Quantifying the Value of Human Resources: An Analysis of Workforce Metrics and Analytics

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Table of Contents

4  |  Introduction
6  |  Building and Implementing Effective Metrics
10 |  Analytics: Transforming Data Into Action
13 |  Conclusion
14 |  References
15 |  About the Author
Introduction

While the fields of metrics and analytics have existed for decades, HR professionals have been slow to use them. One challenge has been having the right infrastructure in place to access and analyze relevant data, and then convert it into information that can direct the company’s actions. This is less of a barrier today with new technologies and human resource information systems (HRIS). In addition, these technologies, models and tools continue to drive down the cost of data management.

With increasing global competition, there is a need for organizations to be more data-driven. Due to the ever-increasing financial investment in human capital programs, the C-suite is asking HR leaders to provide more insight into the programs they manage as well as quantify those programs’ value.

HR professionals are beginning to use metrics and analytics to make more effective decisions in areas such as: workforce planning and recruitment; compensation and benefits; learning and development programs; hiring; training; and work assignments.

This review will define key terminology and explain how metrics and analytics can be used to measure current conditions and predict future workforce probabilities and trends.

Marketplace Review
The literature, blogosphere and conference circuits are filled with articles, books, online discussions, tweets, LinkedIn groups, webinars, courses and conferences on this topic. While metrics and analytics have been used for quite some time, the focus has shifted from historical analyses to more predictive capabilities.

Jac Fitz-enz, known as “the father of HR metrics,” has made significant contributions to the field of metrics and analytics since the 1970s. Other past and current contributors in the field include John Boudreau, Wayne Cascio, John Sullivan and Peter Cappelli.
Many HR professionals tend to use workforce metrics and analytics terms interchangeably. Kelly Cartwright, vice president of corporate development at SourceRight Solutions, used the analogy of a GPS navigation system to distinguish between measures, metrics and analytics:

Miles and hours are types of measures. The navigator applies these measures to achieve meaningful metrics for tracking progress: miles per hour. It applies those metrics to calculate travel time, and it tells you when you can expect to arrive. This last piece is an analytic. It is specific. It is predictive, and it illustrates one of the main hurdles companies face: they don’t always agree on their destination, let alone the measures and metrics involved in getting there.

Definitions of Terms
The following are working definitions for basic workforce metrics and analytics terms:
- **Measures** are a basis or standard of comparison. They are the dimensions or the items used to make a standard of comparison.
- **Metrics** are measurements that quantify results. They can be used to compare or track performance or production.
- **Analytics** turns raw data into information upon which decisions can be drawn and actions taken.
- **Benchmarks** are standards against which metrics are compared.
- **Dashboards** measure and monitor performance using a set of metrics.
- **Scorecards** measure against goals and manage organizational performance.
- **Data mining** sorts through huge data sets to identify undiscovered patterns and facts.
- **Data warehousing** is a process of central data management and retrieval.
- **Predictive analytics** is concerned with the prediction of future probabilities and trends.
A good metric is built upon an organization’s mission, goals and objectives. A metric must be meaningful and understandable for management and workers, be easily measurable and provide a foundation for the assessment of an activity’s success. For example, a benefits practitioner may look at medical claims data and determine how many enrollees due for a certain preventive screening receive that service. That data would be used to determine who needs targeted education and communication to encourage the preventive screening.

Metrics can be used to defend and justify decisions, provide objective assessment or progress toward goals, solve problems and validate process improvement. They can perform functions such as: quantify a unit’s accomplishments (performance metrics); determine whether a project is meeting its goals (project metrics); or define a company’s progress in measurable terms (business metrics).

Not all companies define metrics the same way or use the same formulas. Although a company may choose any number of decision criteria and establish metrics to measure project success, key decision criteria should be limited to the critical metrics for one’s own organization. For example, if a company wants to determine if an incentive program is increasing employee motivation, it must determine what behaviors it will be quantifying.

**Benchmarking**

Once established, a metric needs to be measured against some standard. A benchmark is a performance level under a given metric, and typically is specific to a defined comparison group (e.g., one HR member for every 100 employees). Regardless of what is measured, metrics don’t mean anything without a standard or benchmark. Benchmarking typically is either quantitative or qualitative, with both methods important to telling the complete story, and can be applied internally as well as externally. HR metrics are often compared internally (e.g., benchmarked against an organization’s past performance) or externally (e.g., benchmarked against other companies).

It is important to benchmark internally and leverage practices in one’s own organization by:

- Establishing a baseline (based on real company data)
- Making valid assumptions
- Comparing future outcomes.

For example, if an organization is implementing an employee wellness program with established metrics regarding plan participation levels and reduction in health-care costs over a measurement period, it should gather data at the start of the program to have a threshold on which to measure success.
At the same time, it is important for an organization to consider external benchmarks to see if it is moving the needle when looking at how the organization compares against its competitors, and/or some national or regional standard. An organization may gather national or regional benchmark data, along with peer-company data or industry-specific data, and use that information to develop a standard.

