

ARTIFICIAL INTELLIGENCE IN THE RECRUITING INDUSTRY

INDUSTRY REPORT
2019 EDITION

INDUSTRY REPORT: ARTIFICIAL INTELLIGENCE IN THE RECRUITING INDUSTRY

2019 EDITION | CEIPAL Corp.

1

Overview

2

Foreword

3

Summary Infographic

4

Awareness and Adoption
of Artificial Intelligence in
Applicant Tracking Systems

5

Drivers for Adopting Artificial
Intelligence

6

How Adoption of Artificial
Intelligence will Transform
the Staffing Process

7

Practical Applications of Artificial
Intelligence in Staffing Today

8

Conclusion

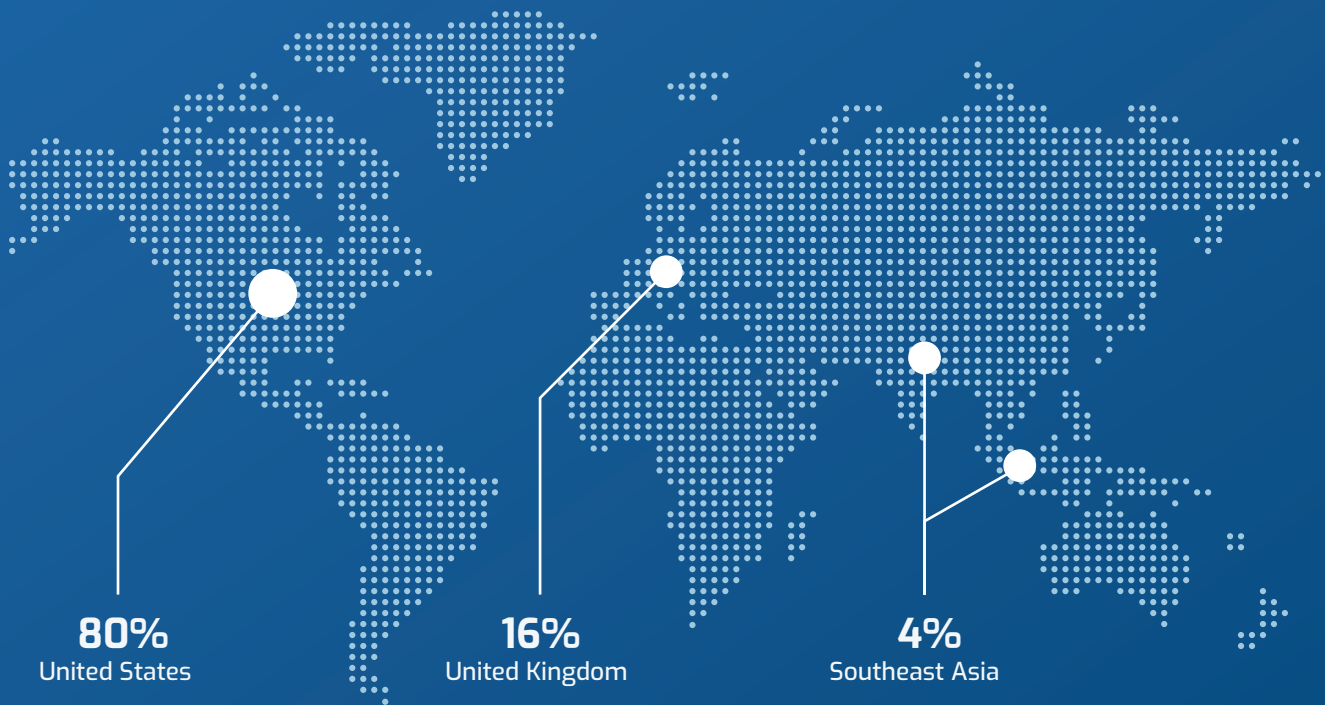
9

Respondent Details
and References

From August to November 2019, CEIPAL surveyed staffing industry professionals from across the globe, asking respondents to rank and comment on their level of awareness of artificial intelligence (AI) in the staffing industry, current industry workflow pain points, plans to adopt artificial intelligence, and various drivers for

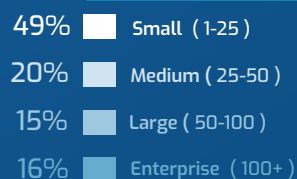
adoption, such as perceived benefits and risks. This research aims to provide a transparent, accurate representation of the real-time challenges staffing firms are currently facing, the business impact of those challenges, and how businesses expect artificial intelligence to help them address each challenge.

