

# **PHRi Functional Area 07**

## **HR INFORMATION MANAGEMENT**

International Human Resource Certification Institute

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Professional in Human Resources – International (PHRi) Workbook

Module Seven: HR Information Management

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## ***Introduction***

As a subscriber of the PHRi certification workbook series, you have access to the [www.ihrci.org](http://www.ihrci.org) learning system. The system includes a Glossary that provides a search box and descriptions of key HR terms. Additionally, the system consists of over 900 practice exam questions and answers with explanations in our database, including pre-tests, review tests, and post-tests:

**Pre-test:** It contains the same percentage of questions from each content area. Participants can take a pre-test of that module to assess their conceptual understanding of that specific area of the PHRi exam content outline. When the pre-test is completed, an overall correct percentage and the number and percentage of questions answered correctly are provided. Answers with explanations for individual questions are also provided. Our system allows users to save the pre-test results for later improvement.

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Access to the learning system is valid for twelve (12) months from the date of purchase, covering two test windows. Take the pre-test, review, and post-test as many times as possible within 12 months. Access to these practice exams is for your use, and your account should not be shared with others. Your use of the online practice exams indicates your agreement with these terms.

Please note that this workbook is not a textbook. The materials, including workbooks and practice exams, are intended for use as aids in preparing for the PHRi Certification Exam conducted by the HR Certification Institute. While studying these materials will enhance your understanding of the key functional areas that comprise the HR Certification Institute PHRi exam content outline, these workbooks should not be considered legal or professional advice.

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## ***Part One: HR Technology and Business Processes***

### **1. Technology Applications in Human Resources**

As the 21st century dawned, a significant shift occurred in Human Resource Management (HRM) with the emergence of Electronic Human Resource Management (e-HRM).

Historically, HR departments, formerly known as personnel departments, were focused on administrative tasks like recruitment, payroll, and compliance. The introduction of Human Resource Information Systems (HRIS) revolutionized these processes, allowing for greater efficiency. With transactional services moving online, HR professionals had more time to concentrate on aspects of human relations.

The 1990s witnessed changes in the economic landscape influenced by globalization and technological advancements, leading to the concept of business process reengineering. This period marked the beginning of e-HRM, which brought HR functions onto a web-based platform, improving decision-making processes and providing self-service options for internal users.

Looking ahead, HR's role evolved from a reactive business partner to a proactive strategist, engaging external stakeholders like investors and customers, thereby directly influencing business outcomes. Economic challenges prompted HR departments to seek efficient ways to deliver value to both internal and external stakeholders. Here, generative Artificial Intelligence (AI) comes into play, offering innovative solutions in HR. AI can revolutionize HR practices by automating complex tasks like resume screening, enhancing employee training with personalized content, and providing sophisticated analytics for better decision-making. Its ability to generate realistic simulations and models also aids in strategic planning and forecasting, ensuring HR departments are more agile and responsive to changing business needs.

#### **1.1. HR Activities**

HR departments engage in three types of activities as follows:

1.1.1. Transactional HR activities involve day-to-day transactions that have to deal mostly with record keeping—for example, entering payroll information, employee status changes, and the administration of employee benefits - 65% to 75% of the time.

1.1.2. Traditional HR activities involve HR programs such as planning, recruiting, selection, training, compensation, and performance management - 15% to 30% of the time.

1.1.3. Transformational HR activities are those actions of an organization that “add value” to the consumption of the firm’s product or service. An example of a transformational HR activity would be a training program for retail clerks to improve customer service behavior, which has been identified as a strategic goal for the organization— 5% to 15% of the time.

One of the main purposes of HR technology is to reduce the amount of time spent on transactional activities and shift that time for HR professionals to use for traditional and transformational activities.

## 1.2. A Primer on HRIS

Important to note that a company that does not have a computerized system still has an HRM system; that is, the paper system used to acquire, store, manipulate, analyze, retrieve, and distribute information regarding an organization’s human resources.

An HRIS is not simply computer hardware and associated HR-related software. Although an HRIS includes hardware and software, it also includes people forms, policies and procedures, and data.

The primary purpose of the HRIS is to provide service, in the form of accurate and timely information, to the “clients” of the system. There are a variety of potential clients, as HR information may be used for strategic, tactical, and operational decision making (e.g., planning for needed employees in a merger); to avoid litigation (e.g., identifying discrimination problems in hiring); to evaluate programs, policies, or practices (e.g., evaluating the effectiveness of a training program); and to support daily operations (e.g., helping managers monitor the work time and attendance of their employees).

Because of the complexity and data intensiveness of the HRM function, it is one of the last management functions to be targeted for automation. This fact does not mean that an HRIS is not important; it just indicates the difficulty of developing and implementing it compared with other business functions—for example, the billing and accounting systems. Powered by information systems and the Internet, almost every process in every function of HRM has been computerized today

## 1.3. Why HRIS?

There are several advantages to firms in using HRIS. They include the following:

- Providing a comprehensive information picture as a single, comprehensive



database; this enables organizations to provide structural connectivity across units and activities and increase the speed of information transactions

- Increasing competitiveness by improving HR operations and improving management processes
- Collecting appropriate data and converting them to information and knowledge for improved timeliness and quality of decision making
- Producing a greater number and variety of accurate and real-time HR-related reports
- Streamlining and enhancing the efficiency and effectiveness of HR administrative functions
- Shifting the focus of HR from the processing of transactions to strategic HRM
- Reengineering HR processes and functions
- Improving employee satisfaction by delivering HR services more quickly and accurately to them.

#### 1.4. E-HRM vs. HRIS

Confusion can arise concerning the distinction between electronic human resource management (E-HRM) and HRIS. E-HRM reflects a philosophy for the delivery of HR; it uses information technology, particularly the Web, as the central component of delivering efficient and effective HR services. Conversely, as conceptualized in this book, an HRIS comprises the technology and processes underlying this new way of conducting human resource management. An HRIS can include technologies such as databases, small functional systems focused on a single HR application (e.g., performance management), or a large-scale, integrated enterprise resources planning (ERP) architecture and Web-based applications. In today's environment, it can even be devices such as smart phones and social networking sites that enable employees to access HR data remotely or to connect with others in the organization.

Another way of looking at the differences between E-HRM and HRIS is that E-HRM tends to be more application and HR-function focused (e.g., e-recruitment and e-training), and an HRIS is more focused on the systems and technology underlying the design and acquisition of systems supporting the move to e-HRM.

#### 1.5. HR Service Delivery

Human Resources (HR) provide services to the organization in a variety of models.

Services are delivered by people through service centers and through the use of technology. People-based service delivery can be centralized or decentralized. Technology can provide informational services or allow self-service for completing HR processes. Services can be offered internally using company employees or outsourced to third-party providers. These methods are not exclusive of one another and it is common to find a blend of these service delivery methods in one organization.

#### 1.5.1. Centralized HR Services

This is used to refer to services that are delivered by people who are located in one place, which may be called a “Service Center”. This delivery model does not allow for an HR representative to be in each company location. Managers and Employees will reach out to HR via phone to speak to a representative to assist them as well as rely on self-service applications. An HR Service Center may be staffed with representatives internal to the company or may be outsourced to a third party. Regardless of staffing, the benefits of having a centralized HR Service center are reduced cost for HR services, consistency of information and common HR processes.

#### 1.5.2. Decentralized HR Services

This is used to refer to services that are delivered by people who are in the locations throughout the organization. This delivery model staffs each separate location with persons who are responsible for delivery of HR Services. Most common would be to have an HR Generalist assigned to these locations to support managers and employees at that specific location. This model offers a high level of personal service and may also be supported with self-service technologies. This model however typically costs more than the centralized model and it is common for HR processes in this model to be location specific and not consistent across the enterprise.

#### 1.5.3. Outsourced HR Services

This refers to the delivery of HR through a third-party contractor, most commonly via a service center. When creating a technology strategy, understand what the HR Strategy service delivery is. If HR currently is outsourced or is planning to outsource some or all of its services, this needs to be taken into consideration in the technology strategy. There are two (2) general categories of outsourced services; Human Resources Outsourcing (HRO) and Business Process Outsourcing (BPO).

*HRO* is an outsourcer that assumes responsibility for the entire HR function. The vendor will typically take over management of the HR system and all administrative

processes in HR.

*BPO* is an outsourcer that assumes responsibility for a specific process within HR. An example of this would be an outsourcer who assumes responsibility for the management and administration of the benefits programs of a company.

Most of these service centers have advanced technology for self-service, as well as to manage and track calls that are called “cases.” Oftentimes outsourcing a specific process, like benefits administration, will enable a company to deliver online benefits enrollment sooner and more cost effective than if supported internally. The outsourcer has “case management” tools, which allow for accurate recording of calls along with robust reporting for trends that help in continuous improvement of services and identification of potential HR issues. These systems are often too costly for an HR department to purchase and consequently their tracking process is more labor intensive and error prone.

## **2. HR Data**

The intersection of data and human behavior has led to the consumerization of workforce analytics tools. Historically, IT had access to business data and HR relied on them to create workforce reports. But as technology has advanced, these tools have become increasingly easy to use.

HR involves practical application of up-to-date understanding in the context of ‘real world’ organizations. Reliable knowledge built on accurate information is needed. To undertake effective HRM, it is important that good-quality information underpins decisions and informs the actions of those involved in the employment relationship, such as trade unions, individual employees, outsourced service providers and professional organizations.

In the context of HR, knowledge, data and information play a vital role in implementing important strategies for management of human resources by referring to the facts and figures related with the human resources and demographic profiles.

### **2.1. Data, Information, Insight, and Impact**

In the context of Human Resources (HR), these terms represent a hierarchy of understanding and value derived from raw numbers and facts (data).

#### **2.1.1. Data**

Data refers to raw, unprocessed facts and figures without any context. In HR, data can include employee headcount, turnover rates, or salaries.

Example: An HR department collects data on employee turnover, which shows that 10 employees left the company in the past month.

#### 2.1.2. Information

Information is data that has been processed or organized into a meaningful format, which provides more clarity on the data's implications.

Example: The HR department analyzes the turnover data and finds that of the 10 employees who left, 8 were from the sales department, indicating a potential issue within that department.

#### 2.1.3. Insight

Insight comes from deeper analysis of information, leading to a better understanding of the underlying patterns or causes.

Example: Further investigation into the sales department reveals that the high turnover is due to dissatisfaction with the new commission structure. This insight is gleaned by combining information from exit interviews and job satisfaction surveys.

#### 2.1.4. Impact

Impact refers to the effects or changes that result from acting on insights. This is about the tangible outcomes that occur when adjustments are made based on what the insights suggest.

Example: Based on the insight regarding the commission structure, the HR department collaborates with the sales leadership to revamp the incentive program. As a result, sales department turnover decreases by 50% over the next quarter, leading to improved team morale and sales performance.

### 2.2. Type of Data

Data comprises pieces of information used for analytical purposes. In the realm of workforce analysis, two primary categories of data are employed: qualitative and quantitative data. The most notable distinction between them lies in the fact that quantitative data revolves around numerical values.

### 2.2.1. Quantitative Data:

Quantitative data refers to raw numbers and unprocessed counts that are inherently measurable and can be used for statistical analysis. This type of data is objective and can often be expressed in units or numerical values.

Example: An HR department records that 80 employees attended a workshop, 30 submitted feedback forms, and the average score given was 4.2 out of 5.

### 2.2.2. Qualitative Data:

Qualitative data consists of unstructured or semi-structured information such as observations, interview transcripts, and notes that capture experiences, emotions, and impressions. This data is subjective and rich in detail, providing depth rather than numerical analysis.

Example: During the workshop, an HR specialist takes notes on participant engagement, collects verbal feedback, and observes non-verbal cues, documenting comments like "the session was engaging" or "the content was too advanced."

|              | Data                                        | Analysis                                                          | Methods                                                                             |
|--------------|---------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Qualitative  | Focuses on opinions, attitudes, and beliefs | Asks and replies to questions of: Why? Would? How?                | Focus group discussions and in-depth interviews with employees                      |
| Quantitative | Focuses on data and hard numbers            | Asks and replies to questions of: How many? Who? Where How often? | Surveys and data tracking forms, such as satisfaction, salary, and turnover reports |

In human resources (HR), qualitative information includes surveys, interviews, and academic literature, while quantitative data consists of statistics and figures pertinent to HR research. HR data analysts collect qualitative data to understand employee morale and organizational issues, whereas quantitative data is used for statistical analysis and benchmarking. HR departments research industry salaries, healthcare benefits, and employee opinions to identify trends and improve practices. Recruiters use this data to maintain competitive compensation packages, while HR researchers use quantitative methods to spot hiring trends and qualitative surveys to gauge employee satisfaction.

Quantitative research in HR aims for objective fact analysis, reducing bias, while qualitative research seeks deeper understanding through stakeholder perspectives. Quantitative studies focus on isolating variables to find correlations, using controlled conditions, whereas qualitative studies take a holistic approach within a natural setting. The combination of both research types enhances validity and reliability, addressing a wider range of internal validity challenges.

HR uses both data types for performance analysis and to resolve personnel issues. Qualitative data uncovers the root causes of workforce challenges, and quantitative data, like attendance and production reports, identifies specific problems. Workplace safety officers also rely on quantitative data to reduce risks, combining it with qualitative insights for a fuller picture of workplace dynamics.

### 2.3. Essentials of Data Analytics

In data analysis, there are several ways to describe a data set:

2.3.1. Mean: The average, calculated by adding all values and dividing by their number. For instance, if three employees earn \$1, \$2, and \$1000, the mean salary is \$334.33.

2.3.2. Median: The middle value in an ordered set. If odd-numbered, it's the central number; if even-numbered, it's the average of the two middle numbers. In the example of salaries \$1, \$2, and \$1000, the median is \$2.

2.3.3. Mode: The most frequently occurring value. If multiple values occur equally, it's bimodal or multimodal; if all values occur equally, there is no mode. For example, in a town where most earn a minimum wage but one person earns millions, the mode would be the minimum wage.

2.3.4. Range: The difference between the highest and lowest values. For example, if pharmacists earn between \$83K and \$133K, the range is \$50K.

2.3.5. Percentile: Indicates the percentage of data below a certain value. Scoring at the 75th percentile means performing better than 75% of the group.

2.3.6. Quartiles: Divide data into four equal parts. For example, in a dataset of hourly customer counts (3, 6, 7, 7, 8, 8, 9, 10, 12, 12, 15), the lower quartile is 7, median (second quartile) is 8, and upper quartile is 12.

