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How is the Role of AI in Talent Acquisition Evolving?

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How is the Role of AI in Talent Acquisition Evolving?

Abstract

[Excerpt] Artificial Intelligence (AI) is a rapidly emerging technology that is at the forefront of industry innovation and efficiency. Despite the rapid technological advances and energy surrounding AI's potential, there are pitfalls in terms of AI's application in the Talent Acquisition (TA) process and many companies have yet to identify strategic points of AI implementation. Through our research, we have identified a variety of AI products available at specific points in the TA lifecycle. We weigh the most apparent drawbacks of using AI in TA as it currently exists, and share research and benchmarks of companies implementing AI in TA. We have identified key areas of AI use in the TA lifecycle, and evidence as to the utility and validity of the technology use along with predictions for future engagement with AI and preparing your workforce.

Keywords

Human Resources, talent acquisition, future of work, artificial intelligence, AI, technology, upskilling, HR, data, recruiting

Comments

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Executive Summary

Question

How is the role of AI in talent acquisition evolving and at which points/aspects of the TA lifecycle is AI being used (what kind of products and vendors exist)?

Overview

Artificial Intelligence (AI) is a rapidly emerging technology that is at the forefront of industry innovation and efficiency. Despite the rapid technological advances and energy surrounding AI's potential, there are pitfalls in terms of AI's application in the Talent Acquisition (TA) process and many companies have yet to identify strategic points of AI implementation. Through our research, we have identified a variety of AI products available at specific points in the TA lifecycle. We weigh the most apparent drawbacks of using AI in TA as it currently exists, and share research and benchmarks of companies implementing AI in TA. We have identified key areas of AI use in the TA lifecycle, and evidence as to the utility and validity of the technology use along with predictions for future engagement with AI and preparing your workforce.

Present AI Available and in Use:

The use of AI in talent acquisition is currently low, as reflected by only 10% of respondents to a broad Oracle survey to HR practitioners who indicated they made high use of tech in recruitment. However, organizations expect to drastically increase their utilization of AI in the next two years³. We found many resources on the various technologies being utilized in TA^{2,9,12}, but there is not one comprehensive resource detailing every vendor and tool available at specific stages in the TA lifecycle. We attribute this to the rapidly evolving nature of AI. We discovered impactful resources including:

- A definition of the 11 areas across which AI can be applied for recruitment and selection, including companies currently employing the tech and vendors offering it⁵ (Appendix A).
- An illustration of the application of AI tools for TA, which guides the consumer as they engage with the tools⁵ (Appendix B).
- Various vendors identified with AI tools available to be applied to specific stages of TA^{1,6} (Appendices C and D).

Challenges with Current AI Technology:

One ongoing challenge since the application of AI in TA has been the programming of technology to replicate human decision-making, which can result in the perpetuation of implicit bias¹¹. When algorithms or machine-learning tools are programmed poorly there is potential for them to perform accordingly, discriminating against candidates based on gender, ethnicity, etc. Additionally, the cost implications and lack of understanding of business benefits and value currently act as barriers for the extensive usage of AI in TA³. Lastly, the growing use of AI in TA requires people who know how to engage with and implement AI. There is currently a scarcity in the HR realm of professionals who are skilled in AI³. In the future, there is projected to be a tremendous AI skills gap in the workforce¹¹.

Utility:

- A 2019 broad survey of HR professionals indicate that the most useful AI-related tools according to their ability to improve talent acquisition are:
 1. Big-data analytics
 2. Automated assessments
 3. Predictive analytics³ (Appendix E)
- An empirical examination of the exchange between predictive hiring algorithms, recruitment and the data-driven nature of AI predict the “most useful interviewing innovations... and areas where [AI] will impact recruiting”⁷ (Appendices F and G).

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- Substantial data analysis and estimates on the utilization of AI in TA processes in the interviewing and assessment of candidates (downstream engagement impacts) and gross value added by country provide guidance for strategic AI implementation¹³ (Appendices H and I).
 - It is important to establish the validity of an AI technology by using data and empirical analysis - experimentation, even - to challenge causal assumptions, garner buy in and determine a path forward¹⁴. Even if utility and validity is established for a specific AI tool, it is in a company's best interest to verify their implementation of that technology.

