DATA AND ANALYTICS

Trending Tools and Technologies in HR

Advances in technology and analytics present many opportunities to increase the efficiency and effectiveness of HR. The Trending Tools and Technologies in HR series uses APQC’s Open Standards Benchmarking® data to brief talent leaders on these new tools and technologies, their adoption and use within HR, and how best-practice organizations are leveraging them to transform the HR function. This article focuses on data and analytics, which allow companies to track KPIs, model and anticipate important workforce trends, and make insights more accessible than ever for HR leaders and executives.

WHAT IS THE DIFFERENCE BETWEEN DATA AND ANALYTICS?
While ‘data’ and ‘analytics’ are often used and discussed together, they are substantively different from one another. Data can refer to either quantitative (numerical) or qualitative (non-numerical) facts about the world, collected for the purpose of answering a question or providing insight into a situation. The advent of ‘big data’—the ability for organizations to gather millions or even trillions of data points from the internet, sales, social media, and other sources—has had a profound effect on the way organizations do business, understand customers, and make strategic decisions.
Organizations today have access to far more data than they would ever be able to analyze manually, which is why analytics—tools that help glean insights from data—have become an extremely important form of technology for organizations regardless of their size or industry. Organizations tend to use four common types of analytics, each of which is aimed at a different purpose:

- **Descriptive analytics** uses intelligence combined with existing data to provide insight into an organization’s past to help answer the question “What happened?” Commonly used statistical methods for descriptive analytics include mean, median, mode, frequency distribution of discrete data points, and percentile rankings.

- **Diagnostic analytics** goes one step further than descriptive analytics to answer not only what happened, by why something happened. Using probability, regression analysis, filtering, and time-series data, diagnostic analytics can help identify causal relationships that explain trends or anomalies in data.

- **Predictive analytics** uses forecasting and statistical modeling to help an organization anticipate what the future might look like. Armed with predictive analytics, an organization could potentially see trends that reveal opportunities or pitfalls to avoid and take appropriate steps beforehand.

- **Prescriptive analytics** uses optimization or embedded decision rules to find out what course of action an organization should take in a given situation. This form of analytics is the most advanced, as it uses insights gleaned from predictive analytics to recommend decisions or actions that are likely to produce a specific result given specific variables or inputs.

**WHY DO DATA AND ANALYTICS MATTER TO HR?**

HR organizations leverage data and analytics for a wide range of benefits, including the ability to model and predict trends related to an organization’s workforce costs. HR experts Lars Schmidt and David Green cite the global data and measurement company Nielsen as a compelling example of this use of analytics. The organization discovered through predictive analytics that for every one percent decrease in employee attrition, they could avoid five million dollars in business costs. In response, leadership made it easier for employees to seek internal promotions or lateral moves. The HR program that was established to respond to this challenge ultimately saved Nielsen more than $10 million in the first eight months of the program.
The use of data and analytics is associated with many other benefits for HR. For example:

- Using data on previous hires, organizations can predict which sources of talent (e.g., schools, degree programs, former employers, etc.) are most like to result in quality hires.

- Organizations routinely use analytics to gain insights into events and attributes that are predictive of turnover for business-critical employees to help mitigate the risk and impact of their departure.

- Analytics can allow an organization to track and gain insight from employee Net Promoter Scores to measure satisfaction or dissatisfaction with recruiting efforts, allowing the organization to shape more effective approaches.

- Analytics can also enhance an organization’s approach to diversity and inclusion through dashboards that provide visibility into data on advancement, mobility, and turnover for historically underrepresented groups.

**HOW IS HR USING DATA AND ANALYTICS?**

*APQC’s Open Standards Benchmarking in HR technology and analytics practices* shows that organizations are using data and analytics for a wide range of HR processes including engaging employees, driving workforce productivity, managing employee performance, rewarding and retraining employees, and redeploying and retiring. At the same time, many organizations have room for growth when it comes to using analytics for these processes. For example, less than one-quarter of organizations have reached the highest level of analytics maturity and are able to develop scenarios or predict outcomes for rewards and retention or redeployment and retirement (Figure 1). At this stage, more organizations are leveraging analytics for historical analyses or reporting for these processes.
Which Situation Best Describes Your Organization’s Use of Analytics for the Following Process Groups?