### 2.4. Reporting

HRIS data is vital for decision-making, with HRMS providing essential reporting tools. Standard HRMS reports, like employee birthdays and compliance data, offer a static

snapshot, requiring updates as data changes. Additionally, HRMS supports ad hoc report creation for customized analysis, tailored to specific organizational needs.

Beyond static reporting, HRMS incorporates advanced analytics reporting:

2.4.1. Descriptive Analytics: These reports provide an overview of current HR data, such as headcount or turnover rates, presenting a clear picture of the current HR situation.

2.4.2. Diagnostic Analytics: This involves deeper analysis of HR data to understand causes and patterns, like identifying reasons for high turnover in a particular department.

2.4.3. Predictive Analytics: This type of reporting uses historical data to forecast future trends, such as predicting future staffing needs based on current trends.

2.4.4. Prescriptive Analytics: These reports suggest potential courses of action, like recommending training programs to address skill gaps identified through predictive analytics.

These reporting tools range from basic data summaries to advanced analysis, enabling HR professionals to make well-informed, strategic decisions.

## 2.5. Data Integration

Data integration in HR involves consolidating data from various sources to enhance decision-making. This process encompasses databases, metrics, data warehouses, business intelligence (BI), and analytics.

2.5.1. Database: The quality of an organization's decisions hinges on its database's robustness. A well-structured database is crucial for generating meaningful information.

2.5.2. Metrics: In HR, metrics are measurements derived from HR data that indicate company performance. These metrics vary based on an organization's specific priorities and objectives, such as evaluating the hiring process's effectiveness.

2.5.3. Data Warehouses: HR metrics often originate from a data warehouse, a type of database optimized for analysis and reporting. Data warehouses are vital for management's decision-making, serving as repositories for extensive data.

2.5.4. Data Mart: A data mart is a focused segment of a data warehouse that concentrates on a specific business area or department within an organization. In HR, a data mart could be dedicated to a particular aspect of HR, like employee performance,

benefits, or recruitment data. It's essentially a subset of the data warehouse, tailored to meet the specific needs and queries of the HR department. By isolating this data, HR professionals can more efficiently access and analyze information relevant to their specific area of interest, leading to quicker and more targeted decision-making.

2.5.5. Business Intelligence (BI): BI involves technologies and applications for creating data warehouses and analyzing data. It integrates data from multiple sources, including legacy systems, into a new database. BI systems facilitate data mining, identifying patterns in large datasets, and provide tools for distributing information in various formats, including executive dashboards.

2.5.6. Analytics: Analytics involves manipulating and combining metrics to gain insights for problem-solving and decision-making. It includes examining graphs and charts to interpret their implications for business outcomes. Effective analytics depend on reliable data, linking the importance of accurate metrics to insightful business decisions.

In summary, data integration in HR encompasses collecting and processing data from various sources into a unified system, enabling organizations to derive meaningful insights and make informed decisions.

### **3. Human Resource Information System (HRIS)**

The Human Resource Information System (HRIS) is a comprehensive system used to collect, store, and analyze data about an organization's human resources. It extends beyond just the technical aspects of hardware and software, encompassing the people, policies, procedures, and data needed for effective human resources management. A functional HRIS integrates these elements, facilitating the management of human capital and the operation of its technical components.

HRIS serves as a tool for acquiring, storing, manipulating, analyzing, and distributing human resource information. It supports various uses, such as strategic planning (like forecasting staffing needs in mergers), legal compliance (identifying hiring discrimination), evaluating HR policies (assessing training program effectiveness), and aiding daily operations (monitoring employee attendance). Accuracy, timeliness, and usability of data and reports are crucial for its diverse users.

Historically, HRM was one of the last functions to be automated due to its complexity and data intensity. However, with advancements in information systems and the Internet, most HRM processes are now computerized, enhancing administrative and operational efficiency by reducing costs and time.



HRIS serves multiple administrative purposes, addressing challenges in information management, recruitment, training, performance tracking, and cost management. Organizations typically develop two types of HRIS: One focuses on replacing administrative tasks, enhancing efficiency and reducing staffing needs, sometimes even aiding in downsizing. The other type, centered around organizational reengineering, optimizes HR processes and often includes interactive tools and web applications for better employee-manager engagement and communication.

### 3.1. Benefits of HRIS

HRIS offers a range of benefits that enhance organizational efficiency and competitiveness:

3.1.1. Unified Information Source: HRIS acts as a single, comprehensive database, connecting various units and activities, and speeding up information transactions. This integrated view helps maintain a customer-focused approach by ensuring total customer satisfaction.

3.1.2. Enhanced Competitiveness: By improving HR operations and management processes, HRIS increases an organization's competitive edge.

3.1.3. Improved Decision Making: The system collects relevant data and transforms it into actionable information and knowledge, enhancing the timeliness and quality of decisions.

3.1.4. Diverse and Accurate Reporting: HRIS enables the production of a wide variety of real-time, accurate HR-related reports.

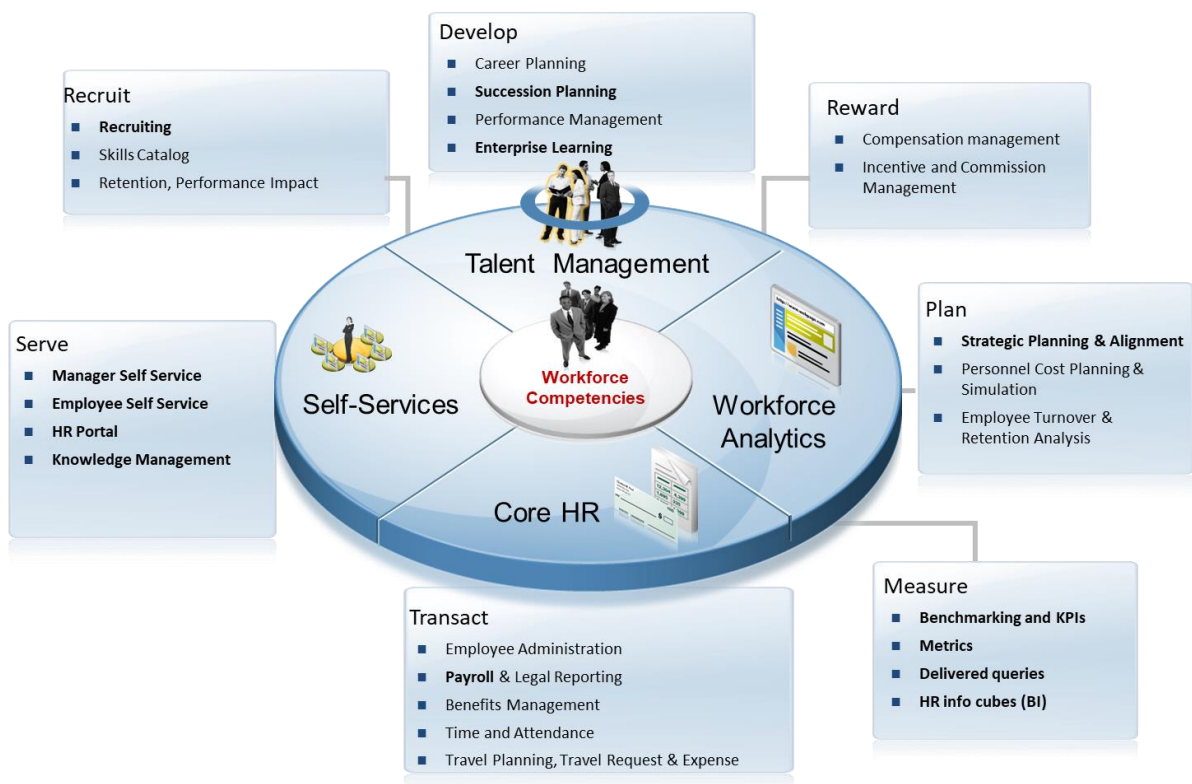
3.1.5. Streamlined Administrative Functions: It streamlines HR functions, making them more efficient and effective.

3.1.6. Strategic HRM Focus: HRIS shifts HR's role from transactional processing to strategic management, reengineering HR processes and functions.

3.1.7. Employee Satisfaction: By delivering HR services more quickly and accurately, HRIS improves employee satisfaction.

The potential of HRIS varies based on factors like organizational size, top management support, resource availability, the company's HR philosophy, vision, culture, and the willingness of employees to embrace change.

HRIS also offers both tangible benefits (like payroll efficiencies and reduced labor costs due to automation) and intangible benefits (such as increased employee satisfaction and strategic focus in HR). Additionally, HR practices play a crucial role in overcoming the rigidity associated with enterprise resource planning (ERP) systems. HRM's focus on knowledge management, human capital, and relationship building aids in implementing and using ERP systems, ensuring organizations realize their strategic benefits. Therefore, the active involvement of HR professionals in ERP introduction and operation is vital.



### Human Resource Information System (HRIS)

Source: SAP HCM Solution

### 3.2. Types of HRIS

There are multiple typologies for the classification of computer-based systems; however, we are going to define the most basic types of systems and then apply them to their development and use within an HRIS. One of the earliest books in the field of computer-based systems placed systems under three basic categories: Electronic Data Processing (EDP), Management Information Systems (MIS), and Decision Support Systems (DSS). EDP is primarily electronic storage of information and was first applied to automate paperwork.

3.2.1. EDP focuses on the operational aspects of HR like data storage and processing transactions. For example, EDP would automate employee timekeeping and payroll processing. An organization uses an EDP system to manage employee attendance records. The system automatically records when employees clock in and out, processing this information for payroll purposes.

3.2.2. MIS steps up to assist middle management with structured information flow and integration by function, such as maintaining databases for recruitment and compensation. A company's MIS system could be used by HR managers to track the status of job candidates throughout the recruitment process. It integrates data from various sources, like interview scores and application details, to help in selection decisions.

3.2.3. DSS caters to higher management by supporting decision-making with flexibility and adaptability, such as analyzing potential outcomes of different workforce planning scenarios. For DSS, an executive might use the system to simulate different staffing scenarios based on market forecasts. This could help determine the impact of hiring additional staff in a new regional office on the company's budget and revenue projections.

### 3.3. Core HR

There are at least thirteen common human resource information subsystems.

#### 3.3.1. Recruitment and Selection

The recruitment and selection system ensures that the list is current all the time and can be viewed by a prospective applicant anytime; generates various statistics like jobs with high turnover and the average time it takes to fill a vacancy; and tests and evaluates candidates' personality, knowledge, and skills at different company locations.

#### 3.3.2. Personnel Administration

The personnel administration subsystem warehouses information about employee names, birth dates, service dates, race, sex, salary, department code, job code, location code, and employment status.

#### 3.3.3. Time, Labor, and Knowledge Management

The time, labor, and knowledge management subsystem tracks and identifies work schedule patterns, absenteeism, and tardiness, allocates resources, and determines procedures to administer either time-related or knowledge-related tasks or functions

based upon an employee knowledge profile.

#### 3.3.4. Training and Development

The training and development subsystem provides programmed instructions and self-paced training to employees; plans classes, sets up training schedules, organizes training courses' activities, and collects fees; and tracks the developmental plan of each employee within the company and their learning progress.

#### 2.3.5. Pension Administration

The pension administration subsystem streamlines plan set-up, record keeping, pension calculations, and retiree payments and statements.

#### 3.3.6. Compensation and Benefits Administration

The compensation and benefits administration subsystem provides information on flexible and non-flexible healthcare plans, short and long-term disability plans, savings plans, retirement plans, pension plans.

#### 3.3.7. Payroll Interface

The payroll interface subsystem streamlines payroll and accounting by providing data on salary, wages, and benefits.

#### 3.3.8. Performance Evaluation

The performance evaluation subsystem aids management with periodic evaluations of employees. This subsystem performs multiple review functions including auditing and analyzing employee competency; analyzing the congruence between employee performance and organizational objectives; and measuring and monitoring the employer's learning progress and performance.

#### 3.3.9. Outplacement

The outplacement subsystem provides support information for discharged or displaced employees such as links to self-help books, career counselors, and training programs on job search techniques, resume development, interviewing strategies, and negotiating salary.

#### 3.3.10. Labor Relations

The labor relations subsystem includes information about work policies on privacy, sexual harassment, and workforce diversity.

### 3.3.11. Expense and Travel Administration

The expense and travel administration subsystem facilitates and automates employee reimbursement for business expenditures on travel, entertainment, and supplies.

### 3.3.12. Organizational Management

The organizational management subsystem provides information about all job positions in a company, their hierarchy, and job descriptions; generates decisions on employee hiring, promoting, transferring, retiring, and firing; and reporting requirements of various employment laws.

### 3.3.13. Health and Safety

The health and safety subsystem provides information about the federal, state, and local health and safety regulations relevant to the organization or workplace as well as information on the company's safety record, injury/illness prevention plan, safety compliance procedures, and worker compensation.

Numerous organizations have shifted the responsibility of updating employee records from human resource staff to the employees themselves. Self-service systems require less direct management and more technological oversight and support. Web-based HRIS allow for global access for telecommuting and traveling employees. Common self-service web-based HRIS applications include Personal Information, Banking Information, Benefits Inquiries and Open Enrollment, Time Entry and Time Off, Cross Application Time Entry, Travel Expenses, Electronic Pay-stubs, Organization Directory, Employment and Salary Verification, Training Overview and Enrollment, and Change Password.

## 3.4. Self-Services

Technology in HR enables self-service for both managers and employees, typically known as Manager Self-Service (MSS) and Employee Self-Service (ESS). These are divided into informational and transactional categories.

### 3.4.1. Informational Self-Service

This category provides employees with access to HR-related information, like policies and benefits. It's purely for reference and does not allow for transactions. These systems, also part of "Knowledge Management," are crucial in both centralized and decentralized HR models, especially when HR services are outsourced.

### 3.4.2. Transactional Self Service

This allows employees and managers to update personal and job-related information directly in the HRIS. Employees can change their address or tax details, while managers can process job changes or promotions. MSS tools also support performance and compensation management. Both ESS and MSS often utilize workflow technology to route changes for approval, ensuring the integrity of the data.

### 3.4.3. HR Portals in Self-Service

Portals consolidate HR information and services into a single accessible online location, typically on an intranet or internet platform. They personalize content based on the employee's role and permissions and often feature single sign-on capabilities, streamlining access and reducing the need for multiple passwords. Portals also centralize the distribution of information like corporate policies, ensuring consistency across the organization.

The benefits of HR self-service include improved accuracy, process consistency, and reduced time spent by HR professionals on administrative tasks.

