

Human Resource Information Systems

LEARNING OBJECTIVES

Upon completion of the chapter, you will be able to do the following:

- Discuss the history of human resource information systems (HRIS).
- Define and explain the functions of HRIS.
- Describe the eight types of HRIS systems.
- Broadly describe the types of HRIS software available and their applications in the public sector.
- Discuss the legal considerations surrounding HRIS in the public sector.

Human resource departments, whether public or private, deal with vast amounts of information. For example, a public HR department houses all the personnel files on its employees—including employees' vital information like Social Security numbers and addresses, pay and benefits information, insurance forms, bank account numbers for direct deposit, and tax forms for every employee who's worked at the agency. It also houses employment information like performance evaluations, years of service, employment manuals, and company policies and procedures. Also included are documents like organizational charts, pay schedules, relevant federal or state employment policies and regulations—and the list goes on. A tremendous amount of information and knowledge is contained within any public organization.

Public managers must be able to manage and leverage this information efficiently to contribute to the overall performance of the organization. As such, **knowledge management** has become a key component of successfully navigating the information age. Knowledge management is the strategic process of creating, acquiring, capturing, aggregating, sharing, and using knowledge from a variety of sources to enhance organizational learning and performance (Bate and Robert 2002, 647; Scarborough, Swan, and Preston 1999). Public sector HR managers tasked with more complex tasks like

human capital management or workforce planning also have a particular need for efficient knowledge management. Social, organizational, and demographic changes are forcing public HR managers to take stock of their capabilities (Hendrickson 2003). Employees, customers, and clients are increasingly demanding expanded services of higher quality and faster, and they want HR services to be seamlessly linked with other corporate functions (Hendrickson 2003, 381; Pfeffer 1997). Organizations are frequently operating in more fluid structures, relying less on hierarchy and more on the ability of managers to coordinate activities across agencies and sectors. Moreover, the impending retirements of an aging workforce necessitate a greater emphasis on recruiting talented people who can assume management positions or grow into them. The ever-changing landscape of the information age has made technology an integral part of the HR function. As a result, our reliance on human resource information systems (HRIS) is more apparent than ever.

HRIS is used to “acquire, manipulate, analyze, retrieve, and distribute information about an organization’s human resources” (Kavanagh, Thite, and Johnson 2012, 29; see also Tannenbaum 1990). In the past, the “HRIS” used in many government offices involved paper and filing cabinets. Today, however, is a completely different story. The combination of technological advances and an increased need for strategic planning has had a profound impact on HR processes (Kavanagh, Thite, and Johnson 2012). Advances in computer hardware and software allow organizations to integrate copious amounts of HR data and monitor HR needs and activities through a variety of metrics (Hendrickson 2003, 381). Yet HRIS does not consist solely of computer applications; it also “includes the people, policies, procedures and data required to manage the HR function” (Hendrickson 2003, 381).

Unfortunately, very little literature exists on the application and usefulness of HRIS in the public sector (Durant, Girth, and Johnston 2009; McGregor and Daly 1989). This chapter will introduce the topic of HRIS and discuss its potential applications for building a knowledge-based organization (Ingraham, Selden, and Moynihan 2000).

History of HRIS

The evolution of HRIS began before World War II. At that time, HR was considered a noncore function of organizations and was limited to employee record keeping (Hendrickson 2003). The HR department was an isolated unit with little or no interaction with other core administrative functions such as budgeting and finance. The main function of record keeping was to compile employee data (e.g., name, address, phone number, employment history, etc.), typically in index card files.

Technological advances during World War II brought greater awareness to the field of human resources and knowledge management (Goerl 1975; Hendrickson

2003). Norbert Wiener's contributions to **cybernetics**—the discipline of regulating systems and structures—provided a way to use technology to effectively achieve organizational goals (Goerl 1975, 584). At the same time, new ideas in organization theory demonstrated that employee morale was an integral part of organizational success, leading to a greater appreciation of the individual in the organization (Hendrickson 2003; Rainey 2009). While the HR function was still relegated to being an informal part of the organization, these advances led to the development of more formal recruitment and selection processes.

By the 1960s, social and economic movements began to revolutionize thinking about the personnel function, especially about how organizations should be staffed. The personnel function achieved greater status within both private and public organizations, becoming viewed as a necessary function for accomplishing organizational goals (Hendrickson 2003). During this era, the term *personnel* was superseded by *human resource management*, leading to the acronym HR that is commonly used today. The landmark Civil Service Reform Act of 1978 reinvigorated the status of personnel in the public sector by creating the Office of Personnel Management to coordinate the staffing of the federal bureaucracy. More importantly, civil rights legislation and regulations governing diversity forced organizations to do a better job of recording demographic information about employees. To this end, large organizations used mainframe computers to maintain employee records, and computer-based HRIS was born (382). In the 1970s and 1980s, computer hardware and software became necessary tools for the HR function.

