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Factors that influence new generation candidates to engage with and complete digital, AI-enabled recruiting

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Abstract Recruiting talent has moved from a tactical HR activity to a strategic business priority. This has been driven by shifts in the source of firm value and competitive advantage and the critical role of human capital in those shifts. Technological advances have moved digital, AI-enabled recruiting from a peripheral curiosity to a critical capability. However, we know little about candidates' reactions to AI-enabled recruiting. Consequently, in this study, we examine the role of social media use, intrinsic rewards, fair treatment, and perceived trendiness on the intentions of prospective employees to engage with and complete digital, AI-enabled recruiting processes. The positive relationships between these factors and candidates' engagement with AI-enabled recruiting have several important practical implications for managers. We also examine the larger implications and make general recommendations to firms about using AI-enabled recruiting technology and tools.

1. Recruiting is a strategic business priority, not a tactical HR activity

Only 10 years ago, very few CEOs would agree with this section's heading; many, if not most, would have believed the opposite. However, in its most recent CEO survey, the Conference Board found that attracting and retaining talent was a top strategic priority for CEOs (Conference Board, 2018). Why is recruiting no longer a tactical HR activity but a strategic business priority? The answer has three related threads.

First, the basis of competitive advantage has shifted from tangible assets to intangible assets. Intangible assets now account for roughly 80% or more of firm value, up from just 17% in 1975 (Black, 2019; Lev, 2000; Ocean Tomo, 2015). The

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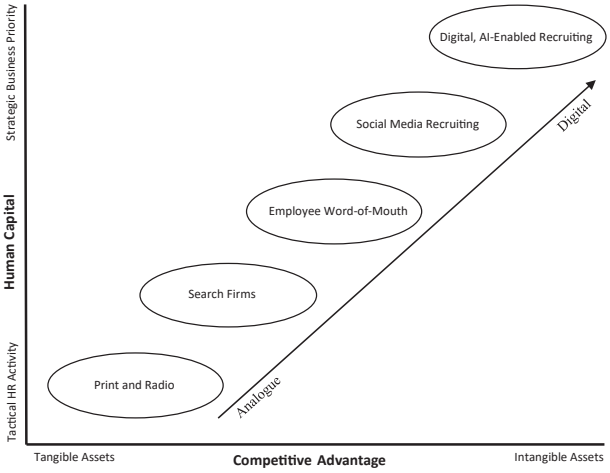
intangible assets that constitute competitive advantage include innovation, customer insight, customer service, and brand, among others (Madhani, 2012).

Second, this shift of competitive advantage to intangible assets has increased the strategic importance of human capital. People are either the sum or substance of intangible assets or they are the principal driver of them (Black, 2019). Therefore, if firms that cannot get the people they desire to want them, they will have a hard time winning competitive battles fought increasingly on terrain dominated by intangible rather than tangible assets.

Third, there is a talent shortage, especially relative to people who can drive competitive advantages embedded in intangible assets (ManpowerGroup, 2018). This imbalance is accentuated by the fact that today's talent has more power and advantage in the employment relationship than in the past (Black, 2019).

In summary, the shift from tangible to intangible assets as the source of competitive advantage, the core role of human capital in driving competitive advantage in intangible assets, and the talent shortage have all served to move human capital from supporting cast to a starring role. As this has happened, recruiting human capital has shifted from a tactical HR activity to a strategic business priority. However, the strategic story of recruiting does not stop here; it only begins. While recruiting has moved from a tactical to strategic activity, AI-enabled recruiting has moved from a peripheral curiosity to a critical capability (see Figure 1).

Figure 1. Strategic story of recruiting



2. AI-enabled recruiting as a critical capability

Three related drivers have moved AI-enabled recruiting from a peripheral curiosity to a critical capability. First, today's job candidates increasingly spend their time in digital spaces. The number of active social media users worldwide is 3.2 billion (Kemp, 2018) and those who are 18–35 years old in the U.S. are spending 6.5 hours on social media per week (Nielsen, 2018). Therefore, if companies want to attract and recruit talent who increasingly spend their lives in digital space, they have to recruit in that digital space with digital technologies and tools.