## 3.5. Knowledge Management System

Knowledge Management (KM) is the umbrella term for the management of unstructured information - that is, all kinds of documents. KM can be defined as the process of capturing, distributing and using knowledge effectively. In order to effectively share an organization's information assets (think: policies, procedures but also expertise and experiences), that knowledge needs to be identified, captured, evaluated and easily retrieved.

Knowledge Management Systems (KMS) organize and share information to enhance business operations. Today, KMS are crucial for efficiency and productivity in businesses, acting as a hub for data storage and retrieval globally, around the clock.

### 3.5.1. Understanding Knowledge Management Systems:

KMS facilitate the creation, organization, sharing, and application of information to refine decision-making across various business domains, from sales and marketing to operations and finance.

Example: To analyze customer product usage, a KMS consolidates data for analysis. For supply chain efficiency, it monitors inventory and product availability.

### 3.5.2. Significance of Knowledge Management Systems

KMS allow companies to comprehend customer needs and market dynamics, leading to more informed product and service decisions. They simplify information sharing with employees and customers, fostering innovative solutions. KMS also support recruitment and retention by housing a repository of employee skills and qualifications.

### 3.5.3. Three Key Types of Knowledge Management Systems

*Enterprise-wide KMS:* Utilized by large, geographically diverse organizations to centralize data, aiding in collaboration and compliance, and providing a unified source of truth.

*Knowledge Work Systems:* They provide immediate, relevant information to employees, streamlining their tasks and reducing the need for individual data searches. Tools like calendars and task managers exemplify KWS by helping employees manage daily responsibilities.

*Intelligent Techniques:* These automate tasks using technologies like AI to improve speed and efficiency, such as in mass email distribution.

### 3.5.4. Key Components of a Knowledge Management System

*Knowledge Workers:* These are the experts and contributors within an organization who provide valuable insights. For instance, a software developer who optimizes system efficiency or a recruiter who excels in sourcing candidates exemplifies knowledge workers, acting as the foundation of a KMS.

*Knowledge Repository/Base:* A centralized digital library where knowledge is stored, like a cloud-based platform housing project reports, manuals, and procedural documents.

*Content Management and Workflow:* Look for KMS software with user-friendly content creation tools. An example is a system with rich text editors and multimedia embedding capabilities, along with workflow features that enable collaborative editing and approval processes.

*Taxonomy:* A structured categorization system is essential. An example is an intranet with a categorized directory for finance, operations, and HR documents, making it easier for employees to find relevant information.

*Search and Retrieval:* A KMS should have robust search functions. An example would be

an intelligent search engine within the KMS that uses natural language processing to understand and retrieve relevant documents quickly.

*Analytics and Reporting:* Continuous updates and improvements are guided by KMS analytics. For example, a dashboard that tracks user engagement and gathers feedback on content utility helps in refining the knowledge base.

*Permission and Access Controls:* To maintain information integrity, it's crucial to manage who can publish or edit content. An example is a role-based access control system where only authorized personnel can modify official documentation.

### 3.6. Talent Management Systems

The systems that support the processes of onboarding, recruiting, performance management, compensation management, succession planning and learning management are commonly referred to as Talent Management Applications.

#### 3.6.1. ATS

Recruiting Applications, also known as Applicant Tracking Systems (ATS) or talent acquisition systems, support the process of sourcing and selecting candidates for open jobs. They include the creation of requisitions for the recruitment of a particular job and storing and tracking the résumés of applicants and can include screening of candidates via assessments. Recruiters can use search tools and queries to weed through the mountain of applications for a particular job. Hiring managers are presented candidates for their positions electronically.

Recruiting applications provide benefits on the compliance side as well. Tracking for Affirmative action purposes becomes streamlined. The total cost of sourcing and selecting candidates can be reduced with a recruitment management system. HRIS job and organizational information can be interfaced to the recruitment systems for consistency purposes.

#### 3.6.2. Onboarding

Onboarding refers to the process of hiring the employee into the organization. Applications that support this process include online self-service for new hire paperwork, drug screening, background checks, ordering of equipment (workstations, PC's, phone, company credit cards), and integration with security systems to establish an ID and access. Integration with a core HRMS automates setting up of the new hire in that system. Onboarding systems provide benefits to a company by reducing the



amount of time that it takes to bring an employee into the company, making them a more productive worker in less time and reducing the total cost of hire. Many recruiting systems include onboarding modules.

### 3.6.3. Performance Management

Performance Management refers to those applications that manage the process by which employee's performance is evaluated. These applications can support annual, as well as more frequent review cycles, and they typically include a process for the setting of goals for the organization and the individual. As a result the individual's goals are aligned with the organization goals. These systems include the ability for an employee to perform online self-assessments, as well as manager reviews of their employees. Online automated confidential peer reviews (known as 360 assessments) can also be managed through these applications. These applications rely on the job and organizational management data in the HRMS to build goals of various organizational units and to establish workflow for management approval. These systems provide benefits to the company by eliminating paper-based manual processes, providing information for job and pay decisions and ensuring compliance of the performance management processes.

### 3.6.4. Competency Management

Competency Management provides the ability to create a set of competencies by job. Ideally the integration of the application will allow the sharing of competencies with performance management for the evaluation of an employee based on the competencies, compensation for the evaluation of jobs and to determine appropriateness of pay, career planning for the identification of career paths, and succession planning to identify successors to jobs based on competencies either demonstrated through a performance evaluation or those tied to previous jobs held. Learning management systems also use competencies for linkages to training activities.

### 3.6.5. Learning Management

Learning Management includes all of the functions around training employees. It includes establishment of courses and curriculum, scheduling of training events, delivering online training courses and tracking the training taken. It also supports the ability to prescribe learning plans based on the jobs a person is performing or career paths for them to pursue. These systems can provide hard dollar benefits to the organization by offering instructor-led training activities as online courses, eliminating the time and travel expenses associated with face-to-face training and the need for

instructors. Other benefits of online training include less time away from ones job and greater availability of training.

#### 3.6.6. Succession Planning

Succession Planning features the ability to assess an employee's fit for their current job, readiness to take on a new job and be potential successors for others. In an integrated suite, performance management and compensation data is included to provide a full picture of the employee's fit to current and future jobs. Oftentimes this is done in a graphical way using organizational charts. When integrated with a learning management system, a person can be given learning assignments to better qualify them for new job assignments.

#### 3.6.7. Compensation Management

Compensation Management refers to those applications that support the job and pay processes within the compensation department, as well as employee pay actions. Within the compensation department these applications support the processes surrounding job creation and evaluation. They include features such as online job descriptions, integration with salary survey providers, and establishment of pay ranges/bands for jobs and support of market pricing or point-based evaluation methods. These systems benefit a company by providing accurate and timely information for the compensation professional and management with regards to how to create and establish pay practices.

Employee pay actions are supported for merit pay, incentive pay and bonus payments. Typically these solutions allow for the provisions of salary plans that are tied to jobs. The employee participates in that salary plan by virtue of being assigned to the job.

Pay for performance processes, also known as merit increase, are typically automated in compensation management systems through manager self-service. Using information found within the core HRMS for job, pay and organizational structure, a manager can make pay actions on their employees. These systems allow for budget management within the merit process for determination and allocation of available budget. These systems eliminate the need for manual spreadsheet based processes, improve accuracy and eliminate the need for manual entry or complex interfaces to the HRMS for the reflecting of these pay actions.

### 3.7. Workforce Analytics

Workforce analytics, also called people or HR analytics, involves using data to create

metrics and analyze changes, distinguishing it from HR metrics, which are straightforward data reflecting HR outcomes.

3.7.1. Benchmarking: Initiated by the Saratoga Institute, benchmarking in HR metrics offers insights into human capital management. However, direct comparisons can be misleading due to varying HR functions across organizations.

3.7.2. Data Mining and Big Data: The rise of integrated HRIS and digital HR processes has increased interest in data mining, which identifies patterns in large datasets to enhance decision-making. Big Data analysis focuses on extremely large datasets from sources like web transactions to uncover customer preferences or process characteristics.

3.7.3. Predictive Analysis: Predictive analysis uses models to forecast outcomes and understand hypothetical changes. For example, linking job satisfaction to turnover rates can help HR suggest workplace improvements.

3.7.4. Operational Experiments: Part of evidence-based management, operational experiments involve making decisions based on organizational data rather than assumptions. Google, for instance, conducts experiments to determine the effectiveness of different ad wordings on its website.

3.7.5. Workforce Modeling: This involves predicting changes in human capital needs due to organizational changes, such as market shifts or mergers, necessitating human resources planning.

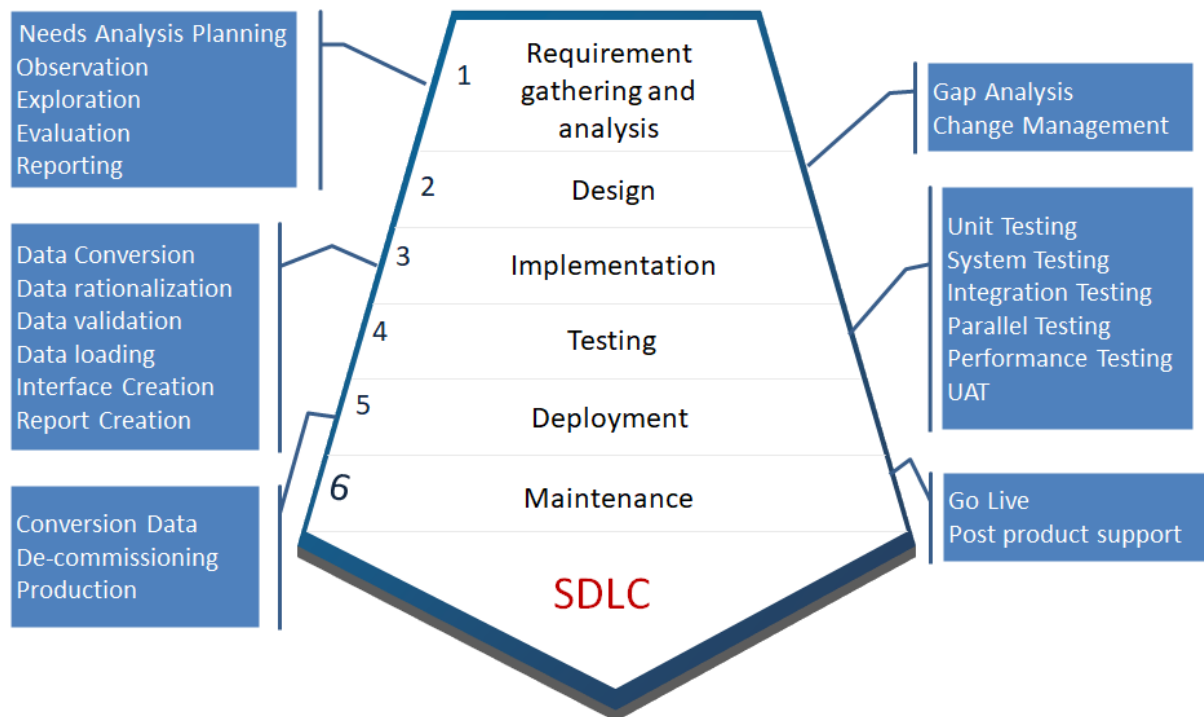
3.7.6. Strategic Realignment: Known as human resource planning, it focuses on long-term plans for strategic organizational changes, extending HR analytics to new situations like mergers or market expansions.

3.7.7. HR Reporting: In reporting HR metrics and analytics, understanding the audience's needs is crucial. Information should be relevant and comprehensible. Reporting can be via "push" (e.g., email) or "pull" methods (e.g., internal web postings). The goal is to increase organizational effectiveness, not just to generate reports or dashboards. Dashboards align real-time analysis of HR processes with organizational data aggregation.

#### **4. Development of HRIS**

From the engineering and information processing literature, the formal design of any information processing system is supposed to follow a set of steps labeled the System

Development Life Cycle (SDLC). However, the traditional SDLC is somewhat difficult to use as originally specified. But there is agreement that the SDLC has six general phases: (1) Requirement gathering and analysis, (2) design, (3) implementation, (4) Testing, (5) Deployment, and (6) maintenance.



#### 4.1. Requirement gathering and analysis

The process of gathering business requirements for developing or implementing an HRIS involves several key steps:

##### 4.1.1. Business Requirements Gathering

Project managers and stakeholders focus on understanding the system's users, their usage patterns, and the data inputs and outputs.

Meetings with managers, stakeholders, and users are conducted to clarify these requirements.

The validity and feasibility of these requirements are analyzed, leading to the creation of a Requirement Specification document.

#### 4.1.2. Needs Analysis

This involves understanding the current HR processes ('as is' state) and envisioning the future ('to be' state).

Techniques like interviews, surveys, and focus groups are used for the current state analysis.

Gap analysis compares the current HRIS state with the desired future state, identifying unmet needs and system requirements.

#### 4.1.3. Data Collection Techniques

**Interviews** can be structured or unstructured, gathering detailed insights about HR practices and processes.

**Questionnaires** efficiently collect structured data but may have limitations like lower response rates.

**Observations** in the actual work environment provide context-specific information.

**Focus groups** bring together representatives to discuss HRIS-related topics, fostering effective information sharing.

#### 4.1.4. Evaluation

Data collected are reviewed and assessed to understand current and desired processes and issues.

The project team then reviews this data for further insights, noting any redundancies or gaps.

Data are organized and prioritized based on importance and urgency.

#### 4.1.5. Reporting

This final stage involves summarizing the findings and presenting recommendations for the design phase.

The report outlines current systems and processes, along with potential improvements offered by a new system.

A formal requirements definition is included, specifying solutions for identified problems and new functionality needed.

#### 4.2. Design

During the system design phase of implementing an HRIS, the focus shifts from understanding requirements to detailing the system's architecture and specifications. This phase transforms requirement specifications into a comprehensive design, outlining both hardware needs and the overall system structure. Key activities in this phase include:

4.2.1. Translating Business Requirements: The system's functionality is mapped out to align with the identified business needs. Subject Matter Experts (SMEs) and Functional Product experts collaborate to configure the system to meet these requirements.

4.2.2. Addressing Gaps: A crucial step is identifying any gaps where standard configurations don't meet business needs. Lists of these gaps are created to ensure they are subsequently addressed.

4.2.3. Establishing Reporting Requirements: This stage also involves defining the requirements for system reporting, ensuring that the system can generate the necessary data and insights for effective HR management.

