



The Human–Agent Continuum in HR: Exploring Collaboration Models for the Future of Work

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Article Info

ISSN (online): 3049-1215

Volume: 01

Issue: 05

September–October 2024

Received: 23-09-2024

Accepted: 18-10-2024

Page No: 26-34

Abstract

The fast introduction of AI into HR is changing how companies find, train, and supervise their staff. The transformation will require an update on how we coach human specialists and AI systems to work together. The Human–Agent Continuum is proposed in this paper as a method for demonstrating how much control falls to humans against an AI, from complete human control to full automation. The framework shows how HR decision-making has adapted as new technologies have developed from straightforward automation to modern systems that look for patterns and run independently.

This research supports the alignment of AI with human tasks by linking key areas of HR, for example, recruitment, performance management, and compliance, with suitable collaboration models. It suggests essential things to consider when deciding on a model, such as affective sensitivity, possible ethical problems, and how it is. People are concerned that AI could lead to bias, describe how AI makes decisions, and cause us to shift responsibility to machines. We support hybrid HR models that add to human governance and emphasize ongoing ethical review. Overall, HR needs to use intuition together with AI, so the workplace will stay adaptable, fair, and trusted as the future unfolds.

DOI: <https://doi.org/10.54660/IJFEI.2024.1.5.26-34>

Keywords: Human-Agent Continuum, Human Resources Management, Artificial intelligence, Future of Work, HR Intelligence, Ethical AI, Hybrid Collaboration Models.

1. Introduction

Organizations are being transformed by adding artificial intelligence (AI), machine learning (ML), and intelligent automation to key areas of operation. AI technologies shape the human resource management (HRM) field in recruitment, measuring employee achievements, guiding staff development, and engaging employees (Tursunbayeva *et al.*, 2018; Chamorro-Premuzic *et al.*, 2019) ^[20, 7]. Because of pressure from digitalization and the need for flexible workforces, understanding how AI and people can work better together in HR is increasingly essential. Recent empirical studies show that AI delegation strategies—where tasks are dynamically shared between humans and AI—enhance both performance outcomes and employee satisfaction, underscoring the relevance of studying human-AI interaction models in practical workplace contexts (Hemmer *et al.*, 2023) ^[10, 17]

To illustrate this ongoing interaction, we propose the HumanAgent continuum—a tool for studying how human workers and AI work side by side in HR. Modern applied AI goes from systems where a human is entirely in charge and technology supports them to those where machines take care of decisions themselves with limited help from a human. Hybrid options occur where AI humans, people working together with AI, and AI guiding people are found. They show differences in who has authority, who oversees things, and what context is considered (Jarrahi, 2018; Wilson & Daugherty, 2018) ^[12, 23]. Moreover, corporate benchmark reports from studies highlight that over 60% of HR leaders increasingly pair AI agents with humans to optimize decision-making and ensure ethical oversight, emphasizing the continuum’s practical importance (Call, 2024) ^[6].

We propose introducing and assessing these models of human-AI collaboration with a focus on HR functions, offering a clear path for organizations to evaluate and use the suitable model relative to their service attributes. This inquiry is highly relevant given the complexity, more digitalization, and increased care for workers' rights in the Future of Work (World Economic Forum, 2020) ^[24].

Since technological changes are happening quickly, companies need flexible ways to use human wisdom and robotics. Because more employee data is available today, HR professionals must make challenging choices for society and workers (Binns, 2018) ^[3]. As a result, the Human-Agent Continuum helps guide how to introduce innovative changes ethically in HR. Overall, this piece bridges an essential gap in the study and practice of human resources by suggesting a continuum approach to how people and machines work together. The model enables HR leaders, technologists, and policymakers to react to changes in the future of work while elevating the organization's performance and the satisfaction of its employees.

2. Evolution of HR Technology to HR Intelligence

Technological progress in HRM shows how broadly organizations are being transformed by digital technology. From clerical automation to systems that can make decisions independently, HR technologies evolved through separate but still linked stages. This changed the approaches and resources used in HR and recast the profile of people working in HR. Realizing this pattern, placing the Human-Agent Continuum in context is essential as the right strategy for both human and artificial agents to collaborate.

