



Introduction to the Discipline of Human Resources Technology

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Scope—The Human Resources Technology Discipline deals with the use of technology of all types and in all functional areas of human resources both supporting the function itself and in support of business goals. Technology creates efficiencies, produces reliable and repeatable reporting, assists with honing metrics and adds a layer of security and anonymity to many human resources functions. It includes matters involving human resource information systems, automated scheduling and timekeeping systems, the technology aspects of workplace security, and full suite talent management systems. Important information to keep abreast of include trends in technology, effective and evolving practices, and the basics of vendor and software selection.

It also includes matters that focus specifically on careers, communications, legal and regulatory issues, metrics and outsourcing in the human resources technology field, as well as effective HR technology practices and global HR technology issues. Developing segments in this field today are preventing and responding to data breaches and how to manage mobile technology.

It does not include matters involving the legality or advisability of using automated technologies to monitor employees' work, whereabouts or activities undertaken during work hours, which are encompassed in various topics within the Employee Relations and Safety and Security Disciplines.

Overview

In the past, HR professionals' use of technology may have been limited to administrative tasks such as time and attendance and payroll. But no longer. Today, core HR responsibilities as diverse as recruitment, oversight of legal and regulatory compliance, benefits administration and the safeguarding of confidential employee information cannot be carried out effectively without the use of sophisticated technology tools.

The increasing reliance on technology requires HR to work closely with their colleagues in IT around such issues as data integration and privacy. Many companies have established a job function for a human resource information system (HRIS) professional or have someone either in HR or IT dedicated specifically to human resources technology support.

In nearly all organizations, HR professionals considering any kind of system have had to become versed in the vernacular of information technology—learning concepts once strictly the domain of computer science majors—such as models for service delivery (e.g., leased, hosted or licensed) and the risks, benefits and costs associated with any selection. Partnering with the IT department ensures both HR and technology experts participate in the buying decision thereby reducing the risk of spending large sums on a product or service that won't meet the organization's needs. For many HR professionals, the growth of electronic communications, the advent of Smart phones and tablets and the increasing use of the Internet by nearly

all workers have required the development of new policies governing the safekeeping and appropriate flow of information, including e-mail, blogs, and social networking sites. Indeed many HR departments, working in tandem with IT, now rely on a combination of policy and software to monitor data flow and to electronically block inappropriate data such as pornography or the leaking of trade secrets. Social media managers check social networking sites to monitor their company's reputations. Accordingly, the practice of human resource technology has become an HR discipline in itself, as well as a facet of all other HR disciplines. .

Technology and Business Leadership

When it comes to technology, business leaders want to stay ahead of the curve. Leaders want to innovate with technology, learn about the technology innovations of other organizations, acquire technology, and successfully implement it to achieve the organization's strategic objectives. Many organizations are using technology to disrupt the status quo of their industry. Leaders unwilling to adapt lose their competitive edge. Because technology is constantly and quickly evolving, this is an ever-present focus for leaders.

Many technology requirements involve basic business functions: word processing, publishing, planning, accounting, budgeting, legal compliance, research and communications. Software relating to these fundamental tasks is constantly being improved. Technology has made a great impact on higher-level functions; a vast and ever-increasing array of technology, including software, Web-based applications and now mobile apps, exists to assist organizations with achieving their strategic plans.

In a world where what matters gets measured, many HR executives turn to sophisticated analytics to measure everything from gauging their department's strategic contribution to evaluating employee engagement. Next-generation tools enable HR and business managers to make predictive correlations between traditional HR metrics and the business outcomes they are expected to achieve—such as the impact of a mentoring program on performance. Some companies underscore the importance of such metrics by displaying them front and center in a "dashboard" format.

See: Technology Helps Organizations Better Analyze HR Data (www.shrm.org/ResourcesAndTools/hr-topics/technology/Pages/Technology-Helps-Organizations-Better-Analyze-HR-Data.aspx) and Experts: HR Dashboards Must Tell Stories with Data (www.shrm.org/ResourcesAndTools/hr-topics/technology/Pages/HRDashboardsUpdate.aspx)

Technology and Benefits

Many employers use technology for benefits administration. Self-service websites, for example, allow workers to go online to make changes to their benefits and to give notice-of-life events changes that impact their benefits, such as change in marital status or the birth of a child. Self-service sites also facilitate leave of absence administration allowing employees and their physicians to interact with the provider while maintaining employee privacy. Many employers use automated systems to direct employee benefits contributions, such as those that automatically direct a portion of a worker's pay toward their retirement savings plan unless the employee opts out.

And while total rewards statements that alert employees to the total value of their compensation benefits package have been around for years, many companies are now making that information available to workers electronically through their HR information systems or self-service sites.

Technology and Compensation

Payroll administrators were early adopters of HR technology. State-of-the-art systems allow for connecting time and attendance systems to payroll, and processing payroll with little or no human intervention.