4.2.4. Impact Assessment: An impact assessment is conducted to understand the changes brought about by the new system and processes. This assessment is crucial for anticipating and managing potential disruptions.

4.2.5. Change Management Planning: Based on the impact assessment, a change management plan is developed. This plan is designed to prepare the organization for the upcoming changes, ensuring a smooth transition to the new system.

#### 4.3. Implementation

In the build phase of HRIS implementation, system design documents are transformed into functional code and configurations, marking the most extended phase of the software development lifecycle. This phase involves:

4.3.1. Modular Coding: The development work is split into modules or units, with coding being the primary focus for developers. This includes configuring the application, creating reports, and developing interfaces and conversion programs.

4.3.2. Phased Design and Build: While each design task needs completion before the corresponding build task, the entire design phase doesn't need to be finished to start building. To expedite delivery, build tasks often begin immediately after their design counterparts, running concurrently.

4.3.3. Data Conversion: This involves moving data from existing sources (like old systems or spreadsheets) to the new HRIS. Steps include data rationalization (ensuring data compatibility with the new system), validation (checking data accuracy), and loading (inserting data into the system).

4.3.4. Interface Creation: Building interfaces for data exchange between the new HRIS and other systems is a significant aspect of this phase. This may involve modifying existing interfaces or developing new ones.

4.3.5. Report Creation: Developing custom reports identified during requirements gathering is crucial. Testing these reports with sufficient data ensures they function correctly when the system goes live.

#### 4.4. Testing

After development, the HRIS code undergoes thorough testing against initial requirements to ensure it meets the identified needs. This includes various types of testing to validate both functionality and technical performance.

4.4.1. Unit Testing: This technical test evaluates each program independently, confirming its integrity before integrating it into the broader system.

4.4.2. System Testing: Conducted by both functional and technical teams, this stage tests individual programs within the system environment using a sample of data. It ensures that programs not only work in isolation (as verified in unit testing) but also deliver correct results within the system.

4.4.3. Integration Testing: Here, the focus is on how programs and processes function together in an end-to-end test, often with more data than in system testing. This stage checks for any discrepancies that may arise when components interact within the full system.

4.4.4. Parallel Testing: A practical test, particularly for applications like payroll, where processes are run in both the current and new systems to compare outputs. This helps verify that the new system delivers matching results.

4.4.5. Performance Testing: This technical test assesses whether the application performs at satisfactory levels in terms of online response and background processing.

4.4.6. User Acceptance Testing (UAT): The final phase of functional testing, where Business Functional Experts test the application against their requirements. The goal is to formally approve the system, confirming that it is ready for production.

#### 4.5. Deployment

Once testing is successfully completed, the HRIS product is delivered and deployed for customer use, a stage commonly referred to as "Go Live". This critical phase involves preparing the application for active, operational deployment. Key activities in this phase include:

4.5.1. Staging of Conversion Data: This involves finalizing and loading the conversion data into the system before it goes live. It ensures that all necessary data is accurately transferred and functional within the new environment.

4.5.2. De-commissioning of Old Systems: Often, the new HR system replaces older ones. As part of the transition, these older systems must be deactivated, including stopping any interfaces that interact with them.

4.5.3. Preparing the Production Environment: The IT team plays a vital role in readying the production environment for the new software. This preparation typically follows a comprehensive "go-live checklist" provided by the IT department or vendor, ensuring that the database, operating system, network components, and job scheduling systems are set up and ready for the new system's deployment..

#### 4.6. Maintenance

After the HRIS goes live and customers begin using the system, they may encounter issues that need resolution. This phase, known as maintenance, involves the project team providing ongoing support for the newly implemented system.

During this critical post-live period, the project team ensures that the system operates as intended in the production environment. They address any problems that arise, ensuring a smooth transition for users. This support phase typically lasts for a predetermined period, often ranging from four to six weeks, depending on the company and the project's complexity.

After this initial support period, the responsibility for the system's upkeep and



troubleshooting is handed over to the operations team and designated application owners. The transition marks the end of the project team's direct involvement, as the system becomes a regular part of the organization's operational infrastructure.

The HR department can adopt the principles and stages of the traditional Software Development Life Cycle (SDLC) for HRM functions. The development of an HRIS encompasses various stages, from initial consideration of computerizing HR functions through to analysis, design, development, implementation, maintenance, evaluation, and enhancement.

While the traditional SDLC, often termed as the waterfall model, follows a linear and sequential approach, the agile development method offers a more flexible and iterative process. Agile focuses on people-centric operations and relies on continuous feedback and regular testing, rather than extensive upfront planning, to guide software evolution. Two crucial aspects to note in both the waterfall and agile approaches are:

***Initiation of the Process:*** The system development process starts when an organization first considers digitizing its HR functions. Documenting this initiation is vital for future evaluations and maintenance, ensuring a comprehensive understanding of the system's evolution.

***Continuous Evaluation and Improvement:*** Ongoing assessment and enhancement of the system are essential. This should not only happen post-implementation but also at every development stage. The effectiveness of these evaluations relies heavily on detailed documentation of the entire development process. Thorough documentation from planning to development is a key factor in successful system implementation and ongoing improvement.

## 5. Selection of HR Tech Vendors

Human Resources technology is constantly evolving, with AI-driven advancements offering automated workflows and valuable insights. However, the diverse range of tools available and their compatibility with specific organizational needs makes selecting the right HR software challenging. To navigate this, consider the following steps:

### 5.1. Assess Your HR Needs

Understand where your organization is struggling, whether in compliance, recruitment, or employee data management. An Applicant Tracking System (ATS) might be essential for efficient candidate processing, while a Human Resources Information System (HRIS)

could better manage employee data and payroll.

- Conduct internal audits of current HR processes.
- Identify areas where technology can improve efficiency.
- Involve HR team members in discussions to pinpoint specific needs and challenges.

#### 5.2. Systematic Vendor Comparison

Use a spreadsheet to list essential features and compare vendors systematically. Focus on must-have features rather than being swayed by extra offerings.

- Create a comparison chart listing essential features for each vendor.
- Score vendors based on how well they meet these criteria.
- Prioritize features based on your organization's specific needs.

#### 5.3. Industry-Specific Expertise

Seek vendors with a proven track record in your industry. Request case studies and references to gauge their effectiveness in similar-sized companies.

- Request case studies or examples of the vendor's work with similar organizations.
- Ask for a list of current clients in your industry and reach out to them for feedback.

#### 5.4. Gather Unbiased Reviews

Look beyond vendor presentations to independent reviews and feedback from HR communities. Pay particular attention to feedback from organizations similar to yours.

- Research independent reviews from third-party websites.
- Join HR forums or online communities to get unbiased opinions.
- Consult with industry peers about their experiences with different HR software.

#### 5.5. Test Before Committing

Experience the software firsthand through demos and free trials. Involve multiple HR team members in testing and create an evaluation system for a thorough comparison.

- Schedule demo sessions with the vendors for a hands-on experience.

- Engage multiple team members in the trial to get diverse feedback.
- Set specific tasks or scenarios to test during the trial period.

#### 5.6. Check for Software Integrations

Ensure the new software can seamlessly integrate with your existing systems to maintain efficiency.

- List your existing software and check for compatibility with the new HR system.
- Ask vendors about integration capabilities and any associated costs.

#### 5.7. Scalability

Consider how the software can grow with your organization. Evaluate future scalability and the costs associated with scaling up.

- Discuss your long-term business goals with vendors to understand scalability options.
- Evaluate the costs of scaling up the software as your organization grows.

#### 5.8. Customer and Compliance Support

Research the vendor's customer support quality and their compliance with data security regulations like the EU's General Data Protection Regulation (GDPR).

- Inquire about the vendor's customer support hours, channels, and response times.
- Verify the vendor's compliance with data security and privacy regulations.
- Ask for evidence of how they handle data breaches and security updates.

#### 5.9. Consider All Costs

Look beyond initial costs to understand ongoing fees and potential hidden charges. Consider maintenance and upgrade expenses.

- Request a detailed breakdown of all costs, including set-up, maintenance, and upgrades.
- Ask about any additional fees for extra features or user licenses.
- Factor in internal costs, such as training and IT support.

### 5.10. Trust Your Judgment

After narrowing down your options, trust your instincts. The vendor you are naturally inclined towards, and which aligns well with your needs, is likely the right choice.

- After thorough research, weigh the pros and cons of each option.
- Discuss with your team to gauge collective instincts.
- Make a decision based on a combination of evidence.

## 6. Managing HR Tech Projects

When implementing HR tech solutions, applying project management skills and principles is crucial for streamlining processes and achieving goals. Effective project management in HR tech implementation can:

- Manage budgets, timelines, and human resources efficiently.
- Facilitate the attraction and recruitment of new talent through streamlined systems.
- Enhance communication with employees and stakeholders regarding new technology.
- Plan and execute training programs for the new HR tech solutions, ensuring smooth adoption.
- Develop change management plans to help employees adapt to new systems.

Agile HR methods, typically used in project and software development, are also beneficial in HR tech implementation. This approach allows HR professionals to quickly adapt to changes and challenges during the implementation process. Agile HR focuses on flexibility and responsiveness, essential for adapting to workforce dynamics and meeting evolving needs during tech implementation.

This agile framework is particularly effective in managing the complexities of HR tech solutions, ensuring that the workforce can quickly adjust to new systems and that the organization can respond promptly to feedback and necessary adjustments.

Project management in HR encompasses five key stages, each with distinct objectives and actions. These stages with an example of managing an HR project to develop a new employee training program as below:

### 5.1. Initiation

Objective: Define the project's primary goals and assess resource availability.

Example: The goal is to create an innovative employee training program to enhance skills and boost productivity. This stage involves identifying the need for the program, its expected outcomes, and assessing available resources like budget, personnel, and materials.

## 5.2. Planning

Objective: Outline specific tasks, establish a timeline, create a budget, and allocate resources.

Example: Break down the project into tasks like curriculum development, trainer selection, materials preparation, and scheduling. Create a budget for resources such as trainers, materials, and venues. Set a timeline for each task and assign responsibilities to team members.

## 5.3. Execution

Objective: Actively work on and complete the planned tasks.

Example: Begin implementing the plan by developing training materials, hiring trainers, and organizing training sessions. Regular team meetings ensure that each component is progressing as scheduled.

## 5.4. Control

Objective: Monitor progress, manage the team, and track task completion.

Example: The project manager oversees the training program's development, ensuring milestones are met and addressing any issues. They track the progress against the timeline and budget, making adjustments as needed.

## 5.5. Close

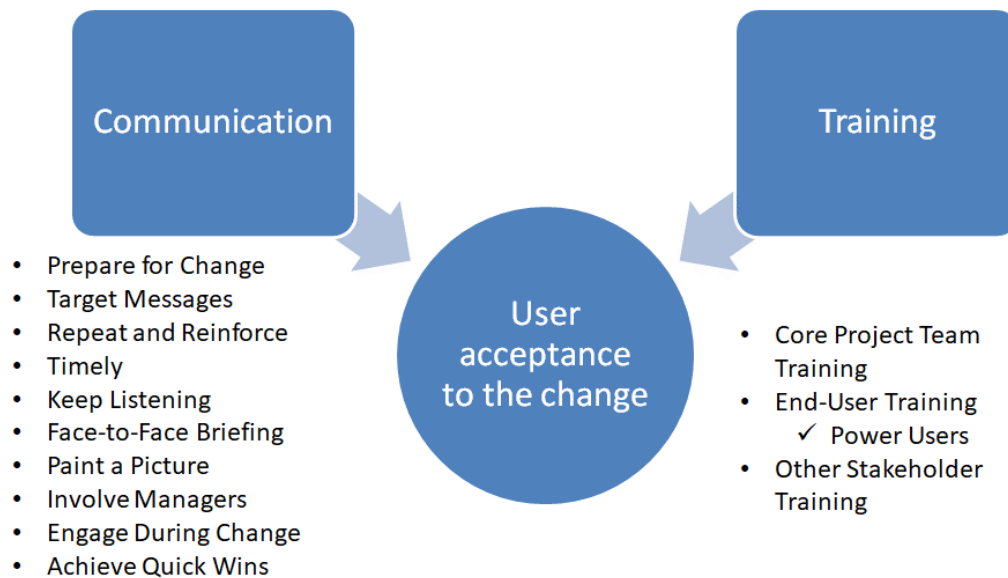
Objective: Finalize the project, deliver the output, and evaluate performance.

Example: Launch the training program and then review its development process. Each team member reflects on their performance, and the group collectively evaluates the project's successes and areas for improvement. Lessons learned are documented for future projects.

# 6. Change Management

Every systems implementation project involves a great deal of change. Not only do the

business users and technical support teams need to learn a new system, they often need to learn processes as well. While the project may be improving the way in which work gets done, not all users will welcome the change. Some users will be resistant to change and, conversely, there will be those who welcome change. The challenge is to manage the expectations of both groups.



## 6.1. Training

Ongoing, effective training is essential in any change management initiative, particularly when new technology and work processes are involved. At the beginning of the project, a training plan should be developed. This plan should include a complete assessment of the current skills and future requirements for all who will be affected by the change.

Training people in the context of a systems implementation includes teaching them how to use a new process and a new system. Without proper training, the project team, end users and management will not be able to understand how to work in the new way. This can jeopardize the success of the implementation through lack of adoption and the continuation of those manual processes and workarounds the system was implemented to replace.

### 6.1.1. Core Project Team Training

The core project team is the first group of people that need to be trained on the application. While the implementation may have experienced consultants to assist, the sooner the internal team has an understanding of how the application works the more

productive each team member will be and the less reliant on consultants.

Ideally have the core project team attend training before the build phase of the project. Minimally have this team trained before the testing phases of the project. Typically they will attend training provided by the software vendor that is generic to the product. It is possible to arrange some customized training for a larger project team that has specific training needs.

#### 6.1.2. End-User Training

The people that will be using the application on a regular basis need to be trained before the system goes live. It is best to time this as close to the go live as possible as retention of the training is compromised when one cannot immediately use what they have been taught. End users need to be taught not only on how to use the system but also on the new processes.

Ideally, create custom training for the end users. This will be tailored to reflect the business processes and configuration of the product. User training should also be limited to only those processes the specific user performs. Tailored training will increase the likelihood of adoption and acceptance of the new system and process.

Involving “power users” can be an effective training technique. Organizations may use individuals who adapt to the new technology quickly to provide one-on-one on-the-job training to those who do not learn the system as rapidly.

