Past, Present, and Future of Technology and Social Media in the Workplace

Over the past 3 years, we’ve highlighted technology and social media trends in this column that were having a large impact in the workplace. Those key trends included big data, adaptive training, virtual reality, gamification, simulations, and social media, as well as virtual communication and teamwork. Every so often, we find it’s important to step back and reflect in order to learn and prepare for the future of the field. This issue will cover the trends we’ve seen since the inception of The Modern App that we believe are here to stay. We also provide suggestions for how you can learn more about these topics!

#1 SIOP Trend of the Future: Big Data

In our October of 2013 issue, we wrote about big data, explaining how organizations were beginning to use big data to recruit, retain, and manage employees throughout their journey at a company. In addition, we explored how big data was being leveraged to create customized, and personalized learning experiences based on one’s knowledge or skill set. Our research and experience in this area has shown that the availability of big data is changing the way I-O psychologists are thinking about the next generation of selection and training. For more information about adaptive training trends, be sure to check out our April of 2015 issue.

When looking at the trends today, we feel confident to say: Big data is here to stay! By examining the #1 SIOP workplace trend this year “Leveraging and Maximizing Big Data and Applying the Correct Analytics to Make Better Business Decisions,” we can see other I-O psychologists would agree with this assessment. For the full list of 2016 workplace trends, check out the official SIOP list.

Excitingly, this year at #SIOP16 there are eight big data presentations and workshops alone. These sessions will highlight the use of big data and how it will continue to advance our thinking on many topics such as recruitment, retention, performance management, and even leadership, which is typically characterized by smaller data (Wiita, Dollwet, Harrell, Rodda,
& Strange, 2016). In addition, new prediction models and algorithms will be shared, such as random forests and gradient boosted trees, which are being leveraged to help I-O psychologists handle big data. We will also learn about new methods of gathering big data, such as theory-driven web scraping, which are also emerging (Cavanaugh, Brusso, Collmus, & Landers, 2016).

One particularly exciting technological advancement in the big data arena is the metaBUS project. In order to make this a reality, many I-O psychologists have come together to develop a cloud-based technology tool for finding, curating, synthesizing, and disseminating research findings based on nearly one million correlations reported in I-O psychology journals within the last 25 years. We highly recommend reading the recently published article that was included in a new open-access I-O journal called Personnel Assessments and Decisions.

Even though we are learning a ton about (and from) big data, we as a field are still challenged with several issues regarding measurement, analysis, validity, and legal consequences. I-O psychologists must strive to understand how to gather and analyze big data to keep up with organizational practices.

If you’re interested in learning about big data and how to use it, you’re in luck! Below are a few ways in which you can deepen your knowledge:

- Revisit the discussion from our first #SIOPchat on Twitter, which took place on March 1, led by Richard Landers (@rnlanders). You can either search the Twitter feed or read the summary of that discussion at my.siop.org/chat. The forum is similar to Ask Me Anything (AMA) on Reddit.
  - How it works: You participate by following the hashtag #SIOPChat during a designated day and time and hear from speakers talking about a specific topic. You can either read and follow, or engage and ask! Simple as that.
  - Be sure to join us on Saturday, April 16 at 2:30 PM PT to ask questions and discuss our annual conference with SIOP Conferences and Programs Officer Evan Sinar (@evansinar)!
- Attend any of the #SIOP16 big data presentations this year in Anaheim and connect with other experts in the space to see what type of research they are conducting and learn about their previous research findings.
- Sign up for a master tutorial on Thursday and a seminar on Friday at #SIOP16 that will teach you how to conduct big data predictive analytics using R.
- Attend SIOP’s Leading Edge Consortium in October of 2016, which will be focused on—you guessed it—big data! At the consortium, experts will explore and discuss technologies for gathering data, new analytic methodologies, and new approaches for displaying and exploring data.