Second, over the last decade, the digitization of job information, both information from candidates to companies and from companies to candidates, has removed much of the cost and friction of that matchmaking process. The removal of this friction has caused the number of applicants per position to explode from 100 applicants per job in 2013 (Smith, 2013) to an estimated 250 in 2018 (Yin, Camacho, Novais, & Tallon-Ballesteros, 2018). To screen and evaluate these staggering increases in applications, a company would have to hire an army of recruiters, which would be prohibitively expensive. As a consequence, companies have no choice but to use AI-enabled tools to screen the ever-growing number of job applicants.

Finally, in the last decade, AI-enabled tools have improved to the point where their superiority to humans in terms of both efficiency and effectiveness—especially in the early stages of recruiting—are beyond debate (Kaplan & Haenlein, 2019; Smith & Neupane, 2018; Van Esch, Black, & Ferolie, 2019). Unfortunately, while executives increasingly recognize the criticality of digital, AI-enabled recruiting systems, their actual practices lag. For example, a survey of top executives by Deloitte found that 72% of top executives think that AI in recruiting is critical, but only 31% felt that their firms were positioned to utilize the potential (Deloitte Insights, 2018).

3. AI-enabled recruiting disruptions

As mentioned, the improvements and advancements in AI-enabled recruiting are such that executives ignore them or lag behind them at their own peril. This is not because executives need to be keeping up with the Joneses, but because only through keeping up or catching up with digital, AI-enabled recruiting technologies will firms be able to attract and select the human capital they need

to drive the company performance they target (Becker, Huselid, & Ulrich, 2007).

Unilever recognizes this. It has 170,000 employees across its global operations and understands that people are its most important asset. To compete and win against the best competitors, Unilever believes it must find the best talent. To secure the best talent, they cast the widest net possible. In the past, Unilever spent significant sums on money and invested enormous amounts of time to recruit fresh university graduates via on-campus visits. This analog technique netted fresh college graduates from an impressive 840 universities. However, by leveraging AI-enabled recruiting tools across social media platforms like Facebook, WayUp, and Muse, Unilever was able to expand its universe of fresh graduate candidates to 2,600 universities at a substantially lower cost than before (Feloni, 2017). In a similar scenario, firms like CVS Health, Delta, Public Storage, and Staples use an AI-powered assistant named Olivia from AI startup Paradox to engage with candidates through mobile and social media channels to learn about their expertise, relevant job experience, and skills. Olivia guides candidates through the different steps of the recruitment process from answering company and process-related questions to scheduling interviews.

AI-enabled recruiting goes beyond just increasing the breadth of firms' outreach, it also allows them to dive deeper into the matches between prospective employees and jobs. As an example, Nvidia has AI chips for mobile phones that learn users' behavior and speech patterns, which enables Nvidia to match candidates with jobs that align with both their personal and work-based habits. Then, in order to understand a candidates availability, experience, skills, and market value, firms like eBay, IBM, Intel, and Verizon use AI-enabled technology through Hiretual to compare candidates against an aggregate of over 700 million professional profiles across 30 different web-based public platforms.

Regrettably, in some instances, top candidates can be accidently overlooked. In order to connect with and re-target high caliber candidates, industry-leading companies like Adidas, Macy's, Quicken Loans, and Wayfair use an AI-bot recruiter from Restless Bandit to sift through their company's automated tracking system (ATS) and other resources to compare résumés and applicant profiles to ensure they continue to discover and rediscover top talent.

Sometimes, the challenge is not just finding the right candidates but structuring the precise language to appeal to those candidates and changing the exact wording to fit particular candidates. Firms such as Textio use AI to help clients customize the wording of job ads and descriptions and make them hyper-personalized. Johnson & Johnson used Textio's technology and added 90,000 new female candidates to its pool (Dodson, 2018). Sometimes, candidates and employees do not necessarily respond to emails, so online clothing company ThredUp introduced the engagement platform TextRecruit to communicate via live chat and text difficult-to-reach candidates more easily.

While finding and attracting a wider pool of job candidates is important, the wider and bigger that pool, the more challenging is the task of screening that pool. Here too, AI-enabled technologies are disrupting the old analog world. Today, companies such as Hilton use AI-enabled technologies by providers such as AllyO to screen initial job applicants reliably and effectively between 75% and 90% faster than humans can (Yin, Camacho, Novais, & Tallon, 2018). In addition, AI-enabled tools are at least 25%—100% more effective than humans in discriminating between good and bad candidates (Kuncel, Klieger, & Ones, 2014; Van Esch & Mente, 2018).

