A New Age of Opportunities

What does Artificial Intelligence mean for HR Professionals?

Human Resources
Professionals
Association

HRPA

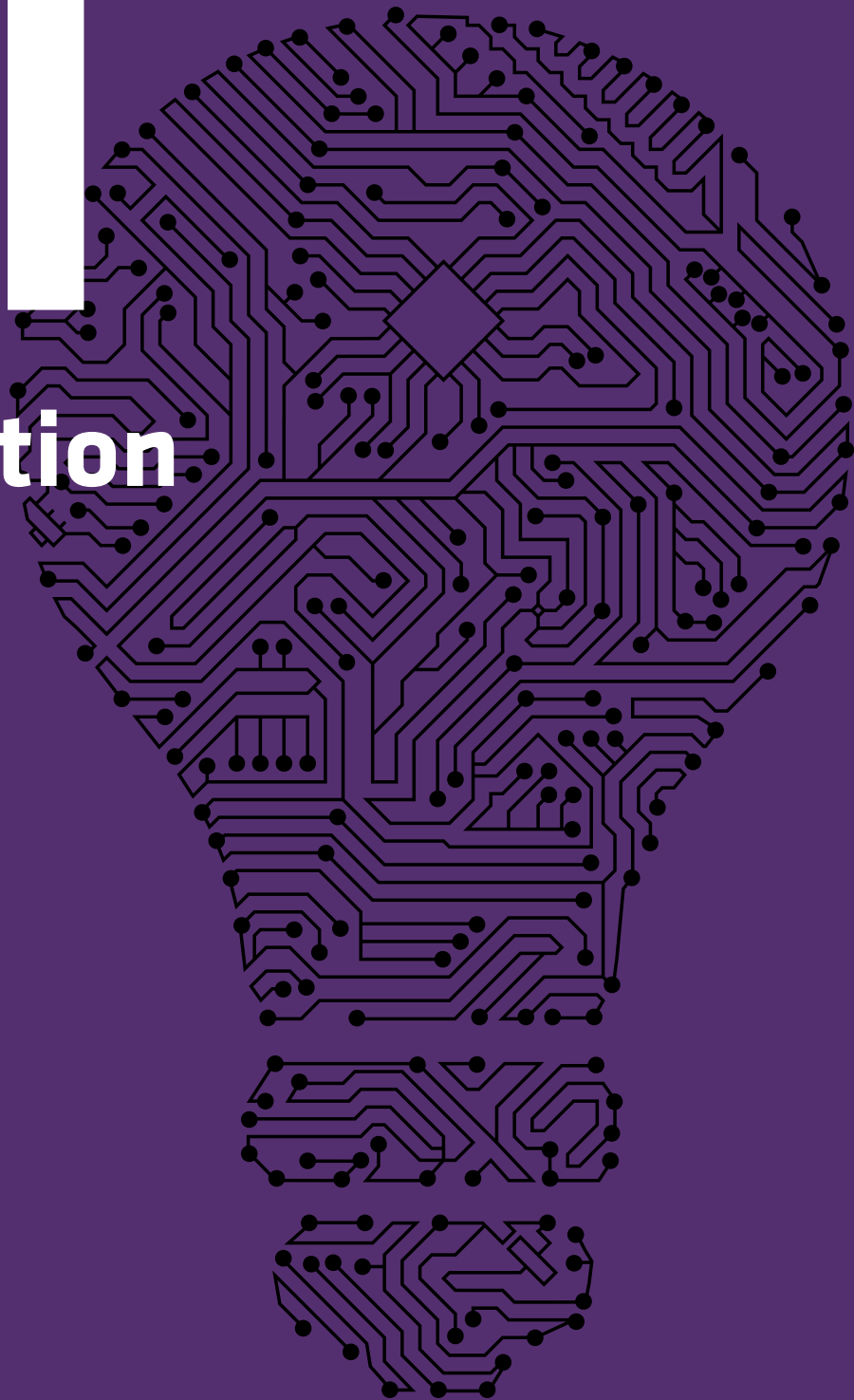# A New Age of Opportunities

What does Artificial Intelligence mean for HR Professionals?

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Introduction

ORGANIZATIONS ARE INCREASINGLY TURNING TO ANALYTICS AND ARTIFICIAL INTELLIGENCE (AI) TO HELP IMPROVE COUNTLESS BUSINESS FUNCTIONS. YET IS THIS TREND FINDING ITS WAY INTO THE HUMAN RESOURCES (HR) FIELD, AND WHAT WILL AI MEAN IN THE CONTEXT OF HUMAN RESOURCES MANAGEMENT? IS THERE A SCENARIO WHERE THE ENTIRE HR FUNCTION IS GOING TO BE HANDED OVER TO ROBOTS?

While the widely-used "people analytics" in HR is associated with collecting data about employees and measuring metrics, AI can be described as a machine learning where applications have the capacity to learn from and make – or recommend – decisions based on data collected.

Using media articles and academic journals, as well as the findings of a 500 member survey conducted by the Human Resources Professionals Association (HRPA) from August 13 to August 24, 2017, this paper will examine how prevalent AI in HR is in Ontario. The paper will then discuss four of the main ways AI can be used to help organizations, as identified by HRPA members. These include:

• Reducing administrative burden;
• Recruiting;
• Reducing bias; and
• Improving retention & internal mobility.