#### 6.1.3. Other Stakeholder Training

There are always those persons who are not regular users of the system, but are owners of the processes the system supports or may be casual users of the application. It is important that these interested parties have training on the new system and processes, BUT NOT at the expense of the end users. While these people tend to have more clout in the organization, they are not the priority audience for training. Oftentimes these people will be satisfied with a demonstration of the new system instead of attending formal training. The key for this audience is to balance their need to know and the overall project training objectives.

One common error is providing too detailed training too early in the learning process. If training is provided too early, users will not retain the material. Additionally, advanced training should be provided in phases, as users become accustomed to performing routine tasks. Training should also be provided in new employee

orientation programs.

## 6.2. Communication

Effective change communication can make the difference between success and failure of an HRIS implementation project. No matter what kind of change initiative an organization's leadership may desire, the change won't be successful without the support and commitment of a majority of its managers and employees. Getting people "unstuck"—that is, getting them to not only embrace the vision but also change their beliefs and thinking to move in the new direction—is a huge communication challenge.

Communication plays a vital role in the success of change programs. It is difficult to engage everyone based only on communication alone, however. Ideally, people must participate in the process from beginning to end. If the sentiment is that the change is imposed from the top, then gaining commitment will be tough. The following 10 tips can help you communicate through times of change.

### 6.2.1. Prepare for Change

Constant change has almost become a norm, so challenge the status quo regularly to help employees become aware of the need for change, either now or in the future. Use staff quizzes to challenge the current situation. This is an example of a question you might include: "In our changing industry, which will be the most effective way to do business in the future? A, B or C?" To ensure high employee participation, use a quiz format that is delivered directly onto targeted employee's computer screens with display recurrence options based on the user's response.

### 6.2.2. Customize and Target Messages

Avoid a 'one size fits all' approach to communicating change. During organizational change it is particularly important to customize and target messages to meet the needs of the different employee groups within your organization.

### 6.2.3. Repeat and Reinforce

Use multiple message formats and repeat important concepts to drive and reinforce behavior change.

### 6.2.4. Ensure Change Communications are Timely



Fast and effective message cut-through. Use Desktop Alerts as an effective way to draw employees' attention to important or urgent messages.

#### 6.2.5. Listen and Keep Listening

Gauge employee attitudes to change - Survey employees to gauge their attitudes towards organizational changes and assess how well they understand them.

Keep your finger on the pulse - Survey employees regularly as a temperature check and test that your change strategies are working every step of the way. Target dedicated surveys to specific groups of staff (e.g. to check whether you are making progress with a resistant group).

Collect feedback and report on it - Include a section in the internal newsletter or a feature on the intranet called "Great feedback we're working with". Highlight how you are using staff's constructive comments to improve the business and the way you manage and communicate change.

#### 6.2.6. Provide Face-to-Face Briefings

Encourage employees to attend face-to-face briefings, as this gives them opportunities to express their point of view. Be flexible with times and venues; it may be difficult to get everyone in a room at the same time.

Reinforce face-to-face executive communications - Encourage staff to ask questions and raise issues both before and after face-to-face briefings. This will help managers address concerns and employees to buy into changes.

Measure and manage information cascade - Measure how well your managers are communicating change with their teams. Use surveys and polls to understand how well each employee understands the main messages about the change and link the survey results back to individual managers as a measure of communications effectiveness. What gets measured usually gets focus and priority.

#### 6.2.7. Paint a Picture of the Future

Tell Stories - Include articles in the internal newsletter or on the intranet to show how employees are modeling new values or putting in place new strategies. If possible, allow them to submit their stories directly.

Digital signage on screensavers - Pictures paint a thousand words. Use interactive

screensaver messages for change communications and to portray a positive picture of where the organization and its products are headed. Broadcast them around your organization to capture employee's imagination in an appealing, visual way.

Scenario quizzes - Help employees visualize the change working for them. Ask scenario questions. For example, "The new XYZ technology will help me do A, B, C, or D or all of the above?" Offer prizes to encourage staff to take part. Include humorous or trick questions and answers to lighten the tone and make the staff quiz fun.

#### 6.2.8. Make it Easy for Managers to Communicate Change Effectively

Provide advance notification - Ensure managers are fully briefed prior to their teams being notified of change. Allow sufficient time for them to plan their response, including a FAQ sheet.

Regular updates via scrolling desktop ticker - Give administrator rights to Team Leads so they can create and publish news feed tickers featuring the latest, accurate (and top-down) updates.

Video updates - Create internal video updates relevant to specific employee groups. Work with managers to make messages as relevant as possible to the different groups. Use reporting options to see which employees have watched the video.

#### 6.2.9. Focus on Employee Engagement During Change

Involve staff - Use Staff surveys to involve employees and elicit their views. Consider letting employees respond anonymously for maximum candor. Every problem uncovered is a problem that you can address.

Celebrate new beginnings - Allow employees to contribute their own articles to the internal newsletter or intranet. Encourage them to tell their own stories about how the changes are working for them.

Repeat key messages - Repeat your main messages in a range of ways to ensure that they don't become boring or are seen as 'wall paper'.

Inject fun and involve people - Use a Staff quiz to ask employees to name new ways of working (e.g. new systems, projects) or suggest improvements. Offer prizes for the best ideas and recognize them using Screensaver Messages and articles in the internal newsletter.

### 6.2.10. Measure Results and Celebrate Successes (Quick Wins)

Benchmark and track trends - Survey staff to assess what's working, measure attitudes, understanding and to track trends.

Highlight and celebrate success Screensaver messaging provides a visual, engaging way to highlight and celebrate success during the change. Target Screensaver Messages to specific employee groups to celebrate companywide successes as well as small local wins.

Profile success stories Use an internal newsletter as an engaging way to document success. Encourage employees to submit articles that talk about what they have achieved (e.g. simpler ways of working, important milestones met).

### 6.3. Resistance to Change

Despite the fact that the new systems are being implemented to improve the efficiency and effectiveness of the HR function, fear and resistance to the new system from HR staff will be common and must be anticipated and addressed. What people resist is the loss of control over their lives that they fought so long and hard to create. This sense of loss of control often leads to a lot of uncertainty about the future. One way to help people regain control of their work lives is effective two-way communication. People need to understand what is happening, that change is essential.

Resistance can represent critical feedback about potential problems associated with the change. For example, those who are providing the resistance may possess vital details of problems that will arise if the change is made. Those resisting the change often care passionately about the organization and this passion ignites the resistance. Change leaders may be able to work with these individuals to refine the change, harnessing their energy to redesign the portion of the plan that could have ultimately derailed the change.

When employees outside the HR department are affected by new technology, as is the case with the introduction of manager or employee self-service components, resistance to the change is also a common source of problems in an implementation. All these issues can be prevented or addressed with proactive, continuous communication and effective, ongoing training.

#### 6.4. User Acceptance

One approach to improving the odds of convincing people that the change is necessary is to help them understand that the vision for the change is headed in the right direction. It's important that people understand both emotionally and intellectually why they need to change.

Ultimately, acceptance of the new technology and new processes represents project success. Although the technical challenges in implementing any system can be great, it is the people "challenges that cannot be overlooked (although often are) during the implementation phase" of an HRIS.

End users must be involved and feel ownership of the new system. When future users participate in the planning and acceptance testing of a new HRIS, as well as in the process of converting to a new system, their commitment to the project increases.

One of the major obstacles in gaining user acceptance is getting users to try out the new system. Offering rewards to encourage user participation in new systems can be very effective. Research clearly shows that acceptance is improved if information is clearly communicated, if users are involved in the process, and if ongoing training is provided. Not everyone will accept the changes at the same time. User acceptance can be influenced by culture and demographics.

### 7. Artificial Intelligence Applied in Human Resources

Artificial Intelligence (AI) and algorithmic technologies to support or even automate human resource management (HRM) activities are a key driver of innovation in HR. Broadly, AI describes when a machine mimics cognitive functions that humans associate with other human minds, such as learning and problem solving. On an even more elementary level, AI can merely be a programmed rule that tells the machine to behave in a specific way in certain situations. In other words, artificial intelligence can be nothing more than several if-else statements.

Machine learning (ML) and deep learning (DL) are both types of AI. Most of the time, AI, machine learning, and deep learning are terms that are often used interchangeably, but they are not the same things. In short, machine learning is AI that can automatically adapt with minimal human interference. Deep learning is a subset of machine learning that uses artificial neural networks to mimic the learning process of the human brain.

With simple AI, a programmer can tell a machine how to respond to various sets of instructions by hand-coding each "decision." With machine learning models, computer

scientists can “train” a machine by feeding it large amounts of data. The machine follows a set of rules—called an algorithm—to analyze and draw inferences from the data. The more data the machine parses, the better it can become at performing a task or making a decision.

Where ML algorithms generally need human correction when they get something wrong, DL: algorithms can improve their outcomes through repetition, without human intervention. A ML algorithm can learn from relatively small sets of data, but a DL algorithm requires big data sets that might include diverse and unstructured data.

Think of DL as an evolution of ML. DL is a ML technique that layers algorithms and computing units—or neurons—into what is called an artificial neural network. These deep neural networks take inspiration from the structure of the human brain. Data passes through this web of interconnected algorithms in a non-linear fashion, much like how our brains process information.

According to Oracle, AI can help address common HR challenges and provide value by application of ML or DL as following:

### 7.1. Sourcing

Today’s organizations must continuously market their open roles due to one of the tightest labor markets in history. Using AI to improve sourcing can greatly enhance an organization’s ability to find the right talent at just the right time. It can help to:

#### 7.1.1. Find the best candidates

Uncover candidates with the best match between job requirements and their skills and experience. Beyond a simple search for key terms, ML algorithms learn synonymous words that are commonly used in resumes.

#### 7.1.2. Recommend jobs to candidates

Prospective candidates, found either through organic search activity or a targeted campaign, receive recommendations to apply for open positions. AI can alert the right people with the right skill sets to available jobs prior to their posting.

#### 7.1.3. Predict candidate performance

AI-based candidate matching uses HR data to calculate a candidate’s likelihood to accept a job offer, project performance outcomes, and estimate their expected tenure.

## 7.2. Screening and Interviews

A major benefit of AI at the interview stage is the use of digital assistants or AI video interviews for a more engaging candidate experience, which can:

### 7.2.1. Help candidates become more self-sufficient

The entire interviewing process is in their control, from rescheduling or canceling to sending reminders, sharing notes, and recommending resources for review.

### 7.2.2. Assist hiring managers

AI reminds them of upcoming interviews and provides details on candidates. AI can also help overcome subjectivity by gathering data from previous employees in similar roles and preparing targeted questions for hiring managers. This provides greater focus on the candidate's skill set, more context on the nature of the job, and measures against similar roles in other organizations.

## 7.3. Selection and offering

While ML applications should never be making the final decision on who gets hired, AI can help recruiters and managers make better hiring decisions. It allows them to:

### 7.3.1. Compare candidates to existing top performers

Use benchmark data and AI to compare job candidates with others who have succeeded in similar roles in the organization.

### 7.3.2. Create individualized offers

Evaluate the wealth of data points relative to the local market and listed salaries by competitor, providing a nuanced and strategic view into how roles should be banded. Getting even more granular, AI can also increase recruiting efficacy by matching a specific offer with individual job and employee histories to calculate the odds of whether a candidate will accept.

### 7.3.3. Anticipate candidate behavior

Predict a candidate's likelihood to accept, perform, and remain in the position being offered.

## 7.4. Onboarding

Onboarding is critical because it sets the tone for the employee's tenure. According to research by Work Institute encompassing data from 34,000 exit interviews, approximately 40% of new employees quit within the first year of being hired<sup>6</sup>. Work Institute estimates that three-quarters of that turnover was preventable if onboarding had been handled more effectively. AI helps to:

### 7.4.1. Ease the administrative burden

Automate delivery and receipt of necessary paperwork, company policies, and login information. AI can track which documents were read, capture electronic signatures once steps are completed, and remove the need for HR to follow up manually.

### 7.4.2. Allow onboarding to occur 24/7

Digital assistants improve the process by guiding the new hire through all required onboarding steps and proactively suggesting next steps to ramp up quickly in their role.

### 7.4.3. Shorten time to productivity

AI-driven digital assistants can recommend job related-learning based on successful employees in similar roles, and offer relevant content such as books and journal articles.

## 7.5. Career Development

One of the emerging nuances of work is the evolution of how job seekers and employees achieve career growth. In the distant past, workers often stayed with their employers for the entirety of their careers and grew from entry level roles into leadership. With a faster moving economy, more frequent layoffs, and emerging startups, employees can now move at a much higher rate. Some data indicates that millennial and Gen Z workers will switch jobs at least four times by the time they are 32 years old. To retain employees, organizations must take a strategic approach to career development. Employees expect to be offered learning and career opportunities that help them grow their career and realize their goals. AI offers:

### 7.5.1. Personalized recommendations

Employees can get curated career development recommendations that shift with the

business and maximize career potential. Carefully tailored content not only acts as a supplement to manager guidance but will also show employees that their employers are invested in their career.

#### 7.5.2. Individualized career pathing

AI collects insights around each employee's career progression and deliver it in a personalized way. Each person can map their own career path, mapped to specific learning experiences required to bridge current and projected skills gaps. Providing employees with clarity and necessary tools to make career shifts is one of the best ways to encourage learning.

### 7.6. Succession planning

Even with the best retention strategies, an organization will experience some kind of turnover as employees decide to move on or retire. When employees with critical skills or domain expertise leave, it can often create huge gaps in the organization that impede company success and create a negative experience for the employees left in their wake. It is imperative that organizations have solid succession plans in place to ensure this transition is as smooth as possible. Yet, succession planning can be one of the trickiest parts of talent management. Leaders struggle to communicate succession plans to their teams and manage an effective process that can be fraught with bias. AI can help:

#### 7.6.1. Identify flight risk

light risk prediction draws on different attributes and behaviors in order to formulate its conclusions. The attributes include employee sentiment, an employee's mentors and influences, their number of years in a position, how long they've been reporting to their current manager, their potential career path, their salary history, and whether and when they last received a raise. These all factor into a predicted attrition rate and offer leaders a number of useful cues and clues on how to retain their most valuable people.

#### 7.6.2. Uncover most capable successors

Leveraging data models to analyze employee behavior and determine which employees are ready to step up based on cultural fit, leadership capability, and the accomplishments of past successors.