Sifting through résumés is one thing, but connecting employers with potential new team members is another. This is where firms like Credit Karma, Hallmark, SONY, and SpotX are using the AI and predictive analytics capability of Entelo and its machine learning platform Envoy to source and connect top candidates unbiasedly via emails to their respective inboxes.

AI recruiting technologies now go beyond just screening résumés to conducting virtual interviews. Companies like HireVue offer not only enhanced convenience and lower costs but also a more effective evaluation of candidates. HireVue allows candidates to set any time that is convenient for them for a video recorded interview. The AI-technology asks the candidate a short set of questions that HireVue has agreed to with the client company in advance. Candidates can record their response multiple times if they wish before submitting their final reply. HireVue's AI technology not only evaluates the actual responses and compares them to ideal responses but also assesses word choice and microfacial movements to provide assessments of personality and honesty of answers. Unilever used HireVue and reported that it dramatically increased the speed and quality of the finalists who were subsequently interviewed in person and made offers. In fact, 80% of those who made it to the final round were given job offers (Feloni, 2017).

For those companies that believe selecting the right candidate requires much more than a simple screening of a job application or even an interview, AI-enabled technologies allow companies to construct digital simulations and evaluate both the outcome and the process candidates use completing the simulation. For example, McKinsey & Company created a simulation in which a job candidate faces a forest with abundant wildlife and blessed with beautiful flora and fauna (McKinsey & Company, 2018). The candidate is then informed that the animals are dying due to an unknown illness. The candidate must then figure out what to do and act quickly to protect as many animals as possible. AI not only tracks how many animals each candidate saves and how quickly he or she reacts but also the process the candidate takes in achieving his or her outcome. It tracks, records, and analyses all this without the inherent biases that typically encumber human evaluators.

4. Why would candidates engage in and complete an AI-enabled recruiting process?

Even though the potential disruption of AI-enabled recruiting technologies is growing ever-clearer, we have little empirical research on how candidates actually respond to AI-enabled recruiting efforts. For example, even though we cite evidence that the new generation of job candidates are spending more time on social media, the empirical evidence about the relationship between the use of social media and candidates' engagement with and completion of digital, AI-enabled recruiting systems via social media is almost nonexistent. There is reason to want to better understand this because we have learned from empirical studies of consumers' reactions to AI-enabled ads that if consumers perceive those AI-enabled ads as intrusive, they ignore the ads and think less of the brand sponsoring the ad (Zha & Wu, 2014). Therefore, we set out in this study to examine empirically a number of factors that might drive candidates' likelihood of engaging with and completing a digital, AI-enabled job application process.

We focused on a job candidate's likelihood of engaging with and completing a digital, AI-enabled job application process because even if AI-enabled screening tools are more efficient and effective than humans, if reaching out to candidates via social media actually drives them away from a company's AI-enabled recruiting process, then the practical value of that system is limited (Miles & McCamey, 2018; Van Esch & Mente, 2018). Thus, the core focus of the study was to examine those factors that might cause candidates to be more likely to engage with and complete a digital, AI-enabled job application process.

4.1. Social media use

Given the growth of social media users and the time people spend on social media, the first factor we examined was the use of social media. There is general evidence that as people use a particular technology, they also become more comfortable engaging in other activities via that same technology (Kaplan & Haenlein, 2010). For example, as people became more experienced and comfortable using computers in the 1980s, they became more comfortable doing things on a computer that they had done via a different technology previously, such as making reservations via a computer versus a phone call (Sproull & Kiesler, 1991).

Increasingly, prospective employees spend time on social media platforms via mobile devices; therefore, if companies want to reach these prospective employees, they have to go where those job candidates can be found. However, there is a gap between candidates' job search activities on social media platforms via mobile devices and companies' recruiting activities. Although 89% of job seekers report that mobile devices are the most important tool when looking for a job and 45% use their mobile devices to search for a job at least once a day (Glassdoor, 2014), only 16% of job applications are actually submitted via a mobile device (PageUp, 2017). This may suggest that companies are lagging behind the opportunity.

