WHITE PAPER - A Method for Matching Candidates to Job Positions Based on Predictive Modeling

Presented by:

The Return On Hire Provider

Introduction

Ask two human resources managers what's the right profile for a particular position, and you're likely to come up with differing combinations of traits. That's because so many attributes – some unquantifiable, others unrecognizable to those involved in the hiring – affect an individual's job performance.

Moreover, due to differences in management style, environment, business goals, and economic reality, an accurate job profile in one organization is not always appropriate for that same position in another organization. Given the fact that job profile generalization across companies and markets (both horizontal and vertical) is untenable, it's easy to understand why it is difficult to predict job performance for a given position.

Overview of a Predictive Modeling Offering

A solution based on predictive modeling relates to an assessment method used to select the suitable candidate(s) from a pool of candidates, for target positions in any organization. The solution seeks to overcome one of the predominant difficulties in hiring new employees: the lack of ability to cross **match** the right personality and abilities of a candidate, with the requirements demanded by a **specific** organization, and subsequently predict who, among all the candidates, would be the most suited for a certain position in particular circumstances.

This type of solution would offer a computerized technique, which identifies that specified match by defining the correlation between: a) the abilities of current employees and b) their success (performance level) in the organization. This correlation is a proven basis for checking candidates, because essentially, performance evaluation would prove to be the crucial axiom for candidate suitability prediction.

The Predictive Modeling Solution vs. Other Approaches

A predictive modeling solution adopts a different approach for better, improved prediction of candidate's performance in a certain environment. The current approaches for solving this problem are:

1. Test the candidate on general abilities, and whoever gets the best score is considered to be the best one.
2. Test the candidate on 'industry specific' abilities – Usually, based on history of testing in various organizations, over a long period of time.

3. Test the candidate on parameters, previously gathered within the organization. This approach assumes that the main abilities of top performers will serve as the basis for finding the 'future' top performers – e.g. if the most successful employees are mostly assertive, with a relatively strong memory and with a high level of basic general knowledge, this is what should inherently be looked for, regarding candidates applying for the same position. This is what is known as the **'linear grading approach**'.

However, **the above three techniques ignore important critical truths, like:**
a. Each organization has different standards and requirements, which could significantly lower predictions of a 'standard' assessment.
b. The predictive validity of the 'linear approach' is not that high. Human beings have proven to be a repository of intricate traits of varying levels (including some that are not openly perceived) – and a successful professional is not always the one who ranks among the top (not always good) in all his/her attributes.

The predictive modeling solution takes a **'non-linear approach**', by finding the set of rules which create the best correlation between the existing employees, and their level of success in the organization. To do so, one needs a very complex, computerized modeling program, which yields that correlation out of huge amount of combinations. **This will prove to be the most efficient predictive formula to predict success for new hires.**

A Predictive Modeling Solution: Methodology & Processes

The first stage of this solution involves testing employees via a specific set of unique standardized tests and evaluating their job performance. The combination of attributes deemed necessary for optimal job performance is then analyzed.

Results of this analysis are then used to generate a complex formula that yields a set of rules that can be applied to the candidates for a specific job. From that point on, each candidate is tested vis-à-vis the organization's standards and evaluated vis-à-vis the existing population that has formed the basis of the study.

Using these results as an analysis tool, the hiring personnel can then set appropriate standards for the organization by establishing a framework from which to empirically determine the quality of a future candidate.

Goal of the purported method: Being able to predict a job performance evaluation for each candidate (who applies for a particular position in a particular organization) which he/she would get after working some time in the organization.
Reasoning: Since the supervisor's evaluation would reflect the satisfaction level of the employer with the employee's performance, it would be the single most important factor towards hiring a particular candidate for the target job.

- **Step 1**: Test existing employees

FIG 1 – Attribute Scores for Employees

Attribute / Employee	Visual Memory	Knowledge	Assertiveness	Stress Tolerance	Other …
John Smith	68	91	46	88	
Patricia Brooks	55	66	78	78	
Ann Gillmor	91	92	45	55	
Other…					