Simply looking at one’s own benchmark data may not tell an organization if it is doing well or hitting the mark. For example, turnover costs of $50,000 may seem too high to the CEO, but when benchmarked against other organizations, perhaps $50,000 falls into the lowest 20% of turnover costs. The broader view provides a more meaningful comparison to judge performance.

It is important to remember that because of factors such as different organizational structures and business models, comparing one’s performance to only standards outside of the organization may be irrelevant, and could lead to poor business decisions.

**Metrics Specific to Human Resources (HR) and Total Rewards (TR) Programs**

Organizations use HR/TR metrics to measure the impact of specific initiatives as well as overall departmental performance. Are the HR/TR programs and the overall performance of the department in alignment with and meeting overall organizational objectives? Are the HR capital initiatives for which HR/TR teams are responsible improving organizational value and supporting strategic business goals? In order to answer these questions, it is critical to establish the right metrics, focusing on those metrics that affect progress toward the achievement of business goals. The primary focus of HR/TR professionals is on people resources and how companies attract, retain, deploy, engage and develop their human capital.

Metrics can be used to measure the efficiency of an existing program or a department’s performance relative to a benchmark. The keys to measuring performance are developing targeted goals, learning what information to collect, knowing how to use this data to determine what’s working and what isn’t, and then determining how what isn’t working can be fixed. Metrics can also assist in making appropriate plans for future human capital investments using a level of predictive analytics based on a look back at results measurement of prior business investments.

In human resources, efficiency ratios and measurements (e.g., turnover, attrition rates, replacement rates and absenteeism rates) have been around for a long time. More recently, the ability to measure employee engagement and job satisfaction has emerged. Recent efforts include measuring the return on investment (ROI) of wellness programs and communications initiatives.

Metrics can be used to increase productivity and employee engagement and improve factors such as organizational competitiveness, ROI, rewards systems and organizational efficiency.

**Return on Investment (ROI)**

Often, ROI is used as a predictive tool to assess whether or not to make an investment or to compare the value of one investment against another. From a total rewards perspective, the general approach to determining ROI involves measuring the cost and benefits of an investment or bundle of investments in one or more of the total rewards elements. Measuring the actual ROI of total rewards is difficult because there is no existing baseline against which to measure. A more practical approach is to measure the ROI of changes made to the TR offering (e.g., new pay plan, new incentive plan, new benefits, training course and wellness initiatives). This measurement will reveal whether specific investments in the offering have yielded the projected and desired returns to the business.

ROI analysis involves assumptions and calculations, and a degree of judgment. To determine ROI:

- Calculate the baseline performance using your people metrics for the targeted population segment(s).
- Calculate the cost of the investment (e.g., cost of development and implementation of the change, cost of management of the change, cost of the change itself).
- Calculate the change in baseline metrics.
Scorecards and Dashboards
The terms “scorecard” and “dashboard” often are used interchangeably, but there is a significant difference between the two. While both scorecards and dashboards help organizations monitor and manage performance by measuring progress against set targets, the way they are used and how they achieve these goals differ.

A scorecard measures against goals and manages organizational performance; it is a performance management system. The goal of a scorecard is to focus the business on a common strategic plan by monitoring real-world execution and mapping the results of that execution back to a specific strategy.

Meanwhile, a dashboard serves as a performance-monitoring system using a set of metrics to measure results. Less focused on a strategic objective and more tied to specific operational goals, a dashboard falls one level down from a scorecard in the business decision-making process.

Dashboards
Organizations use dashboards to get a broad or high-level idea of what is happening within the company, a specific department or a specific function. Good dashboards provide organizations with a first glimpse into what is occurring so that decision makers can delve into the cause and effect, and then take action. Dashboards enable organizations to consolidate information from multiple sources, and spot trends that might not otherwise be apparent. In a call center, managers may want to monitor the time it takes to solve caller issues, the number of calls being handled, levels of service, trends and calling patterns, and how all of those relate to companywide initiatives. For sales, businesses might use maps to identify sales by region or the popularity of specific products within certain geographic areas.

Here are some HR/TR examples:
- Organizations might focus on head count, actual vs. budget (by group, department or division), or workers’ compensation claims, actual vs. budget (for regions, departments or job classifications).
- Organizations could consider employee satisfaction scores, turnover rates and individual performance ratings, by business unit or department, for purposes of succession planning and talent management.
- Regarding its own performance, an HR department might monitor the time it takes to fill an open-position requisition; in other words, the time to hire. This can be measured by individual-contributor performance and/or aggregated for overall department performance.
- For compensation, an organization might analyze compa-ratios for various departments or divisions, or monitor the time it takes to pay out merit increases or incentive payments once the available pool of funds has been determined.
- For benefits, an organization may wish to monitor retirement trends by looking at 401(k) participation rates, average deferrals, average balances, investment selections, etc.