Nonetheless, because research has demonstrated that familiarity with a particular technology leads to greater comfort with and willingness to engage in additional activities via that technology, we would anticipate the more people use social media and the more exposed they are to the AI-enabled advertising, news feeds, and other push applications on their mobile devices, the more likely it is that they will engage in and complete AI-enabled job application processes on a mobile device.

4.2. Intrinsic rewards

There is a significant body of literature that shows people often use new technology not only for the anticipated utility outcomes of the technology but also for the anticipated intrinsic rewards such as a sense of accomplishment, innovation, novelty,

fun, and confidence (Davis, Bagozzi, & Warshaw, 1992; Mumford, 2000). Social media is just over a decade old. Consequently, the anticipated intrinsic rewards of using social media might not have much power at this point. In contrast to general social media use, however, applying for a job via a social media interface is relatively new. In addition, applying for a job whose process is advertised as both digital and AI-enabled is even newer. Therefore, job candidates could easily anticipate intrinsic rewards for engaging in an AI-enabled job application process via social media independent of any functional outcomes, such as securing a job through the AI-enabled recruiting process (Salge, Glackin, & Polani, 2014). For example, there is intrinsic motivation for using the like button on general social media independent of any functional outcome (Roth, Bobko, Van Iddekinge, & Thatcher, 2016; Tucker-Ladd, 2000). There is no reason to think that these same sources of intrinsic motivation would not be true for AI-enabled recruitment via social media.

These anticipated intrinsic rewards could be enhanced by what companies communicate to candidates about the process or what they highlight. For example, organizations can deliberately communicate that applying for their jobs via the AI-enabled process is fun, novel, and leading edge. To the extent that these messages are effectively communicated to potential job candidates, their willingness to use AI-enabled social media recruiting as part of the hiring process would be expected to increase (Baum, 2017; Brahmana, 2013).

As a consequence, it is reasonable to expect that at least some prospective job candidates would perceive applying for a job via a social media interface and with a company who was utilizing an AI-enabled process as a source of intrinsic rewards. Furthermore, we would expect that, to the extent that candidates view applying for a job via a digital and AI-enabled process as intrinsically rewarding, their level of engagement and intention to complete a digital, AI-enabled job application process will be higher.

4.3. Fair treatment

However, the technological novelty of the process may not be enough or rather could be mitigated by an undesirable process. There is extensive literature on the influence that a sense of fair treatment can have on an individual's willingness to engage in any process (Tyler, 2000). The literature finds that fair treatment includes being treated with respect, empathy, and courtesy while being given relevant information (Sundaram & Webster, 2000). Just as people expect fair treatment from other people, there is no evidence to suggest that people would want or accept unfair treatment from an artificially intelligent agent. In fact, there is some evidence that people expect or desire fair treatment from AI-enabled systems just as they expect it from other humans (Ostrom, Fotheringham, & Bitner, 2019). Thus, we hypothesize that the more job candidates perceive the digital, AI-enable recruiting system as providing fair treatment, the more likely they are to engage in and complete such a recruiting process.

4.4. Trendy

To the extent that applying for a job on social media via a digital, AI-enabled job application process is new, it might be perceived as not just novel (i.e., new and different) but trendy. Trendy technologies are not only seen as new and early in the development cycle but they are also seen as more than a temporary blip on the technology radar screen. Participating in or engaging with a trendy technology can vicariously bestow on the participating individual all the cool, novel, and leading-edge characteristics inherent in the trendy technology (Van Esch & Mente, 2018). The fact that some organizations have hired or internally promoted senior executives to new positions with titles such as chief AI officers or global heads of AI could easily add to the probability that some job candidates would see AI-enabled recruiting as trendy. The general increase of AI products and services could also bestow a bit of trendiness to AI-enabled recruiting. Some job candidates might even be familiar with various AI-enabled products and services directly related to recruiting such as chatbots or AI-analyzed video interviews. This could add to the likelihood that AI-enabled recruiting is viewed as trendy. Consequently, we expect that some job candidates view AI-enabled recruiting as trendy and that the more they viewed it as such, the more likely it is that they would engage with and complete such a job application process.