In each section, the paper will identify the current challenges of using AI. Recommendations will also be made to employers considering utilizing AI and to the government which must consider the privacy impacts of AI in human resources functions.

BRIEF HISTORY OF ANALYTICS

The HR profession was slower to adopt predictive analytics that other areas of business did due to a prolonged focus on data as a reporting tool. Josh Bersin, founder of Bersin by Deloitte, has done extensive research on this subject. He explains that when Big Data swept other business functions up into the predictive field, HR stayed behind. Bersin explains that instead of utilizing the power of analytics, HR initially focused on improving reporting.

Holger Mueller, vice president and principal analyst at Constellation Research, has identified cloud computing as a catalyst for bringing HR up to speed. He says that 'past AI applications were hampered by their inability to scale [...] The cloud gave them the big data, processing and storage they needed.' With the analytical power made possible by cloud computing, people analytics is a major trend in the human resources discipline.

*SOURCE:HTTPS://WWW.FORBES.COM/SITES/JOSHBERSIN/2015/02/01/GEEKS-ARRIVE-IN-HR-PEOPLE-ANALYTICS-IS-HERE/#3781E23073B4
*SOURCE:HTTP://SEARCHHRSOFTWARE.TECHTARGET.COM/FEATURE/AI-IN-HR-ARTIFICIAL-INTELLI-GENCE-TO-BRING-OUT-THE-BEST-IN-PEOPLE

"It's not that there isn't a need for AI in human resources; the problem is we don't yet fully understand its capabilities, or how to leverage it as a tool"

IS AI AT WORK IN HR?

The HRPA member survey found that 14% of respondents indicated their organizations already use some form of AI to assist with human resources decisions. In these instances, AI is being used to assist HR professionals with various tasks, most predominately recruitment (43% of functions).

Additionally, the HRPA survey found that 73% of respondents were somewhat (60%) or very familiar (13%) with the application of AI to the human resources field, while 84% of HRPA members believe AI is a useful tool for HR. At the same time, the survey found that 68% of respondents believed their workplaces were either 'not very prepared' (33%) or 'not prepared at all' (35%).

So, while AI may not be utilized by many organizations yet, a clear majority of HR professionals see the value of this technology. In fact, when members were asked if they believe that their organizations will utilize AI to address HR challenges in the next five years, 48% said they believed so.

Of those 52% of respondents who indicated their businesses were unlikely to adopt AI in their HR departments in the next five years, 36% believed their organization was too small to do so, while 28 percent said their senior leadership did not see the need for such technology. Additionally, many respondents indicated that cost was the primary barrier to deploying AI.

While AI deployment might still be in the infancy stages in Ontario, HRPA members believe its uptake will be dramatic. If larger organizations wish to remain competitive in today's global economy, they will need to look at ways to incorporate AI in their HR decision making.

DO YOU BELIEVE THAT AI IS A USEFUL TOOL FOR HUMAN RESOURCES PROFESSIONALS?

16%
NO

84%
YES
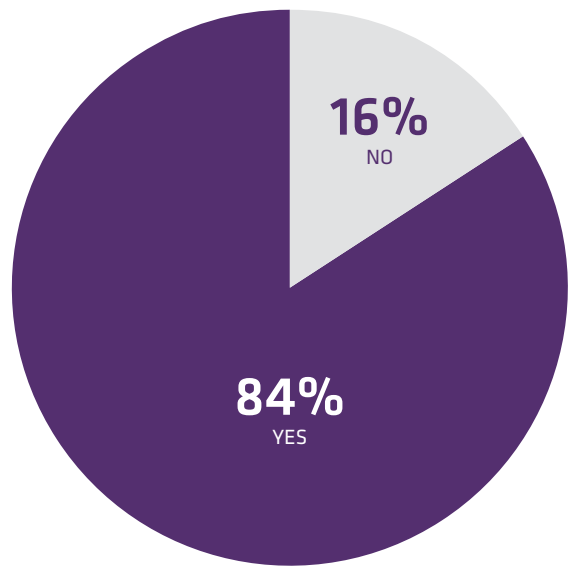
HOW PREPARED DO YOU FEEL YOUR WORKPLACE IS TO UTILIZE PEOPLE ANALYTICS AND ARTIFICIAL INTELLIGENCE TO ADDRESS HR CHALLENGES?

