and less than $750, taxes are 15%.
   - If gross pay is at least $750 but less than $1,000, taxes are 20%.
   - If gross pay is greater than $1,000, taxes are 28%.

17.8 The local community feels that secondary school education is a necessity and that lack of education leads to a number of social problems. As a result, the local school board has decided to take action to reverse the rising dropout rate. The board has voted to provide funds to encourage students to remain in school and earn their high school diplomas. The idea is to treat secondary education like a job and pay students. The board, however, could not agree on the details for implementing this new plan. Consequently, you have been hired to devise a system to compensate students for staying in school and earning a diploma.

As you devise your compensation scheme, be sure it meets the following general control objectives for the payroll cycle:
- All transactions are properly authorized.
- Everyone is assigned to do productive work, and they do it efficiently and effectively.
- All transactions are accurately recorded and processed.

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* Life-long learning opportunity: see pp. xxiii–xxiv in preface.

- Accurate records are maintained.
- All disbursements are proper.

REQUIRED

Write a proposal that addresses these five questions:

a. How should the students be compensated (e.g., for attendance, grades)?
b. How and by whom will the payments be authorized?
c. How will the payments be processed?
d. How should the payments be made (e.g., in cash or other means)?
e. When will the payments be made?

(Adapted from Carol F. Venable, "Development of Diversity Awareness and Critical Thinking," Proceedings of the Lilly Conference on Excellence in College and University Teaching—West [Lake Arrowhead, Calif., March 1995]; and American Accounting Association Teaching and Curriculum Demonstration Session [Orlando, Fla., August 1995]. Reprinted with permission of Dr. Carol Venable.)

17.9 What threats should each of these control procedures mitigate?

a. Make use of EFT to pay employees.
b. Use hash totals of employee numbers.
c. Make use of a zero-balance check.
d. Distribute an earnings statement (pay slip) to each individual employee.
e. Make use of user IDs and passwords.
f. Do not allow HRM employees to assist with payroll processing.
g. Implement reasonableness tests for incorporating payroll changes.
h. Use source data automation with time and attendance data.
i. Unclaimed paychecks should be returned to the treasurer's office.
j. Check that the funds transferred for employee payroll equals the amount of net pay for the specific pay period.
k. Supporting documentation is required before the cashier can sign any payroll checks.
l. When new employees are added, ensure that all required information entered into the payroll master file is validated.
m. Regularly review changes made to the payroll master file.
n. Ensure that the database containing payroll and HR information is encrypted at all times.

17.10 Excel Problem*

Objective: Learn how to use text and array formulas to locate potential payroll problems.

REQUIRED

a. Download the spreadsheet for this problem from the course website.
b. In column I, under the label "Ghost Employee?" write a function that compares the employee# in the time cards column to the employee# in the payroll master data column and displays the message: "Time card employee# does not exist in master data" for any employee in the time cards column who is not listed in the payroll master data column. The function should leave the cell blank if the employee# in the time cards worksheet does exist in the payroll master file worksheet or if that row in the time card column is blank. (*Hint:* Use the ISNA and MATCH functions.)
c. In column L, titled "Invalid SSN?" write a function to identify invalid Social Security numbers. Assume that Social Security numbers that begin with the digit 0 or that have the digits 99 for the middle two numbers are invalid. Your function should display a message that flags either of these two conditions or that displays nothing

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* Life-long learning opportunity: see pp. xxiii–xxiv in preface.

otherwise. (*Hint:* There are text functions that examine specific portions of a string, such as the left three characters, and there are also functions that convert text to numeric values.)

d. In column P, titled "Missing Paycheck?" write a function to check whether a time card exists for each employee in the master payroll data section of the worksheet. The formula should either return the message "No paycheck created for this employee" or display nothing.