Many companies use electronic systems, or paycards, to pay workers electronically and to eliminate the processing of paper checks altogether.

Compensation systems allow Human Resources professionals to design and administer multiple incentive systems across an organization to meet departmental objectives and can integrate the compensation plan directly with the performance management tool for a seamless pay-for-performance program.

Technology and Diversity

Technology also supports workplace diversity. Remarkable developments in assistive technology, for example, have dramatically increased job opportunities for people with physical disabilities.

While many employers believe that investing in such technologies is simply the right thing to do, some say it also makes strategic sense—allowing companies to recruit from a broader pool. And like many other technologies, the cost of many assistive tools has gone down significantly over the last decade, which makes them a more realistic option for companies of all sizes.

Here are some examples of assistive technology:

- Computerized text-to-speech readers allow blind and low-vision employees to navigate websites and hear their e-mail. Such speech-to-text transcription software provides a way to record observations without typing or using Braille. High-tech Braille keyboards seamlessly connect to desktop computers.
- Digital hearing aids automatically make adjustments to reduce background noise and to increase clarity of speech. Videoconferencing allows sign-language interpreters to provide translation services for on-site and virtual workers.
- Infrared beams allow workers with limited mobility to open programs and search the Internet with facial movements. An oversized mouse for a person with a nerve disorder can help ease navigation.

Technology and Employee Relations

The move to a technology driven, mobile workforce where employees are accessible at all times via mobile phone and email has created a workforce that often complains of overwork and burn-out – while at the same time lauding the ability to work flexible hours or work remotely. Human Resources must foster a culture that balances that fine line.

While companies interested in gauging their own employees' attitudes were once confined to cumbersome paper surveys that had to be counted manually, many now circulate surveys online through their own intranets and the Internet.

Employers are also turning to technology to assist in evaluating their workers. Electronic systems can automate the performance management process to ensure an accurate "grading curve" and guarantee feedback to employees. Integrated Talent Management systems can tie performance to compensation and learning systems for a holistic system to train, track and reward performance. The "gamification" trend is helping organizations engage employees and direct behavior through the use of interactive games or competitions. Technology is key to many social media or gaming techniques. See, Gamification: Win, Lose or Draw for HR? (www.shrm.org/hr-today/news/hr-magazine/pages/gamification-win-lose-or-draw-for-hr.aspx)

Technology offers many more opportunities and challenges in the realm of employee relations including:

- Email: Email is ever present in today's workforce and can create both efficiencies in communication and inefficiencies in over-communication. Monitoring inappropriate use of email poses a challenge between security and privacy that Human Resources professionals must balance.
- Internet: While the Internet is a vast source of information, surfing the internet is a major productivity challenge for organizations. Human Resources professionals must guide leadership in developing practical and enforceable

policies about Internet usage.

- Biometrics: Biometrics can increase efficiency, prevent fraud and ensure the safety of workers. However organizations utilizing biometrics must also balance employee privacy and security.

Social Media: The rise of social media presents another technological challenge. Business related social networking sites serve as great sources for talent sourcing, networking and advertising. However organizations are challenged to have social media policies to protect their brand from slander or libel of employees or competitors.

Technology and Labor Relations

Technology has changed the face of union organizing and communications. But the National Labor Relations Board(NLRB) has held that employees have no legally protected right to use the employer's e-mail system to engage in union organizing or other protected concerted activity. An employer in one case successfully argued that the e-mail system remained the employer's property, and that, for practical purposes, the union was seeking to piggyback on a costly employer resource.

Technology and Organization and Employee Development

Technology has had a significant impact on the field of organization and employee development in such areas as e-learning, computer-based testing and workplace collaboration. Organizations increasingly use technology to deliver training, and it helps them achieve greater overall efficiencies in the development function.

Workforce Planning

As data analytics becomes more sophisticated, HR is turning to data analysis in workforce planning. While this area of HR is still fairly new, it will gain increasingly important in years to come as organizations struggle to obtain and keep talent particularly in highly competitive roles. Workforce analytics can help organizations identify talent gaps, high potential employee segments that are at risk and can indicate markets where talent might be available. As HR provides more insight into predicting the business; they will increase their value added throughout the organization. See, Workforce Planning Moves into the Real-Time World (www.shrm.org/ResourcesAndTools/hr-topics/technology/Pages/Workforce-Planning-in-Real-Time.aspx).

E-learning

Broadly speaking, e-learning is education through using the Internet, a computer network or a stand-alone computer. Specifically, e-learning applications and processes include Web-based learning, computer-based learning, virtual classrooms and digital collaboration. Content may be delivered via the Internet, intranet/extranet (web streaming), CD-ROM or satellite TV.