Respondent Data & Geographic Distribution

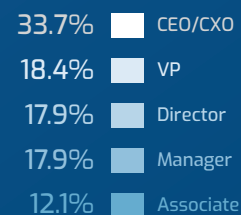


Company Size

(# of Recruiters on Staff)



Job Title



Over the past several years, artificial intelligence has transformed multiple industries by providing the ability to gain previously unreachable insights through near-instant analysis massive amounts of data. AI has become an increasingly important enabler of advanced features in cloud services such as Google, Facebook, and Apple, and in big data offerings.

Structurally, the staffing industry is a great fit for many of the modern AI technologies—searching from millions of résumés and large volumes of unstructured data, matching to vital but imperfectly written job descriptions, and meeting continuously changing requirements. The ability to run millions of correlations and analyses, and then make data-driven decisions, can surely transform the industry for the better.

Because of the enormous benefit AI promises to the staffing industry, conversations around adoption and AI-enabled applicant tracking systems have persisted for several years. Yet, until now, the staffing industry has been remarkably lacking any innovation and there has been little deployment of real artificial intelligence.

Recruiters continue to rely on their ability to think of and manually type various Boolean searches; this remains the primary means used to identify qualified candidates from the millions of résumés available in a staffing firm's database and/or on various job boards—a process akin to searching the Internet pre-Google.

Similar to the “black hat” tactics employed during the early days of SEO—before Google deployed artificial intelligence, changed its search algorithm, and rendered all tricks and gimmicks obsolete—applicants today “optimize” their résumés and LinkedIn profiles to game the recruiters and their tools. With so much empty hype from software vendors about how their “groundbreaking AI capabilities” will revolutionize the recruiting process, it's no wonder that staffing firm executives have remained skeptical for so long ... until now.

Thankfully, there are promising signs that AI has finally arrived in the staffing industry to combat these issues. Awareness is at an all-time high among executives, managers, and recruiters, and there are vendors that have finally, truly incorporated AI in their ATS solutions. There are even staffing firms that have already deployed these systems and are reaping enormous productivity benefits.

So, while there are many ways to utilize AI and various segments of the industry it is set to positively disrupt, certain questions are at the forefront.

- **How does adoption of AI vary across company size and geographic location?**
- **What are the drivers for adopting AI in the staffing industry?**
- **What are the first practical applications of AI for recruiting?**
- **What are the quantifiable benefits these early adopters are reaping?**

We aimed to find out.

We are CEIPAL, the first industry-deployed and adopted, AI-enabled, applicant tracking system. We present our findings in this report and hope you find these insights valuable in shaping your own adoption of this beneficial technology.



ARTIFICIAL INTELLIGENCE IN RECRUITING

2019 REPORT BY CEIPAL

CEIPAL.COM

1 Awareness vs. Plans to Adopt AI



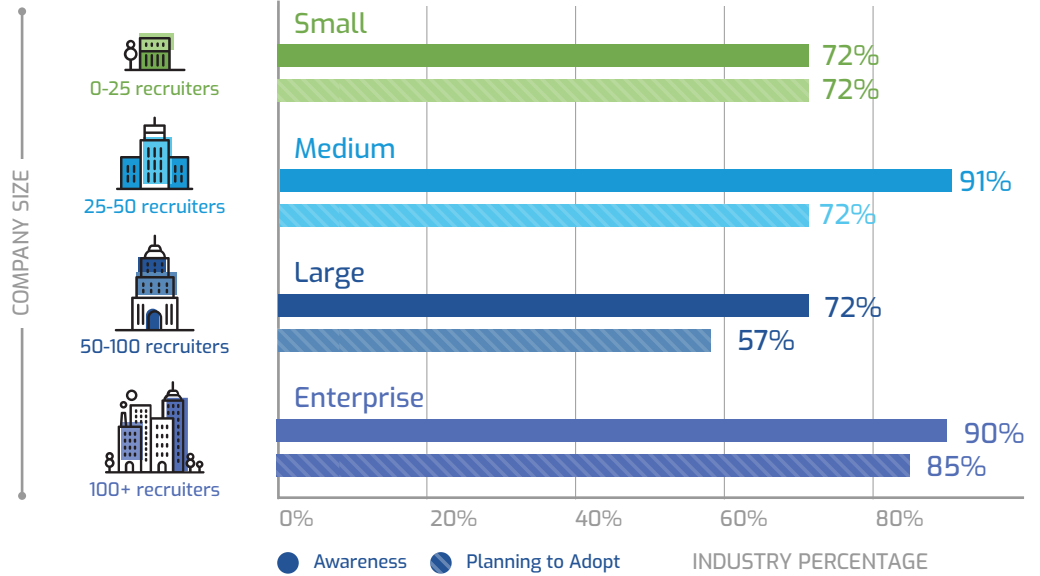
Who Knows About AI?