2.1 HR Tech 1.0: Process Automation

The first stage of using HR technology in HR, branded as HR Tech 1.0, revolved around replacing repetitive office duties with software. At this time, companies also joined the Enterprise Resource Planning (ERP) movement by aiming to automate office tasks to improve efficiency and lower errors (Strohmeier, 2009) ^[18]. Management of payroll, benefits, attendance, and personnel records started with core HR systems. At that point, transaction efficiency was the main aim, with limited ability to analyze data or plan better.

Now, companies use payroll automation software and basic ATS systems, helping their HR departments complete many tasks with fewer mistakes and little manual involvement. Even so, decisions in HR were mainly made by humans because these tools were made to guide, not to dictate, how HR decides. Often, data was arranged and didn't change, mainly used to save information rather than analyze or predict it (Kavanagh & Johnson, 2017) ^[13].

2.2 HR Tech 2.0: Self-Service Platforms and Diagnostic Analytics

In the early 2000s, when internet connectivity, database technology, and cloud computing improved, HR Tech 2.0 appeared. At this stage, HR portals appeared that let employees gain access to HR services without needing assistance. Employees and managers gained more control over HR by introducing learning systems, online leave requests, and dashboard tools (Bondarouk *et al.*, 2017) ^[4].

At the same time, workforce analytics increased in importance, with organizations analyzing their HR information for functional patterns. Through descriptive and diagnostic analytics, HR leaders learned about past attrition

through numbers and exit surveys, influencing their decisions (Marler & Boudreau, 2017) ^[15]. A 2022 field study revealed that self-service platforms integrating AI-driven diagnostic analytics increased employee self-efficacy and engagement by 18%, highlighting the practical value of these early analytic systems (Vhora *et al.*, 2022) ^[22]. Although people still made the key decisions, these new tools pointed HR toward using data.

Furthermore, at this stage, HR moved towards better aligning with business objectives, relying on statistics to segment employees, design their workforce, and assess their results. However, most analytical models were not designed to adapt or predict outcomes in real-time.

2.3 HR Intelligence: Predictive, Prescriptive, and Autonomous Systems

AI, ML, NLP, and big data analytics are coming together to define the current HR phase, HR Intelligence. With these new technologies, organizations can examine past trends and suggest how to respond to upcoming events. In this way, AI-based models may identify employees about to depart, indicate who should be replaced, or offer learning programs based on their goals and present skills (Tambe *et al.*, 2019) ^[19].

HR departments are also reliant on autonomous agents. To welcome and educate employees, chatbots answer questions and review policies. NLP evaluates employee feelings in surveys, and intelligent systems suggest tailored training and courses (Leicht-Deobald *et al.*, 2019) ^[14]. Significantly, these technologies are not just tools for aid; they now evaluate, making it difficult for humans to control what an agent does. The capability to make essential decisions is now often shared or given over to automated systems.

As a result, HR professionals now have new responsibilities. It's not only their job to maintain systems; they also have to care for data, uphold ethical standards, and check the results provided by intelligent machines. As companies use HR Intelligence, their HR departments must understand digital tools, work with data, and consider ethics when using AI.

2.4 The Redistribution of Decision Authority

One of the most significant shifts is giving more control over decisions to automated algorithms than to humans. Initially, systems were used to help, never to replace, human judgment. Currently, résumé screenings, employee evaluation, and corrective actions are outsourced to agents, although each task relies on differing degrees of human supervision. Because of this, essential questions are being asked about accountability, transparency, and bias in how HR operates (Binns, 2018; Dastin, 2018) ^[3, 8]. Recent empirical evidence shows that organizations delegating performance evaluation tasks to AI agents with human oversight reported 23% fewer compliance errors and improved decision transparency, reinforcing the critical need to map decision authority along the Human-Agent continuum (Spitzer *et al.*, 2024) ^[17].