35% **33%** **17%** **12%** **4%**
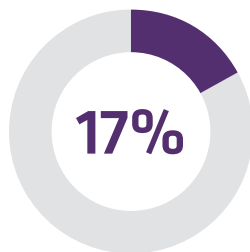
02

Reducing Administrative Burden

AS COMPANIES BEGIN TO RECOGNIZE THAT A BUSINESS'S SUCCESS IS HIGHLY DEPENDENT ON ITS PEOPLE, HR LEADERS ARE INCREASINGLY EXPECTED TO CONTRIBUTE TO STRATEGIC PLANNING ON AN ORGANIZATIONAL LEVEL. UNFORTUNATELY, THE BURDEN OF ADMINISTRATIVE TASKS CAN OFTEN HOLD HR PROFESSIONALS BACK FROM SERVING IN THIS CRITICAL ROLE. AI CAN PROVIDE A SOLUTION TO THIS PROBLEM.
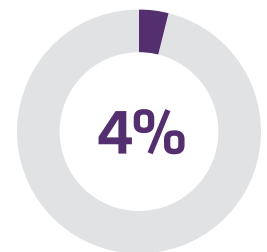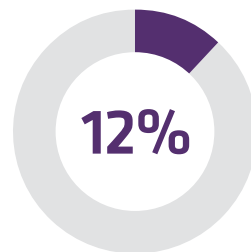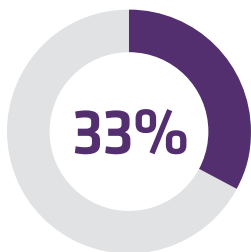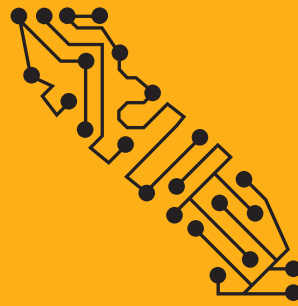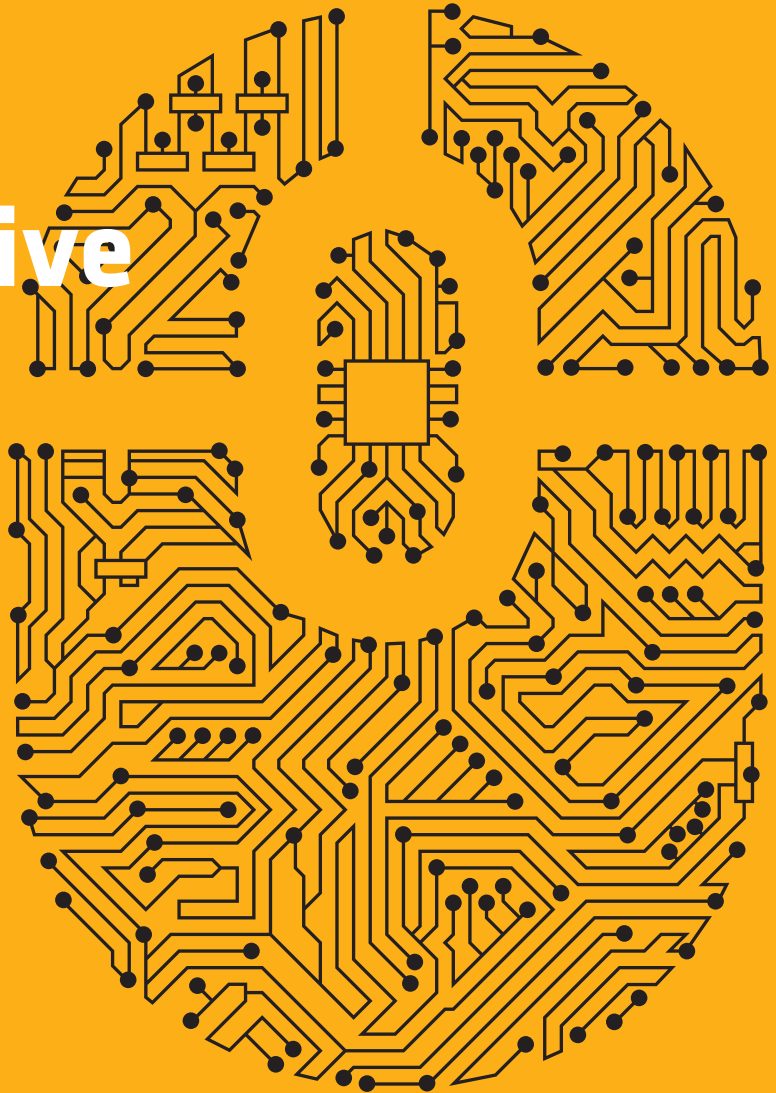
Laurie Padua, director of technology and operations consulting at Alexander Mann Solutions, explains that "recruiters spend between 40% and 60% of their day sourcing candidates, so effective automation can free-up around three to five hours per day."[1] Padua's company has been trialing several Robotic Process Automations (RPAs), including DORIS, which takes care of document filing and quality control, and ISAAC, which can schedule thousands of interviews.[2] These advancements can save employers valuable time.

In a survey of its members, the HRPA found that today's companies use AI for administration of benefits (18%) and administrative support (18%), while 24% of respondents believed that AI can assist with reducing the amount of time HR professionals spend on administrative tasks. This indicates a large growth area for the use of AI. If more companies rely on AI to perform administrative duties, HR departments may become more efficient, and HR professionals will be able to focus more on strategic planning on an organizational level.

CURRENT CHALLENGES

As previously mentioned, financial barriers can be blamed for the lack of wider implementation of AI tools to assist in administrative tasks. When senior leaders do not see the value in using AI for human resource functions, it can be hard to justify the cost.

RECOMMENDATIONS

Recommendation: A cost-benefit analysis should be conducted to gauge the viability of implementing AI applications for HR support in every organization. Senior leaders should also consider the added benefit of using AI for administrative duties in terms of freeing up more for improving strategic planning.