Countering Bias:

- Although there is evidence of AI perpetuating bias in the TA process, the algorithmic screening technology is still significantly less biased and more accurate than its human counterparts⁴. The technology is only as good as the qualifications you provide, however, so the utility of the tool cannot be guaranteed if intentional crafting of unbiased criteria for a position has not occurred.
- In order to combat bias being introduced or unconsciously programmed into the algorithms of AI technology being used for TA, Microsoft is developing AI to remove bias in other AI technologies¹¹.

Business Cases and Tools:

- Hilton has been using AI technologies from brands HireVue and AllyO in the initial stages of the recruitment process for call-center reps, which has allowed the company to make:
 - 400% more offers with 23% less staff
 - Decrease time to fill from six weeks to one week
 - Better hires - more top-performers - reducing turnover by using AI predictive insights from video interviews¹⁵
- Companies who are currently piloting AI in recruitment and selection (most are piloting rather than fully adopting) are tending to do so using three key applications, despite the 11 different applications available:
 1. Chatbots/CRM apps
 2. Admin-related task automation
 3. Screening software (CVs and video)⁵

Upskilling in Data:

- “63% of companies surveyed by Forbes are now providing in-house data analytics training” so that even if employees cannot develop the technologies, they can at least use them effectively⁸. Since about a third of AI-related positions require a PhD, extensive years of experience, and often come at a very high cost, organizations are urged to hire employees with a bachelor's degree in mathematics or physics with the intent to further train these individuals in AI⁸.
- It is important to implement a sophisticated, strategic data strategy in conjunction with AI adoption; know your data points and how to leverage them¹⁰. Additionally, it is imperative to ensure you've thoroughly vetted any vendor prior to investing in their AI tools, and to ensure you have a large, quality data set⁵.

Conclusion

AI has relevant applications to the talent acquisition process and provides streamlining that benefits businesses and candidates. However, limited research has been conducted as to the utility of various AI tools as they apply to TA¹³, which was reinforced throughout our process. Companies are urged to cautiously vet AI products prior to implementing them in their TA processes, while also not pumping the brakes on AI entirely, as early adopters are projected to have a significant advantage when compared to companies who wait to adopt AI tools⁵. Using the research that is available to make an informed decision to implement AI tools in the TA lifecycle while carefully monitoring the resulting data is the approach most companies are taking.

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APPENDICES

Appendix A:

