

# THE SCIENCE BEHIND



## SITUATIONAL OVERVIEW

Every organization that wants to compete successfully in rapidly changing markets needs to hire exceptional employees. This need for exceptional hires is balanced by the need to do this efficiently. In the past, hiring managers were forced to choose one or the other. However, with OGPsynet, they can have both.

Most of our clients have two specific hiring situations. One is for operational hires and the other is for high impact. When the position is operational, the hiring process can be made more efficient by providing OGPsynet's online assessment and then interviewing the most highly ranked candidates first.

When the position is considered high impact, OGPsynet uses online assessments to rank applicants, which increases efficiency. We combine the online results with a professional evaluation from a PhD-level consultant to improve accuracy.

Whether working for the NHL to predict future goal scoring by young athletes, Fortune 500 companies' that need to predict executive performance and potential, or financial services firms looking to leverage top talent, OGPsynet cares not only about what is, but what could be. In other words, we predict the candidate's potential to work well in an organization and their potential to improve when placed in the right position.

## CURRENT STATE OF ASSESSMENTS

The current state of selection is impacted by inaccurate resume data and outdated assessment methodology. Additionally, when employers use only resumes and interviews to hire, they identify high performers only 17% of the time, on average. Psychometrics have improved this, but over time, we have identified several issues with their use.

- Assessments take a long time to complete and are cognitively draining.
- The theoretical support for assessments is outdated.
- Personality has a poor track record for predicting performance. Capabilities that are important in the new economy, like innovation and agility, are inferred from personality traits like openness.
- Assessment results are hard to interpret, as they use psychological terms that are meaningless to most people.
- People are compared to norms, but evaluated without context. Work life has changed and a company's success depends more on team synergies than individual output.
- The attributes considered important by most companies could not be effectively measured online.
- Current assessments focus on labels that limit.
- Research standards for validity in psychological research are misapplied to talent selection.
- International hackers have shown the ability to get into insecure systems.

## PROBLEMS OUR CLIENTS HAVE ASKED US TO SOLVE

We often hear concerns that assessment results are interesting but lack practical use in almost every conversation, from CHROs to a Founder Roundtable investor. Since Psynet Group first delivered psychological assessments to choose salespeople over 40 years ago, we have used our research and the research of others



to provide results that matter. For example, Psynet Group learned that a job candidate's mental models (a belief structure of how the world works and the origins of success and failure) are a strong predictor of future success, especially when coupled with an updated drive assessment. Psynet is even more successful at predicting success when critical and creative thinking is measured.

As important as connecting results to success, is the ability to avoid potentially harmful hires. In Psynet's 40+ years of experience, consultants have seen organizations wrecked by arrogant executives who would not accept their limitations, bullies who enjoyed hurting their employees and taking enormous risks with disproportionate rewards, and recently-promoted executives whose failure to manage stress resulted in a failure to lead and execute during times of crisis. All three types created catastrophes for the organizations that trusted in them.

When Psynet Group queried our clients as to which questions mattered most, we heard:

1. Does this person have the critical thinking, creativity, and strategic thinking levels to do the job?
2. Does this person have the drive to get the tasks done?
3. Can this person inspire and improve those around them?
4. Does this person have a personality concern that will damage the organization in the long run?
5. Does this person fit our culture?

*Our clients want a solution that they can tie directly to performance improvements, improved organization design, increased engagement, and decreased attrition.*

#### **More Efficient Assessments Needed to Gather More Data in Less Time**

Nearly every potential client is concerned about the length of time assessments will take potential candidates to complete as well as its impact on the firm's brand. Most do not want executive candidates to spend more than 90 minutes taking online assessments and less for entry level candidates as they may be put off from continuing the interview process. In order to be effective and useful, an assessment company has to be able to gather more data in less time.

*Our clients want us to assess capabilities and attributes that matter and to do so in a reasonable amount of time.*

#### **Hiring Decisions Often Fail Because of Poor Fit more often than Lack of Competencies**

When companies hire based solely on capability and disregard cultural fit, they can make costly hiring mistakes. Psynet Group has come across several situations where capable people fail in their jobs due to poor fit.