The ability to use dashboards for immediate or short-term monitoring of processes — while supporting longer-term initiatives using scorecards to align shorter-term goals with the overall strategic management of the organization — provides a good way to get the most out of managing a company’s metrics. In many cases dashboards are used to identify what is currently happening within the business and ensure that day-to-day operations stay on track.

Scorecards
A scorecard displays a collection of key performance indicators (KPIs), each of which represents an aspect of organizational performance, together with performance targets for each KPI. Representing a snapshot of organizational performance at a particular point in time, each indicator usually shows how far away a metric is from its predetermined target, and is designed to let a business user know at a glance if results are on target.

It is important to know the scorecard’s intended audience, such as HR and company leaders, program/
initiative champions or service partners. Keep the scorecard simple and make it stand alone so that anyone can pick it up and understand it.

A good example is the use of a balanced scorecard to manage the organization’s financial metrics with internal business processes, general goals and external factors (e.g., goals related to customers). The balanced scorecard is a strategic planning and management system used in business and industry, government and nonprofit organizations to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals. Coined by Robert S. Kaplan (Harvard Business School) and David P. Norton as a performance measurement framework that added strategic non-financial performance measures to financial metrics to give organizational leaders a more “balanced” view of organizational performance, the balanced scorecard has evolved from its early use as a simple performance measurement tool to what it is today.

Usually, the scorecard combines an organization’s overall vision and business strategy by monitoring key metrics based on financial information, customer behaviors, general business processes and overall desired growth. These factors and the targets associated with them will reconcile to the desired state. Alerts can be set up to identify situations whereby targets will not be met so proactive action can be taken. Overall, businesses adopting scorecards identify what they want to achieve and use the scorecard as a guide on how to get there.

A scorecard is a powerful way to track and influence the use of compensation in an organization’s strategy. A compensation scorecard collects and displays the results for all the measures that an organization uses to monitor compensation and compare compensation among internal departments or units. It can be used to help organizations detect and prevent compensation problems, make compensation decisions and actions more transparent, and improve the quality of compensation decisions.

Rather than measure and report on everything related to compensation, it is important to use scorecard elements that reinforce the organization’s desired compensation strategy. Some examples include compa-ratio, average market percentile, grade inflation, merit differentiation, ratio of benchmark job data to grade midpoint, percentage of people promoted, and average increase and level of pay differentiation relative to performance levels.

Another total rewards-based example is a scorecard that is used to measure the performance of an organization’s various benefits programs against its key employee benefits plan objectives. For example, if one of a company’s plan objectives is to increase enrollment in its consumer-driven health plan, it may wish to adjust its premium contribution strategy and monitor impact on enrollment. Another example may be to decrease the number of neonatal medical claims by offering a prenatal program to eligible insureds to monitor the impact of the program on average medical claims. A final example might be changing one’s prescription benefit strategy by lowering the amount of an eligible employee’s generic co-pay and/or increasing the brand-name co-payment in order to increase generic usage and reduce prescription drug costs.

Scorecards measure against goals while dashboards need not. Dashboards present raw data while scorecards offer interpretation of that data. Following Cartwright’s GPS analogy, automobile dashboards use many measures that provide data about how the car is operating but provide little insight, or metrics, into progress toward the goal of reaching the destination on time. Scorecards take a longer-term approach.
Analytics transforms raw data into critical insights, and is used in many industries to allow organizations to make better business decisions.

Analytics often involves studying historical data to research potential trends and analyze the effects of specific decisions or events. In human resources and total rewards, analytics involves looking at the metrics organizations have been tracking and measuring via dashboards and scorecards, then diving in deeply and providing context around the data to offer insights and analysis into what the data means. In other words, an objective of analytics is to draw conclusions from the examination of data in order for organizations to take action.

In total rewards, this might involve looking at the top emergency room (ER) diagnoses and claims dollars reported in a health plan, and then examining the plan design to make changes to potentially reduce the number of ER visits. In this analysis, consider looking at company historical data for the plan, as well as external benchmarks for similar plans in the community.

An organization might compare the impact of higher health premiums for smokers on the number of smokers who enroll in a smoking-cessation class. Another example is analyzing the incidence of medical, prescription and disability claims and lost days for smokers vs. nonsmokers to arrive at some conclusions that will help a company implement a solution to mitigate the related health risks.

An organization could also cross-reference its financial well-being score against medical claims and disability claims and against the number of calls to the employee assistance program seeking assistance for financial concerns, and then make some assumptions around the financial stress of its employees.