E-learning presents many advantages over traditional classroom training, including the following:

- Time savings.
- Savings on travel costs.
- Convenience— flexibility in time and location.
- Diversity – through a larger geographical audience

As with all technology, e-learning has some challenges as well, including:

- Identifying the appropriate method of delivery to best ensure learning retention
- Vendor selection can be time consuming and may require intensive research.
- Integration of training technology with with the organization's existing technology infrastructure.
- Cost of purchasing new technology.

- Cost of adding staff to handle the technology.

Collaborative tools

Successful adoption of collaborative tools requires support from executives, IT and change-management specialists.

Today's collaborative tools fall into two broad groups:

- **Web-based tools.** These tools include blogs, wikis, and the increasing use of social networking sites where people mine and exchange information. Although developed for the Web—the greatest collaboration platform ever designed—these tools have been adapted for secure use by businesses, and vendors have infused many of these features into their software.
- **Collaborative media platforms.** These tools are designed for various disciplines, from supply chain management to HR processes to general knowledge sharing. They support HR practices such as recruiting and performance management, for example.
- **Collaboration tools.** These tools include SharePoint sites, file shares and other spaces where teams can collaborate on projects to share information in a private, secure setting.

Technology and Safety and Security

Human resource professionals use various forms of technology to manage safety and security information and functions. Human resource information systems (HRIS), for example, enable the sorting of employee information so it can be readily used for record keeping, reporting and business decision-making. Workplace safety and security can benefit tremendously from incident management technology by facilitating acquisition and analysis of injury and illness data, injury costs per employee, training documentation and management, performance management, electronic communications, digital access key login information, security camera data management and identity theft protection, among other uses.

Technology to track employee's whereabouts are often used in high risk security situations to ensure the ability to evacuate those in danger or in the event of a natural disaster. Employers must grapple with their responsibility to ensure the safety of employees while not violating privacy rights in this area.

Some employers have found that use of biometrics devices—those that use fingerprints or other physical traits for identification—can help identify employees and solve some employee discipline problems as well as protect sensitive data. Traits most often used are fingerprints, and iris, hand or finger geometry. Time clocks are one of a growing number of workplace applications of biometrics. Nevertheless, biometrics make up only a small percentage of the market for time and attendance data gathering.

Proponents of the use of biometrics for time and attendance say the technology eliminates business costs due to lost cards and "buddy punching," while allowing for seamless transfer of information into payroll software. Potential issues include reliability, religious accommodations, and employee privacy concerns. See, May employers track employees' attendance by using biometric timekeeping systems? (www.shrm.org/resourcesandtools/tools-and-samples/hr-qa/pages/monitoring-surveillance--searches-may-employers-track-employees-attendance-by-using-biometric-timekeeping-systems.aspx)

Technology and Staffing Management

A vast and ever-increasing array of technology exists to assist organizations with staffing management. Solutions include software, Web-based applications, cloud computing, mobile apps and video products. In fact, organizations that do not have some kind of web application process experience a limited pool of candidates as most job seekers now do so online.

Some of the more common areas of staffing management where technology is employed include the following sourcing, applicant tracking, affirmative action tracking, background investigations, job analysis and job description tools. The combination of social media and data analytic search engines to search out candidates results in highly skilled workers being in demand and "poached" by tech savvy recruiters. See, Perk Up Hiring with Games for Recruiters (www.shrm.org/resourcesandtools/hr-topics/talent-acquisition/pages/hiring-games-recruiters.aspx)

Finding talent

Over the last decade, the Internet has played an increasingly important and prominent role in external recruiting. While large, all-purpose online job boards quickly found a place in the recruitment industry, niche sites catering to specific industries and demographic groups such as women and national origin based sites have also won favor with employers and job seekers. Online corporate job sites and intranets have also become essential recruitment tools, allowing employers to get the word out about job openings quickly and at little or no additional cost.

The most robust systems facilitate a broad range of functions:

- Tracking of data to meet EEO and government contractor requirements. Development of reports that analyze and measure the success of recruitment sources and strategies.
- Better tracking of where applicants are in the recruitment process.
- Self-service portals that allow applicants to manage multiple applications at once.

Employers have also begun to leverage technology to market their job openings more strategically. Many employers capitalize on emerging technology like real simple syndication (RSS), which allows their online job postings to reach job seekers via e-mail or text message as soon as a new job is posted. Other organizations are enhancing their traditional online listings with accompanying videos and podcasts.

Meanwhile, employers have had to adapt to an increasingly tech-savvy recruitment pool that has multimedia resumes displaying text, photos, video and sound. See, Playing Games with Applicants (www.shrm.org/resourcesandtools/hr-topics/talent-acquisition/pages/games-applicants-recruiting.aspx)

Virtual interviewing is increasing in popularity. This results in a reduction of recruitment costs while still allowing the candidate and hiring manager the ability to assess job fit.