ADDED BENEFITS OF AI

Not only can AI process data more quickly than the average human, it is also able to cast a wider net, bringing attention to people who employers might not have considered or who may not even be looking for work. Having more qualified candidates from the beginning shortens the process, enabling managers to dedicate more time to analyzing HR data and improving strategic planning.

*SOURCE:HTTPS://WWW.WSJ.COM/ARTICLES/HOW-AI-IS-TRANSFORMING-THE-WORK-PLACE-1489371060

TOP HR CHALLENGES AI CAN ASSIST WITH

1. Reducing amount of time HR Professionals spend on administrative tasks
2. Recruiting and retention
3. Measuring return on investments
4. Reducing bias in HR decision making

SOURCE: HRPA MEMBER SURVEY, AUGUST 24, 2017

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Recruiting

A natural avenue for leveraging analytics in human resources is for recruitment and selection of staff. In a survey of its members, the HRPA found that companies mostly use AI for recruitment (43%). AI provides solutions in this area primarily by reducing flawed logic and assessing soft skills.

REDUCING FLAWED LOGIC

The traditional recruitment process requires human action from beginning to end-- sourcing candidates, screening resumes, conducting interviews, and making hiring decisions. The human decision making process is vulnerable to error because of flaws in human logic. Aman Alexander at CEB Global elaborates that a majority of people do not have the required information to back up their assumptions about what makes "an ideal candidate."[3] When hiring managers derive concrete knowledge from AI systems, they can be confident that their hiring process will result in successful hires.
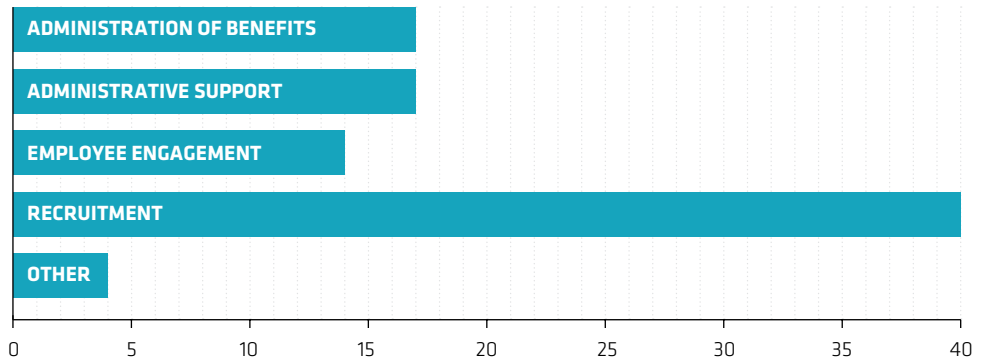
IDENTIFYING SOFT SKILLS

As the power of AI continues to grow, numerous new solutions are coming into the marketplace. A notable example of an emerging AI solution for recruiting is an algorithm which evaluates candidate speech patterns and looks for signs of soft skills like empathy.[4] This technology was designed by a start-up company called Interviewed. Chris Bakke, cofounder of Interviewed, says that an algorithm's ability to recognize empathy is evidence of "a new hiring technique—one in which machines assess, but humans make the final call."[5]

Solutions such as these do not fully replace the need for human evaluation, but may provide HR professionals with new powerful sets of data points to base decisions on.

CURRENT CHALLENGES

AI is developing the capability to do some incredible things, but it will likely never be able to completely replace human judgement. For example, AI may overlook unique characteristics a candidate can offer, which would make him or her better for the job. Inma Martinez, a venture partner at Deep Science Ventures, Imperial College's tech-sciences innovation accelerator elaborates:

"Technology can't access bio data like 'does she look alert, does she seem passionate about the role, will she fit in with the culture.' This can only be assessed when you meet the candidate. This kind of tacit knowledge can never be taught to robots. It can't be put into words, explained to someone, or programmed into AI software."

Unless AI solutions are able to one-day overcome this challenge, computers will never be able to fully evaluate candidates. Because of this, the responsibility of hiring decisions should never be left completely to technology. Instead, HR Professionals should find ways to incorporate AI solutions into their recruitment processes, but ultimately still remain responsible for all hiring decisions.

RECOMMENDATIONS

Recommendation: Organizations should consider using AI to pin-point what factors make a candidate successful to better narrow down hiring decisions.

WHAT TYPES OF FUNCTIONS DO YOU USE AI TO ASSIST WITH? CHECK ALL THAT APPLY.

