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# EVALUATING EMERGING TECHNOLOGY TRENDS

## WITH THE THREE PILLARS OF SELECTION BEST PRACTICES

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## INTRODUCTION

Like many industries, technology has changed the landscape of personnel selection. How candidates apply and complete phases of the hiring process is dramatically different today than a decade ago. The future will be no different; technology advances will continue to impact every phase of the talent cycle, including how we select people to join our organizations. While innovative technologies often offer new ways of presenting and collecting information from candidates, not every emerging technology trend improves our selection processes. As advances are applied to our talent programs, it is critical to view these enhancements through the scientific lens that has been so useful in the last 50 years in helping organizations differentiate best practices from snake oil. While many new technological improvements create efficiencies and effectiveness, others may come at costs too great to bear. In order to evaluate these emerging discoveries, it's important to understand the basic principles of hiring and ensure that the application of technology enhances our ability to make fair, predictive, efficient, and compliant decisions about organizational membership. In this article, we will explore some of the most recent trends in our field and consider how they stack up to the basic considerations that underscore effective personnel selection.

## THE THREE PILLARS

How do you know if your selection process is working? A well-designed selection process takes into account three main factors – what I like to think of as the three pillars of personnel selection – accuracy, utility, and fairness. If your process rates highly in these three areas well, you will have a best-in-class hiring process.

- **Accuracy:** this area refers to the ability of the selection process to screen out the worst candidates and screen in the best. Accuracy refers to the validity of the decisions you reach using your selection procedures (e.g., is the cut score of your assessment accurately differentiating between those who are a good fit for the position and those who are not?). A valid process uses job relevant information to identify the individuals most likely to perform well in the target position. Accuracy is influenced by the psychometric characteristics of the tools used in the selection process. Assessment tools need to be reliable (consistently measured across time and candidates) and valid (job related). If a test is not reliable and the resulting inferences are not valid; simply put, the test is not useful.
- **Utility:** this pillar often determines the return-on-investment to the organization. A selection process with strong utility has a nice balance between accuracy and efficiency. Any time or cost invested by the company is "worth it" by getting valuable information about a candidate. Metrics that help organizations determine utility are pass rates by selection phase, cost-per-hire, and time in process. Utility is influenced by factors that relate to time and cost such as, the cost of assessment tools, length of time in each phase, and high/low pass rates. For example, even a highly accurate assessment does not provide ROI if the cut score is set such that everyone passes it.
- **Fairness:** This last pillar is related to the legal compliance of a selection process. All assessment tools used to make selection decisions must be job-related. Information that is not job-related should not be used to make decisions about candidates. This is simply sound business sense – using information that isn't related to the behaviors on the job, does not help us make good business decisions. Where this is particularly problematic is when a selection procedure leads

companies to make decisions (unintentionally) that are related to protected classes. Procedures that select a disproportionate number of one protected sub-group over another (e.g., significantly more women pass than men) may have a compliance problem if the organization's system is challenged.

## CURRENT TRENDS

Armed with an understanding of the basic pillars that define effective selection, let's evaluate a few emerging trends in personnel selection based on these ideas. This discussion should help you understand whether the relative pros and cons of each emerging technology is a good fit for inclusion in your hiring process. First let's discuss each trend separately to better understand how they are used in selection:

- **Big Data:** This frequently discussed hot topic refers to the use of large data sets to identify statistical relationships predicting on-the-job behavior. Social media and wearable monitors are just two examples of ways that personal data might be accumulated into large datasets to mine for trends. The statistical procedures used to identify these relationships are amazingly powerful and have the potential to find empirically meaningful trends that have previously not been considered. This is an interesting approach because, theoretically, if an organization identifies predictive trends in, for example, social media posts; using this information could replace more resource-heavy selection procedures.
- **Serious Games:** Continued advances in internet speed, bandwidth, and programming platforms have led to wonderfully creative interactive game development. The difference between serious games and a typical 'video game' is that a typical game is built for the purpose of 'fun.' Serious games are often fun, but their primary purpose is to measure something that is serious (or in the case of a serious game created for selection, the purpose is to measure something that is job related). They are interactive and often give the candidate a task to accomplish that is similar to the types of tasks that are actually completed on the job. Serious games can measure skills and abilities that other measurement methods (e.g., personality, situational judgment, multiple choice) are not able to capture. Organizations like serious games because of the unique prediction, but also because it is often believed that candidates may perceive a game more favorably than traditional selection procedures (which may or may not be true).
- **Gamification:** Gamification is different from serious games. It is important to understand the difference, as oftentimes when people discuss gamification, they are actually thinking about a serious game (i.e., a game built to measure information related to the job). Gamification actually refers to a different type of intervention entirely. The purpose of gamification is to increase engagement with an activity that is NOT a game by adding game-like features to it. For example, if a boring marketing survey receives a low response rate, it might be useful to add game-like features to increase engagement so that the response rate improves. Selection gamification interventions include adding features such as progress bars, timers, badges, scores, levels, and leader boards to traditional selection procedures. The idea behind adding game-like features in a selection context is that they will make the assessment more interesting and engaging to candidates, which could improve completion rates and organizational perceptions. The question organizations considering a gamification intervention should consider is whether or not the problem gamification solves is actually a problem for them. For example, if a selection assessment already has a 98% completion rate, is there ROI on adding game-like features to increase the completion rate?
- **Short Assessments:** Organizations are increasingly concerned with candidate care. A logical and well-intended trend in assessment is to implement shorter and shorter assessments out of respect for candidate time and to create a process of applying that is easy to complete. Select International and many of its competitors have very short screening assessments (~15 minutes) that are often used at the top of the hiring funnel (post application) to screen out the candidates with the lowest probability of success on the job. These assessments do serve a purpose, but the current trend is to rely on these assessments more and more and continue to shorten assessments within all phases of the hiring process. While this may seem like a logical approach to

candidate care, there is evidence that suggests candidates might actually react more favorably to assessments that are longer because they allow candidates to showcase their fit with the job more completely. Further, there is no evidence to show that candidates are dropping out of longer selection processes in large numbers (https://selectintl.wistia.com/medias/lfrcmq0e69).