79% Recruiters are aware of AI



Who will adopt AI?

73% Plan to adopt by the end of 2021



2 Drivers

Companies with **HIGH** pain points are more likely to adopt AI than those with **LOW** pain points



Marketing a Requirement



Sourcing Candidates



Reporting

REASONS FOR ADOPTION

3 AI is the FUTURE of Recruitment

How many recruiters agree that AI will help...



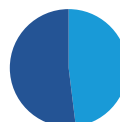
BUILD RELATIONSHIPS WITH CANDIDATES

52.9% Strongly Agree

47.1% Agree

0.0% Disagree

0.0% Strongly Disagree



IMPROVE PRODUCTIVITY & CANDIDATE EXPERIENCE

52.2% Strongly Agree

47.8% Agree

0.0% Disagree

0.0% Strongly Disagree



ELIMINATE HUMAN BIAS

47.9% Strongly Agree

22.9% Agree

0.0% Disagree

29.2% Strongly Disagree

"I've seen the features, and I honestly think artificial intelligence is the only way to go."

Anil Kilaru
CEO | Primus Global

"Traditional recruitment will be forced to evolve or become extinct with the implementation of AI."

George Koh
Managing Director | Smart Recruitment, Singapore

AI Isn't Coming Soon – It's Already Here

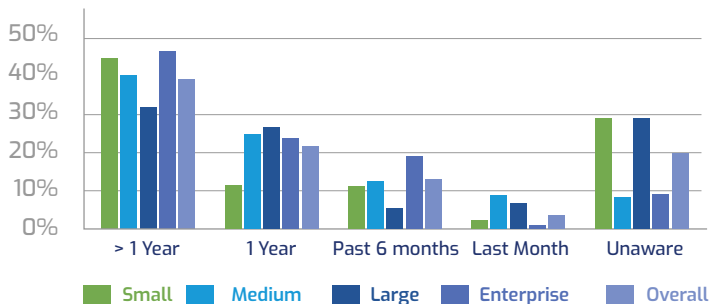
Vendors have been discussing AI for years, so most high-level executives have heard about how it can positively impact their business by providing smart automation of various processes. It comes then as no surprise that awareness of artificial intelligence in applicant tracking systems is high, with 80% of staffing companies aware of it; planned adoption is close behind, with 73% planning to adopt it within the next two years.

Surveying various companies of different sizes around the globe provided some telling conclusions.

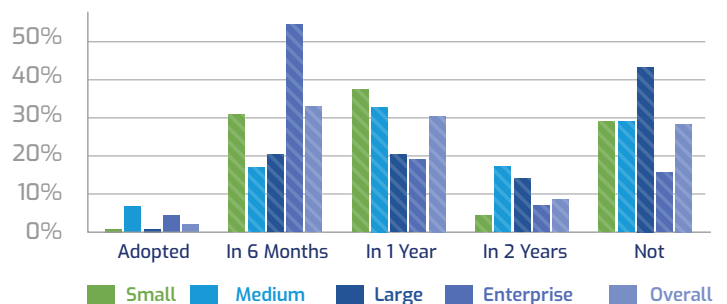
KEY TAKEAWAYS

- Enterprise staffing firms (100+ recruiters on staff) have the highest levels of awareness (90%) of Artificial Intelligence in ATS systems and are also the most likely to adopt AI (85%).
- Large staffing firms (50-100 recruiters on staff) are laggards both in terms of awareness (72%) and plans to adopt AI (57%) and are at a substantial risk of being disrupted by Medium firms (25-50 recruiters), who show a much higher level of awareness of AI (91%) and are much more likely to adopt AI (72%).

Who Knows About AI by Company Size?



Who Plans to Adopt by Company Size?



Awareness by Company Size

Unsurprisingly, we found that Enterprise organizations are most aware of AI. Considering these firms employ the most recruiters and work with the largest volume of job requisitions and résumés, AI can deliver substantial, quantifiable benefits.

What was surprising was the relatively low awareness of AI among Large staffing firms with 50-100 recruiters, especially when compared to their Medium-sized competitors (25-50 recruiters on staff). This should be a concern for Large staffing firms as they are at risk of being disrupted by those who appear to be much more in tune with technological innovations within the industry.

Lastly, staffing firms with 1-25 recruiters on staff tend to follow a relationship-driven business model and, not surprisingly, show lower awareness of AI.