![Figure 1](image)

Organizations are also in varying stages of maturity when it comes to using analytics for specific processes such as employee engagement, workforce productivity, and performance management (Figure 2). Relatively few organizations leverage data and analytics systems with embedded artificial intelligence (AI) to optimize these processes, which represents the highest stage of maturity.

Which Situation Best Describes Your Organization’s Use of Analytics for the Following Process Groups?

![Figure 2](image)
Implementing data and analytics within an organization is a significant undertaking that requires strong foundations in terms of processes, people, and technology. It’s no surprise that the top data and analytics challenges for HR encompass these areas, including challenges like poorly-defined metrics, a lack of available skills, and a lack of integration between systems.

**Analytics Challenges**

![Analytics Challenges Diagram]

Access to data can also pose substantive challenges to an organization’s analytics efforts. APQC’s Open Standards Benchmarking in HR technology and analytics practices shows that while about one-quarter (24 percent) of HR functions have real-time access to enterprise data as needed, another quarter of respondents say that data is siloed in departments or lines of business in their organization (25 percent). And, 17 percent of HR functions have no regular access to data beyond that needed to perform regular transactions. An analytics solution is only as effective as the data from which it draws: HR functions with less reliable access to data will find it more difficult to effectively leverage analytics.

These challenges are formidable but have not stopped the steady adoption of data and analytics in HR across a broad range of organizations and industries. Few organizations are not using data and analytics at all for process groups like rewards and retention (14 percent), and the cost of analytics solutions continues to come down as the technology becomes more ubiquitous.
DATA AND ANALYTICS IN PRACTICE

Best-practice organizations today are effectively leveraging analytics to track and report important human capital management metrics, measure the strength of diversity and inclusion efforts, drive deeper employee engagement, and more. For example, the workforce planning and analytics team at Swedish telecommunications organization Ericsson leverages data to track the health of HR processes like talent acquisition, pay and benefits, and learning and development. Trained business analysts in the organization’s shared service centers analyze the organization’s data to detect patterns related to human capital trends that may affect organizational performance, like workforce cost and generational demographics. Analysts provide inputs for financial reporting related to headcounts and populations in core areas of business. The organization has also built self-service analytics dashboards for executives that allow for customizable views of raw HR and workforce data so that leaders have immediate access to the data and can parse it according to their reporting needs.

Walmart provides another example as data and analytics sit at the core of Walmart’s diversity and inclusion efforts. The organization has taken steps to make diversity data more transparent and accessible across the organization, and provides executives with an analytics dashboard that includes data related to advancement, mobility, and turnover for each management level. To support the use of these dashboards, Walmart offers ongoing training that teaches executives and other users how to navigate the data, discover gaps, and drill down into root causes for better data-driven decision making.

PepsiCo, meanwhile, has taken employee engagement to new levels with data and analytics. Insights from data found in crowdsourcing initiatives, lifecycle surveys, social media sentiment analysis, and chatbots have allowed the organization to develop a much more agile approach to measuring engagement than it had when it used a more rigid, biennial employee questionnaire. Christopher Rotolo (Vice President of Global Talent Management and Organizational Development at PepsiCo) said that the ability to gather insights from this data meant that “very quickly, we started to get down to a very small set of items that either predicted turnover or predicted a differentiator between high and low performers,” which has helped the organization sharpen its engagement efforts.

PepsiCo has also successfully integrated its data and analytics efforts with AI through a ‘nudge’ engine that sends automated messages like “Did you know that 64 percent of your colleagues have already downloaded their reports and created their action plans?” to drive desired behaviors. While the organization is still testing its approach to nudging, the use of AI with data and analytics represents the cutting edge of data and analytics maturity.
IMPLICATIONS AND KEY TAKEAWAYS

Data and analytics have had a significant impact on the HR function, allowing organizations to model and anticipate critical workforce trends, better assess the health of core HR processes, and drive deeper employee engagement. Few organizations at this point do not currently use or plan to use analytics in their HR function—a majority leverage some form of analytics for core HR processes like workforce productivity and employee engagement. At the same time, the HR function in many organizations still has plenty of room to grow the maturity of their analytics to integrate AI-driven solutions like those seen at PepsiCo. Moving to more mature applications of analytics requires the right people, processes, and technology, and many organizations continue to struggle with challenges related to these areas. Even so, analytics solutions have evolved rapidly over the last decade, while the cost of these solutions has continued to come down. The HR function is likely to see increased adoption of these technologies as it continues to look for ways to make sense of complex and ever-expanding sets of data.

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