RECRUITING ANALYTICS AND METRICS

Current Challenges and Trends

WHAT'S INSIDE

Predictive analytics is transforming hiring decisions in ways that reduce cost, increase efficiency, and boost effectiveness. This article details APQC’s research into current challenges and trends in applying predictive analytics and traditional measures to recruiting. Topics covered include the following.

- Predictive Analytics Applications
- Predictive Analytics Challenges
- Common Recruiting Metrics
- Selecting Recruiting Metrics
- Reporting Metrics and Making Predictions

KEY TAKEAWAYS

Predictive analytics uses aggregated hiring data to predict future trends and outcomes. Organizations are heavily investing in predictive analytics and advanced reporting. They can use predictive analytics to source and select the best candidates, assess the effectiveness of recruitment marketing, and even predict the need to hire.

The biggest challenge organizations face in using analytics in talent acquisition is extracting data from systems. Additional challenges include poor integration of HR systems, poor integration of HR systems with other function’s systems, vaguely defined metrics, and a lack of HCM professionals with skills in statistics, algorithms, and data analysis.

Because predictive analytics uses real-time metric results to make predictions, HR needs solid recruiting measures to achieve actionable, predictive insights. Quality of hire is the most commonly used recruiting measure. Other common measures include time to fill, cost per hire, and new hire retention rate.

Predictive analytics will make talent acquisition dashboards a much more informative tool within and outside of HR. Such dashboards will display hiring metrics and analysis so decision makers can quickly view key performance indicators, trends and correlations, and real-time and anticipated results.

For more details and ideas, read the full article which follows.
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Current Challenges and Trends

One of the most exciting applications of Big Data is talent acquisitions. For years, human capital management (HCM) professionals have heard about the potential game changers to come from mining the rich data collected through HR and the vast amounts that could be collected during the hiring process. And as historically low unemployment rates continue, the promises of advanced analytics are finally coming to fruition for most organizations.

The value of Big Data lies not in its collection but in an organization’s ability to analyze massive amounts to derive actionable insights. The new reality is the accessibility of advanced analytics to measure results and predict outcomes, ultimately making the hiring process more effective and efficient.

Pulling from APQC’s research, recent reporting, and HCM analysts, this article details the state of predictive analytics for talent acquisition and recruitment metrics.

PREDICTIVE ANALYTICS

Predictive analytics apply advanced data analysis techniques to aggregated talent management data generated throughout the hiring process in order to predict future trends and outcomes. This may involve artificial intelligence (AI), machine learning, and powerful query engines so that the data can be structured to optimize analytics.

In late 2018, APQC analyzed its Open Standards Benchmarking data to gauge organization’s use of analytics in recruiting. Half of organizations have moved beyond report to using analytics to inform the talent acquisition process. Of these, just under one-third were analyzing historical patterns and trends, and just under one-quarter were developing scenarios and predicting outcomes. These numbers should spike in the near future.

Organizations are heavily investing in predictive analytics and advanced reporting, with experts predicting an immediate buying surge (with adoption rates varying from 69 percent to 83 percent). But for many organizations, that implementation may be just a starting point in expanding from operational reporting to predictive analytics. They are only beginning to leverage algorithms to identify problem areas and potential solutions.

APPLICATIONS

The applications for predictive analytics in talent acquisition are expansive and likely to transform hiring decisions in the next couple years. The necessary counterpart to robotics process automation, predictive analytics will help source and identify the most qualified candidates, transform and improve processes, and improve an organization’s understanding of
how hiring directly affects business. For example, automated collection and predictive analysis could make the following processes exponentially more data-driven and effective:

- Optimizing employee referrals
- Creating job profiles based on internal attribute/performance data from top performers
- Filtering and prioritizing candidates in the screening process
- Combining all candidate inputs (tests, references, etc.) into one profile gauging job fit
- Gauging how often a posting is viewed and which sources are most fruitful by demographic
- Assessing applicants on validated critical success factors and probable length of employment
- Gauging a candidate’s performance potential or flight risk
- Matching passive candidates with open positions
- Monitoring talent availability internally and in the marketplace
- Predicting position openings and aligning with talent pool
- Meeting candidate expectations
- Designing and measuring the effectiveness of a recruitment marketing campaign
- Comparing talent acquisition performance to competitors
- Tying talent acquisition efforts to business impact