The human capital movement (see Chapter 12) over the last few decades has made HRIS an even more vital component of public and private organizations of all sizes. An organization's ability to track current and future workforce needs cannot be accomplished effectively without HRIS. The contemporary HRIS landscape has seen the function of HR departments evolve from basic record keeping to contributing significantly to the operation of the organization, for example, by sophisticated applications of labor analytics. As a result, HR professionals are equipped with technology that can assist in key strategic processes like workforce decision making.

HRIS Applications

The uses of HRIS in the private and public sectors are similarly broad in scope. For example, HRIS allows public HR managers to keep track of EEOC metrics to report workplace demographics. Moreover, HRIS gives HR managers the ability to track instances of discrimination in personnel actions. Thus, HRIS allows the organization to reduce or avoid potential legal liability. HRIS may also be useful for tracking metrics for specific programs or policies, enabling managers to assess the usefulness and efficiency of such practices. For example, HRIS lets managers assess the effectiveness

of training and development programs over time, evaluating such programs' impact on productivity. Managers can also use HRIS to keep track of employee absences, paid and unpaid time off, and other day-to-day operational metrics (Kavanagh, Thite, and Johnson 2012). Most importantly, HRISs provide automated and integrated data solutions needed for strategic HR planning.

According to the Society for Human Resource Management (SHRM), HRIS serves six vital organizational functions: strategic management, workforce planning and employment, human resource development, total rewards, employee and labor relations, and risk management (SHRM 2008). Table 11.1 provides examples that illustrate these six functions. In terms of strategic management, HRIS assists with scanning the external environment and tracking improvements in quality and productivity. HRIS can provide workforce-planning metrics by tracking promotions, transfers, new hires, and termination rates. HRIS can also help in the maintenance of regulatory records and forms (i.e., EEOC, OSHA, and affirmative action reports). HRIS is useful to employees too. It can help them manage their career development by tracking training and development opportunities, for example. Other functions include tracking an employee's performance evaluations and compensation over time, as well as health and retirement benefits enrollment and interfacing pay and deductions to payroll. HRIS allows HR managers to use salary survey data efficiently, and HRIS can store disciplinary and grievance records, union membership and dues information, and attitude survey data. Finally, HRIS can assist the organization with **risk management** by identifying trends in on-the-job reportable incidents for workers' compensation and workers' compensation claims.

HRIS offers organizations a number of advantages (Beckers and Bsat 2002). An integrated HRIS collects information in a single database, offering better information processing and knowledge management (Kavanagh, Thite, and Johnson 2012; Lengnick-Hall and Lengnick-Hall 2006). It provides managers with timely, comprehensive assessments of information across the organization. In addition, real-time reporting of important HR metrics expedites and better informs the decision-making process. Timely and accurate information processing also improves the organization's HR operations and management and streamlines administrative functions associated with HR; for example, automation of payroll reduces labor costs (Roberts 1999). The advanced use of HRIS changes the overall function of HR from a top-down process to a more strategic approach. Such a transformation entails a move away from rule-bound hierarchies to a more fluid structure, in which HR takes into account the stakeholders in the internal and external environment. For public agencies moving toward strategic human resource management (SHRM), HRIS enables them to improve connectivity and collaboration and make better-informed decisions

Table 11.1

HRIS Application

HRM Application	Examples
Strategic Management	<ul style="list-style-type: none"> • Environmental scanning • Tracks quality and productivity improvements
Workforce Planning and Employment	<ul style="list-style-type: none"> • Tracks promotion, transfer, hiring, and termination rates • Maintains and reports EEOC data in the required format • Produces applicant flow and utilization reports for affirmative action programs
Human Resource Development	<ul style="list-style-type: none"> • Outlines career path development • Tracks education, skills, and training programs completed • Registers employees in courses • Tracks employee performance
Total Rewards	<ul style="list-style-type: none"> • Tracks salary survey information • Tracks retirement planning, tuition reimbursement, COBRA and HIPAA information • Facilitates benefits administration and salary analysis across job classifications
Employee and Labor Relations	<ul style="list-style-type: none"> • Stores employee disciplinary records • Records union data and labor distribution data for budgeting payroll expenses associated with labor. • Tracks attitude survey results
Risk Management	<ul style="list-style-type: none"> • Identifies accident and illness trends • Tracks safety records, insurance, and workers' compensation claims • Monitors departments and jobs with higher risks

Source: SHRM 2008

about future needs. Moreover, HRIS provides accurate delivery of HR services and benefits to employees—a boon to overall employee satisfaction. For example, employees' paychecks are deposited electronically in their bank accounts. Also, intranets (proprietary websites that contain information specific to individual agencies) are repositories of information on any number of topics—such as open job postings or expense report forms—that employees can access at any time and from remote locations or even from home.