*Our clients understand that fit is as important as capability and want to understand the candidate in the context of the people and supervisor with whom they will collaborate.*

#### **Promotional Decisions Often Fail Because People Are Promoted to a Level Beyond Their Capabilities**

Our clients often refer to the 'Peter Principle', a concept many of them discovered during their MBA programs. The Peter Principle states that the selection of a candidate for a position is based on the candidate's performance in their current role, rather than on abilities relevant to the intended role. Thus, employees only stop being promoted once they can no longer perform effectively. As a result, Dr. Peters says that "Managers rise to the level of their incompetence."



One of Psynet Group's clients recently explained to Dr. Popple that the Peter Principle caused their own organization to waste millions of dollars through two channels: the first loss was in the promotion of an ineffective manager and the second one was in removing an effective individual contributor. They complained that their executives could not predict potential and consistently failed at promoting the right person more often than they succeeded.

*Our clients want a solution that provides immediate answers and a roadmap to solve them.*

### **When the Stakes are High, Many People Are Willing to Cheat**

Psynet Group's clients used to be more concerned about how they identify candidates who lie on assessments. However, today they are more concerned about Psynet's ability to identify cheaters. Facial recognition technology used by Psynet allows clients to identify when candidates cheat or lie on an assessment.

*As validity of assessments are trusted more, our clients want the same level of trust that the data reflects the candidate and not a stand-in.*

### **Hiring Takes Too Much Time**

When talking with a financial services company that needed to hire several people very quickly, they needed a tool that would help them make the right decisions quickly. For the hiring manager tasked with adding 40 staff, as many as 120 people may be interviewed for the positions. Even a short 30-minute interview can end up costing a hiring manager up to an hour of their time, when accounting for the unaccounted for.

### **Dangerous Employees Interview Very Well**

Sociopaths\* are found 2-4 times more often among director-level executives and above than in the general population. The bullying behavior of just one sociopath can destroy a company's culture and put the organization at significant risk.

Narcissists\* (people with high self-deception scores) are impressive in interviews and don't start to show their true character until 2-3 months after hire. Once exposed, it is often too late to remove them.

*\*Psynet group does not attempt to diagnose assessment takers but instead identifies common traits that are detrimental to companies.*

### **Avoiding Hiring Clones**

In the past, companies profiled their best executives and then attempted to hire people with similar characteristics. As a result, organizations became homogenous and innovation suffered.

### **Keeping from Discriminating from Well-Managed Mental Illness**

Most assessments cannot differentiate between psychological issues that are well managed and those that are not. As a result, they put companies at risk of violating anti-discrimination laws.

# PSYNET'S KEY ASSESSMENT TOOLS FOR FINANCIAL SERVICES CLIENTS

## PHACT (Critical Thinking)

The PHACT is a measure of cognitive ability that was developed by Dr. Dave Popple, who has led more than 40 Critical Thinking Workshops globally. The examples are generated from his observations of participants' thinking skills and common mistakes.

Psynet Group developed the PHACT because experience taught us that strong analytic and decision making skills are the most frequently listed job requirements AND the least likely to be measured effectively (9 out of 10 companies fail to measure this skill before hiring). Our clients indicate that poor decision making is the primary reason why so many professional hires become costly failures. The main reason is that decision making deficits are not obvious when a person has a strong work ethic. Many people are hired and promoted based on their results as an individual contributor or entry level manager. However, the need to make effective decisions becomes exponentially more important as someone is promoted internally.

The assessment itself is made up of 89 questions and measures skills in thinking, reasoning, differentiating between facts and assumptions, making logical inferences and intelligence. More specifically, the PHACT measures the candidates' abilities to:

- Differentiate between strong versus weak arguments
- Prioritize information
- Determine whether or not conclusions follow from the data presented
- Decide whether or not there is sufficient information to make conclusions
- Identify assumptions
- Evaluate arguments as based on assumption, inferences, and emotions or fact based
- Evaluate the impact of emotions on a candidate's decision-making process
- Identify the over-reliance on black-and-white thinking
- Measure the confidence in their decision-making

Psynet Group monitors web traffic associated with the PHACT to ensure that the questions in the assessment are not leaked.