For this reason, the developments in HR technology mean more than just making things efficient. It involves a new way of relating humans and machines at work. The arrival of the Human-Agent Continuum shows how humans and artificial agents keep negotiating who does what. It does not always follow a straight path; when it exists, it is shaped by companies, HR teams, and cultures. Below, we will describe how this continuum works and outline how each HR service area can be best matched to the right collaboration models.

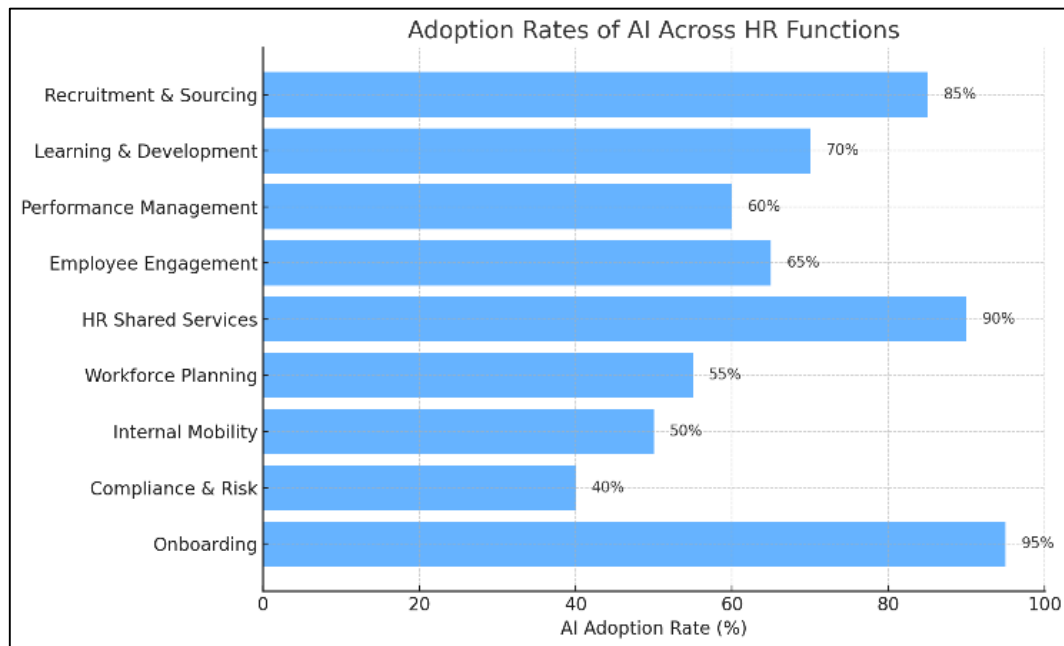


Fig 1: Adoption Rates of AI in HR Functions.

1. The Human-Agent Continuum: A Framework

When organizations use AI in HR, equating human and AI roles to a simple system where humans rule is impossible, but AI merely automates. It happens along a continuum where the amount of collaboration includes varying degrees of authority, decision-making, and familiarity with the situation based on the type of task involved, the development of the company, and questions of ethics. Here, we introduce the Human-Agent Continuum to outline five ways humans can collaborate with intelligent agents in HR.

3.1 Human-Led: AI as a Passive Support Tool

When using Human-Led AI, machines help by giving data or administrative support, but they don't affect decision-making. Full decision-making, understanding, and responsibility lie with the person. HR professionals can see attrition data on a dashboard but decide how to act based on their knowledge and experience. When activities need to consider sensitive matters, require empathy, or involve a specific background, the CNN model might be used, for example, in discipline or conflict resolution (Jarrahi, 2018) ^[12]. It reflects earlier ways in which HR technology automated tasks without replacing the role of human decision-making.