Particularly insightful is the application of HRIS to **enterprise resource planning (ERP)**. According to Kavanagh and colleagues (2012), ERP is

a set of integrated database applications or modules that carry out the most common business functions, including HR, general ledger, accounts payable, accounts receivable, order management, inventory control, and customer relationship management. (20)

ERP houses the essential functions of management (i.e., human resources and finance) in a readily accessible software system. The potential efficiencies from integrated delivery of a variety of management and HR functions include enhanced knowledge management, human capital stewardship, and improved collaboration among organizational units (Kavanagh, Thite, and Johnson 2012; Lengnick-Hall and Lengnick-Hall 2006). For agencies embarking on more strategic HR efforts like workforce planning or human capital management, which involve substantial intra-organizational coordination, ERP is essential (see also Dery and Wailes 2005).

Implementation of HRIS

The potential for organizations to implement and manage HRIS effectively varies according to their characteristics. Ngai and Wat (2004; see also Kavanagh, Thite, and Johnson 2012) suggested that factors such as organizational size, management support and commitment, resources available, HR philosophy, managerial competence, and aptitude for change are important. Larger organizations tend to enjoy more marginal benefits from HRIS applications than do smaller organizations; the larger the organization, the more information it needs to manage, and the more it will benefit from HRIS efficiencies. The success of HRIS also depends on the commitment of top management to driving and implementing the development of new hardware and software. Finally, the installation and maintenance of computerized systems require a significant investment of money, time, and personnel with key skills, so the amount of resources the organization can dedicate to HRIS determines what can be done.

A supportive HR environment is also crucial to the success of HRIS. An HR philosophy that embraces the use of technology in the application of the organization's vision, culture, and structure is important. Finally, the technological capacity of employees determines whether they will buy in to the technological changes brought about by HRIS. A necessary step in the adoption of HRIS is to motivate employees to adopt the new technologies that automate the HR function.

Types of HRIS

Several types of computer-based HRIS applications are available; Table 11.2 provides an overview (Kavanagh, Thite, and Johnson 2012, 20–22). HRIS can be described

Table 11.2

Information Systems Providing Support for HRM

Organizational Level	Type of System	Major Goals and Focus	HRM Examples
Operational	Transaction processing system	Improved transaction speed and accuracy	Payroll processing
		More efficient processing of daily business transactions	Time and attendance entry
		Automation of routine transactions	Online creation and dissemination of application forms
		Reduced transaction costs	
Managerial	Management information system	Provision of key data to managers	Producing EEO reports
		Improved decision making	Calculating recruiting and selection yield ratios
		Scheduled and ad hoc reports	Calculating per capita merit increases
Executive	Executive information system	Provision of aggregate, high-level data	Succession planning
		Assistance with with long-range planning	Aggregate data on balanced scorecard (see Chapter 12)
		Support of strategic direction and decisions	
Boundary spanning	Decision support system	Interactive and iterative managerial decision making	Staffing needs assessment
		Support of forecasting and "what-if" analysis	Labor market analysis
		Running of business simulations	Employee skills assessment
	Expert system	Embedding of human knowledge in information systems	Résumé keyword searches
		Automation of decisions with technology	

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Organizational Level	Type of System	Major Goals and Focus	HRM Examples
	Office automation systems	Designing documents Scheduling shared resources Communication	Online training-room scheduling
	Collaboration technologies	Electronic communication and collaboration between employees Support of virtual teams	E-learning Online meetings and shared documents HR department wikis
	Enterprise resources planning system	Integration and centralization of corporate data Sharing of data across functional boundaries Single data source and common technology architecture	Systems such as OrangeHRM, Oracle/PeopleSoft, Lawson HRM, and SAP

Source: Kavanagh, Thite, and Johnson 2012

based on the organizational function it serves (i.e., operational, managerial, executive, or boundary spanning). Organizational functions include daily operating tasks (operational), managerial functions (managerial), strategic functions (executive), and integrated operations (boundary spanning).

Operational functions are transaction-based processes such as calculating payroll, tracking time and attendance, and processing forms. HRIS can improve the speed and accuracy of daily operations by automating routine transactions. Adopting such systems has the potential to reduce transaction costs associated with routine data entry and cut down on human error. Such efficiencies can be realized through online applications that can disseminate forms and information and collect data.

Management information systems help managers deliver vital data that support decision making in the organization. Management-based systems may also provide predefined reports as well as ad hoc analyses. Such automated reporting is particularly useful to HR managers interested in producing EEO reports and calculating metrics for recruitment and compensation (e.g., yield ratios for recruitment and per capita merit increases).

Executive-level information systems provide aggregate data to inform long-term decision-making. Executive-based HRIS supports strategic planning on key objectives (e.g., balanced scorecard reporting on financials, customers, internal processes, and future objectives, discussed in depth in Chapter 12) (Kaplan and Norton 1996). For HR managers, such systems might be particularly useful for succession planning, that is, identifying and developing future leaders for the organization.