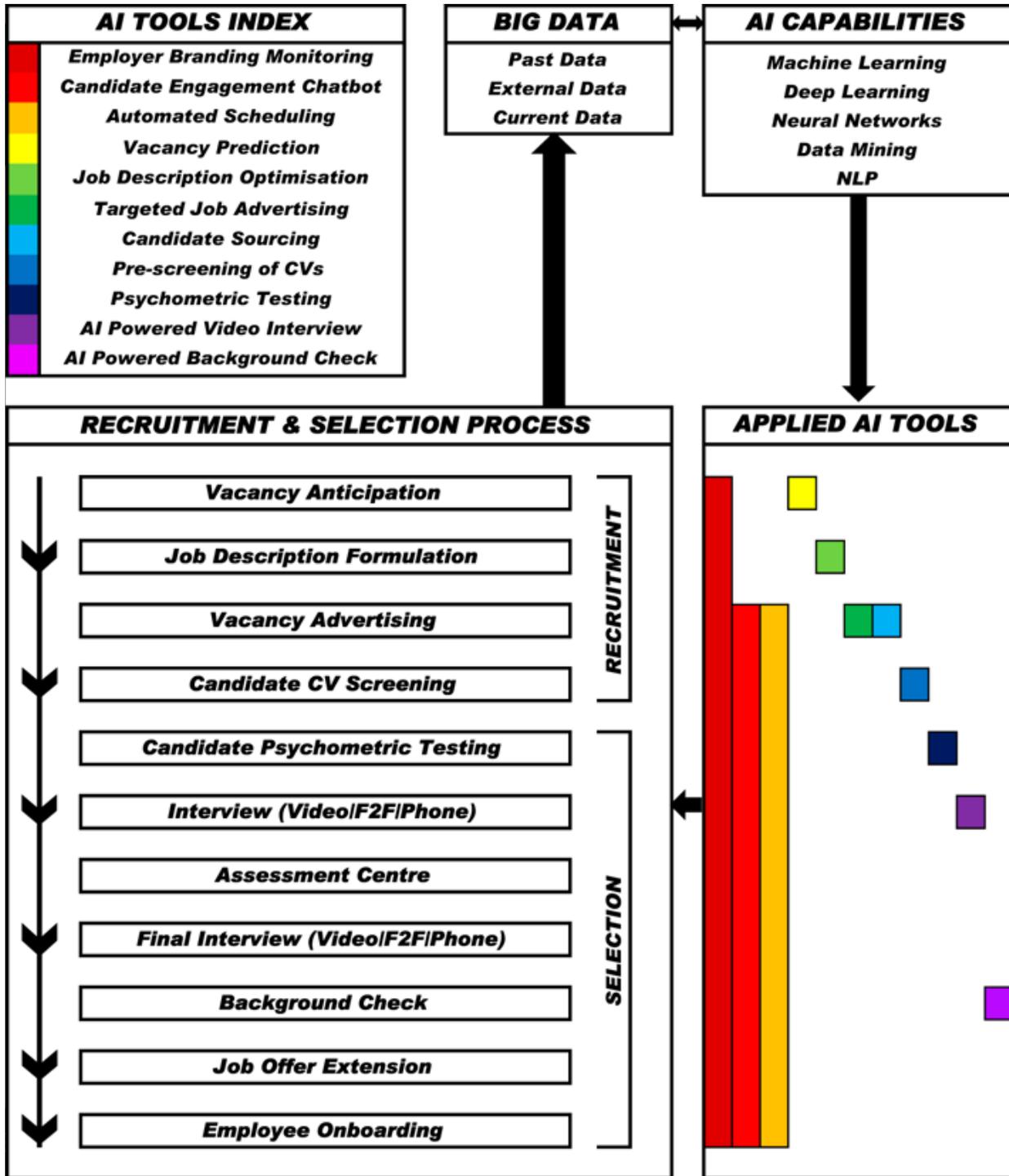
Table I Areas AI tools can be employed to support R&S					
<i>Ai tool</i>	<i>Problem</i>	<i>Solution</i>	<i>Outcomes</i>	<i>Adoption</i>	<i>Vendors</i>
Vacancy prediction software	Spontaneous resignations increase costs	Software identifies employees' behavioural data and makes a prediction on likeliness to leave Prediction software gives a head start, which reduces these costs	Improved talent attrition Improved employer brand Reduced time to hire	Large companies (e.g. IBM) Data-driven firms (e.g. Facebook) High candidate volume (e.g. Goldman Sachs) High turnover (e.g. Call Centres)	Workday talent insights Bamboo HR Job rate Monster talent management
Job description optimisation Software	Complex jargon, boring, indirect discrimination can be off-putting Negatively affects diversity, applicant volumes and employer brand	Software provides recommendations to optimise job descriptions and tailor the language to different types of candidates	Improved diversity Reduces the risk of indirect discrimination Higher candidate engagement	Cisco American Express Johnson & Johnson Nvidia Expedia Evernote	Textio Three sourcing 15Five
Targeted job advertising optimisation	Wrong message to the wrong audience through the wrong channels is a waste of resources	Using AI, ML and data insights, firms can target accurate recommendations to relevant candidates	Improves candidate experience Maximises chances of candidate engagement Minimises advertising spend	Retail sector Newton Netflix YouTube	ClickIQ PandoLogic Recruitz Appcast
Multi-database candidate sourcing	Untapped potential of suitable passive candidates and former employees reduces talent pool quality	AI-tools scans through multiple databases (e.g. LinkedIn, Glassdoor, indeed, social media profiles) much faster and more accurately than a human recruiter	Accelerates candidate sourcing rate Frees up recruiter's time to focus on more essential tasks Improves quality and quantity of talent pool	Intel eBay Hilton Verizon IBM Accenture Warner Bros	Hiretual Pro Ideal
CV Screening Software	Reviewing CVs is time-consuming and costly Human error increases as the number of CVs increases	Software instantly reviews a large volume of CVs to filter out and rank the best ones	Reduces bias and issues associated with human fatigue Improves diversity Reduces costs Allows recruiters to focus on more essential tasks	IBM LinkedIn Hilton Goldman Sachs Amazon	IBM Kenexa Ideal. CWIZ Zoho Recruit Talent Recruit Talent Cube
AI-Powered psychometric testing	Outdated, boring and unengaging tests leads to negative candidate experience and negatively affects employer brand	Tests use AI to provide engaging tests designed to improve candidate experience while simultaneously assessing candidates	Allows recruiters to focus on more essential tasks Improves diversity in the work places Improves the candidate to hire (C2H) ratio	Unilever PwC Accenture LinkedIn Tesla	Arctic Shores Pymetrics Knack
Video screening software	Pre-screening interviews are costly, biased and time-consuming	Software analyses video interviews to assess person-organisation and person-job fit	Reduces bias and discrimination Allows recruiters to focus on other essential tasks Improves candidate experience	Vodafone Intel UrbanOutfitters IBM Hilton Unilever	HireVue Montage Wepow Interview Stream
AI-Powered background checking	Background checking is time-consuming and ripe with human error Leads to problematic employee termination downstream	AI software scans through multiple databases to verify candidate details such as criminal record, credit rating and references	Allows recruiters to focus on more essential tasks Reduces costs associated with human errors	Fortune 500 firms Financial Firms Uber Axa Insurance BT McAfee	Check's Intelligo GoodHire HireRight Sterling Talent Onfido