Technology-Enhanced Assessment

Throughout most of our issues, we’ve highlighted the evolution of testing and assessments due to new technologies and applications being used in recruitment, hiring, and promotion. Virtual reality, gamification,
and simulation trends are continuing to take shape at rapid pace and are embedded into workplace practices. For example, many organizations are using virtual reality or simulations to not only assess whether the applicant can do the job or fit in with the organization but also to provide applicants with a realistic job preview (Winkler, 2006). This gives applicants a better preview of what it would be like to work for that organization and determine whether they think they might enjoy working in the organization. Ideally, applicants who do not believe they will fit the job or organization will self-select out of the application process, and the ones that do see a fit will continue through recruitment process. In turn, organizations should expect an applicant pool with more qualified applicants.

Simulations are more recently being developed for virtual assessment centers, which are almost always conducted as in-person events. Check out some demonstrations of simulations being used in organizations: sample demos. You can also watch a video about how one organization, Swarovski, uses avatar-based assessments.

Our October of 2014 issue focused on how video-based technology is being leveraged to enhance recruitment and selection processes. Organizations are using videos as a recruitment tool to show short clips of the organization and what it is like to work there as well as using video conferences to communicate with applicants. Video technology is used in selection in several ways. Applicants are now creating video résumés, video-based situational judgment tests, prerecording a video in which they answer a set of interview questions as well as video conferencing to conduct interviews.

New technologies are not only changing the way individuals interact and communicate with and within organizations, they are also creating new measurement and administration challenges. For example, in virtual reality assessments, applicants are no longer responding to a single item but rather interacting with a more complex and more realistic workplace environment. This change presents difficulty in teasing out the specific constructs that one wishes to measure. New technologies can also introduce other visual components that affect applicant performance. For instance, Skype interviews have a picture-in-picture component that allows applicants to see themselves in an interview, which can increase cognitive load (Horn & Behrend, 2016). Internet testing, which we discussed in our October of 2015 issue, presents opportunities for cheating and piracy.

Even though measurement challenges are present, we are learning it is possible that new technologies can address concerns with more traditional paper and pencil tests. For example, a recent study by Tenbrink, Delgado, and Kinney (2016) provided evidence that simulation-based cognitive ability measures have smaller subgroup differences while maintaining comparable validity to traditional measures. All in all, much empirical evidence is still needed to support the validity and use of these assessments. Also, a greater understanding of applicant reactions to these assessments is needed. We have a lot of work ahead of us to provide best practices in developing psychometrically sound assessments using virtual reality technologies, but the benefits of these tools are promising!
At #SIOP16, you will have the ability to attend several sessions related to these topics, including but not limited to:

- 3D Virtual Games and How They Can Increase Learning of Business Ethics (Jagger, Nguyen, & Sloan, 2016)
- Acquisition of KSAOs Through Online Games and Virtual Team Collaborations (Siriabian, Weidner, & Prewett, 2016)
- Extending the Uncanny Valley Theory to Simulations (Lee et al., 2016)
- Going Mobile: Empirical Evidence From Higher-Fidelity Mobile Simulations (O’Connell et al., 2016)
- Meaningful Gamification in an Industrial Organizational Psychology Course (Earnest & Stansbury, 2016)
- Simulation Games and Their Effectiveness in the Socialization Process (Howard, Rose, Dogru, Millard, Mahla, Gui, & Lee, 2016)
- Using Gamification to Improve Training Reactions and Learning (Armstrong & Landers, 2016)
- Validity of Simulation-Based Cognitive Ability Measures (Tenbrink, Delgado, & Kinney, 2016)
- Video Killed the Interview Star: Does Picture-in-Picture Affect Interview Performance? (Horn & Behrend, 2016).

In our July of 2014 issue, we highlighted ways in which social media has changed the recruitment landscape. Since then, we’ve continued to see social media penetrate organizations, shape policies and decisions from obtaining and selecting talent, and create an organizational online branding through outreach. This is highlighted through this year’s #10 workplace trend “Using Social Media to Make Employment-Related Decisions.” Several SIOP sessions this year will aid in moving this conversation forward.

There is no doubt that in the future, organizations will continue to use social media to make decisions and drive organizational practices. One of our greatest challenges as #SIOP members will be to help organizations use social media in a responsible and ethical manner (especially in the hiring context) based on empirical support.

