

Artificial Intelligence–Enhanced Recruitment Strategies and Their Impact on Digital Talent Acquisition: A Comparative Case Study of Unilever and IBM**استراتيجيات التوظيف المعززة بالذكاء الاصطناعي ودورها في استقطاب المواهب الرقمية:****دراسة حالة مقارنة بين شركتي IBM و Unilever****Merzouki Yasser¹**¹ University of Mila (Algeria), y.merzouki@centre-univ-mila.dz**Received:** 01/02/2026**Accepted:** 31/03/2026**Published:** 31/03/2026**Abstract:**

This study aims to analyze the effectiveness of Artificial Intelligence (AI)-based recruitment strategies in addressing the scarcity of "Digital Talents" through a comparative case study of two global leaders: Unilever and IBM. Adopting a descriptive-analytical and comparative approach, the study reviews the strategies of both companies during the period (2022–2025). The results reveal a strategic divergence in application; Unilever adopted a "High-Volume Filter Model" relying on cognitive gamification, which reduced time-to-hire by 75% (from 4 months to 4 weeks) and saved over 70,000 man-hours annually. Conversely, IBM adopted a "Predictive Advisor Model" based on Watson algorithms, achieving financial savings of \$107 million and an 80% success rate in closing skill gaps through internal mobility. The study concludes that AI is not merely an automation tool but a transformative factor enhancing diversity and candidate experience, provided that human governance is present to mitigate "algorithmic bias" and ethical risks associated with video analysis and behavioral data.

Keywords: Artificial Intelligence; Digital Talent Acquisition; AI-Enhanced Recruitment; Human Resource Management; Workforce Diversity.

JEL Classification Codes: M12, M51, O33, J24, J15

ملخص:

هدفت هذه الدراسة إلى تحليل فعالية استراتيجيات التوظيف القائمة على الذكاء الاصطناعي في معالجة ندرة المواهب الرقمية، وذلك من خلال دراسة حالة مقارنة بين شركتين رائدتين هما يونيليفر (*Unilever*) و (*IBM*)، واعتمدت هذه الدراسة على منهج وصفي-تحليلي ومقارن، حيث تم استعراض استراتيجيات الشركتين خلال الفترة (2022–2025). وأظهرت النتائج وجود تباين استراتيجي في التطبيق؛ إذ اعتمدت *Unilever* نموذج الترشيح عالي الحجم القائم على الألعاب الإدراكية، مما أدى إلى تقليص مدة التوظيف بنسبة 75% (من أربعة أشهر إلى أربعة أسابيع)، وتوفير أكثر من 70,000 ساعة عمل سنوياً. في المقابل، اعتمدت شركة (*IBM*) نموذج المستشار التنبؤي المعتمد على خوارزميات واتسون (*Watson*)، ونجحت في تحقيق وفورات مالية بلغت 107 ملايين دولار، إضافة إلى تحقيق معدل نجاح بلغ 80% في سد فجوات المهارات من خلال التنقل الوظيفي الداخلي. وخلصت الدراسة إلى أن الذكاء الاصطناعي لا يعد مجرد أداة للأتمتة، بل يمثل عاملاً تحويلياً يساهم في تعزيز التنوع وتحسين تجربة المرشح، شريطة وجود حوكمة بشرية فعالة للحد من «التحيز الخوارزمي» والمخاطر الأخلاقية المرتبطة بتحليل الفيديو والبيانات السلوكية.

كلمات مفتاحية: الذكاء الاصطناعي، استقطاب المواهب الرقمية، التوظيف المعزز بالذكاء الاصطناعي، إدارة الموارد البشرية، تنوع القوة العاملة.

تصنيفات JEL : J15، J24، O33، M51، M12.

INTRODUCTION:

Today, the world is witnessing an unprecedented acceleration in digital development, where digital technology and artificial intelligence have become pivotal elements in reshaping the global economy and bringing about fundamental transformations in labor markets and human resource strategies. The Fourth Industrial Revolution has prompted organizations to rebuild their organizational structures, modernize their operations, and develop their competitive capabilities by employing artificial intelligence tools in various activities, including the recruitment of digital talent, which has become the cornerstone of organizational success and sustainability.

Digital talent, which includes experts in data science, artificial intelligence, cybersecurity, software engineering, and data analysis, has become a rare commodity today in a highly competitive global market for qualified human resources who possess such talents and skills. As a result, traditional recruitment methods are no longer able to meet the needs of organizations for high-competence human resources, especially with the expansion of digital transformation and the adoption of new business models based on innovation, rapid decision-making, and data utilization. Here, artificial intelligence emerges as a revolutionary tool that redefines traditional concepts in talent attraction, selection, and assessment.

Smart technologies—from job matching algorithms, predictive analytics, interactive robots for initial interviews (chatbots), and AI-powered video analysis interviews—have become an integral part of the modern recruitment ecosystem. Numerous reports have shown that these tools can reduce the time spent in recruitment processes by more than 50%, improve the quality of candidates, enhance workforce diversity, and support data-driven decision-making rather than human intuition.