Other examples of applying analytics include analyzing the results of a sales compensation incentive plan and then modifying the targets and goals to achieve specific corporate objectives. Or, an organization could measure the efficacy of educational and communications initiatives on 401(k) plan participation and average deferral rates or the effect of automatic enrollment on 401(k) participation rates.

Two other functions — data mining and data warehousing — can be used to further advance the analytics. Using a data warehouse lends itself to conducting these analyses and cross-references because all of the data are stored in one central database for ease of integration and analysis. In this way, data can be mined to identify patterns and explore assumptions that can help support future business decisions and build a business case for various programs.
Data Mining
Data mining is distinguished from analytics by the scope, purpose and focus of the analysis. Data miners sort through huge data sets using sophisticated software to identify undiscovered patterns and significant facts, whereas data analytics focuses on inference, the process of deriving a conclusion solely on what is already known.

Data mining gets its name from the similarities between searching for valuable information in a large database and mining a mountain for a vein of valuable ore. Both processes require either sifting through an immense amount of material or intelligently probing it to find where the value resides.

The overall goal of data mining is to dig through enormous amounts of data sets located in huge relational databases, extracting the meaning of the data and converting that data into information and knowledge that can be used. Data-mining software is one of a number of tools for analyzing data. It allows users to analyze data from many different dimensions or angles, categorize it and summarize the relationships identified. It then helps convert that into useful information that can be used to increase revenue, cut costs or both.

This type of analysis can be applied to total rewards. Data-mining tools sweep through databases and identify previously hidden patterns. By mining various databases of health-care plan eligibility, medical/prescription claims, payroll information and other data, relationships among these items may be found. For example, in attempting to identify health and well-being trends, one may compare data such as absences, lost days, short-term disability and Family and Medical Leave Act of 1993 (FMLA) leave for individuals who have completed a health-risk assessment to those who have not.

Data Warehouses
Dramatic technological advances in data capture, processing power, data transmission, data-analysis software and storage capabilities are enabling organizations to integrate their various databases into data warehouses.

Data warehouses are used to consolidate data located in disparate databases. A data warehouse stores large quantities of data by specific categories so the data can be more easily retrieved, sorted and interpreted. Warehouses enable organizations to work with vast amounts of stored transactional or other data to respond faster to markets and make more informed business decisions. It is predicted that every business will have a data warehouse within 10 years. However, merely storing lots of data without learning more about that data to improve knowledge of customers and markets will be of very little benefit. The company benefits when meaningful trends and patterns are extracted from the data.
For example, a benefits professional may mine several databases of health and wellness eligibility and claims data, participation rates and leaves of absence to analyze potential cause-and-effect outcomes.

**Predictive Analytics**

A subset of analytics, predictive analytics is concerned with the forecast of future probabilities and trends, and involves using statistical models that integrate internal and external data to predict future workforce and talent-related behavior and events. These models can help companies better focus their resources.

Modeling is the act of building a set of examples or a mathematical relationship based on data from situations in which the answer is known, and then applying the model to other situations in which the answers are unknown. Modeling technologies have become more feasible for organizations because of the improved data storage and communication capabilities required to collect and store huge amounts of data and the availability of computational power to automate modeling techniques and work directly on the data.

The central element of predictive analytics is the predictor, a variable that can be measured for an individual or other entity to forecast future behavior. For example, an insurance company is likely to take into account potential driving-safety predictors such as age, gender and driving record when issuing car insurance policies.

In predictive modeling, data are collected, a statistical model is formulated, predictions are made and the model is validated (or revised) as additional data become available. Multiple predictors are combined into a predictive model that, when subjected to analysis, can be used to forecast future probabilities with an acceptable level of reliability. Regression analysis is a statistical modeling technique in compensation, often used to determine pay models based on relationships between job worth and market pay. Regression analysis can help you understand the relationship between the independent variable (the item that is believed to have an impact on the dependent variable) and the dependent variable (the variable that you are trying to explain or predict) — for example, the relationship between years of experience and pay, or the relationship between performance ratings and pay. When the independent variable is changed, you will be able to see how it affects the dependent variable(s).

In a variety of compensation, benefits and other total rewards scenarios, variables can be used to make a prediction, whether that be the number of employees to enroll in a newly introduced consumer-driven health plan or the likelihood of meeting targeted revenue and budget goals with a new incentive plan.
Conclusion

There is certainly a growing need for foresight and the ability for organizations to improve decisions and outcomes. A focus on measures, metrics and analytics plays a pivotal role in achieving this objective. Getting there clearly requires a process and a road map that address multiple challenges and dimensions: technology; people and organization; data and process integration; analytical methods; and information delivery. Organizations that have the infrastructure and support to establish this framework and make sound business decisions are ahead of the game. Most are just beginning to use these data-driven tools. In addition, the field of analytics will continue to become more sophisticated and offer new technologies, models and tools to help HR/TR professionals achieve optimal effectiveness.
References


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