SOURCE: HRPA MEMBER SURVEY, AUGUST 24, 2017

ADMINISTRATION OF BENEFITS
ADMINISTRATIVE SUPPORT
EMPLOYEE ENGAGEMENT
RECRUITMENT
OTHER

0   5   10   15   20   25   30   35   40

04
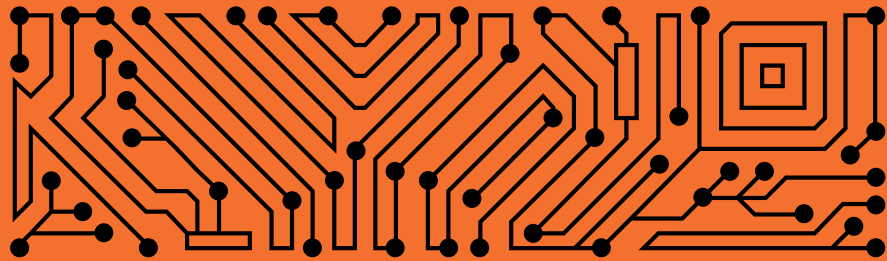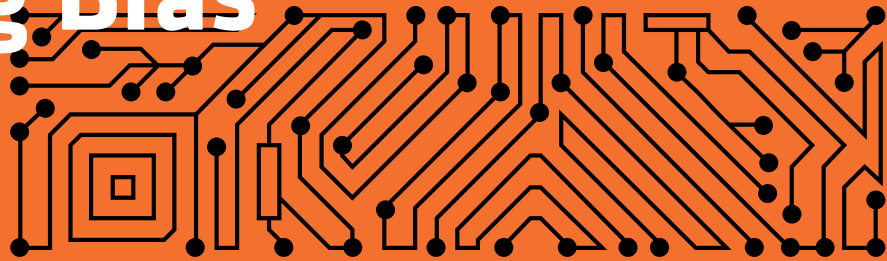
Reducing Bias

REDUCING BIASES IN HIRING AND PAY SCALE DECISIONS HAS BEEN A FOCUS POINT FOR GOVERNMENTS AND BUSINESSES ALIKE. TODAY, AI IS BEING TOUTED AS TOOL TO PREVENT DISCRIMINATION AND PROMOTE DIVERSITY BY REDUCING UNCONSCIOUS BIAS.

UNCONSCIOUS BIAS

Even when employers strive to be inclusive, they may subconsciously lean toward candidates who are most like them. This phenomenon is called "unconscious bias," and is just that, unconscious.

The United States Supreme Court has stated, "an employer's undisciplined system of subjective decision making [can have] precisely the same effects as a system pervaded by impermissible intentional discrimination."[6] This is just as true in Canada, where anti-discrimination laws are comprehensive but HR professionals may still exhibit unconscious bias.

HOW PREVALENT ARE UNCONSCIOUS BIAS?

Unconscious bias can impact hiring and wage decisions in a variety of ways. As a report by the HRPA found, unconscious bias can be blamed for much of the issues that cause gender wage gaps, which is the difference between the income earned by women and men.[7] In Canada, the gender wage gap was recently estimated to be anywhere between 12% to 31.5% by Statistics Canada.[8]

Much research has been conducted by the Province of Ontario on ways to close the gender wage gap. Additionally, a survey of HRPA members found 16% ranked reducing bias in HR decision making as one of the top challenges AI can help overcome.

PLEASE SELECT ANY OF THE FOLLOWING HUMAN RESOURCES CHALLENGES THAT YOU THINK ARTIFICIAL INTELLIGENCE CAN ASSIST WITH. SELECT ALL THAT APPLY.

SOURCE: HRPA MEMBER SURVEY, AUGUST 24, 2017
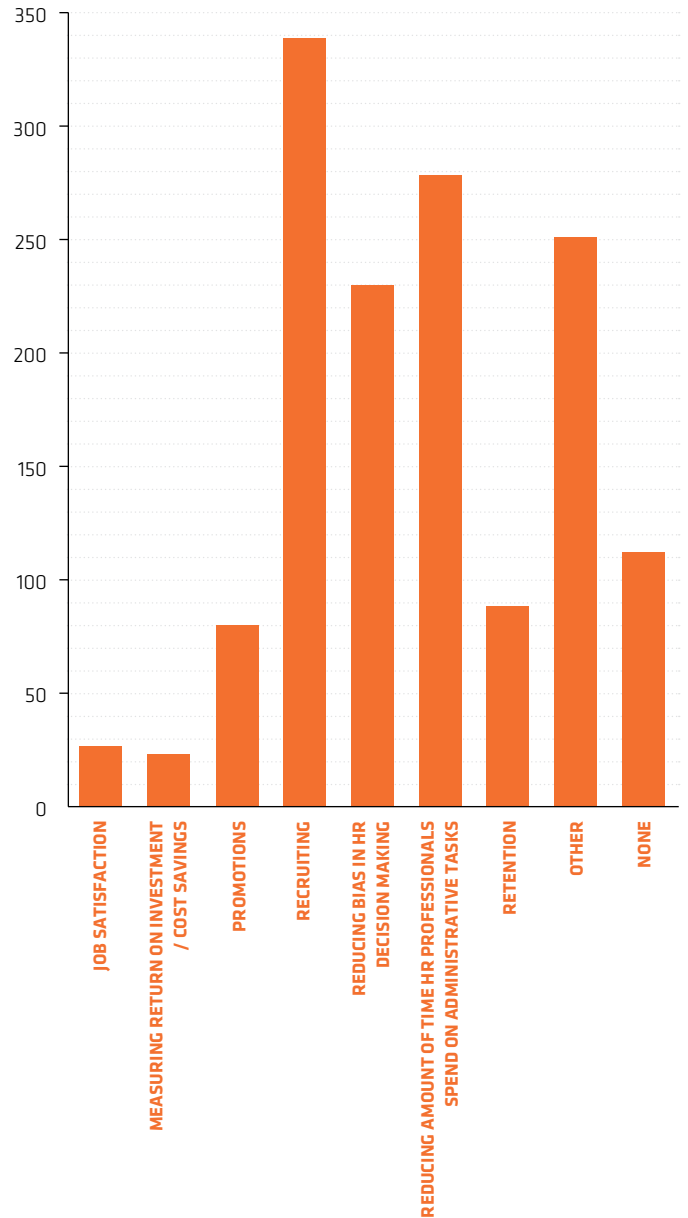
"It's very dangerous to auto select interview candidates based on set criteria. Protective measures would need to be established to ensure any potential bias is eliminated"