(continued)

Table I

<i>Ai tool</i>	<i>Problem</i>	<i>Solution</i>	<i>Outcomes</i>	<i>Adoption</i>	<i>Vendors</i>
Employer branding monitoring	Reputation affects the way candidates perceive a potential employer Bad reputation leads to lower talent pool quality	Software scans through public data to assess overall sentiment and identify weak points in the hiring process	Stronger employer brand improves talent pool quality Positive image for clients Reduces T2H, staff turnover and overall costs	McKinsey & Co Oracle HP Dominos	Lexalytics Semantria Microsoft Thematic DiscoverText
Candidate engagement chatbot/CRM	Direct recruiting and relationship management are costly and time-consuming Unpredictable or high volume can lead to longer responses, dissatisfied candidates, which negatively impacts employer brand	Chatbots are tool that leverages Natural Language Processing to mimic human conversational abilities and can be used to engage candidates, provide quick responses to questions anytime	Reduces T2H Allows recruiters to focus on more essential tasks Improves candidate experience and employer brand	Sephora eBay H&M Pizza Hut Burberry	IBM Nuance NextIT Kore Inbenta Personetics Aivi Mya Beamery
Automated scheduling	Scheduling calls, tests, interviews or meetings is time-consuming and non-essential	AI system that picks up on scheduling expressions to automatically execute these admin tasks	Allows recruiters to focus on more essential tasks	AT&T Disney Coca-Cola Walmart General Electric Survey Monkey	X.ai Troops Tact Olono