- **Mobile Devices:** Almost two-thirds of adults have smartphones. The number of individuals who rely on their smartphone to use the internet is small (~10%) but growing. At Select International we have witnessed a three-fold increase in candidate mobile usage in testing over the past four years. We expect the numbers to continue to grow. As such, mobile devices aren't so much a trend as an inevitability. While candidates are using mobile devices, not all assessments are ready for them. Research has shown that assessments that have been designed for mobile and contain text-based or non-interactive measurements are equally useful across devices. However, more interactive assessments and/or assessments not designed to display appropriately on mobile devices have shown measurement inequivalence. This means that not all assessments should be taken on mobile devices – candidates using these devices could be disadvantaged.

The question on the table is – do these trends make selection processes better, worse, or the same? To answer this, we have created a table that considers each of these trends in the context of the three pillars.

The symbols below are used to show our conclusions:

| | |
|---|---|
| | Caution or no real change |
| | PRO: Improvement over conventional selection technology |
| | CON: Serious concern the trend could do more harm than good (consider using it carefully) |

| | Accuracy | Utility | Fairness |
|---|---|---|---|
| **Big Data** | | | |
| | Caution – it depends on where the data are coming from. Using data from outside sources (e.g., social media) to draw conclusions about candidates can lead to unreliability in measurement – some candidates might have 10 likes on Facebook and another 200; And someone else may not even have a Facebook page. This makes it hard to have consistent measurement for all candidates. | Pro – a main benefit of using Big Data is that there is no assessment administration or data collection that needs to occur. This can be a time and cost saver for the organization. Additionally, candidates can move through the process faster if Big Data replaces steps that require candidate involvement. | Con - Using Big Data for hiring decisions opens the door to unfairness. The information available might show statistical relationships but the information must be job relevant. Additionally, demographic information and lifestyle information could be gleaned from many social media sites. It might be difficult for organizations to prove they did not use this information in their decision making. |
| **Serious Games** | | | |
| | Pro – They may be predictive and engaging. Able to measure unique knowledged, skills, and abilities that other predictors cannot. | Caution - Depending on the game, they can be longer than other measurement methods without providing broad measurement (typically only measure ability or knowledge). They can also be expensive to develop and implement. As such, some might say they are not a good use of measurement time. If they are part of a process, they are likely to be supplemented with other tools, which would make the selection process longer. Lastly, most games are not psychometrically equivalent across mobile devices. | Caution – Games are often cognitively loaded which can lead to a higher chance of adverse impact. They are best used as part of a selection process that also includes non-cognitive measures to minimize impact. |

| | Accuracy | Utility | Fairness |
|---|---|---|---|
| **Gamification** | | | |
| | No Change – Adding gaming features typically doesn't lead to improvements in measurement, therefore there is no increase or reduction in accuracy. | Caution – Adding gaming features can be expensive to develop without adding any real value to accuracy or fairness. While there is a belief that gamification will increase candidate engagement, there is no real evidence to support it. The cost might not lead to ROI. | No Change - Adding gaming features typically doesn't lead to improvements in job relevancy, therefore there is no increase or reduction in fairness. |
| **Short Assessments** | | | |
| | Con – It's difficult to shorten a test without taking out items. As such, the assessment becomes less reliable and predictive. Shorter assessments are limited in what they can measure well and what kinds of item types can be used. Items that take less time are more susceptible to misrepresentation. | Pro – Assessments are short and fast for candidates. Using an automated assessment helps organizations make objective decisions without using administrative resources. | Caution – Shorter assessments typically have lower validity and potentially lower reliability. These issues could lead to more difficulty defending them in a legal challenge. Higher volumes on these assessments (because they are top of the funnel) could also lead to a greater chance of finding adverse impact in some approaches to determining adverse impact (based on statistical significance). |
| **Mobile Devices** | | | |
| | Caution – Assessments need to be designed for mobile to be accurate. Not all assessments measure equivalently on different devices. Be aware of what is being measured and how – determine if certain candidates will be disadvantaged by not using a personal computer or laptop. | Pro – Much more convenient for candidates to be able to apply and complete assessments on a mobile device. Organizations benefit from candidates moving through the process faster – as they can fill positions faster. | Pro – Being able to use a mobile device for personnel selection opens up the applicant pool to more individuals who do not own PCs. Individuals who only have a phone to connect to the internet are more likely to be minorities and women. The applicant pool could be diversified as a result. |

## CONCLUSION

What does this all mean? When deciding if a trend is going to help your hiring process, don't forget to consider all three pillars. While a new technology might improve utility, it could reduce accuracy or fairness. Be aware of all three and find a process that balances them to the best of your ability. Consider the pillars most important to your organization or position. For example, a position with high training costs and a special skill would be a prime target for a serious game. In that case, getting the right person is more important than the cost of developing the game. In the end, there is no perfect technology advantage and most emerging trends have pros and cons; as such, it is important to always think about your improvement plans from the basis of the three pillars.

Good luck in your quest for great hires!