In terms of process improvement, predictive analytics point to where to tweak/transform steps based on best practices and how to secure a greater ROI. In terms of workflow prioritization, predictive analytics can align the efforts of all talent acquisition professionals for a single source of truth and optimized workflow. And in terms of hiring, predictive analytics can highlight what the best candidates look like and the most effective way to source and hire them. (The use of algorithms in hiring has already been proven to increase retention by at least **15 percent**.)

From a practical standpoint, greater analytical capabilities can ensure HCM professionals:

- are aware of historical patterns and anticipated trends;
- understand why changes are happening;
- have time to prepare a plan for trends, problems, and opportunities;
- can quickly respond to executive queries and directives;
- can advise executives on the best course of action and the most pertinent areas of concern;
- simulate different scenarios based on varying constraints and assumptions before acting;
- coordinate across HR and the business; and
- act strategically by forecasting, assessing risk, and planning ahead.

Ultimately, because predictive analytics are focused on probabilities and impact, HCM professionals can measure and predict efforts in terms of efficiency (e.g., time to fill), effectiveness (e.g., new-hire performance), and outcomes (e.g., profitability and retention). They can understand drivers in terms of candidate decisions, employee performance, marketplace drivers, and organizational needs. There is less uncertainty about the right job candidates, as well as the right steps throughout the hiring process and recruitment marketing.

No HR function can afford to throw resources at every potential sourcing and recruitment opportunity. They are expected to efficiently secure qualified candidates, and predictive analytics can point to where and how to invest.
CHALLENGES AND CONSIDERATIONS

The relative affordability of varying vendor solutions for predictive analytics is a recent phenomenon, with organizations heading towards an early majority adoption rate. Implementation considerations and challenges are hitting many organizations at once.

APQC has found that the biggest challenge organizations face in using analytics in talent acquisition is extracting data from systems. There are additional challenges stemming from the poor integration of systems within HR and with other functions, vaguely defined metrics, and a lack of HCM professionals with skills in statistics, algorithms, and data analysis. These are all early adoption stage issues.

As organizations address these foundational issues, other data-related challenges bubble up in leveraging predictive analytics. The quality of organizational data takes center stage, as organizations experience “garbage in, garbage out” in making erroneous insights and perpetuating bias. It’s important to remember that, whether it be a vendor or in-house, a person is designing the driving algorithms. The validity of those algorithms needs to be tested against real outcomes. And the amount of data to build predictions from needs to be substantive. Importantly, the hiring process is about people, and the patterns behind their actions and decisions are complex. People-related data is messy and often housed in disparate systems. And what’s true at one organization will be different for another organization.

It’s wise to invest in the centralization/integration of systems at the enterprise level, from applicant tracking and HRIS to performance management and strategic planning. It’s equally wise to invest in expertise in predictive analytics and machine learning. HCM professionals need to understand what they are buying and using. The organization needs to know who is building the algorithms, regularly updating the technology, validating and analyzing the outputs, operationalizing the outputs into dashboards and workflows, and leveraging the insights for decision making.

And, of course, recruitment measures should be well-defined.

RECRUITMENT METRICS

Predictive analytics take real-time metric results and make predictions about the future. Obviously, HR needs solid measures for talent acquisition to achieve actionable insights. Measures of processes and performance need to be specific, attainable, relevant, and reliable.