## 7.6. Compensation

A continuing concern of the labor market is compensation, as workers seek to be paid for their value. In this tight labor market, employees feel confident in seeking jobs elsewhere or asking for pay raises to improve their quality of life. In this environment, employers also face the challenge of ensuring the right compensation for the right positions to avoid paying too little or too much. Leaders must work strategically and seek to understand competitor trends so they can meet employee expectations and keep top talent. With HR continuing to evolve, it's important to also change how compensation is determined. Organizations need a wider range of data to create a strategy that works for their people and matches differences in expectations, roles, and skill sets. AI helps to:

### 7.6.1. Provide market insights

AI provides a nuanced and strategic view into how roles should be banded by analyzing a wealth of salary data points relative to the local market and available competitor data.

### 7.6.2. Increase recruiting efficacy

By matching a specific offer with individual job and employee histories to calculate the odds of whether a candidate will accept.

## 7.7. Learning and Development

Learning can be a significant competitive advantage, helping organizations eliminate skills gaps, encourage development, and engage and retain top talent. But even organizations that commit to learning as a priority are faced with challenges, since curricula are often designed to drive compliance rather than workforce agility and performance.

These fundamental changes have led reskilling to be called "the new trend in recruiting." Therefore, organizations are now increasingly looking to learning and development (L&D) to fill skills gaps in multiple functional areas. AI helps to:

### 7.7.1. Offer personalized learning

Learning matters more when it's relevant, adaptive, and meaningful. AI can gather information on an employee's learning habits, skill interests, work style, and projects and responsibilities to provide appropriate recommendations for courses that will

enhance the employee's productivity and competency in the workplace.

#### 7.7.2. Promote collaborative learning

Employees from different departments often need to learn together and from each other, and AI can help them pair up. Collaboration drives cross-functional learning, simplifies organizational operations, and improves team performance<sup>8</sup>. This approach to learning is very effective for today's work culture, where much of the actual day-to-day work happens at a team level.

#### 7.7.3. Optimize learning administration

AI can ease the workload of administrators by modifying curricula based on role, location, and line of business while also capturing data on learner engagement, interactions, and outcomes. With greater optimization and better insight, leadership can effectively manage and report on how learning benefits the organization.

### 7.8. Generative AI (GAI) Applied in HR

Generative AI (GAI) differs from traditional AI in its primary function and application. Generative AI focuses on creating new content, such as text, images, and music. It learns from a vast dataset to understand a particular format or style and then can generate new, unique outputs that match the training data in style and substance.

In contrast, traditional AI refers to a broader range of machine learning applications, including various types such as generative AI. These AI systems may focus on problem-solving, data processing, pattern recognition, or making predictions and don't necessarily involve the creation of new content. For example, an AI program might be used to identify objects in photos, whereas generative AI would create entirely new images.

GAI like ChatGPT, Claude, or Llama can be applied in various functions of HR to enhance efficiency and decision-making:

#### 7.8.1. Recruitment and Selection:

- AI can parse through extensive resume databases to identify candidates that match job specifications.
- It can conduct preliminary interviews using chatbots to collect essential information for HR professionals to review.

#### 7.8.2. Employee Training and Development:

- AI can curate personalized learning paths for employees, adapting training content based on their progress and learning styles.
- Skill gap analysis through AI can suggest relevant courses or training to promote professional growth.

#### 7.8.3. Employee Services and Support

- AI chatbots can provide round-the-clock responses to common employee inquiries about benefits, leave policies, and more.
- AI can assist employees in selecting healthcare benefits plans by offering personalized recommendations based on their needs and past choices.

#### 7.8.4. Performance Management

- AI can analyze performance data to help managers provide more objective feedback and set measurable goals for employees.
- It can identify patterns in employee performance and suggest interventions or recognition for achievements.

#### 7.8.5. Employee Engagement and Retention

- Through sentiment analysis, AI can gauge employee morale and job satisfaction from various communication channels.
- Predictive analytics can alert HR to potential retention risks by analyzing trends in employee turnover.

#### 7.8.6. HR Analytics and Workforce Planning

- AI can forecast staffing needs by analyzing market trends, business cycles, and internal data.
- It can provide insights into diversity and inclusion metrics, helping HR to make informed policy decisions.

### 7.9. Risks of using AI in HR

Applying AI in HR functions comes with certain risks, as well as necessary precautions:

### 7.9.1. Risks

*Bias and Discrimination:* AI systems can inadvertently learn and perpetuate biases present in their training data. This can lead to discriminatory hiring practices or unfair performance evaluations.

*Privacy Concerns:* AI tools that analyze employee data might compromise privacy if sensitive information is not handled correctly.

*Security Vulnerabilities:* AI systems, like all digital tools, are susceptible to security breaches, potentially exposing confidential HR data.

*Over-reliance on Technology:* There's a risk of over-relying on AI for decision-making, which can overlook the nuanced understanding that human HR professionals bring to complex situations.

*Compliance Issues:* AI must comply with labor laws and regulations, which vary by jurisdiction. Non-compliance could result in legal and financial penalties.

### 7.9.2. Preventive Measures

*Bias Mitigation:* Regularly audit and update AI algorithms to ensure they make unbiased decisions. Diverse datasets and ongoing monitoring can help reduce bias.

*Data Privacy:* Implement strict data governance policies, ensuring AI systems comply with data protection regulations like GDPR. Employees should consent to their data being used for analytics.

*Security Protocols:* Secure AI systems with the latest cybersecurity measures, including encryption, access controls, and regular security audits.

*Balanced Approach:* Use AI as a tool to support, not replace, human decision-making in HR. AI can provide data-driven insights, but final decisions should consider human judgment.

*Regulatory Compliance:* Stay updated on relevant HR laws and ensure AI tools are designed to comply with these regulations. Consult with legal experts to navigate complex legal landscapes.

## 8. Employee Data Management

Employers typically keep a number of different employee records (often called personnel

files) as a way of documenting an employee's relationship with a company. In certain instances, documentation in a personnel file can provide important supportive data- for example, to show an employee's discipline history in support of a termination in subsequent litigation. The personnel file can also track performance goals, leaves of absence, and any employment-related agreements. In addition to being a good business practice, employers may be required to keep certain types of employee records in order to comply with specific provisions under labor laws in different countries.

## 8.1. Type of Employee Data

8.1.1. Basic Information: Employee's full name, social security number, address, and birth date.

8.1.2. Hiring Documents: Job descriptions, employment applications, and resumes.

8.1.3. Job Performance and Development: Performance evaluations, corrective action or disciplinary letters, awards, promotion records, and records of education or trainings.

8.1.4. Employment-Related Agreements: Employment agreements, union contracts, non-competition agreements, confidentiality or nondisclosure agreements.

8.1.5. Compensation: Documents related to compensation and benefits information, such as beneficiary forms, payroll records, and time cards for prior year(s).

8.1.6. Termination and Post-Employment Information: It is a good idea to keep information related to an employee's termination on file should a dispute later arise.

8.1.7. Confidential Files: (Certain records should be kept in a confidential file separate from the personnel file)

8.1.8. Medical records and documents that relate to an injury or disability

8.1.9. Material relating to Workers' Compensation claims

8.1.10. Family and Medical Leave documents

8.1.11. Employment verification information

8.1.12. Wage garnishment documentation

8.1.13. Documents pertaining to sensitive matters, such as harassment investigation records or any information pertaining to an employee's religion

## 8.2. Recordkeeping Policy

It is important to develop a policy that outlines the procedures for how your company will manage employee records and files. Keep in mind that your policy must comply with the related laws. Some states, for instance, require employers to provide employees with access to their files. Consider the following points when developing your company's employee records policy:

### 8.2.1. What types of records will be maintained?

Identify documents and forms that should be kept in either a personnel file or confidential file.

Establish a regular timeframe for reviewing and updating employment records, as well as for disposing of records that no longer need to be retained.

Your employee records policy should clearly state which records to maintain and how long certain documents should be kept.

### 8.2.2. How will access to records be controlled?

Identify staff who have authorization to access personnel and confidential files. Be sure that safeguards are in place that restrict access to those individuals. These safeguards can be physical (such as locked cabinets) or technical (such as special username and password access).

Define the specific circumstances by which an employee may access or copy files, including the specific records which may be reviewed. Files should be accessed under supervision of management.

Generally, employees should not be permitted to remove or change any documents contained in their personnel files. If an employee disagrees with a record, consider allowing them to submit a written statement regarding the disagreement and adding it to his or her file.

Develop procedures for handling third party requests for disclosure of employee information, and what information may be released. Consider obtaining the employee's prior written authorization to release such information.

## 8.3. Maintain accurate records

The importance of an accurate employee record stretches far beyond the legal ramifications of that information not being current. For employers, keeping accurate records can help recruitment, identify gaps in skills, and save time while performing

administrative duties. If you're looking for one way to improve your Human Resources department and ease your burden during inspections, consider these reasons to improve the accuracy of your employee records.

#### 8.3.1. Prevent Litigation

No employer likes to dwell on the possibility of litigation, but a termination may result in legal action and a complete employee record can provide documentation and justification for your actions as a company. Employee records must be maintained at least one year after employee termination and, if kept up-to-date, they can be invaluable for preventing a frivolous lawsuit. An accurate and updated employee record not only records employee information, but also issues that led to termination or reprimands.

#### 8.3.2. Ensure Competency

While some industries, like healthcare and public works, focus on competency, it's an important concept for all businesses. Employees need to be properly trained and educated on their job duties before working independently to prevent mistakes or injuries. Keeping an accurate employee record of staff training helps document that you have not only given employees the correct information to do their job, but also that the employee agrees to having been trained. When scheduling or cross-training, a well-kept employee file can help determine who is competent in various areas and able to help other departments. During inspections, you can verify training. Competency is a key benefit of an accurate employee record.

#### 8.3.3. Continue Networking

Just because an employee leaves your company doesn't mean that's the last you've heard from them. During subsequent job hunts and strategic moves, you may run into that employee professionally. They may be your new sales representative, board member, or applicant for an advertised job. Having accurate, secure, and complete employee records can help jog your memory when an old face pops up for a reference or a new job, even after their manager has left. Often, employers receive calls about former employees for new job opportunities and a quick look at their employee record can yield vital information about the employee's work ethic. Keeping employee records past the date they work with the company can help identify other workers in your industry that may return to your company in the future.

#### 8.3.4. For Employee and Managerial Review

Accurate employee records offer a global view of the employee and their time at a company. Whether you're training a new manager and want them to understand the employment history of their new employees or have an employee asking to see their file, accurate employee records are essential for presenting a non-biased look at an employee's work history. When needed, having the ability to understand an employee's career in one file can save time.

#### 8.3.5. Meet Legal Requirements

Keeping employee files isn't just a convenience for businesses, it's also a legal responsibility. Maintaining tax information, wage information, employee demographics, and other required documentation is essential to meeting your legal obligations. When regulators ask for employee information, having it available in a single, easy to find place is essential.

Maintaining accurate employee records is far from a burden. In fact, with an effective HRIS, it can be both easy and secure. Employee records can help employers by meeting legal obligations and avoid litigation and it can help new managers understand their employee's background. Employers still need to be diligent in establishing and maintaining their employee records to help their business and their employees thrive in today's workforce.

Consider an investment in an HRIS (human resources information system) to help you automate and track all employee records, including benefits and carrier information. HRIS can help you maintain control of employee information while staying compliant.

#### 8.4. Other Considerations

When collecting and maintaining information to be kept in employee personnel files, you should be careful to comply with all applicable laws, including any requirements as to what information should be collected, what your company may or may not do with that information, and how long employee records should be kept.

##### 8.4.1. Human Resources Information System

Consider an investment in human resources information system (HRIS) to help you automate and track all employee records, including benefits and carrier information. An easy-to-use HR software solution can help you maintain control of employee information while staying compliant.

##### 8.4.2. Consumer Protection



Many international laws protect an individual's right to privacy and protection from unauthorized disclosure of personal information. One of the important pieces of personally identifiable information collected by employers is an employee's Social Security or Identity Number. Employers use the number to report an employee's earnings, including payroll taxes and benefit contributions. By controlling who has access to paper files and electronic files containing an employee's personally identifiable information, an employer manages records and prevents fraud.

#### 8.4.3. Decision-Making

Employee records management includes standard operating procedures. For example, an employer develops a protocol for handling each type of employee record. Employees need a standard protocol for deciding what information to save, discard or preserve for each record.

#### 8.4.4. Role Assignment

Information technology personnel assist an employer with managing records by controlling the roles of employees in their organization's information system. For example, through role assignment, a computer programmer can authorize only people with a business need to view an employee's personally identifiable information when they log in to the information system.

#### 8.4.5. Storage

Records management also requires adequate physical storage. For example, employers must maintain employee records, such as payroll records, to comply with federal laws. To keep records, employers must choose how to store them and prevent long-term damage or destruction. Employers must provide spaces where paper files are free from fire and water damage. A file storage area must also be locked to prevent unauthorized access.

### 8.5. HR Data and Document Retention

HR departments handle a large array of personnel data and documents, including job postings, resumes, and payroll records. The ongoing creation and maintenance of such records necessitate the implementation of effective document retention programs. These programs not only alleviate storage issues but also enhance business operations by boosting efficiency and liberating valuable storage space. Moreover, they play a crucial role in legal protection for firms. Implementing a consistent and uniform document retention policy is vital to ensure proper document management and avoid the risks associated with discarding important documents.

A Document Retention Policy (DRP) defines the duration for keeping documents and the criteria for their deletion or destruction. While there's no universal law dictating document retention periods, industry-specific regulations may apply. The DRP process includes:

8.5.1. Appointing a Responsible Party or Committee: Establish a person or committee, with representatives from various departments like IT and legal, to oversee the DRP.

8.5.2. Defining and Prioritizing DRP Scope: Clarify the DRP's scope and timeline, and consider implementing retention policies gradually.

8.5.3. Consultation with IT and Data Management: Ensure comprehensive coverage of all forms of documents and electronic data, including their creation, storage, and backup.

8.5.4. Identifying and Assigning Ownership of Documents: List all types of information held by the company, their retention periods, and assign responsibility for these records.

8.5.5. Reviewing Legal Requirements: Align the DRP with relevant laws and regulations, including definitions of "business records."

8.5.6. Storing, Retaining, and Preserving Data: Outline methods for document organization, storage, and backup, including special protocols for sensitive information.

8.5.7. Guidelines for Data Destruction: Establish procedures for disposing of documents after their retention period, and include protocols for legal holds.

8.5.8. Employee Training and Communication: Implement a thorough training program and communicate the DRP processes clearly to all employees.

8.5.9. Employee Compliance and Protocol: Clearly state the employee responsibilities and consequences for non-compliance, covering the use of company and personal devices for business.