In this context, leading global companies such as Unilever and IBM have become models for advanced reliance on artificial intelligence in talent management. Unilever has adopted innovative recruitment methodologies based on cognitive games and AI-powered video interview analysis platforms. IBM, on the other hand, is one of the first companies to develop recruitment systems based on predictive analytics and Watson algorithms to attract digital talent. Comparing these two experiences represents an important scientific entry point to understanding the role of artificial intelligence in attracting digital talent and analyzing the impact of these tools on organizational decisions and the effectiveness of recruitment processes.

Problem Statement

Despite the rapid development of artificial intelligence technologies in recruitment, researchers and experts continue to question the extent to which these systems can actually improve the quality of digital talent recruitment compared to traditional methods. While some believe that AI offers unprecedented efficiency in analyzing skills and evaluating candidates, others believe that over-reliance on it may lead to algorithmic bias or a loss of the human dimension in the recruitment process. The issue becomes even more complex when it comes to digital talent, as it requires accurate assessments that include technical abilities, analytical understanding, digital intelligence, cognitive flexibility, and innovation. Hence, the main question of our research is: *How have AI-enhanced recruitment strategies at Unilever and IBM affected the attraction of digital talent and improved the quality of the selection process?*

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The following sub-questions arise from this problem:

1. What is the nature of the smart methods used by Unilever and IBM in recruitment?
2. To what extent can these systems improve the quality and efficiency of digital talent acquisition?
3. What are the similarities and differences between the two companies' strategies?
4. What are the ethical and regulatory challenges associated with this transformation?

Study Hypotheses

Based on previous literature, the study assumes the following:

- Smart recruitment strategies contribute to improving the quality of digital talent acquisition by enhancing matching accuracy.
- Reliance on algorithms reduces human bias and promotes diversity in the workplace.
- The effectiveness of smart systems varies depending on the organization's strategic objectives (selection model versus prediction model).
- Artificial intelligence contributes to improving the digital candidate experience compared to traditional methods.
- Smart recruitment strategies lead to reduced operational costs and increased time efficiency.

Methodology

This study relied on: The descriptive analytical approach, to analyze concepts and theoretical models related to artificial intelligence and smart recruitment. It also provided an in-depth analysis of Unilever and IBM's strategies. Additionally, the comparative approach was used to identify similarities and differences between the two models.

The study adopted a multiple case study approach as a qualitative research design suitable for examining complex and emerging phenomena, such as artificial intelligence applications, within their natural organizational contexts. This approach enables a deeper understanding of how and why recruitment strategies differ across organizations, rather than merely describing what occurred. Purposive sampling was employed to select Unilever and IBM based on their global leadership as early adopters of AI, sectoral divergence (fast-moving consumer goods versus technology), and data availability over the period 2022–2025. To ensure the reliability of findings, data triangulation was applied by integrating official corporate documents, specialized technical reports (such as HireVue and Pymetrics case studies), and relevant academic literature. Finally, the data were analyzed using thematic analysis, structured around four main comparative dimensions: operational efficiency, quality of job–candidate match, candidate experience, and ethical considerations.

Data Sources:

The study relied on examining a diverse set of official documents issued during the period (2016–2025), including:

- Annual reports and financial statements of Unilever and IBM to determine return on investment (ROI) indicators.
- Corporate social responsibility and sustainability reports to analyze diversity and inclusion strategies.

- White papers and technical reports issued by technology partners such as HireVue and Pymetrics.
- Articles published in peer-reviewed academic journals to ensure strong theoretical grounding and critical analysis.

Literature Review and Research Gap:

Thomas, L. (2017):

This study examines how AI-driven automation has improved human resource (HR) processes by significantly reducing administrative workloads. It emphasizes the early implementation of artificial intelligence technologies in standard HR functions, including payroll processing and employee record management. The study highlights how these technologies enable HR practitioners to focus on strategic initiatives, thereby transforming the HR function from an operational role into a transformational one. The study concludes by outlining key challenges encountered during early adoption, particularly system integration and employee training.

Clarke, E. (2017):

This study explores the potential of artificial intelligence, as of 2019, to transform HR from a support function into a strategic business partner within organizations. It focuses on the application of predictive analytics in workforce planning and people management. The author examines how AI-driven insights have enabled HR managers to anticipate organizational needs and align HR strategies with business objectives. Ethical considerations, particularly those related to data privacy and algorithmic fairness, are acknowledged as critical areas requiring attention to ensure sustainable deployment.

Garcia, P., & Martin, K. (2018):

The authors present a foundational study on the advancement of AI applications in human resource management, detailing the transition from early recruitment tools to sophisticated employee engagement systems. The study provides a comprehensive examination of AI functionalities, including natural language processing and machine learning, in enhancing HR practices. The authors highlight the role of AI in improving recruitment accuracy, mitigating bias, and enhancing employee experience, while also examining its potential to generate competitive advantage by enabling more agile HR initiatives.

Patel, D., & Singh, R. (2019):

This study investigates the use of artificial intelligence technologies by small and medium-sized enterprises (SMEs) to enhance their recruitment processes. The authors identify key benefits, including cost reduction, accelerated candidate screening, and improved access to diverse talent pools. The study also examines the barriers faced by SMEs, such as limited financial resources and insufficient technical expertise, which hinder widespread adoption. Practical insights are offered to support SMEs in integrating AI solutions into their HR systems more effectively.