5. Methodology

In order to examine the relationships among social media, intrinsic rewards, fair treatment, trendy, and AI-enabled recruiting technology in relation to the job application process, we used a cross-sectional design. Specifically, 293 participants enlisted through a crowdsourcing platform read a

description of a job application scenario and then answered a series of questions based on existing and established measures (Smith, Roster, Golden, & Albaum, 2016). The scenario specified several key conditions. First, participants were told that they were made aware of an open job via social media on their mobile device. They were instructed to view the job as one to which they were attracted, but without specifying what the job was or why they were attracted to it. At the same time, participants were instructed that they would apply for the job through social media via a mobile device. Furthermore, the participants were informed that the organization used AI in its job application and selection process and that the candidate's behavioral and physiological characteristics would be analyzed as a part of the overall decision-making process to determine their suitability for the job. In addition, the scenario made no mention of any anticipated efficiency or effectiveness benefits of the digital, AI-enabled recruiting process. Nor did the scenario mention the length of time the organization had been using AI in the recruiting process. The scenario was purposefully brief to avoid shaping participants' perceptions of and attitudes toward a digital, AI-enabled recruiting process, and thereby allowing participants' existing perceptions and attitudes to remain operational. The measures in this study were, in some cases, adapted slightly from previous studies to include explicit wording specific to the focus of this study.

6. Results

All the measures demonstrated strong internal reliability as well as sufficient independence between measures (see Table 1). In addition, the correlations between the key independent variables and the outcome variable of intent to complete the digital, AI-enabled recruiting process were all statistically significant and in the expected direction.

To examine the simultaneous relationships of the independent variables with the outcome variable, we conducted a multivariate regression (see Table 2). Social media use, intrinsic rewards, fair treatment, and trendy each had a significant and positive impact on the likelihood that candidates would engage in and complete an AI-enabled recruiting process. Collectively, these variables explained a significant amount of variance in this outcome. Indeed, these few key variables explained 63% of participants' intentions to engage in and complete the recruiting process.

6.1. Social media use

Given the younger demographic profile of the participants in this study, it is not surprising that their use of social media on average was relatively high (mean = 4.67 on a 7-point Likert-type scale). However, there was important variation (standard deviation = 1.34) with a sufficient number of participants being less active users of social media making it ineffective to test the relationship of this variable with the outcome variable. Given that the setup scenario explicitly informed participants that the company used an AI-enabled job application process, the strength of the relationship between this variable and the outcome ($\beta = .24$, $p = .01$) suggests that explicitly stating that the firm uses AI-enabled recruiting technology is a positive thing to do.

6.2. Intrinsic rewards

The job scenario in this study was deliberately brief and did not include any signals about the potential intrinsic rewards that participating in an AI-enabled recruiting process might have. This study shows that unprompted job candidates have high expectations of intrinsic rewards for engaging in and using digital, AI-enabled recruiting technology (mean = 4.45 on a 7-point Likert-type scale), though there was sufficient variation around this mean (standard deviation = 1.60). The

Table 1. Reliability, descriptive statistics, and Cronbach's Alpha

Scale	Mean (SD)	SMU	IR	FT	TR
Social Media Use (SMU)	4.67 (1.34)	[.93]			
Intrinsic Rewards (IR)	4.45 (1.60)	.73**	[.94]		
Fair Treatment (FT)	4.36 (1.33)	.46**	.58**	[.79]	
Trendy (TR)	4.80 (1.30)	.44**	.54**	.45**	[.79]

Note: ** p = .01; Cronbach's Alpha = [> 0.7].

Table 2. Regression results

Independent variable	Digital, AI-enabled recruiting process
Constant	.17 (.24)
Social Media Use	.24** (.06)
Intrinsic Rewards	.31** (.05)
Fair Treatment	.16** (.05)
Trendy	.27** (.05)
R^2	.63
MSE	.88
F	124.50**
df	4, 288

Note: ** p = .01; Unstandardized coefficients are shown; The numbers in parentheses are standard errors.

strong relationship between greater expectations of intrinsic rewards and completing an AI-enabled recruiting process ($\beta = .31$, $p = .01$) suggests that communicating the potential intrinsic rewards of participating in an AI-enabled recruiting process by using descriptors (e.g., fun, new, innovative) would be a positive step for firms to take.