APQC’s Open Standards Benchmarking® research indicates that quality of hire is the most commonly used measure for the talent acquisition process. This aligns with organizations’ talent acquisition strategies. The number of candidates per position is the second most common measure, which reflects the challenge that organizations are facing in finding enough talent. Recruiting cost is slightly less frequently used, which is surprising given that cost is a top consideration in organizations’ talent acquisition strategies. Other frequent measures include new-hire failure rates, time to fill, candidate by source, and online application rate. (It’s worthy to note that measures of employer brand and candidate experience did not make the list.)
QUALITY OF HIRE

Quality of hire is a measure of the value added to the business. That value may be measured in terms of retention, performance, ratings, customer satisfaction, etc. Although it is the most popular talent acquisition measure, there is no set formula. Most organizations aggregate a collection of relevant metrics. APQC’s research indicates the most popular metrics feeding “quality of hire” are: new-hire length of service, new-hire engagement scores, new-hire performance data after a set period of service, and hiring manager survey of their satisfaction with their new hire—all four measures being used by about 50 percent of respondents.

Yet most talent acquisition leaders don’t feel they are measuring quality of hire effectively. In a LinkedIn survey of global recruiting trends, only one third or respondents feel their metric methodologies are strong, possibly because the formulation for quality of hire requires data beyond the conventional applicant tracking system. Some example approaches follow.

- **Compare pre-hire and post-hire measures at the individual level.** Include assessments in the hiring process to gauge candidate quality. Three to four months after hire, gauge the individual’s performance on the same terms.

- **Compare pre-hire and post-hire measures for a measurable group.** Focus on jobs with quantifiable performance such as sales and call center representatives. Compare team productivity pre- and post-hire. Augment with new-hire retention rates and presence of diversity in key roles.

- **Gauge overall new-hire performance.** Combine an individual’s traditional performance measures—be it 360-degree review, manager approval rating, etc.—with individual/team/function-level productivity metrics after a set period of time. (This approach depends on the rigor and reliability of the organization’s existing performance measurement approach. Otherwise, the talent acquisition team has the more difficult job of analyzing how the organization defines success.)

- **Focus quality on new-hire retention, performance, and promotion.** Determine how long each new hire stayed at the organization, gauge what traditional performance measures indicate, and track whether each hire progressed to a higher position and at what rate.

- **Focus quality on customer satisfaction.** Survey managers and coworkers on how satisfied they are with the hire in terms of cultural fit and contribution to team objectives. (Although this data is easily obtainable and can provide trending data, it is highly subjective.)

- **Focus on the initial onboarding period.** Track if the new hire successfully completed the full onboarding process and their time to productivity. This approach focuses on near-term results and can integrate initial assessments of engagement, performance, error rates, and culture fit.

The results of this measure have relevance both at the individual level and in planning talent acquisition efforts. Individuals falling below expectations need additional support and investment. Results falling below expectations signal problems in the hiring process. Tracking trends, broken down by terms such as department assignment and end of onboarding period, enables course corrections in very specific terms.
TIME TO FILL
Time to fill, also called time to hire, is the core talent acquisition measure for making each step of the hiring process as efficient as possible. As the name implies, it gauges how long it takes to fill a position.

Although hiring can be very time-consuming—and the process is only getting longer for most—this trend has critically negative consequences. Vacant positions put a strain on an organization in terms of productivity, revenue, and team retention. And HCM professionals lose top candidates when the hiring process is too long. (One expert estimates that the quality of hire decreases by 1 percent for every day in time to fill.) Any candidates frustrated by a long hiring process can diminish the employer brand through review sites such as Glassdoor.

To ensure the hiring process is efficient, HCM professionals need to know what might be causing delays. Beyond pinpointing inefficiencies in the hiring process, this measure is also useful in predicting hiring outcomes and setting realistic expectations within the organization.

To formulate time to fill, most organizations measure from the point of approval to fill a role to the point when a candidate accepts the offer. When analyzing, this can be broken down by source, position type, department, location, market condition, etc. It can also be broken down by each step of the hiring process. For example, are reference checks, interview scheduling, or assessments too time consuming?