1. The Evolution from Administrative Automation to Strategic Transformation:

Early studies agree that the primary role of artificial intelligence (AI) was to reduce administrative burdens and automate routine tasks (Thomas, 2017; Patel & Singh, 2019). However, critics of this approach argue that focusing solely on "operational efficiency" overlooked the strategic role of technology in reshaping the HR function from an operational role to a transformational one that drives competitive advantage (Clarke, 2017; Garcia & Martin, 2018). Our current study delves deeper into this argument by analyzing how Unilever and IBM are translating these strategic shifts into the digital talent market.

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2. The Debate Between Objectivity and Algorithmic Bias:

While some literature promotes the ability of algorithms to improve objectivity and reduce human bias (Garcia & Martin, 2018), other studies in the field of organizational behavior highlight the dangers of "inherited bias," also known as "garbage in, garbage out" (Jeffrey, 2018). A critical analysis of these studies reveals that relying solely on historical data can perpetuate exclusion patterns, prompting companies like Unilever to seek technological solutions such as "audited algorithms" to ensure fairness.

3. The Gap in Qualitative Comparative Studies:

Despite the abundance of studies addressing the benefits of artificial intelligence in general, there is a clear lack of research employing a comparative approach between different technological models (such as filtering versus prediction). Most of the current literature (such as Owen et al., 2021; Marcello et al., 2017) has focused on partial aspects such as the effect of accent or performance sequence, without providing a holistic view of how integrated intelligent systems work in major technology companies.

Research Gap

Despite the valuable insights provided by prior studies, a critical gap remains in the existing literature. Most previous research has predominantly emphasized operational efficiency outcomes of AI adoption in human resource management—such as cost reduction, administrative automation, and processing speed (Thomas, 2017; Patel & Singh, 2019). While these contributions are significant, they offer a partial perspective on the broader strategic implications of AI-enabled recruitment. Moreover, although some studies acknowledge ethical considerations and predictive analytics (Clarke, 2017; Garcia & Martin, 2018), there is a notable lack of comparative empirical research examining how strategically different AI recruitment models operate in practice. In particular, limited attention has been paid to qualitative dimensions such as quality of job–candidate match, digital candidate experience, and diversity outcomes, especially when targeting the highly competitive segment of digital talent. Furthermore, the literature remains fragmented with respect to comparative case studies of global organizations employing distinct AI recruitment philosophies (e.g., rapid screening versus deep predictive analysis). Consequently, there is a clear need for research that systematically compares alternative AI-driven recruitment strategies and evaluates their differentiated impacts. A lack of applied comparative studies examining.

1- Theoretical Framework of the Study

This section aims to present the theoretical and conceptual foundations of the study by analyzing the concepts of artificial intelligence, digital recruitment strategies, and digital talent, as well as highlighting recent models of artificial intelligence recruitment in human resources. This framework serves as the scientific basis for the subsequent comparison between Unilever and IBM in the following chapters of the thesis. This theoretical framework contributes to a clear vision of the radical transformations taking place in the field of recruitment worldwide and how smart tools have become an essential element in the process of attracting highly skilled digital talent. (Reggani & Benabid , 2025)

1-1 The Concept of Artificial Intelligence

The concept of Artificial Intelligence (AI) emerged in the mid-1950s and later evolved to include machines and systems capable of learning, inferring patterns, and making decisions. Artificial intelligence can be defined as: "The ability of digital systems to perform tasks that require human intelligence, such as reasoning, decision-making, learning, and problem-solving." (Co-operation&Development, 2025)

Russell and Norvig further define artificial intelligence as a field of computer science concerned with developing systems that can perceive their environment and act in ways that maximize the likelihood of achieving defined goals. (Stuart & Peter , 2025)

Artificial intelligence encompasses several key branches and technologies, most notably: (Cole & Eda , 2025)

- **Machine Learning**
- **Deep Learning**
- **Natural Language Processing**
- **Computer Vision**
- **Expert Systems**

Today, artificial intelligence is considered one of the primary drivers of digital transformation across various sectors, including human resource management, where it contributes to improving efficiency, supporting decision-making, and enhancing fairness and transparency when implemented within well-defined ethical governance frameworks.

1-2 Artificial Intelligence in Human Resources (AI in HRM)

The field of human resources has undergone a major transformation as a result of the integration of artificial intelligence (CIPD, 2023), with many administrative and functional tasks becoming fully automated. Applications of artificial intelligence in human resources include: (Marcello , Gazi , & Burak , 2017)

- **Predictive Analytics:** Used to predict satisfaction rates, likelihood of leaving the job, or anticipate job performance. (Owen , Ke , & Rachel , 2021)
- **AI Recruiting:** This is the focus of this thesis and relies on tools such as resume screening software, video analysis tools, cognitive games, and chatbots.
- **Performance Management:** Analyzing employee work data and suggesting improvements. (Thomas H. & Rajeev , 2021)
- **AI-based Learning:** Designing customized training programs for each employee.