6.3. Fair treatment

As with intrinsic rewards, this study found that job candidates expected fair treatment from an artificial intelligence agent (mean = 4.36 on a 7-point Likert-type scale; standard deviation = 1.33). The more participants expected that the AI-enabled recruiting process would treat them fairly, the higher were their intentions to engage in and complete the recruiting process ($\beta = .16$, $p = .01$). The tactical implication of this is that firms should take care to ensure that their AI-enabled systems, in fact, do treat people fairly. At a most fundamental level, this means providing candidates with relevant information in a timely manner. Unfortunately, 52% of non-AI recruiting systems provide candidates with little or no information regarding the status of their application (Talent Board, 2018). Providing regular updates to candidates all along the recruiting process is relatively simple to achieve with AI chatbots such as Mya.

6.4. Trendy

Lastly, our study found that candidates view AI-enabled recruiting systems as trendy (mean = 4.80 on a 7-point Likert-type scale; standard deviation = 1.30). The more candidates viewed AI-enabled recruiting as trendy, the more likely they were to engage with and complete the recruiting process ($\beta = .27$, $p = .01$). Consequently, companies may want to reinforce the notion that AI-enabled recruiting is trendy with lines such as, "We are one of the few companies using AI this way in recruiting," or "Our use of AI in recruiting is at the leading edge."

7. Implications and recommendations

Looking across both the research and practice landscapes, it seems clear that AI—and in recruiting specifically—is here to stay. Its presence and impact will likely only grow. However, that growth is unlikely to be either linear or smooth. If we look at the growth of such sweeping innovations like electricity, the telephone, the car, or even the internet, none of them were linear nor smooth. Finally, even though these innovations dramatically changed people's lives and how they lived them, they did not dramatically alter human nature. Even though electricity allowed people to stay up and do many things past sunset, most people still spent those hours primarily with friends and family as they had done before the advent of electricity. Even though the internet allowed people to connect from any place on the planet, they still talked about 'friending' someone. Even with the seemingly inevitable growth of AI-enabled recruiting, the likelihood that the growth will be linear or smooth, and the nature of that growth, some aspects of human nature will not likely change. Great are the foundations for the implications and recommendations we see, which we group under the three I's of AI-enabled recruiting: investigate, iterate, and integrate (see Table 3).

7.1. Investigate proactively

Even though it seems that we are early in the lifecycle of AI-enabled recruiting, the technology is progressing fast enough and is close enough to an inflection point that any firm that waits to see exactly how things unfold will find itself not just watching from the sidelines but sitting on the benches as a spectator—not a player. Given that competitive advantage through intangible assets seems here to stay and that people are and will be key drivers of those competitive advantages, the war for talent is just getting underway. If AI-enabled recruiting has the ability to help Unilever access talent across 2,600 universities at a substantially lower cost, would you want to try and compete against it accessing fresh graduates at

Table 3. The three I's of AI recruiting

Three I's	How	AI-enabled technology
Investigate	Proactively	• Use AI to identify and seek out active and passive candidates to increase candidate pool breadth and depth. • Leverage AI to actively adjust wording to decrease gender bias and increase candidate diversity. • Deploy AI to screen candidates quickly and more effectively.
Iterate	Relentlessly	• Employ different AI outreach providers in different geographies or employee segments to test capabilities. • Do not fixate on one particular AI-technology provider, use some to achieve short-term goals and others for longer-term goals. • Fail quickly and small in order to learn fast and less expensively.
Integrate	Intelligently	• Make use of chatbots to provide relevant and timely updates and feedback, even when the decision relative to the candidate is negative. • Utilize chatbots to answer candidates' questions quickly and to fill in missing candidate information. • Think carefully about how all the various pieces fit together and how they will be experienced from the candidates' perspectives to ensure a positive overall experience.

only 800 universities with a higher cost? If through AI-enabled recruiting Hilton can get its time-to-hire to 4 days, would you want to compete against it when your time-to-hire was an industry average of 42 days? How many of the best employees are going to wait an additional 38 days for your offer after they have an offer in hand from Hilton?

The advantages of AI-enabled recruiting are potentially so high that no firm can sit back and wait to see how things shake out. In addition, if AI-enabled recruiting takes a typical nonlinear and exponential development trajectory, then firms that sit back when that inflection point is reached will find themselves not just sitting on the benches but outside the stadium with no ticket to get in. As a consequence, firms must take a proactive approach to investigating various AI technologies and tools for recruiting.