HRIS also facilitates boundary-spanning activities, or activities that integrate services across different organizational units. Such boundary-spanning applications are designed to support decision making, knowledge management, office automation, collaboration, and ERP. Decision support systems allow real-time information gathering that assists with interactive and iterative managerial decision making. Iterative applications, which examine multiple decision scenarios and their potential consequences, are valuable in forecasting analysis. For HR managers, decision support systems can aid in workforce planning by forecasting staffing and other resource needs. Expert systems support knowledge management; HR managers can apply expert systems to managing résumés and keeping track of the knowledge, skills, and abilities deemed vital to future productivity. Likewise, HRIS can automate routine office functions such as document design, scheduling, and communication through shared applications. HRIS also utilizes Web 2.0 technologies to support electronic communication and collaboration across the organization, for example, virtual teams and online meetings (e.g., video calls over the Internet via Skype), e-learning (e.g., online classrooms using services like Adobe Connect), and HR department wikis (web applications that host information that anyone can update). Finally, as discussed above, ERP is a necessary step toward the integrated management of HR functions across the organization. ERP systems centralize important data, enabling employees to share information across functional boundaries. ERP software (e.g., OrangeHRM, Oracle/PeopleSoft, Lawson HRM, and SAP) houses data in a single database, fostering increased data integrity and minimizing data entry, and use common technology architecture, enabling more efficient hardware and software maintenance.

Clearly, the types of systems available to organizations are impressive. However, as noted earlier, organizations are limited by a number of contextual factors such as organizational size, management commitment, and resources available. Organizations considering implementing or upgrading their HRIS must do so based on a careful analysis of its costs and benefits.

HRIS Software

Many software packages exist for HRIS applications. OrangeHRM, Oracle/PeopleSoft, Lawson HRM, and SAP are but a few of the more widely implemented HRIS software packages, used in both the public and private sectors. Most HRIS

applications specialize in open-source and advanced host applications (i.e., cloud computing). Open-source software is free and allows any user to develop and publish modifications of its source code (OrangeHRM 2012). According to the OrangeHRM website, “Open Source has evolved as a flexible low cost alternative to proprietary software owned by corporations, typically created as a collaborative effort in which programmers improve upon the code and share the changes within the community.” In cloud-based computing, the software and data are centrally hosted on the vendor’s website or server and then delivered as a service over the Internet or private network to the end-user organization (NIST 2011). Open-source and cloud-based computing is a departure from the traditional configuration of proprietary software, once the norm in large organizations, which was installed on servers or machines physically located at the organization. Instead, organizations are increasingly using open-source software solutions that are not installed on their own servers but delivered to them virtually, via the “cloud.” The next sections discuss the offerings of some of the leading HRIS providers.

HRIS Software Providers

OrangeHRM, based in New Jersey, specializes in open-source and advanced hosted applications in the form of software as a service (SaaS) for automated HR management. Founded in 2005, OrangeHRM has over 1 million users globally across both public and private sectors (OrangeHRM 2012). It offers applications customizable for small and medium organizations. The software includes human capital management and HRM applications for functions such as employee information, employee time-off, recruitment, and employee performance evaluation management. The company also offers a variety of support and training services for clients, including online and on-site instruction.

Oracle/PeopleSoft offers a variety of HRIS applications to large corporations, governments, universities, and other organizations. Its applications include human capital management, workforce management, workforce service delivery, talent management (i.e., recruitment, retention, and motivation), and HR analytics (i.e., analysis of staffing and productivity) (Oracle 2012). While initially focused on providing a single-client server software approach, as does OrangeHRM, Oracle/PeopleSoft has moved toward integrating cloud computing into its offerings.

Like Oracle/PeopleSoft software, the Lawson Human Resource Management suite (Lawson HRM) is utilized by a variety of public sector organizations, including school districts, local governments, and public utilities (Lawson HRM 2012). Lawson HRM is designed to support routine and strategic planning processes. Applications include benefits, payroll, tracking and managing employee information, time-off management, and general performance management. Like the two software packages

discussed above, Lawson HRM also offers applications for human capital management, workforce management, and talent management.

The German multinational software company SAP is the largest business software provider in the world, specializing in software for managing operations and customer relations (SAP 2012). SAP's ERP system (SAP ERP) integrates data into a single-source application for sharing and analysis. SAP's public sector applications are designed to better link government at all levels to citizens (SAP 2012). Public sector applications include planning, budgeting, and shared services.