1-3 Digital Transformation in Recruitment Digital transformation in recruitment represents a shift from traditional practices based on human interviews and manual CV reading to an integrated system based on data and algorithms. This transformation includes a shift towards digital platforms, the use of data analytics in skills assessment, the elimination of paper-based assessments, the adoption of video interviews, and the integration of smart recommendations into the screening process. Global studies have shown that more than 70% of large companies use some form of artificial intelligence in recruitment. (How AI redefines recruiting excellence, 2025)

1-4 Concept of Smart Recruitment Strategies:

Smart recruitment strategies represent a set of policies, programs, and tools that rely on artificial intelligence to improve the quality and efficiency of the talent acquisition process. Smart strategies include: (Komal & Ashwani , 2018)

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- Automated analysis of résumés,
- Intelligent matching between jobs and candidates,
- AI-based behavioral assessment,
- Gamified assessments,
- Digitally conducted interviews analyzed algorithmically,
- Job success prediction systems.

1-5 Digital Talent

Digital talent refers to employees who possess advanced technological skills, including software engineering, data engineering, data analysis, artificial intelligence and machine learning, cybersecurity, cloud computing, and intelligent systems development. (Klaus & Saadia , 2020)

Digital talent is characterized by several attributes, including rapid learning, analytical thinking, flexibility, the ability to work remotely, and the capacity to adapt to change. Attracting this category is considered one of the greatest challenges facing companies in the digital era. (Co-operation&Development, 2025)

1-6 The Relationship Between Artificial Intelligence and Digital Talent Acquisition

There is a complementary relationship between artificial intelligence and digital talent, which can be summarized in the following points: (James , 2018)

- The ability of artificial intelligence to accurately assess technical skills, such as code analysis or the measurement of cognitive thinking skills.
- The ability to handle massive volumes of applications, as technology companies receive thousands of job applications monthly.
- Reducing personal bias, which is an important requirement for digital talent that favors fairness and transparency.
- Improving the digital candidate experience, which is a sensitive issue for young technical talent.

2- AI-Enhanced Recruitment Strategies at Unilever

2-1 Presentation of Unilever

Unilever is a global multinational corporation operating in the Fast-Moving Consumer Goods (FMCG) sector, with operations in more than 190 countries and a portfolio exceeding 400 brands. The company attracts a highly diverse pool of applicants worldwide, making diversity management a strategic priority closely linked to its recruitment processes. While workforce diversity enhances innovation and organizational performance—particularly in global and multicultural environments—it also increases the complexity of matching heterogeneous candidate profiles with specific job requirements. (Judith , Ruby , & Nelson , 2024)

Since 2016, Unilever has been recognized as a global leader in human resource innovation, having fundamentally transformed its recruitment system through AI-enhanced strategies. This transformation was driven by the need to efficiently, objectively, and rapidly process a massive volume of applications, particularly for graduate and technical roles. According to Unilever’s annual reports, the company processes approximately 1.8 million applications annually and hires over 30,000 employees worldwide, highlighting the strategic

necessity of intelligent recruitment systems. (unilever, 2025)

2-2 Unilever's Motivations for Adopting AI in Recruitment

Unilever's adoption of AI in recruitment is driven by several strategic motivations. First, the massive volume of candidates—exceeding one million applications annually—renders manual processing impractical, positioning AI as a strategic necessity rather than a technological luxury. (LinkedIn_Talent_Solutions, 2023) Second, the company aims to enhance candidate experience, particularly for digital natives who expect fast, flexible, and mobile-friendly recruitment journeys. Third, AI is leveraged to reduce human bias, thereby increasing fairness and inclusivity across diverse applicant groups. (Glider, 2025) Finally, the assessment of complex digital and cognitive skills requires tools capable of measuring behavioral, analytical, and decision-making abilities more accurately than traditional methods. (Shreyan & Abhishek , 2024)

2-3 Stages of the Smart Recruitment Process at Unilever

Unilever partnered with HireVue and Pymetrics, two leading AI recruitment technology providers, to redesign its recruitment model into a multi-stage, data-driven process. (Qirui , 2023)

Stage 1: AI Screening

Applicants apply via digital platforms such as LinkedIn without submitting traditional résumés. (Hirevue, 2025) AI algorithms analyze profiles using keyword matching, skills extraction, comparison with high-performance job models, and predictive suitability scoring. This stage rapidly filters thousands of applications, advancing approximately 20–30% of. (Cynthia CS Liem, 2018)

Stage 2: Cognitive Games (Pymetrics)

Candidates complete neuroscience-based gamified assessments measuring reasoning, decision-making, and risk behavior. These mobile-friendly games enhance engagement while providing reliable, job-relevant insights into cognitive and emotional traits. The algorithms are calibrated using performance data from successful Unilever employees. (unilever, 2025)

Stage 3: AI-Enhanced Video Interviews (HireVue)

Using HireVue's AI-powered video interview platform, candidates respond to pre-recorded questions analyzed through Natural Language Processing (NLP) and behavioral analytics. This stage significantly reduces time and costs, standardizes assessment criteria, improves accessibility, and minimizes emotional bias, while allowing recruiters to process large applicant volumes efficiently. (Hirevue, 2025)