8.5.10. Periodic Review and Update of DRP: Regularly update the DRP to keep up with new technologies and legal changes.

8.5.10. Solutions for Document Management in HR:

- Streamline and update processes.
- Utilize technology for automated document management.

- Outsource non-core document management tasks.
- Considerations for HR Document Management include:

8.5.11. Intelligent Conversion: Choose a suitable strategy for document conversion.

8.5.12. Data Extraction and Classification: Improve document access and legal compliance through effective indexing.

8.5.13. Offsite Storage: Utilize hosted archives for security and storage efficiency.

8.5.14. Integration with HR Systems: Link documents with HR management systems for easy access.

8.5.15. Outsourcing for Specialized Expertise: Focus HR resources on strategic activities by outsourcing high-volume document management.

In conclusion, an effective DRP is integral to managing HR documents efficiently, ensuring legal compliance, and reducing the administrative burden on HR professionals.

## ***Part Two: Information Privacy and Security***

### **1. Information Privacy**

Information privacy is defined by the degree of control individuals have over their personal data, encompassing its collection, storage, access, and dissemination. The importance of privacy is escalating, particularly in people analytics, where 81% of projects encounter ethical and privacy challenges. These concerns are projected to grow unless businesses adapt to the General Data Protection Regulation (GDPR), a pivotal European privacy regulation enforceable from May 25, 2018. The GDPR aims to unify and heighten personal data protection, profoundly impacting how HR data is handled.

For HR departments, data privacy matters significantly. HR handles sensitive employee data, ranging from personal information to work-related data such as camera recordings and internet behavior. The GDPR revolutionizes employment law by imposing stringent rules on how this data is processed. Non-compliance can lead to severe legal consequences and damage to the company's reputation.

Understanding and adhering to GDPR is vital for employers. It ensures the ethical handling of employee data, maintaining trust and integrity in the workplace. It also mitigates the risk of data breaches, which can have far-reaching impacts on both employees and the organization. Thus, for HR, navigating and implementing GDPR standards is not just a legal requirement but a cornerstone of ethical and responsible data management.

#### **1.1. Standards and Rules**

The General Data Protection Regulation (GDPR) introduces several 'new' standards and rules, with the most notable changes being:

##### **1.1.1. Rights for Employees**

- Employees gain additional rights to increase control over their personal data.
- Employees can now know how long their data will be kept, if it's used for automated decision-making, if it will be transferred abroad, and what safeguards will be in place.
- Employers are obliged to inform employees about their right to rectify data and to file complaints with supervisory authorities.
- Under certain conditions, employees have the right to be 'forgotten',

necessitating clear communication from employers about the purposes of data usage.

#### 1.1.2. Data Protection Impact Assessment (DPIA):

- DPIA is a tool to assess privacy risks and is mandatory when data processing poses a high risk to employee rights and freedoms.
- Mandatory in cases of profiling with legal consequences, large-scale processing of special personal data, and large-scale monitoring of public areas.
- Organizations must mitigate identified risks.

#### 1.1.3. Data Protection Officer (DPO):

- The GDPR mandates a DPO for certain controllers and processors: public authorities, entities processing data requiring systematic monitoring on a large scale, and those processing special categories of data or data about criminal convictions and offenses.
- Large organizations typically need a DPO, who is integral to HR analytics projects.
- The DPO's responsibilities include identifying processing activities, ensuring compliance, and advising the controller or processor.

### 1.2. Information Privacy by Design

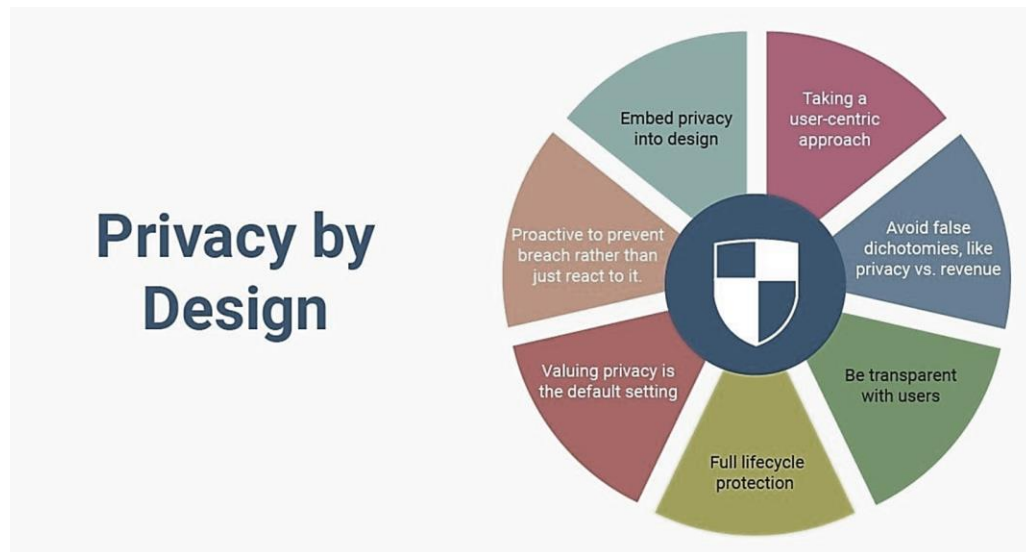
Data plays a crucial role in HR analytics by providing insights into employee behavior, productivity, and overall workforce trends. It enables HR professionals to make informed decisions about recruitment, retention, performance management, and employee development. Analyzing this data can lead to more effective HR strategies, improved employee satisfaction, and better organizational performance.

However, the General Data Protection Regulation (GDPR) imposes significant limitations on how this data can be used. GDPR requires that personal data be processed lawfully, transparently, and for a specific purpose. Once that purpose is fulfilled, the data should be deleted. This means HR departments must be very careful about what data they collect, how they store it, how long they retain it, and how they use it for analysis.

For instance, under GDPR, HR cannot collect data indiscriminately for potential future use. They need to have a clear, lawful purpose for any data they gather. Additionally, employees have the right to access their data, correct inaccuracies, and even request

its deletion in some circumstances. HR analytics must therefore be conducted within the boundaries of these regulations, ensuring data privacy and security at every step.

In essence, while data is immensely valuable for HR analytics, GDPR ensures that employee privacy is not compromised in the pursuit of data-driven insights. This requires a balance between leveraging data for organizational benefit and respecting individual data rights and privacy. Adapting HR analytics to GDPR involves several detailed steps, each requiring careful implementation:



Source: Birkhoff (2023)

#### 1.2.1. Team Awareness

Conduct regular training sessions for the HR analytics team on GDPR updates. For instance, if a new interpretation of data subject rights is issued, the team should be immediately briefed and trained on how to incorporate this into their data handling processes.

#### 1.2.2. Involvement of the Data Protection Officer (DPO)

When launching a new analytics project, schedule a meeting with the DPO to review the project's data usage and ensure it aligns with GDPR. For instance, if the project involves analyzing employee performance data, the DPO should verify that this data usage complies with GDPR standards.

#### 1.2.3. Data Subject Rights

Implement a system that allows employees to easily request access to their data. For

instance, create an online portal where employees can see what data is held on them, request corrections, or ask for their data to be deleted.

#### 1.2.4. Maintain Processing Records

Develop a digital logbook to record every instance of data processing. This should include details like the purpose of processing, the data source, and any entities the data is shared with. If an employee asks for their data to be corrected, this logbook should reflect the correction and note any third parties who must also be informed.

#### 1.2.5. Third-Party Data Security:

When working with a payroll processing firm, ensure a GDPR-compliant agreement is in place. This agreement should specify that the firm adheres to strict data security standards, like encryption and regular audits, and is certified under standards like ISO27001.

#### 1.2.6. Privacy by Design

Example: When developing a new HR software tool, integrate data protection features from the start. For instance, ensure that the software automatically anonymizes employee data used for analytics.

#### 1.2.7. Privacy by Default

Configure HR systems to collect only essential data by default. For example, if setting up a system for tracking employee training, ensure it only collects relevant data like course completion, and not unnecessary details like personal opinions or feedback.

#### 1.2.8. Lead Supervisory Authority

If your company operates in multiple EU countries, like Germany and France, identify which country's data protection authority will be your lead supervisory authority. This could be based on where your company's EU headquarters is located or where the majority of data processing occurs.

#### 1.2.9. Consent Management:

Update your employee onboarding process to include a clear, jargon-free explanation of how employee data will be used, with a straightforward way for new hires to give their consent. Regularly review and update the consent forms to ensure they meet GDPR's stringent requirements.

### 1.3. Data Accuracy and Integrity

In the realm of HR and personnel information privacy protection, data is often the most valuable asset an organization possesses. For businesses that depend on the collection, storage, and utilization of data, the importance of maintaining data that is both secure and accurate is paramount to their ability to thrive. Inaccurate data can lead to erroneous decision-making, flawed analysis, and unsound business advice. Understanding the difference between data accuracy and data integrity is essential in this context.

#### 1.3.1. Difference between Data Accuracy and Data Integrity

Both data accuracy and integrity are crucial in ensuring comprehensive, consistent, and precise HR data. Data accuracy provides the correct, current details necessary for informed decision-making and strategic planning in HR functions. Data integrity ensures that this HR data remains unaltered and reliable, maintaining trust with employees and safeguarding the organization's reputation. It also verifies the authenticity of data, crucial in avoiding corruption.

#### 1.3.2. Data Accuracy

Accuracy is central to data quality, influencing HR decisions such as workforce planning, performance evaluations, and budgeting. It implies the internal validity of data—meaning the information is free from errors and reflects the true scenario. Completeness is also vital; incomplete HR data can lead to incorrect conclusions about personnel issues. For instance, accurate and complete data on employee turnover can inform effective recruitment and retention strategies.

#### 1.3.3. Data Integrity

Data integrity in HR concerns the correct storage and maintenance of personnel data throughout its lifecycle, ensuring it is entered accurately into HR systems. It affects various HR processes, including analytics, which derives insights for informed decision-making through advanced techniques. When setting up HR databases, for instance, ensuring unique identifiers for each employee prevents duplicate records, aiding in accurate data retrieval and compliance.

Maintaining data integrity in HR involves several measures:

*Accuracy:* Ensuring HR data reflects the true details of employees.

*Completeness:* Having a full set of HR data for comprehensive analysis.



*Security:* Safeguarding personnel data against unauthorized access.

*Governance:* Aligning HR data management with organizational objectives.

*Validity:* Regular checks to keep HR data free from errors.

*Uniqueness:* Ensuring individual employee data does not overlap.

*Location Intelligence:* Adding location-based insights to HR data for enriched analysis.

*Data Enrichment:* Integrating external data to enhance the context and relevance of HR data sets.

#### 1.4. Privacy Management

Workplace privacy issues swirl around the controversy of how closely an employer can monitor its employees. Some companies have invested considerable time in creating privacy guidelines meant to explain exactly what is and is not allowed in terms of monitoring, but these guidelines are almost never legally binding. In some cases they may even be used to create a false sense of security among employees. Most experts suggest avoiding the whole messy business of workplace privacy by never using company computers or cell phones for anything other than company business, but various complications can still ensue, resulting in legal consequences.

The extensive growth of technology use by employers and employees is constantly creating new issues to be addressed. Such technology usages as twitters, wikis, social networking, and blogs require attention by employers.

##### 1.4.1. Monitoring Electronic Communications

Employers have a right to monitor what is said and transmitted through their Internet and voicemail systems, despite employees' concerns about free speech. Advances in information and telecommunications technology have become a major employer issue regarding employee and workplace privacy. For example, the use of e-mail increases every day, along with employers' liabilities if they improperly monitor or inspect employees' electronic communications. Many employers have specialized software that can retrieve deleted electronic communications e-mail, and some even record each keystroke made on their computers.

There are recommended actions for employers to take when monitoring technology. Employers should monitor only for business purposes and strictly enforce the policy. For instance, one problem is that most people express themselves more casually in e-mail than they would in formal memos. This tendency can lead to sloppy, racist,

sexist, or otherwise defamatory messages.

Court cases have been brought over jokes forwarded through e-mails that contained profanity or racist undertones. Another problem is that electronic messages can be sent rapidly to multiple (and sometimes unintended) recipients. Also, the messages can be stored, and often legal cases hinge on retrieval of the messages.

#### 1.4.2. HR Policies on Electronic Communications

Given all the time and effort employees spend on technology through both work and personal actions, it is important for HR professionals to provide guidance to executives, managers, and employees. Some areas in which HR policies need to be made can include the following:

- Establishing security and voicemail system
- Communicating that the employer will attempt to monitor security, but it may not be totally guaranteed
- Restricting the use of employee records to a few individuals

Communicating policies on electronic communications to employees, enforcing them by monitoring employee Internet use, and disciplining offenders are means used by employers to ensure that the Internet is used appropriately. These efforts are necessary because both supervisors and employees can engage in violating electronic monitoring policies and practices.

Employers' efforts also can attempt to guard against some employees' accessing pornographic or other websites that could create problems for the employer. If law enforcement investigations find evidence of such access, the employer could be accused of aiding and abetting illegal behavior. Many employers have purchased software that tracks the websites accessed by employees, and some employers use software programs to block certain websites that are inappropriate for business use.

#### 1.4.3. Balance Employee Security and Privacy

Balancing employer and employee privacy is becoming more difficult. On one side, employers have a legitimate need to ensure that employees are performing their jobs properly in a secure environment. On the other side, employees expect the rights that they have both at work and away from work to be protected. The commonplace monitoring of e-mail and voicemail is only one way employers watch the workplace. Technology gives employees who leave an employer the opportunity to take a great deal of valuable company secrets or data with them. For this reason (and others as

well), workplace monitoring has increased.

### *Conducting Work-Related Investigations*

Workplace investigations are frequently conducted using technology. Such means allow employers to review e-mails, access computer logs, conduct video surveillance, and use other investigative tactics. When using audiotaping, wiretapping, and other electronic methods, care should be taken to avoid violating privacy and legal regulations.

### *Employee Theft*

Employee Theft problem faced by employers is employee theft of property and vital company secrets. White-collar theft through embezzlement, accepting bribes, and stealing company property also is a concern. If the organizational culture encourages or allows questionable behavior, then employees are more likely to see theft as acceptable. Employee theft and other workplace misconduct can be addressed using a number of methods. Typical methods may include doing an investigation before hiring, using applicant screening, and conducting background investigations. After hire, workplace monitoring can review unusual behaviors, such as those mentioned earlier.