Appendix B. Use of AI Applications for Recruitment and Selection

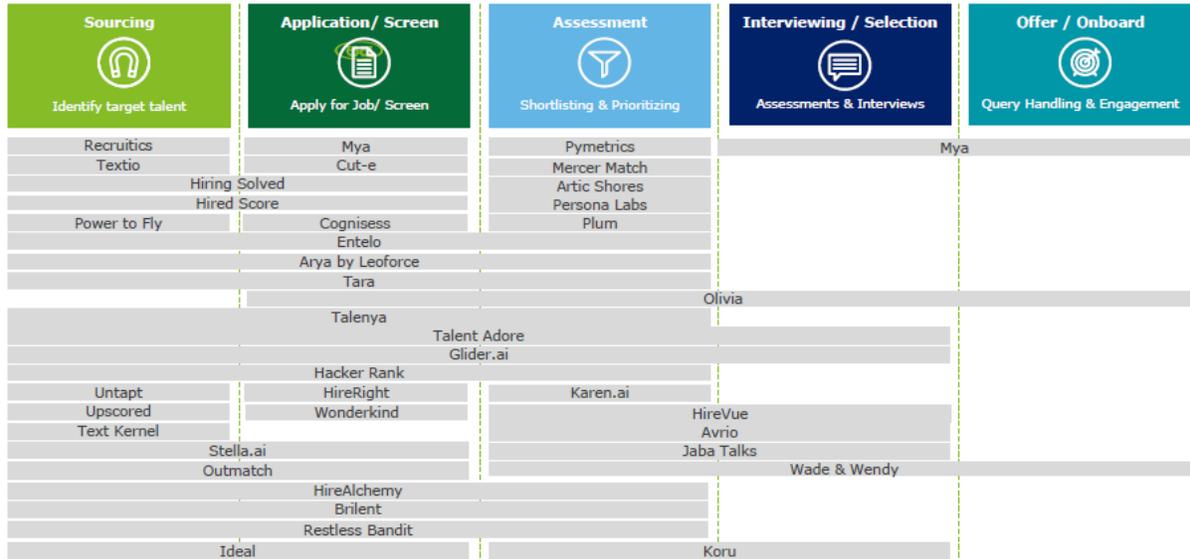


Appendix C. presentation from Gartner, 2018

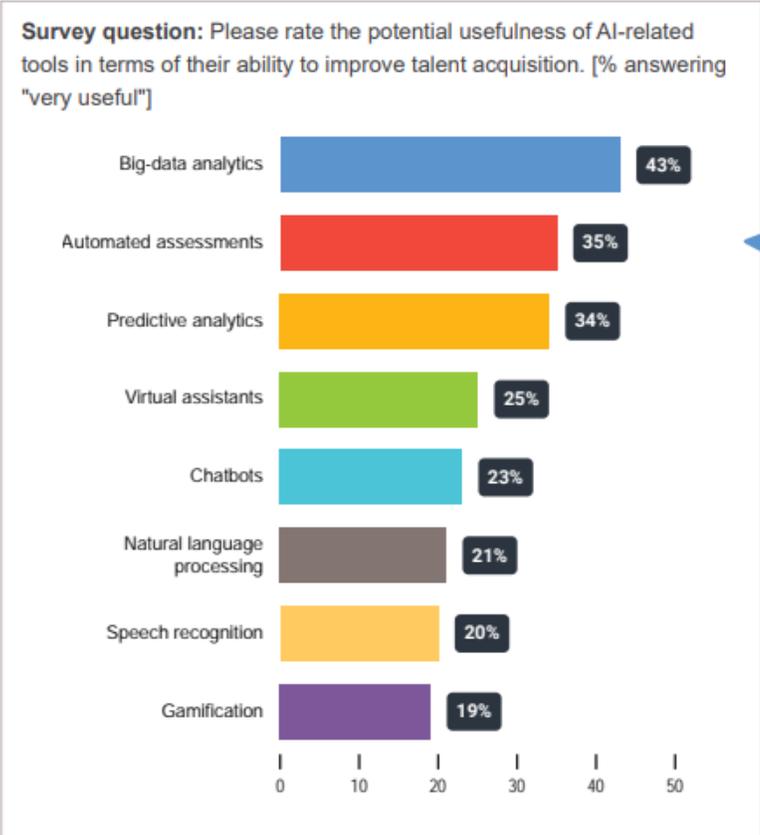
Market	Source/Id	Prioritize	Engage	Nurture	Scheduling	Assess	Video Interview	Offer Letters	Onboard
Wonderkind	Ideal	Hiredscore	Mya	Smashfly	MyAlly	Pymetrics	Hirevue	iCIMS Offer Studio	Pendo
Smashfly	Entelo	Mya	Wade & Wendy	Mya	Hirevue	Hackerrank	Montage		GetHired
Beamery	HiringSolved	Wade & Wendy	Dynamics	Wade & Wendy	Goodtime	Hirevue	Conveylq		Clickboarding
PhenomPeople	Arya	Brilent	Olivia	Beamery	Mya	Arctic Shores	Sonru		Sapling
Appcast		Hiretual	AllyO	Avature	AllyO	Knack	Wepow		Silkroad
Pandologic		HiringSolved	JobPal		Reschedge	Revelian	Yello		ServiceNow
Talemetry		CandidateID			X.ai				
					Zoom.ai				