Stage 4: Final Human Interview

Despite extensive AI integration, Unilever retains human judgment in the final decision-making stage. Candidates participate in written exercises, group discussions, presentations, and final interviews conducted by recruitment staff and committees. This hybrid model ensures a balance between algorithmic objectivity and human evaluation, mitigating ethical risks associated with fully automated hiring. (Qirui , 2023)

2-4 Impact of these Strategies on Attracting Digital Talent

- **Reduced Recruitment Time:** Reduction in hiring time from four months to just four weeks (i.e., by 75%). Savings of approximately 70,000 hours of annual interview time. (Zhang, 2024)

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- **Second: Improving the Quality of Hiring:** The company now has the ability to predict a candidate's success in the job through accurate algorithms, which has reduced turnover and improved the quality of digital hires. (Hirevue, 2025) It has been able to reduce the number of applicants from 250,000 to 3,500 and improve the quality and experience of candidates. (unilever, 2025)
- **Third: Promoting Diversity:** Screening more than one million applicants annually. In addition to a 16% increase in recruitment diversity. The percentage of hires from different countries and backgrounds has increased significantly as a result of reducing bias. (Ben , Tomas , & Richard , 2019)
- **Fourth: Improving the Candidate Experience:** Candidates can now take tests and interviews from home. (Unilever, 2024)

2-5 Challenges faced by Unilever: Despite the success of the experiment, the company faced several challenges, the most important of which were: (Shreyan & Abhishek , 2024)

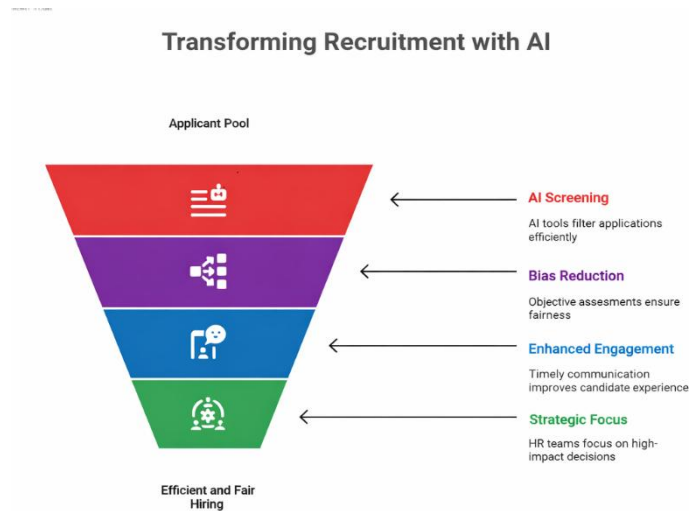
- **Concerns about Algorithmic Bias:** Some criticized facial expression analysis as potentially reflecting biases inherent in the data. (Council, 2024)
- **Resistance from some Candidates:** Some applicants felt that the process was inhumane. (commission, 2019)
- **The Need for Transparency:** International organizations called on companies to manage AI transparently towards candidates. (commission, 2019)
- **Data Protection Issues:** Especially since video interviews involve sensitive data. (Hirevue, 2025)

Unilever's experience represents an exemplary application of the "Smart Recruitment Funnel" shown in the diagram. In the AI Screening stage, the company successfully managed a massive volume of applications, reaching 1.8 million annually, through algorithms that filter applicants and identify the top 20-30% in just minutes.

The level of Bias Reduction is clearly reflected in the company's reliance on cognitive games (Pymetrics) and AI-analyzed video interviews, which led to a 16% increase in recruitment diversity by ensuring objective evaluation independent of a human interviewer's personal preferences. Regarding Enhanced Engagement, Unilever improved the digital candidate experience by providing immediate feedback to all applicants, effectively escaping the "black hole" typical of traditional recruitment where applications often go unacknowledged.

Finally, this process achieved the desired Strategic Focus; the company saved approximately 70,000 work hours annually that were previously spent on manual interviews and preliminary screening. This efficiency allowed human resource experts to dedicate their time to high-impact strategic decision-making in the final stage and to the overall development of the workforce. As illustrated in the following figure :

Fig (1): AI-Driven Recruitment Funnel Engineering: Enhancing Organizational Effectiveness and Objectivity in Candidate Selection



Source: Adapted from GSDC (Global Skill Development Council)

3- AI-Enhanced Recruitment Strategies at IBM

3-1 Presentation of IBM: IBM is considered one of the largest global companies in the field of technology and artificial intelligence. It is among the earliest organizations to introduce artificial intelligence into its internal operations, particularly in human resource management and digital talent acquisition. (IBM_Institute, 2025) Through its well-known intelligent platform, IBM Watson, the company has developed an integrated recruitment ecosystem based on deep linguistic and behavioral analysis of candidates, in addition to enhancing the candidate experience through intelligent conversational tools capable of real-time interaction. IBM's model is regarded as a global example of innovation in AI-based recruitment. (IBM, 2025)

3-2 IBM's Motivations for Adopting Artificial Intelligence in Recruitment

First: Intense competition in the digital talent market IBM competes with companies such as Google, Microsoft, and Amazon to attract top technical skills, making the need for intelligent recruitment tools increasingly urgent. (IBM_Institute, 2023)