NOTE

US-based staffing firms (regardless of size) appear to be lagging behind their international peers when it comes to adoption, but many already have plans to quickly catch up.

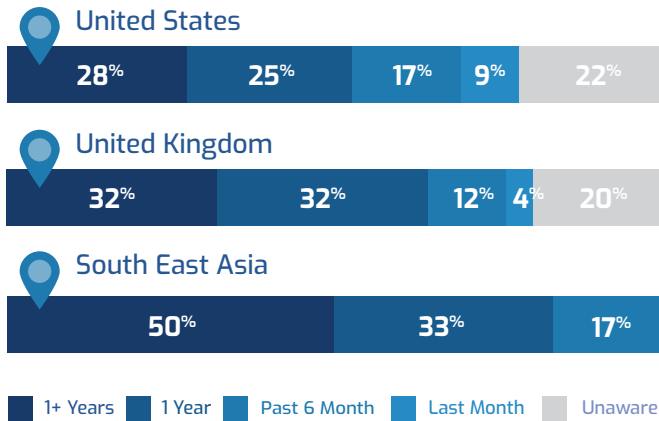
Adoption by Company Size

While the current level of AI adoption by staffing firms is low, it is notable that it is not zero; there are firms that have already adopted AI-enabled applicant tracking systems and are reaping practical business benefits.

Not surprisingly, Enterprise staffing firms (100+ recruiters) are again leading the charge in adopting AI with 60% of them either having already adopted or planning to implement AI within six months. **79% of Enterprise staffing firms and 66% of all staffing firms plan to implement an AI-enabled ATS within one year!**

However, Large staffing firms (50-100 recruiters on staff) are most skeptical about AI, with 43% of respondents in this category having no plans to adopt. Perhaps these firms have lost faith in the constant sales pitches from various ATS vendors? Maybe they have already "bought" into existing AI capabilities but have continuously failed to see these executed in a way that is beneficial to their company? Regardless of the reason, these firms face an acute risk of being disrupted as both their larger Enterprise and smaller Medium-sized competitors are likely to quickly surpass them thanks to their adoption of new technological innovations.

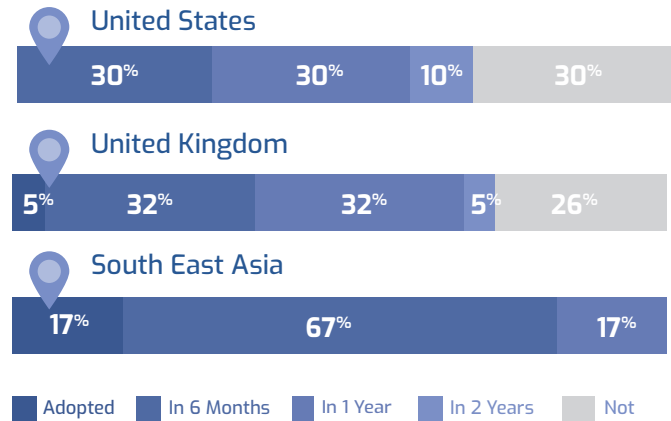
Who Knows About AI by Region?



Awareness by Geographic Location

The overall level of awareness is almost identical across the US-based and UK-based staffing firms. Our survey sample of Southeast Asian firms was small, so it is difficult to draw firm conclusions. However, the Southeast Asian-based firms surveyed showed a very high level of awareness. A possible explanation could be that Southeast Asian firms tend to be larger and therefore service a higher volume of lower tier, more transactional job requisitions.

Who Plans to Adopt AI by Region?



Adoption by Geographic Location

Interestingly, Southeast Asia is far ahead of other regions in AI adoption, followed by the UK, and then the US.

This overall trend can be explained by the firms' profiles within each geographical region. Again, Southeast Asia is home to recruiting agencies with many staffing professionals, often working on transactional placements with smaller margins. Operational excellence is a key driver for success for such firms, and AI promises to greatly enhance the efficiency of their processes.

While US-based staffing firms appear to be lagging behind their international peers, many already have plans to close the distance: 60% of surveyed companies plan to adopt AI within the next year.