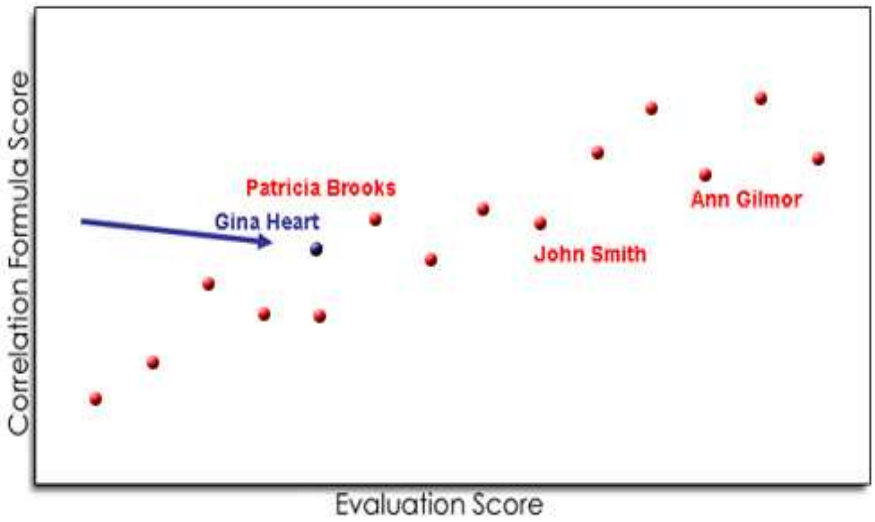
- **Step 2:** Every employee in the sample, should be given an evaluation for one or more Performance Success Criteria. The evaluation should reflect as accurately as possible, the success of the employee in that specific area.

FIG 2 – Evaluation Grades for Employees

PSC / Employee	Overall Performance	Teamwork	Customer Satisfaction	Other…
John Smith	71	66	76	
Patricia Brooks	45	95	71	
Ann Gillmor	81	63	55	
Other…				

- **Step 3:** The computerized program searches for strong positive correlation between the attributes that were tested and the evaluations of all employees. *The resulting Correlation Formula allows for the calculation of a **C**orrelation **F**ormula **S**core for every candidate, specific to a particular job.*

FIG 3 – Matching a candidate to the sample group



- **Step 4:** New candidates are tested against the Correlation Formula, which was previously identified and then designated for the job. This enables the organization to get two crucial results:

A. The grade given to the candidate, in respect to THE EXACT JOB in this organization.
B. The closest employee(s) to whom the candidate's job performance will be similar to (example below: Gina Heart will be similar to Patricia Brooks).

These two parameters dramatically improve the abilities of the employers to identify the optimal candidates *for their own organization*, and they can solve many prevalent problems regarding poor judgment of candidates.

Savvy Expert™ Solution – The First Non-Linear Job Profiles Approach

Savvy Expert™, the first employment assessment solution based on a non-linear algorithm for predicted validity, sets out to empirically tie a job profile to the demands of the actual work environment. This is accomplished by incorporating information tapped from the organization itself regarding in-house performance benchmarks (i.e. job study). ***Savvy Expert™*** creates organization-specific job profiles to match current jobs within the organization by comparing assessment test results to job performance criteria (as rated by the employers) from a sample group of existing employees working in the same position. The result, attained via unique optimization modeling capabilities, is a tailor-made set of rules that define performance benchmarks for the particular job based on the combination of traits and skills the candidate should possess to succeed in that position.

The job study results yield immediate, clear-cut conclusions regarding the candidate's fit with the company, enabling ***Savvy Expert™*** to achieve between a 50-100% increase in validity over existing assessment methods and 30-40% improved hiring predictability.

Savvy Expert™ Features & Benefits

Features

- Improved system effectiveness with the addition of every new candidate
- Built-in evaluation system that integrates testing scores with organizational evaluations
- Automatic identification of most important tests that affect each job profile
- Fast testing time
- Exceptions detection – ability to focus on the discrepancy between workers' abilities and the organization's evaluation system
- Clear graphic, color reporting system

Benefits

- "Bottom line" evaluation of candidate's suitability
- Improved screening of potential employees
- Better assessment of existing employees for promotion
- Significantly higher predictive validity for job performance
- Job profile creation according to organizational norms and culture
- Optimization of candidate's suitability against several job profiles at once
- Reduced hiring, training and HR costs
- Improved organizational effectiveness

Conclusion:

Research of pre-employment screening techniques show that even in most cases it is difficult to reach validity levels (correlation) of .5, through the utilization of combinations of all the available techniques (a well known research on this subject is: The validity and Utility of Selection "Methods in Personnel Psychology: Practical and Theoretical Implications of 85 years of Research findings" {Psychological Bulletin, 1998, Vol. 124, No. 2, 262-274}).
An analysis of the method introduced above, attests a validity level **above .65 and up to .88**, which indicates a significant breakthrough in the selection/assessment field, and will have a huge impact on the huge recruitment market worldwide.

For further information on the predictive modeling method and on ***SavvyExpert™***,
Please contact the local distributor of HRVision.
www.hrvision.com