Second: The massive volume of internal data IBM possesses enormous human resource data due to having more than 300,000 employees worldwide, which requires advanced systems for managing and analyzing information. (IBM_Institute , 2020)

Third: Developing its intelligent HR products IBM sought to use its own products (such as Watson) in its internal operations to demonstrate their effectiveness in the market, which contributed to strengthening customer trust. (IBM_Institute, 2019)

Fourth: Predicting future skills IBM requires digital talent capable of keeping pace with rapid changes in the technology industry; therefore, it relies on predictive analytics. (IBM_Institute, 2019)

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3-3 The Smart Recruitment Ecosystem at IBM IBM adopted an integrated smart recruitment structure consisting of three main pillars:

First Pillar: Watson Candidate Assistant (WCA)

This system represents one of the most significant developments introduced by IBM to enhance the candidate experience. It is an intelligent chatbot that uses Natural Language Processing (NLP) and is characterized by several features, including personalization, ease of use, and continuous learning. (IBM_Institute, 2025)

This system is capable of:

- Interacting with candidates around the clock
- Answering questions related to job opportunities
- Instantly analyzing résumés
- Recommending suitable jobs based on skills
- Guiding candidates throughout the application process

Second Pillar: Intelligent Screening Systems (AI Resume Parsing)

IBM uses advanced algorithms to analyze résumés, including: (IBM_Institute, 2025)

- Analyzing technical experience
- Understanding specialized technological terminology
- Accurately extracting digital skills
- Automatically classifying candidates
- Evaluating the degree of fit between the candidate's profile and the job

Third Pillar: Talent Optimization Analytics (Predictive Talent Analytics)

IBM employs predictive analytics tools to determine:

- The probability of candidate success
- Cultural fit
- Anticipation of future skill requirements
- Identification of competency gaps within the organization

These tools also contribute to:

- ✓ Building future talent acquisition plans
- ✓ Identifying the best global talent markets
- ✓ Supporting decision-making for HR managers

3-4 Stages of the Smart Recruitment Process at IBM

IBM adopted a sequential recruitment structure consisting of four stages: (IBM_Institute, 2025)

Stage One: Talent Discovery (AI Talent Discovery) The system searches the internet, LinkedIn platforms, GitHub, and company databases to identify suitable candidates. In this stage, artificial intelligence relies on recommendation algorithms, analysis of open-source projects, and evaluation of the candidate's digital footprint.

Stage Two: Intelligent Communication via Watson Assistant Candidates interact with the WCA system, which collects detailed data about their skills, interests, suitable job roles, and career expectations. This stage represents the core of the candidate experience and is what distinguishes IBM's model from those of other companies.

Stage Three: Intelligent Screening and Matching (AI Matching System) The system relies on classification algorithms, contextual linguistic analysis, and assessment of both technical and soft skills, assigning each candidate a compatibility score with the job.

Stage Four: Final Human Interviews Similar to Unilever, IBM does not eliminate the human element, as final evaluations are conducted by recruitment experts.

3-5 Impact of IBM's Recruitment Strategies on Attracting Digital Talent (Cole & Eda , 2025)

- **Improved Quality of Matching:** IBM has become capable of predicting employee success in job roles with a high degree of accuracy.
- **Reduced Time-to-Hire:** Recruitment time has decreased by approximately 30–50% due to automation.
- **Enhanced Candidate Experience:** The Watson Assistant feature makes candidates feel that they receive personalized attention.

Increased Talent Retention: This is attributed to the success of predictive models in assessing employee compatibility with IBM's organizational culture.

4- A Comparative Study of AI-Enhanced Recruitment Models: Strategic Performance Analysis of Unilever and IBM:

The transition from traditional recruitment to an AI-augmented model represents a strategic transformation that goes beyond mere technical automation; it aims to address high-volume bottlenecks and achieve precision in predicting future skills. The following table highlights this positive shift by comparing the Key Performance Indicators (KPIs) of Unilever and IBM, illustrating how these intelligent tools have enhanced operational efficiency, objective fairness, and delivered tangible economic returns that redefine the concept of excellence in Human Resource Management.

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Table (1): KPIs Dashboard for AI-Augmented Recruitment: A Comparative Analysis (Unilever vs. IBM)

KPI	Operational Concept	Unilever Performance (Focus: Speed & Screening)	IBM Performance (Focus: Precision & Internal Mobility)
Operational Efficiency	Reducing time and effort in the recruitment process.	Time-to-Hire: Massive reduction from 4 months to 2–4 weeks. Effort: Saved 100,000 human work hours annually.	Screening Time: Reduced resume screening time by up to 90% using Watson, allowing focus on final interviews.
Cost Efficiency	Direct and indirect financial savings from automation.	Cost Reduction: Lowered recruitment agency and advertising costs by relying on in-house digital platforms.	ROI: Saved approximately \$107 million in one year through improved hiring and talent retention.
Quality of Hire	Suitability of the candidate for the job and culture (Person-Org Fit).	Psychometric Fit: Used Pymetrics games to ensure candidate traits align with actual job requirements.	Internal Mobility: 80% success rate in filling roles internally, showing high precision in matching employee skills with new opportunities.
Diversity & Inclusion	The system's ability to remove bias and attract diverse groups.	Expanding Reach: Increased target universities from 840 to 2,600; increased ethnic/gender diversity by 16%.	Bias Mitigation: Watson algorithms are designed to detect and alert managers to bias patterns in word choice or selection.
Candidate Experience	The applicant's impression of the company during the journey.	Instant Interaction: 82% satisfaction rate due to receiving immediate feedback on game performance.	Transparency & Guidance: "Myca*" assistant provides clear growth paths, enhancing digital loyalty.