**I-O Psychology Branding Through Social Media**

We would be remiss if we did not mention the importance of social media in the visibility of SIOP and I-O psychology. In our January of 2014 article, we described how we can use social media to increase our visibility as I-O psychologists and in turn help create greater awareness for the I-O field. We are delighted to say that there is firm evidence showing an increase in our presence on social media! Don’t believe us? Check out Paul Thoresen’s “80 #IO-Psych Pros to follow on Twitter.”

Although the number of I-O psychologists discussing I-O related matters on social media has greatly increased, we think there

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**Social Media in the Workplace and I-O Field: Still Going Strong!**
is still more work to be done to build our brand as the “visible and trusted authority on workplace psychology” (Reynolds, 2013). Please be sure to keep posting and using our two core hashtags: #IOPsych and #SIOP.

Want to learn more about social media best practices and/or contribute to building our brand?

● Attend top social media sessions at SIOP:
  ○ Developing a Structural Framework for Social Media Assessments in Hiring (Hartwell & Campion, 2016)
  ○ Social Media Strikes Selection: Challenges of the Technological Era (Mills et al., 2016)
  ○ Social Media for Employment Decisions: The Risk, Reward, and Unknown (Chambers et al., 2016)
  ○ Last, Be sure to attend “Tweet, Post, and Link: Creating a Presence and Brand Online” and say hello to Tiffany!
    ○ This session will provide practical guidance for using LinkedIn and Twitter to develop an online presence and increase the visibility of I-O psychology! She will be delighted to discuss this issue which we highlighted in a past column or any other social media questions you might have!

● Share your SIOP presentations, research findings, and favorite conference moments using #SIOP16!

● Last, stop by the ECC Social Media table at SIOP. We will be near the wifi lounge so come by to gather fun swag and learn about ways you can stay informed through social media.

Virtual Communication and Teamwork: Evolving Workplaces

In our January of 2015 issue, we wrote about virtual teams in which we shared several technologies available to improve virtual communication and collaboration. In addition, we highlighted that one of the most immediate issues requires leaders to gain a new understanding of how to manage virtual teams. As we’ve seen through our own experiences in practice, virtual work continues to increase in prevalence. With the increase in virtual work also comes both improvements and challenges in collaboration and communication.

With no surprise, coming in at #3 on SIOP’s Top 10 Workplace Trends of 2016 is “Managing Virtual Teams” as well as #2 which focuses on “Trends in Technology Are Changing the Way Work Is Done.” There is no room for debate—organizations are becoming increasingly reliant on technology. We are likely to continue to see this trend, particularly with regards to the use of technology-mediated communication in all aspects of the talent management process including recruitment, selection, training, and performance management.

Want to learn more? Check out the related #SIOP16 presentations that will help advance our understanding of virtual work including:

● Shared leadership in virtual teams (Hoch & Dulebohn, 2016)
● Trust in virtual teams (Coovert, Miller, Bennett, & Martin, 2016; Lee & Coovert, 2016)
● Acquisition of KSAO’s Through Online Games and Virtual Team Collaborations (Sirabian, Weidner, & Prewett, 2016)
**Other Virtual Relationship Trends**

Another type of impact we are seeing across these virtual workplaces and systems is a shift in the performance management technologies that are supporting organizational practices such as coaching. In our January of 2016 issue, you will find examples of the types of technologies that exist now which are enabling new approaches to growing our managers and teams within the workplace, both virtually and in-person.

**Conclusion**

As always, moving forward we must work hard to bridge the science–practice gap that still exists in the workplace. The great news—we as I-O psychologists can work together to improve our research and practice with regards to technology in the workplace. Below are two key areas of focus that we believe can make the difference:

**Develop a Comprehensive Framework**

In research, we need to continuously strive to create a framework that addresses the technological attributes rather than the type of technology if we want to gain a deep understanding of how technology impacts the workplace. For instance, Potosky (2008) has developed an initial foundational framework to understand technology in the assessment process of which we can expand. This year at SIOP, I-O psychologists such as Neil Morelli, Seymour Adler, Winfred Arthur, Denise Potosky, and Nancy Tippins are leading the charge on developing such a comprehensive framework.