3.2 Human-Guided AI: Augmented Decision-Making

In this system, the human official is still responsible for final decisions. Since AI studies data, it provides helpful insights for companies, like choosing a few good candidates and suggesting adjustments in staff pay. Humans get assistance from AI analysis but still choose the final results of this model (Davenport & Ronanki, 2018) ^[9]. When making performance evaluations and choosing internally who moves where, judgment, fairness, and knowing the context matter most, HR professionals must check the reasoning behind AI's suggestions to make the whole process clear and easy to explain (Binns, 2018) ^[3].

3.3 Collaborative AI: Shared Decision-Making

We reach Collaborative AI on the continuum when humans and agents make decisions. AI agents use structured and

unstructured data to influence how things turn out, and human professionals confirm or improve these outcomes. With AI, candidate profiles can be examined by algorithms to fit the company's culture, and chances for success, and these evaluations guide interviews by hiring managers (Chamorro-Premuzic *et al.*, 2019) ^[7]. Working this way means trusting AI predictions and having human inputs dynamically included in system updates. Collaborative AI assures that the solution can manage fast and detailed HR processes.

3.4 AI-Guided Humans: Agent-Dominant Decision-Making

When data flows in this direction, AI applications guide the decision process, and people oversee the process to catch any exceptions. The agent can make decisions but keeps a "human override" feature. An example is an AI selecting training for employees based on their skills. Still, managers can modify this if they think teamwork or one employee's preferences need attention. This model has grown in learning and development, employee planning, and forecasting performance, where analytics are valued, and human expertise still helps. The main difficulty here is maintaining visibility and responsibility when the situation is critical or closely monitored.

3.5 Agent-Led: Fully Autonomous Execution

On the other hand, the Agent-Led model not only has AI systems that function alone but also needs little human supervision. The systems perform operations using predetermined rules or trained models, frequently dealing with data received at that moment. HR services can use chatbots for assistance, automated ways to help new staff join the company, and AI to manage cases (Leicht-Deobald *et al.*, 2019) ^[14]. Thanks to its efficiency, this model is suited to processes that are low risk, high in volume, and mostly follow the same rules. Where emotions or laws are involved, the risks rise, which means knowing your boundaries and fallback options is essential.

3.6 Visualizing the Continuum

HR teams can create charts or tables that link functions with different points along the continuum based on task details, the organization's location, and goals. The continuum doesn't force a set way of working but helps us respond to changes as situations and systems mature.

Organizations require a simple process for choosing and

applying the best human–AI teamwork method to various HR tasks. The table below shows the Human–Agent Continuum, dividing the models by how much AI agents and humans are involved and giving examples of when each is used. This method aims to support HR leaders and those designing systems in choosing the right technology based on what needs to be accomplished.

Table 1. The Human–Agent Continuum: Modes of Collaboration in HR Functions.

Model	Role to Human	Role of AI Agent	Example Use Case
Human-Led	Full control	Provides basic support	Conflict resolution
Human-Guided AI	Final decision-maker	Recommends options	Compensation planning
Collaborative AI	Co-decides	Co-decides	Recruitment & employee engagement
AI-Guided Humans	Monitor/Intervene	Primary decision-maker	Learning path assignment
Agent-Led	Minimal Involvement	Autonomous execution	Onboarding, case management

HR leaders can use this scale to check and match their human-AI programs, guaranteeing their organizations operate fairly and the team feels secure.

2. HR Services Mapped to Collaboration Models

With AI progressing, one challenge for HR today is picking the best model where humans team up with intelligent agents in each HR function. The need for emotional intelligence, sensitivity to laws, and strategy varies among all HR processes. So, deciding which service area belongs where on the Human–Agent Continuum is crucial for combining high performance and ethical standards.

The choice of a collaboration model for services depends on what is being done, the uncertainty of the task, how empathetic the work needs to be, and how risky it would be to automate. Using approaches from the industry, reviews of current practice, and research papers, this section outlines which HR tasks are associated with which collaboration models. The rationale is based on both technology and human principles.