In addition to the more comprehensive HR software, a number of specialized products are on the market. Specialized software tends to focus on automating HR solutions to reduce workload and costs (Anderson 2004). For example, the software company Kronos offers workforce management solutions through a variety of cloud-based HRIS products (Kronos 2012). Workforce HR, Workforce Payroll, Workforce Scheduler, Workforce Timekeeper, Timekeeper Center, and ShopTrac Pro are Kronos software packages that help organizations with time and attendance, scheduling, absence management, payroll, hiring, and labor analytics. Ultimate Software provides cloud-based human capital management solutions for for-profit and nonprofit organizations. The company's UltiPro software provides an integrated, single-source solution for benefits, payroll, workforce analytics, talent management, mobile applications (apps), global human capital management, time and attendance, scheduling, payment services, salary planning and budgeting, and position management (Ultimate Software 2012). Epicor Human Capital Management (Epicor HCM; formally Spectrum) offers automated HR capabilities organizations can use to track, manage, and analyze employee data (Epicor HCM 2012). Specific HR applications include recruitment management, benefits, and absence tracking. Epicor HCM also develops and provides tools for performance management, HR reporting, and workforce analytics.

Nonprofits in Focus

Volunteer Management Software

Like any other type of organization, nonprofits look to HRIS to keep track of vast amounts of personnel data. For nonprofits, HRIS software needs to be able to track data on volunteers and donors as well as employees. Having access to such information is vital to improving the lifeblood of nonprofits: people and money. Nonprofits depend on growing their donor bases and maintaining close ties with those stakeholders. TechSoup Global and IdealWare—two nonprofit-centered IT-savvy firms—compiled a list of volunteer and donor management software programs and assessed their capabilities.

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Software can be divided into stand-alone volunteer management software, which just tracks volunteers, and consolidated software, which allows for cross-listing of volunteers with donors. Cross-listing allows managers to identify volunteers who might be willing financial donors, and vice versa. TechSoup Global and IdealWare's assessment was based on a software's capacity to compile volunteer profiles, track volunteer activities, schedule volunteers, communicate with volunteers, manage online volunteer profiles, be customized and easy to use, and manage additional constituent information. Among the stand-alone software packages profiled were eRecruiter/eCoordinator by Samaritan, Volgistics by the company of the same name, and Volunteer Reporter by Volunteer Software. Consolidated software reviewed included DonorPerfect by SofterWare, The Raiser's Edge(i) by Blackbaud, and Volunteers for GiftWorks by Mission Research. For more detailed information on each software package, you can view the report at <http://www.techsoup.org/SiteCollectionDocuments/article-consumers-guide-to-software-volunteer-management-document.pdf>.

Source: Quinn, L., Bernard, C., Leslie, J., & Andrei, K. (2011). *A Consumer's Guide to Software for Volunteer Management*. TechSoup Global/IdealWare. <http://www.techsoup.org/SiteCollectionDocuments/article-consumers-guide-to-software-volunteer-management-document.pdf>.

HRIS Applications in the Public Sector

The private sector has been the trendsetter in innovative computer-based solutions to HR challenges of the 21st century (see Ulrich, Younger, and Brockbank 2008). As this text has highlighted throughout, public sector organizations are increasingly looking to the private sector for inventive solutions to HR challenges. In the past, HR departments often used myriad applications, which could be difficult to manage. The more recent trend has been to adopt more integrated HRIS solutions.

Increasingly, public sector organizations are adopting shared delivery of HR services that taps into the potential for efficiencies from combining centralized and decentralized operations (Cooke 2006; Selden and Wooters 2011). **Shared services** involves a collaborative approach to combining business functions (e.g., all of the HR departments within an organization) into an integrated, semiautonomous unit (an HRM shared services agency) tasked with managing and promoting efficiency, quality, cost savings, and internal customer service (Bergeron 2003, 3). Integrating HR services into one unit allows the organization to take advantage of economies of scale, eliminate duplication, and promote efficiency (Selden and Wooters 2011, 352; see also Bergeron 2003; Corporate Leadership Council 2006).

Table 11.3 presents a comparison of the three HR service models (centralized, shared, and decentralized) adapted by Selden and Wooters (2011) from Ulrich, Younger, and Brockbank (2008). The public sector has traditionally used the centralized HR service model. Typically, administration of centralized HR services tasks specialists with the design of and responsibility for HRM policies and procedures. Central HRM specialists and staff are also responsible for handling any issues or problems with HR

Table 11.3

Comparison of Centralized, Shared, and Decentralized HRM

Dimension	Centralized	Shared services	Decentralized
Design responsibility for HRM policies and procedures	Central HRM specialists	Specialists in shared services unit	Departmental HRM professionals with variation across units
Implementation of HRM practices	Governed by central HRM specialists	Governed by agency HRM professionals who select from a menu of services; menu designed by shared services agency	Governed by departmental HRM professionals
Accountability	Central HRM	Split between agency HRM/managers and HRM shared services agency	Agency HRM
Services Orientation	Standardized HRM policies and services across government	Tailored to agency; agencies are allowed to choose from a standardized set of service options	Agency needs and priorities
Flexibility	Mandated use of central resources	Flexibility allowed as governed by shared services unit and permitted by law	Up to agencies
Skill requirements for HRM	Technical expertise in functional design and delivery (specialists)	Design expertise but also consulting and support expertise	"General" HRM knowledge (generalists)
Role	Provide HRM services that are consistent with the mission/mandates of central HRM; enforce mandated rules	Agencies helped to determine which available HRM services best fit their needs	Provides HRM services specific to needs of agency