Anyone interested in joining forces or who is already conducting research involving technology should attend their session “Developing a Conceptual Model of Technology Applied to I-O Psychology” to hear about the creation of a comprehensive framework to help create a priori hypotheses and grounded predictions.

**Continue to Engage in Interdisciplinary Work**

For those of us who’ve had the privilege of working with cross-functional partners across various disciplines like software developers, computer programmers, and human factor engineers, we know communication and collaboration is critical. In our April of 2014 issue, we highlighted methods and best practices for I-O psychologists to partner effectively with these teams.

Given each of these fields have its own language and focus, there still remains a set of barriers and challenges given the complexity of the range of field partners. Some barriers highlighted include miscommunication, lack of a clear vision, or shifting of tasks. By focusing on gaining shared mental models and clear understanding of project goals, we can ensure the rigor and research is built into the technologies that are used in the workplace. Two examples of good collaboration include pulling the right performance data within training technologies, systems and simulations, or leveraging the correct models to assess candidates in a selection tool.

Looking to learn more? Check out the “You’re the “I” to my “O”: Developing Successful Interdisciplinary Experiences”
session at #SIOP16 to learn about ways I-O psychologists can benefit from engaging in interdisciplinary research and build networks across domains!

As we can see, these and other related topics will continue to emerge and morph over the years to come. We are certainly excited to continue following the trends at our annual conference as well as on through our social media channels!

**New Changes to the Authors of The Modern App:**

**To our readers:** It is with mixed feelings that we share that this will be Nikki’s last issue as the coauthor of *The Modern App*. As Nikki makes her next play into the world of academia, we wish her well and hope to bring her back for the occasional issue on technology and social media with regards to recruitment, selection, or assessment. ;)

However, we are delighted to share that Evan Sinar will be stepping in as the new coauthor of *The Modern App*! Please join us in welcoming Evan!

**A word from Evan:** I’m excited for the opportunity to join Tiffany for future installments of the Modern App! In my role as a I-O practitioner, I’ve seen technology advance from a way to merely replicate traditional processes in electronic form (think the earliest days of online testing), to opening nearly infinite possibilities for what we measure, how employees learn, where and when work gets done, and who we partner with to optimize I-O tools for end users and business stakeholders (e.g., programmers, graphics designers, user experience experts). Through my role working with the SIOP Conference, I’ve also seen technology surge to become a distinct and popular session topic, after only 2 years as its own content area becoming the 13th-ranked (out of 34) topic on the 2016 program. In the previous pages, Nikki and Tiffany have adeptly summarized an incredible 3 years of technology shaping I-O (and vice-versa). I look forward to sharing my commentary and viewpoints on what’s sure to be a never-dull ride through the next 3!

**A word from Nikki** - First and foremost, thank you to all of our modern app readers and to my dear friend and colleague, Tiffany! It’s been a fun adventure writing with Tiffany and following all the exciting work coming from the I-O experts in technology and social media! I’ve very much enjoyed writing over the past three years and look forward to reading the column as Tiffany takes it forward. Please stay in touch and let me know what trends you are seeing in your research and workplace!

Nikki & Tiffany at #SIOP14 #memories
For a full list, below is the timeline of our columns together over the past 3 years:

- The Modern App hits the press! - July 2013 Issue
- Big Data Technologies - October 2013 Issue
- Personal Branding - Jan 2014 Issue
- Multidisciplinary Teams - April 2014 Issue
- Social Media & Tech Change Recruitment - July 2014 Issue
- Video-Based Technology - Oct 2014 Issue
- Virtual Workplaces - Jan 2015 Issue
- Adaptive Training - April 2015 Issue
- A Year in Review - July 2015 Issue
- Internet Testing - Oct 2015 Issue
- Performance Management Tech for Organizational Coaching - Jan 2016 Issue

References