### *Honesty and Polygraph Tests*

After hire, workplace monitoring can review unusual behaviors, such as those mentioned earlier. Honesty and polygraph tests may be used both before and after a person is hired. Pencil-and-paper honesty tests or integrity tests are widely used, particularly in the retail industry and others. For current employees, polygraph testing (performed with lie detectors) is used by some organizations. However, many governments prohibit the use of polygraphs for most pre-employment screening and also requires that employees must:

- Be advised of their rights to refuse to take a polygraph exam.
- Be allowed to stop the exam at any time.
- Not be terminated because they refuse to take a polygraph test or solely because of the exam results

## **2. Information Security**

Information security (InfoSec) is a set of strategies for managing the processes, tools and policies necessary to prevent, detect, document and counter threats to digital and non-digital information. Infosec responsibilities include establishing a set of business processes

that will protect information assets regardless of how the information is formatted or whether it is in transit, is being processed or is at rest in storage.

Information privacy and security are particularly important issues for HRIS because unlike many other organizational systems, an HRIS includes a great deal of confidential data about employees, such as social security numbers, medical data, bank account data, salaries, domestic partner benefits, employment test scores, and performance evaluations. Therefore, it is critical for organizations to understand and pay close attention to what employee data is collected, stored, manipulated, used, and distributed—when, why, and by whom.

Organizations also need to carefully consider the internal and external threats to this data and develop strong information security plans and procedures to protect this data and comply with legislative mandates. There is a growing concern about the extent to which these systems permit users (both inside and outside of the organization) to access a wide array of personal information about employees. As a result, employees may perceive that if these data are accessed by others, the information contained in their employment files may embarrass them or result in negative outcomes (e.g., denial of promotion or challenging job assignment).

## 2.1. Threat Sources

### 2.1.1. Human error

When an HRIS is not well designed, developed, and maintained and employees are not adequately trained, there is a high potential threat of security breaches. Research suggests that human errors, such as incorrectly entered data or accidental destruction of existing data, constitute security threats to the availability, accessibility, and integrity of information.

### 2.1.2. Disgruntled Employees and ex-employees

One of the concerns overlooked by HR managers is that information may be damaged by disgruntled employees. This is commonly referred to as an insider threat.

Employees and ex-employees are dangerous since they have extensive knowledge of systems, have the credentials needed to access sensitive parts of systems, often know how to avoid detection, and can benefit from the trust that usually is accorded to an organization's employees.

### 2.1.3. Other "Internal" Attackers

Many businesses hire contract workers, who work for the organization for a short period. Contract workers usually gain temporary access to various critical areas of an

organization. This creates risks almost identical to those created by employees.

#### 2.1.4. External Hackers

Another significant threat is the penetration of organizational computer systems by hackers. A hacker is defined as someone who accesses a computer or computer network unlawfully. Such attacks, often termed “intrusions”, can be particularly dangerous because, once the hacker has successfully bypassed the network security, he or she is free to damage, manipulate, or simply steal data at will.

#### 2.1.5. Natural disasters

Typical forms of natural disasters are floods, earthquakes, fires, and lightning strikes, which destroy or disrupt computing facilities and information flow.

### 2.2. Types of Threats.

#### 2.2.1. Misuse of computer systems

One of the predominant internal security threats is employees’ unauthorized access to or use of information, particularly when it is confidential and sensitive.

#### 2.2.2. Extortion

The perpetrator tries to obtain monetary benefits or other goods by threatening to take actions that would be against the victim’s interest.

#### 2.2.3. Theft

The value of information can be much higher than the price of hardware and software. With contemporary advances in technological developments, a relatively small computer chip (e.g., a USB device) can easily store over 100 GB of data. For example, the State of Hawaii’s HR department had medical records stolen when doctors’ offices of two doctors servicing workers compensation claims were burglarized .

#### 2.2.4. Computer-based fraud

There is growing evidence that computer-based fraud is widespread. Over 90% of companies have been affected by computer-based fraud, such as data processing or data entry routines that are.

#### 2.2.5. Cyber-terrorism

Cyber-terrorism is the leveraging of an information system that is intended to intimidate, cause physical, real-world harm or severe disruption of a system’s infrastructure. In one such scenario, a person with high-level computer and network

skills (e.g. a hacker) is hired to break into a specific computer or computer network to steal or delete data and information. Cyber-terrorists often send a threatening e-mail stating that they will release some confidential information, exploit a security leak, or launch an attack that could harm a company's systems or networks.

#### 2.2.6. Phishing

Victims usually receive email messages that appear to come from an authentic source with which the victim does business. The official appearance of the message and the website often fool victims into giving out confidential information. According to Gartner the estimated cost of phishing is around \$2 billion.

#### 2.2.6. Denial-of-Service

A denial-of-service (DoS) attempts to make a service unavailable for legitimate users by flooding it with attack packets. The server that is hosting that service is then unable to handle the large number of requests, whereby shutting it down. The financial services sector has been hit particularly hard by this type of attack. For example, Bank of America and JP Morgan Chase have both experienced outages on their public websites due to DoS attacks.

#### 2.2.7. Software Threats

A computer virus is a type of malware that works by inserting a copy of itself onto a computer or device (e.g. smart phone) and then becoming part of another program. It can attach itself to files without the user's knowledge and duplicate itself by executing infected files. When successful, a virus can alter data, erase or damage data, create a nuisance, or inflict other damage.

**Worms** are in some ways similar to viruses since they can replicate themselves. However, unlike viruses that require the spreading of an infected file, worms such as Code Red, Slammer and MyDoom can spread by themselves without attaching to files.

**Spyware** is software installed on an unknowing user's computer that gathers information about the user's activities on the Web (keystrokes, web sites visited, et cetera) and transmits it to third parties such as advertisers or attackers. Problems associated with spyware include potential privacy invasion, appropriation of personal information, and interference with the user's computer operation.

**Blended Threats:** These threats propagate both as viruses and worms. They can also post themselves on websites for people to download unwittingly.

**Trojan** is another type of malware that usually hides inside email attachments or files

and infects a user's computer when attachments are opened or programs are executed. Trojans are named after the Trojan-horse of Greek mythology in that they appear to be something positive, but are in reality doing something malicious. Unlike viruses and worms, Trojans do not reproduce by infecting other files nor do they self-replicate. Instead, they must be opened on a computer by a user. Some Trojans can work as spyware, while others can display a login or install screen and collect personal data such as usernames and passwords, or other forms of identification, such as bank account or credit card numbers. They can also copy files, delete files, uninstall applications using remote access programs on the computers, and format disks without alerting the victim.

### 2.3. Security Policies

Information security is not predominantly a technical issue; it is more of a management issue. It is easy to see why at times there is a major focus on technology. Technology is visible, and there are many things that we can say about security technologies.

This lends credence to importance of effective security policies. Security policies identify valuable assets, provide a reference to review when conflicts pertaining to security arise, outline personal responsibility, help prevent unaccounted-for-events, outline incident response responsibilities, and outline an organization's response to legal, regulatory, and standards of due care.

For effective implementation of security organizations usually follow established security standards such as ISO/IEC 27000 series. This series focuses on areas such as access control, security management, good practices, and protection of health related information. Almost all aspects of the ISO/IEC 27000 series mesh with HRIS. For example it is standard practice to require HR employees to change their passwords on a quarterly basis to achieve optimal access control. It is also a generally good practice to verify that all HRIS users are properly trained in the secure use and handling of equipment, data, and software.

### 2.4. Security Practices

HR application security must contain multiple levels of security. There are three (3) key terms when talking about HR Application security: authentication, application level security and data level security. Within the security levels, persons are assigned permissions as to what they can do with the data; these typically are Display/View, Create, Update or Change.

#### 2.4.1. Authentication

Authentication is the process that identifies the person logging in as having permission to access the application. This checks that the user ID and password combination are a valid one for this application. This level of security merely works as a means for making sure that only authorized users of a system are in that system.

#### 2.4.2. Application level

Application level security defines what information one can see in the application. This includes the modules that can be accessed, the screens and sometimes even which fields can be seen. This is typically based on a person's role as identified to the system that is attached to their system ID. For example, a Benefits Role would have access to specific plan information, where a Compensation role would not. This allows the company to secure the data within a system to specifically those users who have a need to see or use the data.

#### 2.4.3. Data-level

Data-level security defines whose information can be seen in the application. It defines the rights to the system based on a data value. Typically this is defined by organizational unit where a person can see someone within their own organization but not within another's organization. This is the level of security that is used when one has a global organization and must restrict access to one's country. An HR representative may have full access to the information in the system (application level security) but only to those in their country (data level security).

#### 2.4.4. Display/View

Display/View is a permission that allows a user to look only at the information for the persons in the system they are allowed to see. This does not allow them to change any information. This typically does include the right to run reports.

#### 2.4.5. Create

Create is a permission that allows a user to create a new record. In the case of an HRIS, it would be the ability to process a new employee. Care must be taken in setting up the application and data-level security for those who can create a record. It must take into account all of the parts of the system required to create a record, as well as the data values. For example, if the person entering the information cannot access the record of an employee in division A, they will not be able to create a record for someone in that division either.

#### 2.4.6. Update



Update refers to the ability to create a new row of data in an existing record. This allows the user to update the employee record with new information while creating a history record with the old information. In this manner, the old information is retained for reporting or audit purposes.

#### 2.4.7. Change

Change refers to the over-writing of information that already exists without creating a new row of data. This can also be referred to as “correction” access. This will not create a record for reporting or audit purposes unless the application has database level processes in place, to keep a record of the “old” information and thus should only be given to those few persons who need to make corrections to the data.

#### 2.4.8. Delete

Delete refers to the ability to remove a row of data permanently. Use of this should be very limited because when data is permanently deleted it is no longer available in the database. The authority to perform this activity is usually limited to very few users, and approvals are required so that the valid records are not accidentally deleted.

### 2.5. Security and Self-Service Processes

When self-service processes are used in HR applications additional security considerations need to be taken.

#### 2.5.1. Employee self-service

Data-level security must be able to allow the employee access only to their own record but flexible enough to know that if this employee is also a manager or an HR representative they may also have access to other records in the application.

#### 2.5.2. Manager Self-Service

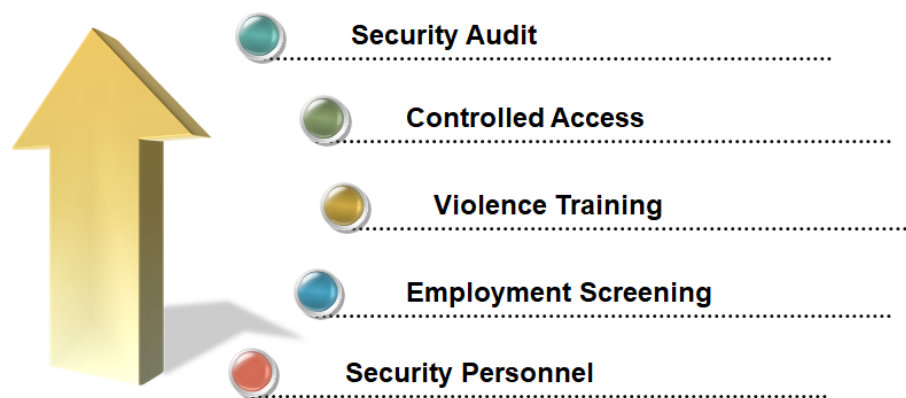
Data-level security must be able to allow managers access to all employees that report to them. Depending on work structure, these employees may or may not be in the same organizational unit of the manager. This must also take into account how a record will be updated in the event that the manager is not available. Workflow processes that instruct systems what steps a change must take before it is approved to be written to the system must be able to identify alternate approvers of the transaction. This is particularly true of those changes that are time-sensitive.

## 3. Security Management

In the context of workplace and information security, security encompasses both physical

and procedural measures designed to safeguard individuals, assets, and data. The objective of security in the workplace is to mitigate or eliminate risks to an organization's tangible and intangible resources, extending beyond the conventional realm of profit and loss activities.

A comprehensive security management approach is essential to address various concerns, including the prevention of workplace violence. HR managers may assume responsibility for security programs or collaborate closely with security managers and consultants. Security initiatives may also involve an in-house or contracted security team, requiring the active participation of employees to support security efforts.



### 3.1. Security Audit

Within a security audit, HR personnel conduct a thorough evaluation of the organization's security measures, often referred to as a vulnerability analysis. This audit engages both internal stakeholders (e.g., HR and facilities managers) and external experts (e.g., security consultants, law enforcement, fire officials, and IT security specialists) to assess security-related aspects.

Typically, a security audit commences with an examination of the surrounding area, considering factors such as parking lot lighting, traffic patterns, proximity to emergency services, local crime rates, and the layout of buildings and premises. Disaster preparedness plans, addressing contingencies like earthquakes, floods, tornadoes, hurricanes, and fires, are also reviewed as part of the audit.

### 3.2. Controlled Access

Effective security involves regulating access to the organization's physical facilities. Many incidents of workplace violence occur during robberies, necessitating protective

measures for vulnerable employees, such as taxi drivers and convenience store clerks, including bulletproof partitions and restricted access zones.

Organizations often employ electronic access or keycard systems to restrict facility and workspace access. While not foolproof, these systems create barriers for unauthorized individuals, such as former employees or estranged spouses, seeking entry. Access controls can also be implemented in elevators and stairwells to prevent unauthorized access to specific areas within a facility.

Securing IT resources involves controlling computer access, which may require collaboration with information technology teams to update passwords, access codes, and enhance data protection measures.

### 3.3. Violence Training

Training is vital for managers, HR personnel, supervisors, and employees to recognize signs of potential violence among colleagues and respond effectively when violent incidents occur. Training programs often cover the typical profile of potentially violent employees and instruct participants to report concerns to the HR department and refer individuals to external counseling professionals. Participants learn to identify verbal and nonverbal cues indicating anger or hostility, as well as how to engage with individuals exhibiting such behaviors.

### 3.4. Employment Screening

Screening job applicants plays a crucial role in enhancing security. HR management, however, operates within legal constraints, particularly regarding the use of psychological assessments and reference checks. Inadequate employee screening can expose organizations to liability if an employee commits crimes subsequently. Employers must exercise diligence in using valid, job-related screening methods while complying with local labor laws to avoid legal repercussions.

### 3.5. Security Personnel

Ensuring an adequate number of well-trained security personnel is a pivotal aspect of security management. Many employers opt to contract security services from specialized firms. For in-house security teams, the selection and training of security personnel are essential to address various workplace security challenges, including responding to employee violence and managing crisis situations, such as natural disasters.

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