Because a firm can only hire those that it finds, the front end of recruiting certainly deserves proactive investigation by firms. Specifically, firms should investigate AI-enabled technologies that help identify, seek out, and entice both active candidates and especially passive candidates (i.e., candidates who are satisfied enough in their job that they are not actively looking for another). We make a point of investigating tools that can target passive candidates for two reasons. First, there are simply more passive candidates out there by about a 3:1 margin. Second, the vast majority of passive candidates are willing to consider a job opportunity even if they are not looking for one. Some surveys put that number as high as 85% (Srinivasan, 2014). Companies such as Hiretual and Eightfold.ai specialize in utilizing AI to identify both active and passive candidates that fit a company's targeted profile. Companies (e.g., Textio) have AI tools that help adjust the wording of those outreach areas to ensure a better match to the individual candidate targeted in order to increase the likelihood that the candidate responds and engages with the recruiting process.

Better candidate attraction tools and lower friction costs mean that the attracted pool could be both very broad and deep. If the applicant to job ratio even approaches 250:1, an army of traditional recruiters could not cost-effectively screen such a large pool. As a consequence, firms should also investigate AI tools that efficiently and effectively screen candidates. Companies such as Ideal specialize in candidate screening. Fashion retailer Hot Topic used Ideal's AI tools to screen its candidates and both shortened the time to screen candidates and significantly improved the effectiveness of the candidates selected for further assessment.

7.2. Iterate relentlessly

Although we recommend that companies proactively investigate AI-enabled recruiting technologies and tools now in order to avoid the risk of being left behind when these technologies and tools hit their exponential inflection point, the technologies and tools are not quite there yet and companies must be prepared to relentlessly iterate. In this sense, established companies—relative to AI-enabled recruiting activities—must emulate the technology startups and partners they are likely to work with. They must experiment, observe, learn, adjust, and try again. Just as they will be left on the sidelines at best or outside the stadium at worst if they wait until the dust settles, firms run the risk of being outscored by opponents if they insist on carefully evaluating different providers and tools and meticulously planning out the implementation of various tools; they have an escalating commitment to stick with what they selected and implemented because they invested so much in the selection and implementation process.

Instead, at this point in time and perhaps for several more years, companies need to select and implement various AI recruiting tools quickly and then adjust or abandon tools that do not work as expected. The good news is that even though AI-enabled recruiting is, in many ways, an information technology, the investment required and follow-on commitment needed is nothing like that of selecting or implementing a new ERP system. There are many AI recruiting providers out there today. It is not clear which ones are today, or more importantly will be tomorrow, the dominant players. Therefore, it is possible and advantageous to employ multiple providers simultaneously to test their capabilities. A firm might divide the outreach providers by geography or by employee segments to learn through experience which are better.

At this early stage in the game, almost more important than getting the selection of the exact provider or tool right is getting in the game and getting up the learning curve. In fact, our experience on the consulting side suggests that the best way to put yourself in the position of making the right bet on particular providers or tools is to simply use some providers and tools to get up the learning curve so that you can more intelligently make longer-term bets. For example, should you build or borrow certain AI recruiting tools? If you should borrow today, who should you select as a provider or even a longer-term partner? There is no debate that these are important questions, but at this point in the change curve, getting to a higher elevation by relentlessly iterating up the learning curve may be the best way to attain that vantage point from which you can best see and judge what to do, how to do it, and with whom. Therefore, the general advice to small firms early in the development cycle applies here: fail quickly and fail small. By failing quickly and small, firms can move up the learning curve faster and at a lower cost so that later, these lessons learned can enhance the ROI of subsequent and larger investments.

7.3. Integrate intelligently

Finally, and somewhat ironically given the first two recommendations, firms have to take care to integrate what they do with AI recruiting so as to ensure that from a candidate's point of view the total recruiting experience is not less than the sum of the parts. We stress this because at the end of the day even if AI-enabled recruiting tools help firms get more of the right people in the door, more efficiently and effectively selected, so that the right people can be offered the right job, the return on all that investment is only realized if candidates say yes to the job offer. Yield has been and will remain a critical metric of recruiting effectiveness. AI is not going to change the importance of this metric. Additionally, the nature of humans will not change that much no matter how more efficient and effective AI-enabled recruiting tools or even systems become. People do not today—and will not tomorrow—join organizations to work with artificial intelligences. People join organizations to work with other people and to serve other people (i.e., customers). As a consequence, an organization cannot afford to have the shiniest AI objects in the recruiting process if, for the candidates, they are separate, disjointed, and unconnected. For the candidates, it needs to feel more—rather than less—like an integrated experience.