17.11 Answer the following multiple-choice questions:

1. Which detective control can be used to identify changes made to master data?
   a. Data processing integrity controls
   b. Segregation of duties
   c. Restricted access to master data
   d. Reports to review changes made to master data
   e. Restricted physical access to master data

2. Which of the following is not an input source to the payroll system?
   a. Human resource management department
   b. External organizations such as insurance and medical aid companies
   c. Government departments
   d. Employees
   e. Bank

3. Which of the following is a key control to ensure that no unjustified payments are made to existing employees?
   a. Source data automation
   b. Segregation of duties
   c. Regular review of changes made to payroll master data
   d. Distribution of earnings statements
   e. Verification of employees receiving paychecks

4. What is the purpose of an access control matrix?
   a. Define actions that employees may perform and confirm files they may access
   b. Verify user IDs and define the files they may access
   c. Enforce integrity controls and verify user IDs and passwords
   d. Verify user IDs and define actions that employees may perform
   e. Define actions that employees may perform and enforce integrity controls

5. What is the purpose of a payroll register?
   a. Serves as supporting documentation to authorize fund transfers to payroll account
   b. Lists year-to-date totals of gross pay, deductions, and net pay
   c. Lists gross pay, deductions, and net pay for each employee
   d. Both a. and c.
   e. Both a. and b.

6. Which of the following data processing integrity controls are used to mitigate threat of payroll errors?
   a. Batch totals
   b. Reasonableness check
   c. Sequence check
   d. Use of supporting documents
   e. Data matching

7. What would be potential benefits if a business decided to get an outside company to handle their payroll function?
   a. The outside company benefits from economies of scale and can offer payroll functions at a cost lower than what it would cost the original business to handle payroll themselves
   b. The payroll function no longer requires computing resources

    c. It is possible to offer a wide range of benefits to the business, since the outside company shares the benefit administration costs across all its clients

    d. All of the above

    e. None of the above

8. If a new employee is appointed, who should be responsible for updating the payroll master file with the information of the new employee?

    a. An HR employee

    b. The manager of the department where the employee is appointed

    c. A payroll clerk

    d. The payroll supervisor

    e. None of the above

CASE 17-1   Excel Project*: Sorting and Grouping Data

Download the spreadsheet for this case from the website. The spreadsheet contains performance data by region and by employee for multiple time periods.

REQUIRED

1. Copy the raw data to a second sheet in the same workbook and use the subtotals function to group the data by employee so that you can either display the full details for various employees or just the totals by each employee by region.

2. Copy the raw data to a third sheet in the same workbook and create a PivotTable to group the data by employee and region so that you can display each employee's performance.

3. Open a fourth sheet in the same workbook and title it "Preferences." On that sheet, state which approach (SubTotals or PivotTable) you prefer and explain why.

AIS in Action Solutions

QUIZ KEY

1. Which of the following is not a task performed in the human resource management (HRM)/payroll cycle?

    a. recruiting and hiring new employees [Incorrect. This is an important step in the HRM/payroll cycle. It involves recognizing the value of the employees' knowledge and skills.]

    b. training [Incorrect. Training of new employees in the workflow process of the company is an important function of the HRM cycle.]

    c. job assignment [Incorrect. Assigning employees to different jobs is an important function of the HRM cycle.]

  ▶ d. access right management [Correct. This is not a task of the HRM/payroll cycle.]

2. Which of the following is not a general threat to the HRM/payroll cycle?

    a. inaccurate employee master data [Incorrect. Inaccurate employee master data could result in over- or understaffing.]

    b. unauthorized disclosure of sensitive information [Incorrect. Such disclosures can create morale problems if employees learn that their pay differs significantly from co-workers.]

    c. loss or destruction of master data [Incorrect. The best way to mitigate the risk of this threat is to employ the backup and disaster recovery procedures.]

  ▶ d. poor product design [Correct. This causes no threat to the HRM/payroll cycle.]

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* Life-long learning opportunity: see pp. xxiii–xxiv in preface.