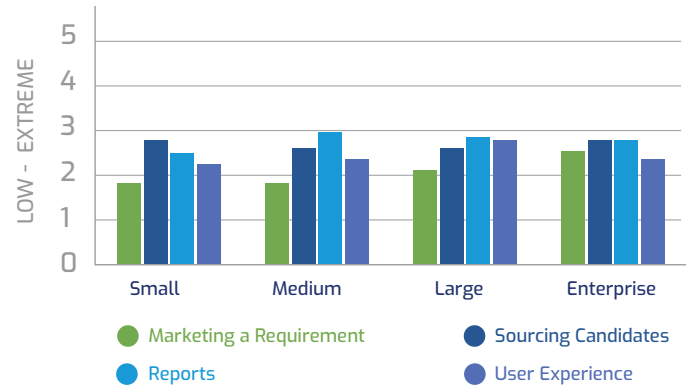
These statistics about awareness and plans to adopt AI should be a wake-up call to everyone in the recruiting industry. AI has arrived, the time to act is now! Regardless of size and location, staffing firms that do not embrace this emerging technology are at a serious risk of being left behind by their competitors.

Transforming Pain to Gain

A primary goal of this survey was to try to understand the main drivers for adopting artificial intelligence in the industry. Staffing firms answered questions about the severity of various pain points within the recruiting process, how AI might relieve those concerns, and plans to implement AI. The answers were then correlated in order to identify specific drivers for adopting AI.

Regardless of size, staffing firms, on average, experienced similar, medium levels of pain with marketing requirements, sourcing candidates, reports, and user experience. However, when we correlated a firm's level of pain with each of these activities to its plans to deploy AI, we discovered some interesting parallels.

Pain Points by Company Size



NOTE

Even though staffing firms experience similar levels of pain points regardless of company sized, they did show statistically significant differences in their likelihood to adopt AI based on the severity of those pain points.

Marketing Requirements

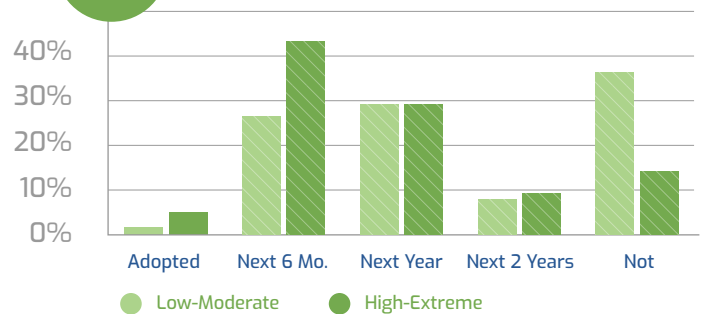
Several firms described the current practice of sending multiple mass emails to thousands of potential consultants, often an email for each new job requirement, as inefficient and damaging to their relationships with consultants. They hope that AI-enabled applicant tracking systems can help them become more precise with their marketing by identifying only the best-suited candidates for a certain job.

Staffing firms that experience high to extreme pain in marketing requirements have a more than 20% higher likelihood of adopting AI than staffing firms that experience only low to moderate pain with marketing requirements.

86% of staffing firms that experience a high pain in marketing requirements plan to adopt AI within 2 years; 64% of firms that do not experience such challenges intend to adopt AI.



Plans to Adopt AI by Challenge with Marketing a Requirement



"It's most important for any staffing company to reach out to the best 50 suitable people for a given job, and not to mass mail 1,000 people for every new job."



Vaibhav Mishra
Director | United Software Group

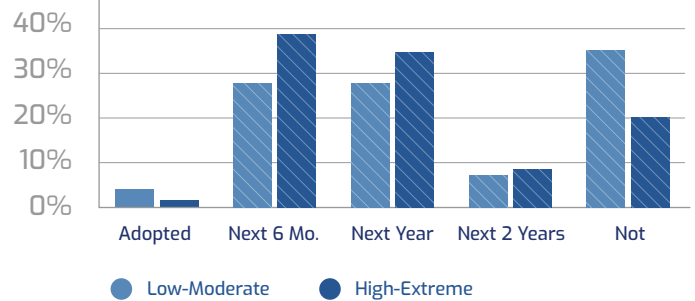
Sourcing Candidates

Productivity improvements delivered by using AI to extract the best qualified candidates in significantly less time was cited as a major competitive differentiator. Additionally, multiple firms noted the benefits to be realized—to both process and recruiters—from the more uniform sourcing process enabled by AI.

Staffing firms that experience high to extreme pain in sourcing candidates have a 15% higher likelihood of adopting AI than staffing firms that experience low to moderate pain with this task. 80% of firms struggling with sourcing candidates plan to adopt AI within 2 years; only 65% of those who experience lesser candidate sourcing pain intend to adopt.



Plans to Adopt AI by Challenge with Sourcing Candidates



"Traditional recruitment will be forced to evolve or become extinct with the implementation of AI into its space.... recruitment cycles will be shortened, accuracy & retention will be at an all-time high, biasness will be a thing of the past."