LANGUAGE BIAS

A psychological tool called the Implicit Association Test (IAT) shows that people's subconscious word associations indicate bias.[9] These biases find their way into job descriptions, as well as resume selections. Now, thanks to AI, algorithms can be designed to help employers identify and remove these bias patterns in language they use to improve their hiring communications and welcome diverse applicants.

AI applications can be used to analyze job descriptions to spot gender bias or language which might discourage strong applicants. It is possible to use male or female-skewed language when crafting job postings according to Kieran Snyder, CEO and co-founder of Textio, a machine learning platform which analyzes language patterns.[10] Applications like Textio use algorithms designed to help employers identify bias in language to improve hiring communications and welcome diverse applicants.

MIRROR BIAS

In addition to removing bias from hiring documents, AI could present managers with candidates who may have been screened out due to human tendency to favour candidates with similar traits or competencies.

Tom Marsden is the CEO of Saberr, a team-building start-up which incorporates AI technologies into its products. He says algorithms are free of those tendencies, which allows managers to go beyond gut feelings and rely on data-driven assessments instead.[11] SAP's Resume Matcher platform is designed to do just that. Because of unconscious bias, managers might not initially understand why these systems choose certain candidates, but further inspection shows them why.

In one example, a Resume Matcher client was surprised that the system recommended several professionals from another country, but then they realized they were simply unfamiliar with the top schools the candidates had attended.[12] Situations like this not only enrich the pool of candidates, they also bring light to personal biases that individuals can improve upon in the future.
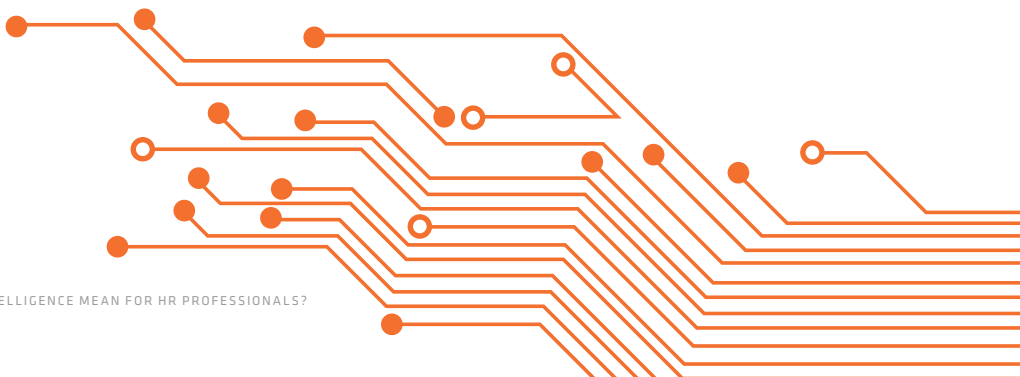
CURRENT CHALLENGES

In a survey of HRPA members, 12% of respondents indicated that 'embedded bias in algorithms'' was the primary aspect of AI they were most concerned about. Though AI applications aid in reducing bias, they can inherit the bias of their creators according to a recent Princeton University study.[13] "Artificial-intelligence systems may be perpetuating historical patterns of bias that we might find socially unacceptable and which we might be trying to move away from," says Arvind Narayanan, a Princeton University assistant professor who worked on the study.[14]

Programmers of AI platforms for the workplace will have to be aware of these flaws and plan for how to address them. Narayanan suggests that rather than trying to sanitize AI systems of stereotypes and bias, programmers should develop mathematical instructions for computers so machines can learn what is or is not acceptable.[15]

Hanna Wallach, a senior researcher at Microsoft Research New York City, says AI applications collect their data from society where biases are entrenched, so it is natural for data-driven algorithms to inherit some of the bias. Thus, a completely objective AI system does not exist yet.[16]

Additionally, Bodie et al say that AI is prone to "homosocial reproduction," where workers are replaced with workers that look like them.[17] This is because the data set is based on company history, which could have been affected by employer biases. Employers should remember that historical data may be flawed and take that into account when setting parameters for data collection and analysis.

HR professionals do not need to be well versed in instructing machine learning themselves, but they should be aware of the potential hazards and ask their AI vendors if they are equipped to address the issue.

Additionally, the HRPA survey found that 34% of respondents were most concerned with the fact that the use of AI ignores aspects of performance that can't be measured by data. Because of this challenge, a human analysis must be applied to any statistical analysis.