Organizations should compare results to industry and profession-specific benchmarks. Some jobs are harder to fill, and some factors such as unemployment rates are beyond HR’s control. APQC’s Open Standards Benchmarking® database shows that the median time to fill (days from approval of job requisition to acceptance of job offer) is 36 days. An important caveat is that jobs not filled within a month are 57 percent more like to remain open longer than 3 months.

Interestingly, some organizations tweak the traditional time to fill measure by examining hiring velocity. A measure of how quickly HR can meet demand and plan accordingly, hiring velocity focuses on the number of positions open rather than the time to fill a position. A larger organization will have open positions at any given time. Hiring velocity measures the ratio of how many positions HR is filling vs. how many positions are opening. A requisitions-to-positions-filled ratio provides a sense of whether the hiring process is efficiently gaining or losing ground.

COST PER HIRE
For organizational leaders, cost per hire is HR’s most resonant measure. Also called cost to acquire, it demonstrates the effectiveness of HCM professionals and the hiring process. And as a dollar value, it’s easily understood by stakeholders beyond HR. The more it costs to secure qualified new hires, the less money an organization has for everything else.

The formulation for cost per hire accounts for everything invested in talent acquisition including: advertising and job posting, recruitment marketing, traveling, screening and interviewing, assessment programs, relocation packages, signing/employee referral bonuses, staff total compensation, recruiting firm fees, staff time spent throughout the hiring process, and
technology support. (Organizations decide what factors constitute total cost, but it rarely includes post-hire costs such as onboarding and training.) This total cost for a specific time period—typically annually—is then divided by the number of hires during that period.

Results predictably vary by industry and other breakdowns. The higher-level positions will cost more to fill, but the median benchmark is $3333.33 according to APQC’s Open Standards Benchmarking® database. Most organizations are interested in driving down hiring costs, often by centralizing talent acquisition efforts, reducing the number of interviews per candidate, automating back-end processes and analysis, and finding the most effective/efficient options to leverage in sourcing and recruiting.

This is a measure that shouldn’t be improved at the expense of quality of hire or time to fill. It’s important to note that APQC’s research has found that recruiting top performers spend four times less on the recruiting process per new hire and deliver recruiting work at a faster pace through shorter cycle times and they balance this with high-quality results. Ultimately, this measure should be put in the context of overall talent acquisition ROI, with considerations for agility and quality as well.

Instead of cost per hire, some organizations prefer to focus on cost per vacancy or cost to not fill the role. Cost per vacancy divides an organization’s revenue per employee by the number of working days in a year. The cost to not fill the role measures the revenue and productivity losses from a role’s vacancy, as well as the time a new hire needs time to onboard and train. This can be calculated by dividing the dollar loss per day by the average yearly revenue generated by an employee and then by the number of days vacant.

NEW-HIRE RETENTION RATE
It’s especially crucial in a tight job market to ensure new hires stay and perform well. With costs for refilling the position and whatever damage occurred during their tenure, the impact of a bad hire can be worse than leaving a vacancy open. A new-hire retention rate is an important indicator of the effectiveness of the hiring process.

APQC’s Open Standards Benchmarking® database measures new hire retention after 12 months. The median is 82 percent. Tracking new-hire retention rates can allow an organization to missteps in the hiring process. Particularly low rates may indicate that all talent acquisition efforts need to be better engineered and driven by data-based decisions and best practices.

EMPLOYER BRAND AND CANDIDATE EXPERIENCE
A potential missed opportunity for many organizations is measuring the impact of their employer brand and the nature of the candidate experience—two measures of impressions that can be very powerful to quantify. The employer brand is what communicates the organization’s identity to potential employees. And the candidate experience is how passive and active candidates perceive and react to all talent acquisition efforts, from sourcing to onboarding.
Both of these measures gauge the perception of an organization as a great place to work. And good impressions are important in creating a full, high-quality talent pool. For example, 72 percent of job seekers report their bad candidate experience online, and 55 percent of job seekers will avoid an organization after reading negative reviews.

Both measures can be challenging to calculate. Organizations typically track numerous factors.