Source: Compiled by the author based on corporate reports from Unilever and IBM

Methodological note: The performance indicators (KPIs) were derived from the corporate social responsibility reports and financial reports of the two companies for the period (2022–2025). The researcher acknowledges the existence of limitations related to the difficulty of independently verifying these figures, due to the competitive nature and confidentiality of human resources data in the private sector.

* « **Myca**» One of the most prominent technological tools adopted by IBM in its strategy is the WCA (Watson Candidate Assistant) system, internally known as “Myca.” “Myca” is an intelligent assistant based on Natural Language Processing (NLP) technologies, functioning as a digital career advisor for candidates. It does not

merely receive resumes; rather, it analyzes applicants' skills and matches them with available opportunities that candidates may not identify themselves. Additionally, it provides immediate feedback on their skill gaps. This tool has directly contributed to improving the "candidate experience" and reducing the human effort required to guide talents toward the most suitable job roles.

It is evident from the table above that smart recruitment strategies vary according to organizational goals, despite their agreement on relying on technology:

1. Unilever Model (Wide-Scale Filtering):

At Unilever, artificial intelligence primarily functions as a large-scale filtering mechanism, with a strong emphasis on operational speed, efficiency, and volume handling. The main objective of this model is to manage massive applicant inflows efficiently, as reflected in the substantial reduction in time-to-hire (from four months to approximately two to four weeks) and the significant savings in human work hours. By automating early-stage screening and leveraging psychometric games, Unilever enhances the quality of hire while simultaneously expanding diversity and improving candidate experience. This approach is particularly effective for attracting junior digital talents, who value rapid, technology-driven, and interactive recruitment processes.

2. IBM Model (Deep Mining):

In contrast, IBM adopts a deep analytical approach, where artificial intelligence plays the role of a strategic advisor rather than a simple screening tool. The focus is on precision matching, internal mobility, and long-term talent optimization. Through Watson-based predictive analytics, IBM significantly reduces resume screening time while achieving high returns on investment and an internal placement success rate of approximately 80%. This model is especially effective in retaining senior digital talents, reducing turnover, and aligning employee skills with future organizational needs. Moreover, IBM's emphasis on transparency, bias detection, and guided career pathways strengthens employee trust and long-term engagement. Overall, the comparison highlights that Unilever prioritizes speed, scale, and external attraction, whereas IBM prioritizes precision, retention, and internal talent development, demonstrating that the effectiveness of AI-enhanced recruitment strategies is highly contingent on organizational strategy and talent objectives.

5- Ethical Challenges and Algorithmic Bias Risks (Ethical Challenges & Algorithmic Bias)

Despite the high level of efficiency demonstrated by artificial intelligence tools at both Unilever and IBM, their implementation is not free from serious ethical and legal concerns. These concerns primarily revolve around algorithmic bias and the transparency of automated decision-making.

1. The Inherited Bias Dilemma:

Artificial intelligence algorithms rely on learning from historical data. If past recruitment data within an organization are biased (for example, favoring men in technical positions), the algorithm may "learn" and perpetuate this bias—a phenomenon commonly referred to as "Garbage In, Garbage Out." (Jeffrey, 2018)

• Amazon Case (Benchmark Comparison):

It is worth noting that Amazon previously discontinued an AI-based recruitment tool after it began automatically excluding female candidates. This case serves as a critical lesson that both Unilever and IBM have sought to avoid. (Bellamy, Dey, & Hind, 2018)

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- **IBM’s Response:**

IBM developed tools such as AI Fairness 360, an open-source software toolkit designed to examine algorithms, detect bias, and mitigate it prior to system deployment. (Bellamy, Dey, & Hind, 2018)

- **Unilever’s Response:**

Unilever, through its partner Pymetrics, employs audited algorithms to ensure that game-based assessment outcomes do not vary by gender or ethnicity. The company also performs periodic data de-biasing to reduce systemic bias. (Unilever, 2024)

2. The Black Box Problem

Candidates—and sometimes recruiters themselves—often struggle to understand why an AI system accepts or rejects an applicant, raising serious concerns regarding transparency.

- **The Challenge:**

European legislation, particularly the General Data Protection Regulation (GDPR), requires the existence of a “right to explanation” for automated decisions.