Gary Koh
Managing Director | Smart Recruitment, Singapore

Reporting

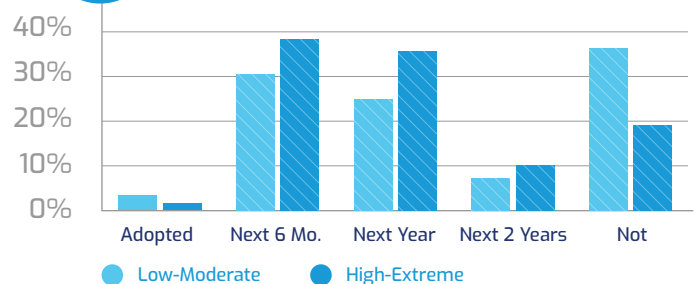
Reporting is frequently cited by managers and executives as a frustration with their existing ATS. High-level executives cite the top 10 "industry standard" reports as a feature any system must have; however, they often do not agree on which exact reports should make the top 10. This is no surprise: the staffing industry is an extremely competitive business and every firm is constantly looking for the ability to spot new opportunities or identify concerns. The means and metrics they use to do so are understandably different.

Firms look to artificial intelligence as a means to continuously run thousands of correlations to identify new trends, opportunities to be exploited, or problems to fix faster than their competition.

81% of firms that identify reporting as a high to extreme pain point plan to adopt AI in their ATS, versus only 64% of firms that consider reporting a low to moderate pain point.



Plans to Adopt AI by Challenge with Reporting



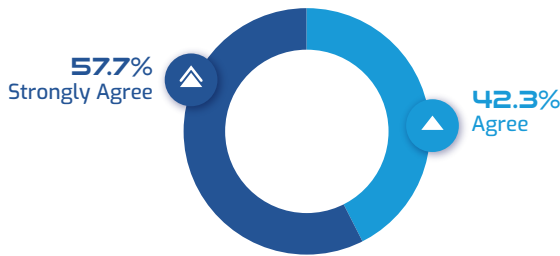
"Forecasting and reporting are extremely important to any staffing business. With AI, if a system is able to forecast the number of placements and revenue it will help us make better, timely, educated business decisions."



Ajai Kumar Dhavala
AVP - Business Excellence | System

6 How Adoption of Artificial Intelligence will Transform the Staffing Process

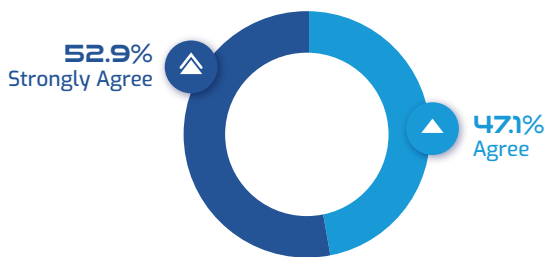
Q: IS AI THE FUTURE OF RECRUITING?



It's Unanimous

Our research shows that recruiters unanimously agree that artificial intelligence is the future of the industry.

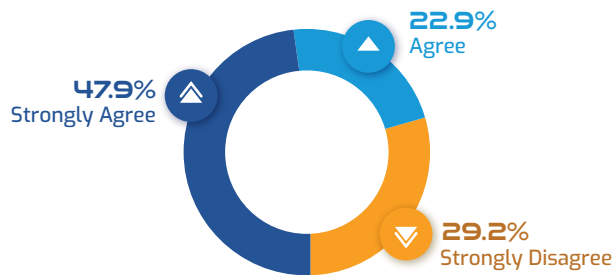
Q: WILL AI HELP BUILD RELATIONSHIPS WITH CANDIDATES?



Building Relationships with Candidates

Similarly, recruiters believe that AI will also enable them to focus more on building relationships with candidates. With the time saved through AI-powered candidate sourcing, matching, and ranking, they will have the ability to interact more, and more meaningfully, with candidates, leading to improved acceptance rates and overall company reputation.

Q: WILL AI HELP ELIMINATE HUMAN BIAS?



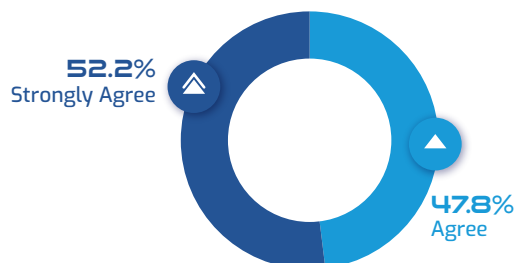
Eliminating Human Bias

Whether we like it or not, human bias is inevitable in human-driven selected processes. After surveying staffing professionals from around the world, we learned that the majority believe artificial intelligence could greatly reduce, or even completely remove, human bias in recruitment through the use of automating initial candidate ranking using unbiased selection criteria. However, there was also a sizable number of respondents (29.2%) who strongly disagreed with that sentiment.