- For employer brand strength, the measure may consider: the percentage of qualified applicants, hit rates for career sites and social media pages, Glassdoor ratings, LinkedIn’s Talent Brand Index, appearance on “best places to work” lists, percentage of employee referrals, the online presence of negative comments, and the online visibility of recruitment marketing.

- In gauging candidate experience, an organization may ask both new hires and rejected candidates questions about every step of the process, including if: job profiles were sufficiently descriptive, interviews were helpful, the timeline was sufficient, status was communicated regularly, and staff established a positive relationship.

SELECTING RECRUITING MEASURES

Given the increased capacity to aggregate and analyze data, now is the time for organizations to consider what talent acquisition measures might best support their strategic concern. This is not a matter of pursuing every now-available metric but instead pursuing relevant metrics that were previously too laborious to gauge. In addition to the aforementioned measures, consider the following:

- Offer-to-acceptance rate
- Applications-to-role rate
- Candidate response rate
- Recruiter screen-to-hire rate
- Applications and interviews completed
- New growth-to-attrition rate
- Candidates-to-later hires rate
- HCM professionals’ compliance with adopted best practices

(APQC members can find metric values for these and many other key recruiting measures in APQC’s Open Standards Benchmarking® Database)

Recruitment measures should inform insights into strategic talent acquisition issues with a direct impact on business results. And high-impact results should be converted into dollars. Predictive analytics can extend results from historical reporting to anticipated future results, as well as point to why results are occurring. As analytics quickly mature, organizations can soon expect tools to provide not only predictive insight but also prescriptive insight on how to proceed.
REPORTING RESULTS AND PREDICTIONS

With the right measures and analysis in hand, HR is effective not only in hiring but also in partnering with the business in strategic planning and budgeting. An important factor, now better enabled by analytic software, is visualizing this information for decision making.

New options afforded by predictive analytics mean that the talent acquisition dashboard can become a much more informative and compelling tool within and outside of HR—while requiring less time and resources from HR to generate. A talent acquisition dashboard displays hiring metrics and analysis in order for decision makers to quickly view key performance indicators, trends and correlations, and real-time and anticipated results. With interactive dashboards enabling a drilldown into data, the analysis should drive evidence-based decisions. This is the all-important single source of truth to drive talent acquisitions and organizational strategic planning.

Given new capabilities from automated data structuring and predictive analytics, consider the following suggestions in designing a talent acquisition dashboard:

- Prioritize and limit metrics to those most pertinent. Provide benchmarks for comparison.
- Results and predictions should be visually connected with trend lines indicating the probability of occurrence and associated risks.
- Wherever possible, quantify talent acquisition results into dollars.
- Provide access to not only causes of problems but also simulated results for potential solutions.
- Highlight recommended actions. When indicating status and possible actions, also note the cost of delaying an action or doing nothing at all.
- Clarify how often each data point updates, be it daily or annually.
- Correlate talent acquisition efforts to corporate goals and business results.

Even with advanced analytics and reporting capabilities, dashboards still have the potential to drain HR resources. So it’s important to keep a relentless focus on the factors truly driving performance. Many facts may be nice to know, but ultimately the measures and analysis must lead to improved business outcomes.

SETTING A SOLID FOUNDATION FOR THE FUTURE

Predictive analytics in talent acquisitions have become widely available, but the field is still in the developing stages. This is a long-term commitment, where organizations are building experience and skills in buying, building, maintaining, and fully utilizing advanced analytical capabilities. Throughout this effort, HR plays a critical role in connecting disparate systems, becoming a savvy buyer and algorithm steward, establishing an analytics culture throughout the enterprise, and enlisting the organization’s Big Data experts in the effort. It’s wise to set reasonable goals and stay focused on top priorities.

Predictive analytics won’t and shouldn’t replace human judgment. But it can provide insights that can greatly improve talent acquisition processes and help organizations tackle complex
decisions. Given that 71 percent of CEOs consider human capital a key source of competitive advantage, the payoff for investing in predictive analytics could be significant.

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