- **The Response:**

IBM has increasingly focused on Explainable Artificial Intelligence (XAI), which aims to provide logical and interpretable justifications for Watson’s recommendations to HR professionals. (Cole & Eda , 2025)

3. Video Analysis Controversy (A Critical Issue)

Unilever (through its partner HireVue) faced strong criticism regarding the use of facial expression analysis in video interviews. Some scholars argued that such practices constitute pseudoscience and may disadvantage individuals who are introverted or come from different cultural backgrounds. (Unilever, 2024)

- **Recent Development (Important Update):**

In response to ethical pressure and regulatory concerns, HireVue announced in 2021 that it would discontinue the use of facial analysis algorithms and limit its assessments to audio and text analysis. This decision reflects Unilever’s strategic flexibility and its commitment to adapting recruitment practices in line with evolving ethical standards. (Hirevue, 2025)

Conclusion:

This study examined the strategic role of AI-enhanced recruitment in attracting digital talent through a comparative case analysis of Unilever and IBM. The findings demonstrate that artificial intelligence has moved beyond being a purely operational tool to become a strategic driver of recruitment effectiveness when aligned with organizational objectives. While both organizations relied on advanced AI technologies, their recruitment models differed substantially: Unilever prioritized speed, scalability, and external talent attraction, whereas IBM emphasized precision matching, internal mobility, and long-term talent optimization.

The results confirm that AI adoption significantly improves time-to-hire, quality of matching, and candidate experience, while also supporting diversity and inclusion objectives

when appropriately governed. However, the study also highlights that these benefits are neither automatic nor risk-free. Ethical challenges—particularly algorithmic bias, transparency limitations, and data protection concerns—emerge as critical factors shaping the sustainability of AI-driven recruitment outcomes.

Accordingly, the study concludes that the effectiveness of AI-enhanced recruitment strategies depends on the integration of ethical governance, explainable decision-making, and human oversight. Organizations that adopt a hybrid recruitment model—combining algorithmic efficiency with human judgment—are more likely to achieve long-term value, organizational legitimacy, and sustained success in digital talent acquisition.

Recommendations

Based on the findings, the study recommends:

1. Adopting "Hybrid Intelligence": Restrict algorithms to providing "Data-Driven Insights" while keeping final rejection/acceptance decisions within human governance to ensure contextual fairness.
2. Strategic Alignment: Match the tool to the talent tier; use Gamification for graduates and Predictive Analytics for professionals.
3. Institutionalizing Algorithmic Governance: Implement regular "Algorithm Auditing" to detect inherited historical biases and adopt Explainable AI protocols.
4. Enhancing Digital Candidate Experience: Invest in interactive AI (Chatbots) that provides feedback, preventing automation from becoming a psychological barrier.
5. Based on the aforementioned limitations, the researcher recommends conducting future field studies using a mixed methods approach to investigate the perspectives of rejected candidates and to assess the psychological and social impact of silent algorithmic rejection.
6. The study recommends that future research should be directed toward investigating the "psychology of algorithmic rejection" from the perspective of excluded candidates.

Discussion of Research Propositions in Light of Applied Results

Based on the comparative analysis of the Unilever and IBM case studies, the five research propositions established for this study were evaluated. The discussion led to the following findings:

1. Quality of Acquisition: The results showed strong support for this proposition. AI algorithms enabled Unilever to filter 1.8 million applications with high precision, shifting the focus from quantity to quality. Similarly, IBM's Watson system enhanced the ability to bridge skill gaps with an 80% success rate through internal mobility, confirming the effectiveness of AI in achieving "Intelligent Matching".
2. Bias Reduction: This proposition received partial support. While Unilever recorded a 16% increase in workforce diversity by excluding subjective human judgments in the early stages, the technology faced an "ethical challenge" regarding facial expression analysis. This led their partner, HireVue, to discontinue its use in 2021 to ensure fairness, confirming that algorithms are not inherently neutral but depend on the quality of input data.
3. Divergence of Strategies: The validity of this proposition was fully confirmed. Results varied between Unilever's "High-Volume Filter Model," which targeted speed and scale, and IBM's "Deep Mining Model," which focused on proactivity and talent retention. This

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divergence proves that tool effectiveness is strictly linked to its alignment with the organization's strategic objectives.

4. Candidate Experience: This proposition received tangible support in terms of "communication efficiency". Unilever achieved an 82% satisfaction rate due to instant feedback. However, a "humanization challenge" emerged, with some candidates resisting interaction with "voiceless" systems, suggesting that experience improvements remain more technical than emotional.

5. Operational Efficiency: This proposition found definitive quantitative support. Unilever saved approximately 70,000 work hours annually, while IBM achieved a direct economic return estimated at \$107 million. These figures confirm that AI transcends being a mere technical tool to become a driver of both economic and temporal efficiency.

Study Limitations:

Despite the significant findings reached by this comparative study, it faced several methodological limitations that should be taken into account when generalizing the results:

Reliance on one-sided sources: The analysis relied heavily on annual reports and official documents issued by Unilever and IBM, which may tend to highlight the strategic successes of intelligent tools.

Difficulty of independent verification: Due to the secrecy of algorithms (black box) and the competitive nature of human resources data, it was not possible to independently verify the accuracy of technical claims related to cost savings or matching quality reported by the companies.

Absence of field perspectives: The study was limited to the analysis of documents and secondary data, without including direct interviews with recruitment managers or surveying candidates' views on their digital experience, which may obscure important psychological or operational aspects of AI-enhanced recruitment processes.

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