TA AI Vendor Landscape

AI solutions augment end-to-end Talent Acquisition



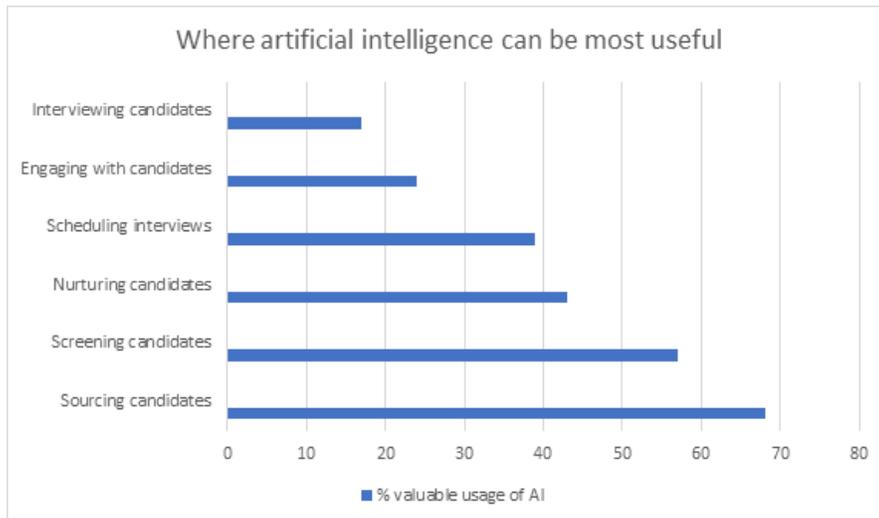
The 2019 State of Artificial Intelligence in Talent Acquisition



Tools using AI functionality should help recruitment teams handle and analyze data affecting candidates

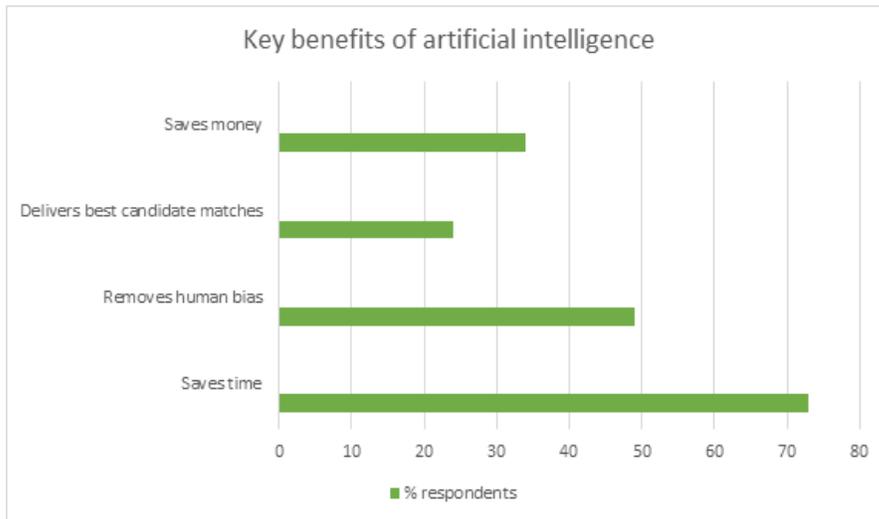
Appendix F. **Table 2** Where artificial intelligence can be most useful (%)

Sourcing candidates	68
Screening candidates	57
Nurturing candidates	43
Scheduling interviews	39
Engaging with candidates	24
Interviewing candidates	17



Key benefits of artificial intelligence (%)

73	Saves time
49	Removes human bias
24	Delivers best candidate matches



Sources: LinkedIn; Statista; my survey among 2,400 individuals conducted November 2018.

Appendix G. **Table 3** Adoption of specific artificial intelligence use cases, by category (%)

	All respondents	Current artificial intelligence adopters
Sales and marketing lead scoring	64	87
Sales opportunity scoring	62	76
Sales forecasting	57	83
Customer service case classification/routing	60	82
Chatbots for customer service or product selection	49	79
Cross-selling and upselling	44	71
Fraud detection	54	67
Credit risk scoring	56	66
Email marketing	77	89

Appendix H. **Table 1** Use of artificial intelligence and automation in interviewing and assessment of candidates (%)

Increase retention	64
Evaluate skill gaps	61
Build better offers	54
Understand candidate wants	52
Do workforce planning	47
Predict candidate success	44
Assess talent supply and demand	42
Compare talent metrics to competitors'	39
Forecast hiring demands	37

Sources: LinkedIn; our survey among 3,700 individuals conducted November 2018.

Appendix I. **Table 2** Potential impact of artificial intelligence on real gross value added, by country (by 2035, %)

	Baseline	Artificial intelligence steady state
United States	2.8	4.9
Finland	2.4	4.6
United Kingdom	2.6	4.2
Sweden	1.9	3.9
Netherlands	1.7	3.4
Germany	1.6	3.3
Austria	1.5	3.2
France	1.9	3.1
Japan	1.2	2.9
Belgium	1.7	2.8
Spain	1.9	2.7
Italy	1.2	2.1

Sources: Statista; our 2018 data