## OASQ

Attributional style is a personality characteristic that was first introduced by Abramson, Seligman and Teasdale (1978) and further elaborated by others. Despite the documented importance of attributions in achievement motivation, little attention has been paid to the role of attributional style in occupational settings other than Psynet Group. One exception is the work of Seligman and Schulman. Utilizing a sample of 94 experienced sales agents who as a result of their job repeatedly encounter failure, rejection and indifference from prospective clients, Seligman and Schulman tested whether explanatory style predicts work productivity and quitting. They found that individuals who saw failure as internal, stable, and global initiated fewer sales attempts, were less persistent, produced less, and quit more frequently than those with a more optimistic explanatory style. The results showed that financial service agents who had an optimistic explanatory style sold 37 per cent more products in their first two years of service than those with a pessimistic style. Agents in the top decile sold 88 per cent more insurance than those in the bottom decile. In a prospective one-year study of 103 newly hired



reps, individuals who had an optimistic explanatory style when hired remained in their positions twice as long and sold more than agents with a more pessimistic explanatory style.

Other evidence supporting the likely importance of attributional style in occupational settings comes from Spector. He noted that mental models as measured by Psynet Group related to motivation, effort, performance, satisfaction, perception of the job, compliance with authority, and supervisory style, as well as being an important moderator between incentive and motivation and satisfaction and turnover. Andrisani and Neste examined the influence of mental models on a number of facets of work experience. The data suggested that Psynet Group could predict who was in higher status occupations, earned more money, and tended to be more highly satisfied in their work.

## **CARA 25**

The CARA 25 is a measure of abstract reasoning and problem solving that is unaffected by education level and verbal and math experience.

The CARA was developed because non-verbal matrices are the best known way to measure pure general intelligence. General intelligence or 'G-intelligence' is considered to be the basic cognitive horsepower that influences all other cognitive abilities.

Psynet Group research shows that Cara 25 scores predict problem solving ability and the ability to manage complexity. However, the most interesting research result was that the CARA 25 can predict improvement in strategic thinking abilities following a strategic thinking course. Low scorers on the CARA 25 showed little improvement before and after the course whereas high scorers on the CARA 25 showed dramatic improvement, even when their initial strategic thinking scores were low

## **Psynet Needs and Drives**

The Psynet Needs and Drives was one of the initial assessments used by us since the firm's inception. Over the years, we have updated the norms and occasionally have had to modernize the language.

Human needs will influence how people will react to the best and worst circumstances. They focus attention on those things that will best satisfy people. These needs and drives are internal, meaning that the fulfillment of these needs gives people a sense of gratification and fulfillment.

The concept that human behavior was an attempt by humans to satisfy needs was first introduced by Clark Hull, who is best known for his Drive Reduction Theory. When the goal of the drive is attained, the drive is reduced, at least temporarily. This reduction of drive reinforces learning. Thus learning involves a dynamic interplay between drives and their attainment. The basic concepts continue to be relevant, as indicated by Dan Pink's 2009 book on the topic of motivation.

Many assessments are developed to make value judgments about the test taker. However, needs or drives are not good or bad on their own. The judgments associated with this assessment are not whether a drive is a positive or negative trait but how they apply to a candidate's satisfaction and engagement with their job.

Psynet uses this assessment to determine whether or not a new position or a promotion will satisfy the candidates' needs and drives. When there is a mismatch, the candidate rarely stays in the position for more than a year.



## FUTURE STATE: COMING SOON...

### **Creativity Assessment**

In a world that requires constant innovation and complex problem solving, creativity is a critical capability needed to succeed.

In the past, the only creativity assessments that were viable needed to be scored manually by experts. Our assessment works by presenting an image and a question. Our assessment will use machine learning and artificial intelligence to assist in response scoring. More precisely, machine learning will help Psynet Group in evaluating the number, variety, and depth of responses. These three scores combine to provide an overall creativity score. This score will be integrated into our strategic thinking charts.

### **Emotional(EQ) and Social Intelligence (SQ) Scores**

We use machine learning and artificial intelligence to categorize user responses to simulations. These categories have been rated by experts in the field of emotional and social intelligence and given a score of poor, average, and excellent. The number of responses that fall into each area is counted and the user is assigned an EQ and SQ score.

### **Integration of Machine Learning?**

In the past, the most effective assessments of creativity, emotional intelligence, and social intelligence were assessed manually by an expert who rated individual responses to stimuli and situations. The current process is tedious, non-scalable, and expensive and is unable to gather a broad amount of data from each user. Scorers have the response to the stimuli but are unable to gather data like “time to respond”, “time to initiate response” or “number of changes to original response.”