3. Which of the following is used to track time spent performing tasks for specific clients?
- ▶ **a.** time sheet [Correct]
  - b. earnings statement [Incorrect. Report listing gross pay, deductions, and net pay for current period, as well as year-to-date totals for each category.]
  - c. job-time ticket [Incorrect. Records detailed data about how employees spend their time in order to allocate labor costs to specific departments.]
  - d. time card [Incorrect. Document used to record arrival and departure time for each employee for every shift.]

4. HRM department is responsible for updating the payroll master database for internally initiated changes related to employment.
- ▶ **a.** True [Correct. Updating the payroll master database reflects various types of internally initiated changes: new hires, terminations, changes in pay rates, or changes in discretionary withholdings.]
  - b. False [Incorrect.]

5. Which of the following functions should be performed by the same employee?
- ▶ **a.** Adding new employees to payroll master file and updating pay raise information [Correct. These are both HR-related tasks that allow updates to the payroll master file.]
  - b. Verifying time worked by an employee and reconciling the payroll bank account [Incorrect. This should be segregated to prevent overpayment.]
  - c. Preparing and distributing paychecks [Incorrect. This should be segregated to prevent overpayment and/or payment of fictitious employees.]
  - d. Recording time worked by employees and authorizing changes to the payroll master file [Incorrect. This should be segregated to prevent overpayment or payment to fictitious employees.]

6. Many companies use a _____ to record daily arrival and departure times of the employees who are paid on an hourly basis.
- ▶ **a.** time card [Correct. A document that records the employee's arrival and departure times for each work shift.]
  - b. time sheet [Incorrect. A data entry screen (or paper document) used by salaried professionals to record how much time was spent performing various tasks for specific clients.]
  - c. punch card [Incorrect. A card /document used to punch in entry and exit of workers.]
  - d. entry card [Incorrect. A document used to record the entry and exit of employees.]

7. Which of the following are not problems related to inaccuracies in time and attendance data?
  - a. inaccurate labor expense reports [Incorrect. Inaccurate time and attendance data does lead to inaccurate labor expense reports.]
  - b. decreased staff morale [Incorrect. Inaccurate time and attendance data does lead to decreased staff morale.]
- ▶ **c.** decreased labor expenses [Correct. Inaccurate time and attendance data leads to increased labor expenses.]
  - d. payments for labor services not received [InCorrect. Inaccurate time and attendance data can lead to payments for labor services not received.]

8. To maximize effectiveness of internal controls over payroll, which of the following persons should be responsible for distributing employee paychecks?
- ▶ **a.** departmental secretary [Correct. This person has no other payroll duties and so cannot conceal theft of paychecks.]
  - b. payroll clerk [Incorrect. The payroll clerk prepares and records the checks and so could create checks for nonexistent employees and cash them.]
  - c. controller [Incorrect. The controller is in charge of the recording function and should not have custody of checks.]
  - d. departmental supervisor [Incorrect. The supervisor authorizes payment by reviewing time cards and should not also have custody of assets.]

9. Where should unclaimed paychecks be returned?
    a. HRM department [Incorrect. Unclaimed checks should be returned to the cashier for redeposit.]
    ▶ **b.** cashier [Correct. This permits funds to be quickly redeposited.]
    c. payroll department [Incorrect. Unclaimed checks should be returned to the cashier for redeposit.]
    d. absent employee's supervisor [Incorrect. Unclaimed checks should be returned to the cashier for redeposit.]

10. Which technique can be used to ensure that telecommuting employees are actually working the hours for which they are being paid?
    a. biometric authentication techniques [Incorrect. Used to verify employees clocking in and out of an office.]
    b. source data automation [Incorrect. This technique is used to reduce unintentional errors in collecting time and attendance data.]
    c. earning statements for such employees [Incorrect. Providing earning statements relates to inaccurate payments, not tracking of hours worked.]
    ▶ **d.** analysis of system logs [Correct. This is a supervisory technique whereby telecommuting employee hours can be traced.]