CASE STUDY

Popular travel company Expedia Inc. recently started using an artificial intelligence application to transform their job description writing and encourage more female applicants. The application, Textio Inc., analyzes job description wording to identify gender bias or other language that could deter marginalized candidates from applying. For example, some terms like "rock star" have masculine undertones and have been shown to be less attractive to women job seekers. Additionally, strict experience requirements tend to appeal to men while women have less confidence in their qualifications. The app provides the job description writer with a score and suggests alternate wording. Expedia reports that their HR employees respond well to this type of feedback and they have seen an increase in female applicants since implementing Textio.

*SOURCE: ESSEX, DAVID. AI IN HR: ARTIFICIAL INTELLIGENCE TO BRING OUT THE BEST IN PEOPLE. TECH TARGET. ACCESSED AT: HTTP://SEARCHHRSOFTWARE.TECHTARGET.COM/FEATURE/AI-IN-HR-ARTIFI-CIAL-INTELLIGENCE-TO-BRING-OUT-THE-BEST-IN-PEOPLE

RECOMMENDATIONS

Recommendation: HR professionals should leverage AI applications to reduce biased language in job postings and unconscious bias in the hiring process, all while understanding AI is not entirely objective.

05

Employee Retention & Internal Mobility

A THIRD APPLICATION OF AI IN HR IS OFTEN OVERLOOKED BUT HAS GREAT POTENTIAL FOR ORGANIZATIONS. TECH COMPANIES ARE NOW DEVELOPING PROGRAMS TO HELP EMPLOYERS IMPROVE INTERNAL MOBILITY AND, AS A RESULT, EMPLOYEE RETENTION. IN A WORLD WHERE YOUNG TALENT IS CHANGING EMPLOYERS AT TWICE THE RATE OF PREVIOUS GENERATIONS AND LOSING AN EMPLOYEE CAN COST A COMPANY UP TO 200% OF THE INDIVIDUAL'S ANNUAL SALARY, EMPLOYERS MUST BE AWARE OF THE BUSINESS CASE FOR RETENTION.[18] BUT DO THEY REALIZE HOW ARTIFICIAL INTELLIGENCE CAN HELP TO IDENTIFY INTERNAL HIRES AND IMPROVE RETENTION?

HAPPY EMPLOYEES, SUCCESSFUL BUSINESSES

Successful organizations view employees as brand ambassadors; therefore, they emphasize the importance of employee satisfaction. Josh Bersin outlines the mindset of business leaders when it comes to measuring success. He says, "Get me the right people into the job, make them productive and happy, and get them to help us attract more customers and drive more revenue."[19]

When asked to select from human resources challenges they believe could be helped with artificial intelligence, only 6% of HRPA survey respondents believed it could help with promotions, and 5.6% thought it could improve retention. This suggests that the majority of organizations are likely missing out on an opportunity to retain top talent.

IDENTIFYING FLIGHT RISKS

There are several ways in which artificial intelligence can help with internal promotions and retention. The first is by identifying employees who are at risk of leaving the company. Tech company Veriato has developed a variety of AI platforms to single out flight risks among employees. Their software tracks employee computer activity—emails, keystrokes, internet browsing, etc.—and stores it for thirty days. Then an AI system analyzes the data to determine a baseline of normal activity patterns in the organization. Based on that knowledge it flags outliers and reports them to the employer.[20] Variato also detects changes in the overall tone of employees' communications to predict when employees might be thinking of leaving. When an employee's "sentiment score" begins to stand out from the company baseline, managers can step in to try to retain them. When used properly, these technologies can assist employers in preventing unnecessary attrition.

RETAINING TOP TALENT

How exactly can these employers retain flight risk employees? According to CEB Global, "a lack of future career opportunities in the primary driver of employee attrition, topping compensation and manager quality."[21] If employers can improve their processes for promoting employees from within, they can both save money on the hiring process and retain talent that might otherwise leave. Paddle HR is a Toronto-based talent technology company that specializes in internal career mobility for companies with 1,000 or more employees.[22] Paddle's algorithm and career matching tools are based on the concept that successful professionals have "T-shaped" careers; rather than following a linear path based on one specialization, they thrive when they can work across multiple sectors and functions.[23]

In addition to providing their own platform, Paddle HR also conducts ongoing research on career mobility. Based on their research, they were able to share some cases of companies using AI to improve internal career mobility practices.

1. General Electric is recommending top job matches to employees based on where their peers with similar job titles and career histories have moved within the company—a method called "collaborative filtering." The next step is to analyze employees' career profiles using natural language processing to further filter job opportunities not caught by historical patterns.

2. Accenture created a global standard process and established a team to focus on internal mobility. They believe internal recruits cost less, get up to speed quicker and have a higher probability of success. Over the course of a 4-year program, the internal hiring rate jumped from 6% to 40% in Canada & United States.

3. Salesforce is experimenting with a novel approach to recommending new job opportunities by analyzing the text of employees' annual reviews. If it finds employees are talking about skills or interests that are outside of the scope of their current job, it finds and recommends open jobs that utilize those skills or interests.

When these programs are successful, companies can save themselves time and money. A study by AirBnB found that internal candidates require 25-50% less interviewing time than external recruits.[24] As mentioned earlier, any time HR professionals save in the recruiting process can be devoted to supporting the more important strategic functions. Additionally, Professor Matthew Bidwell from the University of Pennsylvania found that internal hires perform better, stay longer, and cost companies less.[25] If companies can leverage AI to improve their internal mobility programs, the returns will be valuable.