The good news is that some of the very AI tools that firms might investigate can help them intelligently integrate. As demonstrated in this study, people expect fair treatment even by artificial intelligences. One element of fair treatment is to be given relevant information in a timely fashion. Unfortunately, most firms do not just fall short of providing relevant information in a timely manner, they fall flat by providing no information at any time other than to acknowledge that the individual's application has been received. Just as it is typically more frustrating to not hear from the pilot why the plane is not moving and how long the delay might take than it is to actually experience the delay and suffer the consequences, so too is it

more frustrating to not hear back from a company even when it is not good news. As mentioned, chatbots and the AI technology and companies behind them such as Mya, Ari, Emerson, Mira, and Olivia can provide updates all along the process, can answer candidates' questions, and can even ask candidates questions to fill in missing bits of information. These chatbots do not forget to follow up or have bad days that then negatively affect the tone they use when they follow up. As a consequence, while there is much that companies will need to do to reach a point of seamless integration of the AI-enabled recruiting process, there is virtually no excuse for not achieving this minimal level of integration and fair treatment.

8. Summary

There is no need to rely on the media or provider hype about AI-enabled recruiting. The research is quickly establishing the efficiency and effectiveness benefits of AI-enabled recruiting. Our study both supports this and specifically suggests that there are benefits from explicitly noting that a company is using AI-enabled recruiting tools. Despite the fact that we are in the relatively early days of applied AI-enabled recruiting, and independent of the fact that not all the results are in, the trend is clear. As a consequence, the negative consequences of being left behind are significant enough that firms should proactively investigate the various AI recruiting tools and providers out there. The subsequent application of those tools should be done with an experimental mindset in which iterations of application is the norm and the objective is to get up the learning curve through playing the game—not via armchair quarterbacking. However, because there are virtually no end-to-end providers yet, some thought has to be taken to ensure that the company works to integrate the various pieces and providers intelligently so that candidates have a positive experience, and as a consequence, say yes to the job offer at the end of the process.

One final comment is that in our interactions with top executives, many have expressed concerns that despite the potential benefits of AI-enabled recruiting, they worry that internal HR executives and staff might resist the large-scale deployment of such systems. As one executive put it: "I don't want to invest time and money into something that HR views as a threat and may subtly sabotage." The good news is that, in our many interactions with HR executives and staff, there is little worry that AI recruiting tools will be perceived as a job threat. Our experience is supported by various surveys. For example, Jobvite found that only 7% of recruiters saw AI as a threat to their jobs, while 43% believed it would help them be more effective and efficient in their role as recruiters (Min, 2018). Rather than threaten HR jobs, AI recruiting technology will enable traditional recruiters to pivot into higher value activities. Frontline recruiters know that hiring needs to be data driven and fact based not gut driven and intuition based. As a consequence, they appreciate that AI recruiting technology can quickly and accurately screen a large number of candidates to determine initial suitability. They further understand that effective initial screening, in turn, enhances the quality of hire, which ultimately affects their organization's capability and productivity (Lee, 2018). Thus, while internal HR resistance might seem to executives to be a prudent reason to go slow in terms of AI-enabled recruiting, it is not the case. This only further strengthens our first recommendation of proactive investigation of AI-enabled recruiting technologies and tools.

In conclusion, given the mounting evidence regarding the efficiency and effectiveness benefits of AI-enabled recruiting, the size of the opportunity gap and the fact that this study and others show that many candidates are positively predisposed to engage in and complete AI-enabled recruiting processes, HR and business executives should dramatically increase their efforts to adopt AI-enabled recruiting. Moreover, there is no indication that the factors that shifted human capital from a tactical HR activity to a strategic business priority are going to reverse and, as a consequence, executives have little choice but to ensure that their firms are the employers of choice and that the people they desire want them.

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