NOTE

It is notable that all responses gravitated to the extremes: many enthusiastic believers and a sizable number of strong dissenters, with very few in the middle.

Q: WILL AI HELP IMPROVE PRODUCTIVITY & CANDIDATE EXPERIENCE?



Improving Productivity & Candidate Experience

Gen Z and millennials, whose preference for texting over phone calls is well documented, make up over half of today's workforce. AI-enabled chatbots in applicant tracking systems will allow them to move through the application and interview process in the manner they prefer. Therefore, there is a strong belief that AI-enabled chatbots will not only increase recruiter productivity, but also lead to an improved candidate experience.

Making Technology Work for You

At CEIPAL, we took a pragmatic and practical approach to introducing AI by focusing first on the most pressing challenges recruiters face: **increasing close rate** through better marketing of requirements and **increasing productivity & performance** through better candidate sourcing and matching.



The Challenge of Candidate Searching & Matching

Without AI, the candidate sourcing process contains several steps: recruiters review a job description, determine the relevant skills required, create a Boolean search string to identify matching candidate résumés, and finally review those résumés individually to ascertain qualifications and fit beyond the keywords.

This manual process is painstakingly slow and leads to inconsistency in the quality of searches, and therefore the results. Every job description is different, so it's not feasible to reuse previously created search strings; every search must be built uniquely. Only with experience do recruiters learn how to improve their search queries. Consequently, recruiter seniority is a strong determinant of the quality of the outcome.

For example, a technical job may list a set of skills like "Java expertise," "big data," "perl," etc. Searching only for the exact keywords often delivers false positives and allows candidates to "game the system" by stuffing their résumés with target keywords.

"CEIPAL is showing the recruitment world what artificial intelligence actually looks like in practice, and our recruiters couldn't be more excited."

Derrick Alex
Head of Delivery Excellence | VDart Inc.



Artificial Intelligence at Work

The CEIPAL artificial intelligence engine attacks this issue at its core and delivers consistently optimized searches for each individual job description.

First, it uses natural language processing to strip the résumé and job description down to just the core, meaningful words by eliminating unnecessary prepositions, conjunctions, interjections, etc. Then the AI engine instantly runs multiple correlations and searches to add contextual data, matching the type, context, density, and placement of relevant keywords in the job description and candidate résumé. It also runs corresponding searches to find matches for relevant technologies, location, timing, etc., and ranks the match of a given résumé to the job description on a scale of 1% to 100%.

Returning to the "Java expertise" job description above, CEIPAL's AI further refines the search results by adding relevant contextual considerations to the results, including:

- **Does the candidate have experience in technical environments that match that of the hiring company?**
- **To what programs and technical systems will these "Java expertise" skills be applied? What additional skills and technologies are also needed?**
- **Where is the job located and, if an on-site presence is required, is the consultant located within a reasonable distance?**
- **Is the consultant's experience with the required skill recent enough to be relevant?**
- **Is the candidate suited for the specific size/type of company and environment (e.g., does s/he have the security clearance required)?**

More, Faster, Better: Real-world Business Benefits of AI

Advantages

- Reduce the time spent sourcing and matching candidates—**from days to seconds**
- Improve the **quality & consistency of searches** and the results they produce
- Instantly identify **only the most relevant candidates** for each job
- **Send targeted emails** to the right 10, 50, 100 candidates, **not mass emails to everyone**



Outcomes

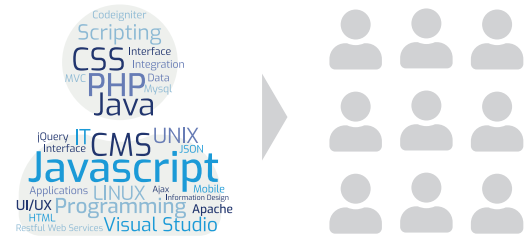
- **Increased throughput**
- **Higher close rate**
- **More effective marketing**
- **Better consultant relationships**

Enhancing the Power of AI

In addition to the benefits realized during the sourcing process, CEIPAL also integrates AI into other features of the platform, increasing both its usability and its value.