Sources: Selden and Wooters (2011, 353); Ulrich, Younger, and Brockbank (2008)

practices and for policing compliance with HR policies and procedures. Implementing HRM practices under a centralized model uses a top-down approach and standardized policies and procedures across the government agency or jurisdiction.

In contrast, the trend toward decentralized delivery of HRM has focused on localized development of HR policies and procedures by agency-level HR managers (Condrey 2010; Selden and Wooters 2011). HRM professionals within agencies are tasked with the implementation of HR functions. Employees are directed to HR managers at the department level for grievances and other issues. The focus of HRM is to prioritize agency needs and goals. Without a standardized process, there is the potential for a great deal of variation among units within the organization (Selden and Wooters 2011; Ulrich, Younger, and Brockbank 2008), which can be problematic.

The increasingly popular hybrid approach to HRM services attempts to blend the benefits of centralization with decentralization (Condrey 2010; Selden and Wooters 2011). Establishing a shared services unit allows the organization to enjoy the advantages of centralization: economies of scale, greater expertise, and integrated technology. At the same time, tasking shared services personnel to adopt an internal customer focus and meet the needs of the respective agencies taps the benefits of decentralization (Selden and Wooters 2011, 352). Specialists within the shared services unit are responsible for the design of HRM policies and procedures. Collaborating with agency HR managers, shared services specialists are able to offer a menu of uniform HRM services that, at the same time, can also be tailored to the specific needs of the internal customer. Issues may be handled by both agency HR managers and specialists in shared services, depending on the nature of problem. The role of the shared services unit is to assist agencies in determining the level of HR service that suits their needs.

According to Selden and Wooters (2011) 16 states have embarked upon shared services models, with another 11 indicating they are leaning in that direction as well (356). The extent of the implementation of shared HR services among these states varied. For example, some states (Arizona, Louisiana, Michigan, New Mexico, Oklahoma, Oregon, and Wisconsin) focus on shared delivery of a specific set of activities, while others (Connecticut, Indiana, Tennessee, and Virginia) offer shared services for select agencies (357). Four states (Georgia, Maryland, Massachusetts, and Utah) offer shared HR services for all agencies, and two states (Iowa and Kansas) offer shared services options for other functions (e.g., information technology or security). For public organizations considering the shared HR services model, integration of technology is crucial to accurate and timely service delivery.

Having the right technology in place enables improved communication and distribution of relevant information in the shared services model (Selden and Wooters 2011; Ulrich, Younger, and Brockbank 2008). Advances in information technology have made HRIS an integral and distinct function of the HR function (Hendrickson 2003). For public HR managers, a greater appreciation of technology

is necessary for the effective delivery of services. Moreover, a greater awareness of the benefits of IT has raised the expectations of public employees, managers, customers, regulators, and clients (Hendrickson 2003, 381).

Managing institutional knowledge is an exceedingly important task of public HR managers (Selden 2009). HR managers, as the arbiters of organizational information, face increased demand from stakeholders (Hendrickson 2003, 392–93) and thus play a vital role in the implementation and integration of HRIS (see also Ulrich 1997). While the private sector came to this realization decades ago, the public sector has only recently adopted the human capital mantra (Brook and King 2008; Selden 2009). Public HR managers now are challenged to integrate vital information for the maintenance of organizational knowledge in a rapidly changing environment.

Legal Considerations Related to HRIS

Since HR departments handle so much personal employee information, the maintenance of and dissemination of this information requires great care. Because many of the records being stored contain sensitive information, knowledge of the relevant laws is essential. While advances in technology have allowed HR managers to effectively manage organizational knowledge, HRIS is also vulnerable to security breaches and other cyberthreats. As a result, HR and IT managers must determine what employee information is appropriate to gather and establish the necessary cybersecurity for keeping it private. Access to information should be limited to only those whose jobs require it.

The lack of a comprehensive federal law regulating the protection of employee information has led to a variety of responses at the state level (SHRM 2008). As a result, HR managers must be familiar with the relevant laws guiding employee privacy. Table 11.4 reviews several important laws that bear on electronic record keeping (*HR Focus* 2006; Sotto and McCarthy 2007).