Onboarding employees

Employers have long been responsible for verifying their workers' employment eligibility. Technology provides them with various options for reducing the cost and burden involved with this task.

Tens of thousands of employers now use e-Verify, an Internet-powered tool offered for free by the Social Security Administration and the Department of Homeland Security to verify a match between their employees' names, Social Security numbers and immigration information. Various vendors offer similar services that also allow employers to store I-9 and other verification information electronically.

Meanwhile, desktop search engines like Google have given many HR professionals a new tool for conducting background checks. Some employers are seeking out additional information about their potential hires—and those already brought on board—by checking out those workers' private blogs and entries they may have placed on social networking sites such as Facebook, LinkedIn and Twitter. However this is a growing area of employment related litigation so employers are advised to utilize these sources with caution.

Employers who rely on third-party background screeners find those checks can be accomplished more quickly through Internet-based tools and online databases. Technology has assisted with international background checks as well.

Once a new hire is ready to start working, many companies rely on electronic onboarding systems to handle tasks like assigning parking passes, computers, uniforms, e-mail addresses and security badges. Some employers—particularly those with a scattered workforce—capitalize on computerized learning systems for orientation and to deliver coaching on topics like sexual harassment avoidance and conflict resolution.

HR's Responsibility to Protect Data

One of the biggest trends in the digital evolution for HR is the responsibility to ensure employee's data is protected. Risks run from inadvertently releasing sensitive data to the wrong manager to major security breaches or hacks that expose the majority of employee's personal information to external, unknown sources.

HR can implement policies and security protocols to minimize the risk of security breaches. These steps could include requirements around encrypting sensitive data. Another approach is to restrict what type of data can be shared in the cloud or on social media. An organization should also be vigilant with vendors that require personal data. In negotiating contracts with benefits providers; staffing firms and others, it is critical to evaluate the vendor's IT security protocols and to understand what steps they will take in the event of a breach. As major data breaches are becoming more common with targeted groups such as healthcare providers, HR must be prepared to respond to such breaches. See, [How HR Leaders Can Prevent Cyber Loss \(www.shrm.org/ResourcesAndTools/hr-topics/technology/Pages/How-HR-Can-Prevent-Cyber-Loss.aspx\)](http://www.shrm.org/ResourcesAndTools/hr-topics/technology/Pages/How-HR-Can-Prevent-Cyber-Loss.aspx) and [Prevent Hacker Attacks \(www.shrm.org/hr-today/news/hr-magazine/Pages/0714-technology-security.aspx\)](http://www.shrm.org/hr-today/news/hr-magazine/Pages/0714-technology-security.aspx).

Technology and Global HR

Between a growing global economy and the shift from a production orientation to a knowledge and service orientation, organizations increasingly seek avenues that offer greater flexibility to remain competitive. Finding the best talent—wherever that talent may be—is one of the best ways to compete. Accordingly, HR needs to leverage technology solutions to enable employees in dispersed locations to work together in global virtual teams. By using virtual teams, companies can take advantage of the competitive synergies that teamwork offers along with the advancements in information and communication technologies. In addition, global teams allow companies to "follow the sun" by having availability to customers 24 hours a day.

Managing Mobile Devices

Recent technological developments such as the launch of phablets (phones and tablets), I-pads and other tablets have made the workforce much more mobile and wanting access to information 24 hours a day; 7 days a week. Add to that the millennial generation who tend to want flexibility in their work environment and communicate most frequently with their phones. The result is organizations are having develop strategies for managing mobile devices.

While the policy and security of these devices often originates in the IT department, HR is becoming more affected in various ways. Applicants need to be able to apply for jobs via their mobile devices. It is becoming more common for employees to complete training via their mobile device. This can make delivery tricky but the benefits are that training can be completed anywhere at any time. Some organizations even complete their performance review documentation via mobile devices.

Managing these areas can be challenging. Questions companies need to consider include: Do they issue their own mobile device and thereby control what can go on it or do they allow employees to use their own personal devices? How do organization prevent employees from using their mobile device inappropriately – be it not encrypting the phone or downloading apps that are not work related or pose security risks? As this is a developing area; there will be many more challenges to consider in the future. See, [Why Mobile Security is Everyone's Job \(www.shrm.org/ResourcesAndTools/hr-topics/technology/Pages/Why-Mobile-Device-Security-Is-Everyones-Job.aspx\)](http://www.shrm.org/ResourcesAndTools/hr-topics/technology/Pages/Why-Mobile-Device-Security-Is-Everyones-Job.aspx).

Express Requests

The HR Knowledge Center has gathered resources on current topics in HR management. Click here ([www.shrm.orghttp://apps.shrm.org/HRResources/ExpressRequests.aspx?type=6](http://www.shrm.org/apps.shrm.org/HRResources/ExpressRequests.aspx?type=6)) to view and request information.

OTHER TECHNOLOGY TOPICS

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