With artificial intelligence informed by machine learning, users’ responses to stimuli are compared to the responses of previous users and added to categories is a process similar to principal factors analysis. Once added to those categories, they become more rich so that all future responses become more easily assigned.

### **Interactive Dashboard**

The dashboard has the ability to change the information being displayed in the following ways:

- Clients can add and remove people from the chart to assess different team combinations or compare different supervisors to direct reports. This feature also allows for an easy comparison among a pool of candidates for hire or promotion.
- Clients can toggle between revealing names or hiding names. This feature allows clients to present the team charts without revealing confidential user data.
- Clients can toggle between seeing each user’s potential/degradation graphic and preferred role graphic or turning both off. This feature allows the client to explore relationships and interactions between team members. By giving the option to remove both, clients have a cleaner graphic with which to compare larger groups.
- Clients can review multiple charts at once or focus on one chart at a time.

## Targets

Psynet Group's research has identified zones where effective candidates tend to score. These zones can be used by the clients and Psynet Group can customize zones for them. Once these zones are in place, we can calculate a GDC score to measure how similar an individual or team is to the desired zone.

## New User Interface

The card sort methodology was used by psychologists before the advent of computers but was difficult to translate this technique into Web 1.0 applications because the pages were static. Dr. Popple experimented with this format and found that by allowing users to "throw out" cards that were irrelevant and sort the remaining, we could gather the same amount of data in half the time. To make certain that the new approach was better for users, we surveyed 158 users, more than 9 out of ten preferred the card sort to the point and click interface.

The second innovation is called the 'joystick', although it is far from being a game. This interface allows Psybil to ask 4 questions with the movement of one token, effectively taking the user 75% less time to respond. This interface also gives some evidence regarding the user's' decision making processes by recording the movement pattern. Dr. Popple suspects that candidates' thinking style, confidence level, and truthfulness can be predicted, in part, by studying the movement pattern of the users. The latter was shown to be true through a study Psynet conducted with an Italian university on mouse movement and lying.

## Team Graphs

Team charting also allows us to calculate the GDCs\*. These scores allow us to generate team scores on diversity and similarity to a target and begin to predict team performance.

These charts can also predict leader/direct report and group dynamics. When a direct report is in located in adjacent quadrants, they may complement the leader's style; When in the same quadrant, they may work together efficiently; and when is opposite quadrants they may experience creative tension. With each combination there are also downfalls such as the lack of efficiency, low creativity, and conflict.

*\*Geometric Distance Coefficient (GDC): The distance between two plots on a two-dimensional plane used in the calculation of the Diversity Score and the Proximity to Target Score.*

## Potential "Bubbles"\*

Predicting potential has kept corporate psychologists in business for a long time. Most combine theory and their own experience to estimate how far an employee can go. Psybil has taken the first steps to automate those predictions. For example, our research shows that our CARA assessment can predict degrees of improvement in strategic thinking two months following a strategic thinking course. In other words, higher scores on the CARA predicted the amount of improvement from before to after the course.

We also have a bubble to predict potential declines in performance. One small study with 62 participants showed that our Vulnerability to Stress scale and our Self Deception scale both predicted lower performance appraisals in two companies that were under stress for the 2008 crisis. Of the 62, there were 25 who scored above the 65th percentile in Vulnerability to Stress. Nineteen of them had a drop in performance appraisal scores from 2008 to 2009. Of the remaining 37, only 6 experienced the same drop in appraisal scores. When making the same comparison with our Self Deception Scale, 12 scored above the 80th percentile and ten experienced a decrease in appraisal scores yet only 21 of the remaining 50 experienced the same drop. Finally,

we also compared the scores of people who took the timed version of the CARA vs those who took and untimed version. The timed group scored significantly less than the untimed group. Nearly all of this difference could be accounted for by Vulnerability to Stress Scores and Self Deception Scores.

\*We are working on the branding and most likely will use another term other than "Bubbles"

### **Homomorphic Encryptions**

This technology allows Psynet to run its complex algorithms and percentile calculations without compromising the encryption. In psychometrics, homomorphic describes the transformation of one data set into another while preserving relationships between elements in both sets. The term is derived from the Greek words for "same structure." Because the data in a homomorphic encryption scheme retains the same structure, identical algorithmic and mathematical operations will yield equivalent results.