The **Fair Credit Reporting Act (FCRA)** regulates background checks conducted during the recruitment and selection process. The FCRA mandates the privacy of employee background information and requires that the organization get written authorization from the prospective employee for permission to obtain consumer reports. If the information leads to an adverse action on the part of the employer, the employee must be notified. Several states have enacted similar laws safeguarding the information procured by background checks. The **Electronic Communications Privacy Act** regulates the protection of federal employee communications, in particular those stored in computers. Employers must obtain prior authorization from the employee or secure a search warrant before accessing such data. The **Health Insurance Portability and Accountability Act (HIPAA)** regulates employee privacy with regard to health records and information. The **Privacy**

Table 11.4	Laws Regulating Employee Privacy
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Fair Credit Reporting Act (FCRA)—Regulates the administration of background checks conducted by the employer during recruitment and selection. The FCRA mandates the privacy of employee background information and requires the organization to get written authorization from the prospective employee for permission to obtain consumer reports. If the information obtained leads to an adverse action on the part of the employer, the employee must be notified. Several states have similar laws.

Electronic Communications Privacy Act—Regulates the protection of federal employees' communications, in particular those stored in computers (e.g., emails). Employer must have prior authorization or secure a warrant.

Health Insurance Portability and Accountability Act (HIPAA)—Regulates employee privacy with regard to the transmission of health records and information. The Privacy Rule requires covered entities to adopt written policies and procedures regarding the use and disclosure of protected health information.

Sarbanes-Oxley Act of 2002—Regulates employee privacy and prohibits retaliation against whistle-blowers.

Fair and Accurate Credit Transactions Act of 2003 (FACTA)—Requires people who maintain or otherwise possess consumer information, or any other pertinent information, derived from consumer reports for a business purpose to properly dispose of such information or a compilation of it. Several states have similar laws.

Social Security number laws—Thirty-eight states prohibit or restrict the dissemination of Social Security numbers.

Security breach notification laws—Several states require employers to notify employees of potential or real security breaches that involve computerized data.

Sources: *HR Focus* 2006; SHRM 2008; Sotto and McCarthy 2007

Rule of HIPAA requires covered entities to adopt written policies and procedures regarding the use and disclosure of protected health information. **The Sarbanes-Oxley Act of 2002** further regulates employee privacy and prohibits retaliation against whistle-blowers. **The Fair and Accurate Credit Transactions Act of 2003 (FACTA)** requires people in the possession of consumer information acquired for a business purpose to properly dispose of such information; several states have enacted similar laws.

In addition, a number of laws regulate the dissemination of Social Security numbers. Social Security number laws have been enacted by 38 states. In addition, software that collects personnel records is increasingly susceptible to hackers (see the case study below). Therefore, several jurisdictions have enacted security breach notification laws, which require employers to notify employees of a potential or actual security breach that has or could compromise employee information.

HRIS and PHRM Reforms

Decentralization has transferred the responsibility for HR functions to agency-level staff, which poses a number of challenges to the coordination of HR activities government-wide. In turn, this means that coordinating the implementation of the other reforms discussed in this text (performance-based pay, declassification, deregulation, privatization) can also be a daunting task. Ensuring fairness and consistency in the application of these reforms is problematic in a decentralized HR authority environment.

HRIS has the potential to ameliorate the coordination problems inherent in decentralization. While an increasing reliance on shared services models has improved coordination gaps, reorganizing the delivery of HR services may pose a political hurdle that is too difficult to overcome. Technology may offer an easier solution to coordinating information management within and across departments, and investing in improved HRIS applications may be a wise choice for governments.

Privatization has raised significant issues with regard to the dissemination of information under the Freedom of Information Act. The increasing use of private contractors to carry out public HR functions has meant that private companies have custody of public information. Contractors may be required to disclose sensitive information obtained in the course of fulfilling their duties because they are acting for the government. As such, they too have a responsibility to maintain personnel records securely.

As the case study below details, the threat to information security is real. Data lapses cause irreparable harm to efficiency, workplace culture, and overall accountability. Having the right HRIS software in place might not be enough. Governments increasingly need to maintain IT expertise in the safekeeping of personnel information. Providing HR managers with greater access to information comes with a cost—a greater likelihood that the information will be at risk. Balancing the needs of management with security obligations will be a responsibility of both public HR managers and their IT counterparts.

Conclusion

Advances in information technology have ushered in a new era of managing human resources information, and policies governing HRIS are more important than ever. Computer networks and cloud-based software have given HR managers tools that allow them to administer HR functions in a more productive manner. HRIS in particular allows HR managers to effectively navigate large amounts of employee information, while providing greater access to this information to employees, customers, and clients. HRIS gives HR managers in the 21st century an integrated, single-source data stream for managing strategic planning, performance management, workforce

planning, human resource development, compensation and rewards, benefits, and risk management. With such information now readily available to HR managers, the HR function can play a critical role in strategic planning for the organization. Public HR managers possess the information agencies need to plan for goal achievement.

