

Predictive analytics identify the best applicants, but no value created unless managers use them

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Business Problem

A global financial services company was experiencing high turnover in their Philippines centers. For all new hires, they provided an extensive and costly four-week training program. But many employees quit during this program or soon after, resulting in a revolving door of talent, and nearly constant training classes.

Business leaders knew that if they could avoid hiring employees who would quit within the first twelve weeks and replace them with more durable hires, there would be substantial impact to their bottom-line.

Moreover, the company was confident that these more durable hires existed in their applicant pool. Having established a strong brand as a local employer, they were able to generate a robust pipeline of applicants. The issue was identifying – during the application process – who would leave quickly, and who would stay.

TalenTeck Solution

Predicting future turnover – or any kind of human behavior – is difficult, but models built with historical data can tell us something about the kinds of applicants that tend to be more durable at this company. The key to building a useful and predictive Applicant Flight Risk Model is that the data has to be informative, and it has to be collected before the hiring decision is made.

Smart Data

TalenTeck implemented several Smart Data collection practices at this company, which helped to fuel the predictive models:

- Applicant surveys: Questions designed from theories about what should matter in turnover decisions, e.g. past mobility, prior work experience, entry channels, and education
- External labor market: Micro-labor-market conditions matter in labor mobility, e.g. unemployment, employer competitors, and travel time to work
- Interviews: Interviewer surveys ensure that structured content from interviews can be incorporated into models; interviewer recommendations are weighted based on past interviewer performance¹
- Referral surveys: Questions related to the context and duration of referrer relationships; in general, referrals produce higher quality applicants²
- Data matching: Most importantly, ensure that applicant information can be married to future employment outcomes of hires

Score Quantile	Predicted 90-Day Turnover	Actual 90-Day Turnover
Best	12.8%	9.5%
2	27.0%	29.9%
3	33.4%	35.2%
4	37.5%	37.0%
5	41.4%	41.5%
6	45.4%	42.7%
7	49.7%	49.9%
8	54.7%	54.2%
9	62.7%	62.3%
Worst	78.4%	83.5%
Overall	44.3%	44.6%

■ Above the mean at 1% significance
 ■ Below the mean at 1% significance

Figure 1: To validate the models, we divide the predicted scores into 10 categories, and look at the actual turnover rates for hires in each category. We then check if the hires in each category are statistically different from the mean.

¹ Barr, Bojilov, and Munasinghe. "What Makes a Good Interviewer? Interviews and Screening" Working Paper. March 2018.

² Barr, Bojilov, and Munasinghe. "Who Learns What When an Employee Refers a Job Candidate? Referrals and Search Efficiency." Forthcoming in *Journal of Labor Economics*. Accepted for publication September 2017.



Predictive Model

Using this data, TalenTeck trained a machine learning classification model to predict whether an applicant would quit in the first three months or not. It's difficult for human brains to keep track of all these pieces of information when making a hiring decision. But these kinds of predictive statistical models are designed to take in multiple dimensions and collapse them into a single, useful piece of intelligence about flight risk.

Before incorporating the turnover risk scores into actual hiring decisions, we needed to validate the predictive power of the model. To do this, we set aside the last three months of data to test the model performance. We then compare the predicted scores to actual outcomes.

As is shown in *Figure 1*, the models were highly predictive of future turnover. Based on these results, the business leaders decided that the model should be implemented to provide flight-risk scores that could be used during the hiring process.

Technology Implementation

To do this, we needed to build technology infrastructure that would enable real-time scoring of candidates as soon as they applied. The scores needed to be delivered directly to the hiring manager, so the intelligence could be incorporated into their decisions.

The company used an online application, and their recruitment, offer generation, and onboarding processes were facilitated by HR management software. For minimal disruption of this streamlined process, we simply set up a data exchange protocol that would collect applicant data, incorporate TalenTeck external data, generate the score, and return the intelligence directly to their existing HRMS within milliseconds of receiving a new application.

When hiring managers viewed a candidate's application, the TalenTeck Flight Risk score would appear next to all the other information typically used in the hiring decision (*Figure 2*). Business leaders were hopeful that this extra piece of intelligence would help hiring managers at least to avoid the quick quitters, and ultimately move the needle on their turnover problem.

Results

For six months, the Flight Risk scores were delivered as a part of the application process. The results were striking. The models were even more powerful than the validation tests had indicated – the scores were separating the quick quitters from the more durable hires with remarkable accuracy. Yet it seemed that no one was using the intelligence!

In *Figure 3* these outcomes are evident. The last column shows the actual three-month turnover rates for applicants who were given different Flight Risk scores. The average total turnover for all the hires was 37%. Those who scored in the best category had a lower turnover rate of 22%. Those who scored in the worst category turned over at an extremely high rate of 84%. Yet, the offer rates for each group reveal that hiring managers were not avoiding the lowest scoring candidates as they should have been – in fact, they were offering jobs to them at a higher rate!

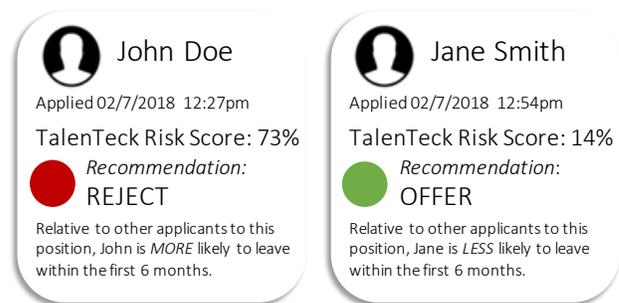


Figure 2: An example of the information that was displayed within the company's existing HRMS interface.



TT Risk Score	Applicants	Offered (Rate)	Hired	Turnover
● Lowest Flight Risk	1,784	760 (43%)	675	22%
	3,451	1,398 (41%)	1,248	21%
	3,624	1,273 (35%)	1,132	30%
	3,303	1,152 (35%)	997	34%
	2,929	927 (32%)	791	40%
● Highest Flight Risk	1,579	1,047 (66%)	874	84%
Total Scored	16,760	6,557 (39%)	5,717	37%

Figure 3: Over the course of six months, TalenTeck scored just under 17,000 applicants. They are separated into six score categories, from lowest flight risk, to highest flight risk. The offer rates and turnover rates are shown for each category.

The business leaders were shocked. If hiring managers had used these scores, they could have had a sizable effect on the three-month turnover rates. The cost savings from just these six months would have been substantial.

So why weren't the scores used? Did managers not trust that data-driven scores could beat their years of

experience at evaluating candidates? Did they not understand how to incorporate the analytics into their decisions? Was there simply too much pressure to fill seats, preventing them from rejecting candidates that scored badly?

Whatever the reason, business leaders needed to find it in order to capture the value of these predictive analytics. They decided to suspend the Flight Risk scores while they worked to understand the issues and re-train the hiring managers on how to use the scores.

Despite the massive potential of analytics to create value for companies, it's important to remember that realizing impact relies on a complex chain of technology, data, estimation, and the end user. If all these components don't come together, the value of analytics will fail to materialize.

Predictive analytics are powerful, and it's worth figuring out how to convert their potential into real business outcomes.

For more information about TalenTeck's suite of human capital analytics tools contact us at info@talenteck.com.