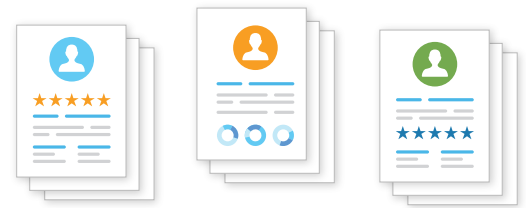
Ideal Candidate “Cloning”

What about situations where the recruiter has identified an ideal candidate and wants to find 10, 20, or 50 more candidates with the exact same profile and fit for the given company? The CEIPAL AI engine runs a reverse analysis on the résumé and job description to build the relevant correlations and searches that would logically produce the original résumé. This “clone” button lets recruiters instantly find the required number of similar résumés with a corresponding match closeness score, saving hours of time-consuming, error-prone work.



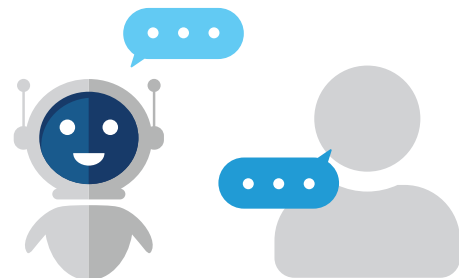
Managed Résumé Harvesting

The larger the candidate pool, the more effective artificial intelligence gets. Managed résumé harvesting automatically downloads résumés from all the job boards to which a staffing company has subscribed, leveraging the unused credits that would otherwise expire at the end of each day or week, depending on the plan. As a result, the CEIPAL AI engine can search thousands of additional relevant résumés to further enhance the quality of every search.



Intelligent Chatbot

Gen Z and Millennials, whose preference for texting and aversion to phone conversations is well documented, comprise 68% of today's workforce. CEIPAL offers an AI-powered chatbot that greatly enhances a candidate's selection and digital onboarding experience by providing immediate answers to common questions, as well as additional functionality such as meeting scheduling.



As our research shows, artificial intelligence is here and it's poised to take the staffing and recruiting industry by storm. Current levels of awareness are reaching all-time highs, and an overwhelming majority of companies are ready, willing, and planning to introduce this technology into their existing company workflows within the next six months to one year.

Failing to be an early adopter of this transformative technology will, over time, become apparent in the speed of requisitions, overall quality of candidates, and candidate satisfaction in the recruitment process. As the technology continues to evolve, so, too, will the companies that utilize it.

Based on our data, we predict that 73% of staffing agencies will have adopted AI in some capacity by 2021. Between now and then, we will continue to perform and publish market research, keeping an eye on speed of adoption, newest emerging trends, and direct benefits experienced thanks to the adoption of artificial intelligence.

So, what are your plans to stay ahead in the recruiting game and utilize this innovative technology? If your company's path is clear-cut, we'd love to hear about it from you. If you're still struggling to integrate AI into your business, we're happy to consult with you about ways to begin and start driving your company forward.

A growing number of global organizations are elevating **AI to the top** of their agenda; YOU should be one of them.



79% Respondents are aware of AI in recruiting



64% Planning to adopt AI by the end of 2020



73% Staffing Agencies will adopt AI by 2021

“Screening resumes efficiently and completing the other processes time-efficiently still remains the biggest challenge in talent acquisition. If AI is applied effectively, it will mean these tasks are automated, thereby freeing up recruiters to focus on clients and candidates”

Praveen, Managing Director | Adroit People, UK



Respondent Statistics, Details, and Demographics

There were 279 respondents to the survey from staffing firms in the United States, the United Kingdom, and Southeast Asia. Statistically, the report is heavily skewed toward respondents from US-based staffing firms (approximately 80% of respondents), with approximately 16% from staffing firms in the UK and approximately 4% from Southeast Asia. 88% of all respondents were managers and executives, with titles including Manager, Director, VP, and CEO/CXO.

Staffing firms of all sizes were represented in the survey consistent with the rough distribution of firms within the industry. The report overall statistical accuracy is 90%. The sample of size and corresponding statistical accuracy for UK and Southeast Asian representation is smaller; however, including these responses offers interesting data points for geographic differences in levels of awareness and adoption of artificial intelligence.

References

1. Forbes
<https://www.forbes.com/sites/forbescoachescouncil/2018/08/10/10-ways-artificial-intelligence-will-change-recruitment-practices/#1c1b4ef43a2c>
2. Randstad
<https://www.randstad.com/workforce-insights/hr-tech/how-will-artificial-intelligence-affect-your-talent-acquisition-strategy/>
3. Deloitte
<https://trendsapp.deloitte.com/reports/2019/global-human-capital-trends/accessing-talent.html>