Managing vast amounts of employee information also comes with a special responsibility to safeguard vital data. The potential for security breaches has resulted in jurisdictions passing laws and regulations governing the handling of sensitive information. For public HR managers and IT staff, familiarity with the law is essential for protecting employee privacy rights.

Public HR managers seeking to capitalize on rapidly changing social and economic environments must be able to analyze vast amounts of data in a timely fashion. HRIS provides public HR managers with the tools critical to meeting the information age's challenge of managing knowledge. Familiarity with HRIS portends untold possibilities for the future of the public service.

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Case 11.1

Edward Snowden and the Safeguarding of Information

The recent leaking of classified information by data analyst Edward Snowden highlights the sensitive nature of securing classified information. Snowden was employed by Booz Allen Hamilton as a computer specialist and worked as a contractor for the National Security Agency (NSA). He was allegedly motivated to disclose perceived illegal counterintelligence information-gathering secrets of the United States and its allies. Recent headlines suggest that Snowden's disclosure represents the most significant breach of US security since

the leaking of the Pentagon Papers by Daniel Ellsberg in 1971 (Mirkinson 2013). Snowden detailed his revelations to the UK-based periodical *The Guardian* in a June 2013 interview.

Prior to his revelations, Snowden was employed in various capacities as a computer specialist for the NSA, CIA, and Dell, before gaining employment with Booz Allen Hamilton. As recently as 2012, Snowden was the subject of a government inquiry because of his downloading of sensitive NSA material in April of that year while employed by Dell (Hosenball 2013b). At this time, Snowden enjoyed access to top-secret information because of his various clearances granted by the NSA and USIS, a private company specializing in background checks.

Upon joining Booz Allen Hamilton in 2013, Snowden was employed as a “system administrator” according to the firm. However, Snowden disputes this, suggesting his job was to look for innovative ways to conduct surveillance on Internet and telephone traffic around the world (Shane and Sanger 2013). Thus began his infamous efforts to collect information on classified US intelligence-gathering operations. Interestingly, a recent investigation of Snowden’s background suggested a number of irregularities, including misleading his employers about educational accomplishments he never actually achieved (Hosenball 2013a).

Public agencies have a special responsibility to safeguard personal information of employees and clients. Relevant federal laws are the Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA) and the Health Insurance Portability and Accountability Act of 1996 (HIPPA), discussed in the present chapter (see Table 11.4) and in Chapter 6’s discussion of pay and benefits. Our discussion of the privatization process in Chapter 10 also underscored the government’s responsibilities with respect to information held by a contractor that might be subject to the Freedom of Information Act (FOIA). That being said, “Technology confers awesome power on those who can harness it for good or bad. Fashioning smart policies that protect security and liberty is the way forward. We live in a “post-Snowden” age. Although his deeds were despicable, this public debate could yield real dividends” (Harman 2013).

The case of Edward Snowden has important implications not only for the application of HRIS but also for the contracting out of functions that bring the worker into contact with sensitive information. According to a recent story on National Public Radio, two factors aided Snowden’s exploitation of the IT infrastructure at the NSA: (1) the agency’s delay in installing the most current antileak software in its systems at the Hawaii station and (2) the sense of inclusion and security that can lead people to drop their guard when they believe their co-workers have been vetted. It was recently reported that Snowden was able to gain access to sensitive

information not only through technical means but also by convincing co-workers that he needed their login information to carry out his duties. This is a security lapse that has every IT employee cringing.

Discussion Questions

With the prospect of more leaked information to come as Snowden continues to evade arrest, many public managers are considering changes that can prevent such lapses. At this point in the text, we have discussed issues of privacy, privatization, and the management of information as part of the HR function in the public sector. Given the wealth of information controlled by the HR function, what trends do you predict for the future of contracting out for IT services in the public sector? What lessons might we draw from the respective chapters in the text that could help prevent another incident such as the Snowden case? Should the outsourcing of sensitive information be centralized, decentralized, or a shared responsibility? Why or why not?

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Exercise

You work in your state's Department of Labor. For the last decade, the agency has lagged behind corresponding agencies in other states in terms of IT capability. The agency needs a revitalized HRIS system that can handle the vast amounts of personnel data collected for the 200-plus employees who work there. As the assistant HR manager for the state's Department of Labor, you have spoken with the department secretary and the head of HR about the need to recruit IT personnel to build in-house the capacity for maintaining an HRIS. The secretary and HR director have asked you to put together a job advertisement for three key IT personnel: an IT director and two IT specialists. Write up job descriptions for the two positions. What types of knowledge, skills, and abilities would you include? What tasks and duties would each of the positions be responsible for carrying out? Where might you advertise the job? As a contingency plan, the secretary has also asked you to consider outsourcing the agency's IT requirements. What criteria might you include in a request for proposals to administer the IT function? What legal issues might you consider when outsourcing IT-related functions?