CURRENT CHALLENGES

While AI has the potential to transform companies' internal mobility programs, there are some challenges preventing universal adoption. First, data is limited by the scope of collection and how employers choose to interpret it. What are the best indicators of success for making internal promotion decisions? Are employers collecting the right data? Research analysts David Johnson and J.P. Gowdner express concern that employers' ability to gather data about employees has outstripped managers' capacity to interpret it properly, opening the door to a variety of counterproductive practices.[26] This is where outdated ideas about HR metrics still have a hold in some workplaces. Some managers will zero in on one measure of potential without understanding whether or not it is the most effective indicator. Johnson and Gowdner attribute this to managers' tendency to pay most attention to what they can measure while ignoring more nebulous qualitative factors.[27] Therefore, managers must be confident that the measures they track are proven indicators of success.

Paddle HR has also identified some major challenges based on discussions with their clients. The first problem is cultural barriers to mobility. In other words, managers may not be motivated to support internal mobility out of fear of losing talent from their department. One large New York City bank addressed this by encouraging leaders to champion internal mobility while also making it clear they weren't encouraging employees to leave their departments.[28] The second problem Paddle identified is companies' limited budgets for mobility initiatives. This sentiment is echoed in the HRPA survey, where of the people who said their company will not be moving towards AI, 10% cited budget restrictions as the main reason. Paddle explains that it is unclear which organizational function "owns" internal mobility, which complicates the funding process. Finally, Paddle pointed out that data readiness is an issue for many companies. They explained, "Predicting future career paths based on an employee's current and previous job titles is the most basic way to offer smarter recommendations to employees, but some organizations may not have this data available in internal systems. Additional data, like skill profiles and performance data, are even less common."[29] Paddle's recommendation for this problem is to leverage external career data such as LinkedIn profiles to provide more information to algorithms.

"Predicting future career paths based on an employee's current and previous job titles is the most basic way to offer smarter recommendations to employees, but some organizations may not have this data available in internal systems."

RECOMMENDATIONS

Recommendation: Employers should assess employees' perceptions of internal career opportunities and track internal vs. external hiring in various organizational functions in order to identify problems, indicators of success, and potential solutions.

Recommendation: Organizations should consider AI technologies to help them manage internal mobility initiatives, which can allow for better internal candidate matching and more timely marketing of internal jobs to both passive and active candidates.

06

Conclusion
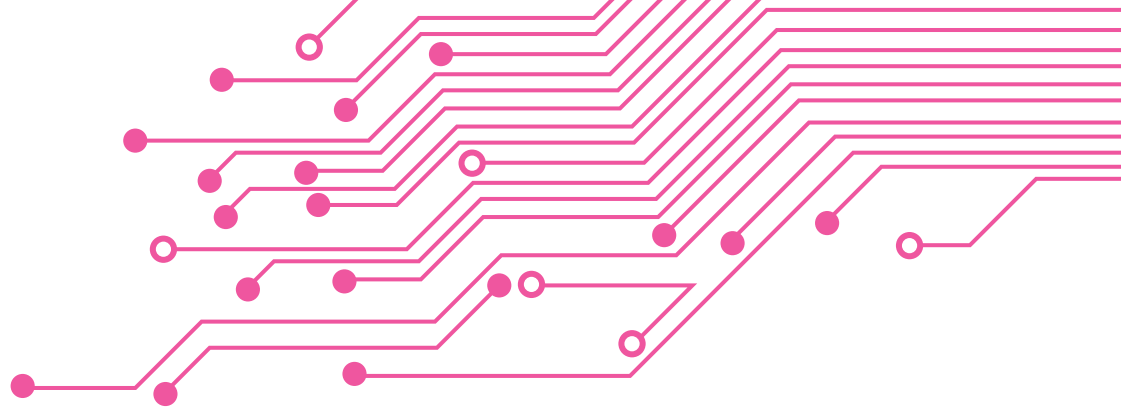
USING AI TO ASSIST IN HR FUNCTIONS IS BECOMING MORE PREVALENT IN TODAY'S ORGANIZATIONS. EXAMPLES MENTIONED IN THIS PAPER SHOW THAT AI HAS THE ABILITY TO REDUCE THE ADMINISTRATIVE BURDEN ON HR PROFESSIONALS AND HELP THEM MAKE DECISIONS BASED ON PROVEN DATA PATTERNS RATHER THAN INSTINCT ALONE. AI IS ALSO BEING USED FOR RECRUITING, REDUCING BIAS AND RETAINING TOP TALENT.

Additionally, AI use is expected to grow as the technology becomes more reliable and affordable. Almost half of the 489 HRPA members surveyed indicated their organizations will move toward using AI to address HR challenges in the next five years, which means AI use in HR is likely to become mainstream.

That being said, AI must not be viewed as a cookie-cutter solution for all HR functions. Companies should recognize AI implementation does not replace human capacity to make judgements. Human intervention is needed to evaluate unique characteristics and avoid treating individuals as metrics. As with any emerging technology, it will take some time for issues to be addressed and benefits to be maximized.

> "AI can help with all HR functions if it is used as a tool to add to our knowledge rather than a gatekeeper to make hard decisions."

08

Endnotes

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