4.1 Recruitment & Sourcing: Collaborative AI

AI plays a significant role in recruitment in today's HR field. Using AI, companies speed up the selection process by quickly looking at résumés, foreshadowing who might match specific roles, and helping with automatic communications. Still, people must review soft skills, judge how a team works together, and manage biases. Because of this, using Collaborative AI is the best way to handle this domain. The system screens candidates until it finds possible matches, and human recruiters ensure they are a fair fit for the company (Raghavan *et al.*, 2020) ^[16].

4.2 Learning & Development: AI-Guided Humans

In L&D, Artificial Intelligence can advise people on training paths that fit their skill needs, recent achievements, and career ambitions. Studies have shown that personalization in learning boosts learner interest and the ability to keep new information (Bersin, 2020) ^[2]. The AI-guided human model has human managers checking and adjusting the recommendations suggested by the AI agent. This approach guarantees that the organization's needs and essential project information are not missed.

4.3 Performance Management: Human-Guided AI

In this area, opinions, organizational preferences, and issues of fairness are closely linked. People are increasingly using AI for immediate suggestions, keeping track of productivity,

and forecasting how they will perform. Even so, overseeing students with only AI can lead to increased bias and reduced clarity of what is looked at in their work (Binns, 2018) ^[3]. So, the Human-Guided model is the best option. AI suggests actions for improvement, for example, when success goals aren't met, but the final assessment is left to people since it is about fairness and openness (Dastin, 2018) ^[8].

4.4 Employee Engagement: Collaborative AI

AI is used today to monitor employee feelings through surveys, email messages, and various communication channels. Such software detects whether people are experiencing job burnout or less job satisfaction as soon as they occur (Tursunbayeva *et al.*, 2018) ^[20]. Still, since engagement is rooted in how people interact, we must explain AI findings using human conditions. AI can identify patterns or issues in this field, after which HR practitioners investigate further and take appropriate action.

4.5 HR Shared Services: Agent-Led

Most HR-shared services involve repetitions and strict procedures, such as answering policy questions, processing benefits, or handling employee tickets. Today, robotics and workflows use artificial intelligence to manage these activities successfully and accurately (Leicht-Deobald *et al.*, 2019) ^[14]. Because these functions are consistent and low-risk, they are perfect for the Agent-Led model, where systems handle most tasks with little human help. Because of this, HR teams have more time for essential and relationship-building roles.

4.6 Workforce Planning: Collaborative or AI-Guided Humans

Predictive modeling makes it possible to predict required talents, skill shortages, and the organization's future. Even so, it's crucial to analyze and certify these forecasts' accuracy carefully. An approach known as Collaborative AI or, more generally, AI-guided humans should be used. AI agents project different scenarios using labor facts, and it is up to human executives (who consider the company's strategy, the cycle of various markets, and the industry situation) to decide on the next steps (Brynjolfsson & McAfee, 2017) ^[5].

4.7 Internal Mobility: Human-Guided or Collaborative AI

Many employers use AI to determine the best opportunities or locations for employees. Still, what happens in a person's career is influenced by teamwork, potential for leadership, and the things employees wish to achieve. Thus, models that

collaborate with humans are the most appropriate choice. AI presents the list of matches and candidates, but it is up to HR and managers to judge if they will fit and how fair these opportunities are (Wilson & Daugherty, 2018) ^[12].

4.8 Compliance & Risk: Human-Led or Human-Guided AI Compliance and risk management can have legal consequences, as having too many false positives or relying too much on automation may lead to significant issues. Because these areas present legal and ethical issues, the best choice for AI in such cases is either Human-Led AI or, at most, Human-Guided AI. To remain in compliance with laws and morals, humans have to be in charge of making decisions (Leicht-Deobald *et al.*, 2019) ^[14].

4.9 Onboarding: Agent-Led

For onboarding, you organize documents, make orientation schedules, collect policy acknowledgments, and provide access. The work involved in these cases is straightforward and rarely confused, so it works well with Agent-Led. With the help of AI and chatbots, new employees are guided through the same onboarding process, freeing the human workers in HR to concentrate on relationships and fitting into the company culture (Tambe *et al.*, 2019) ^[19].

In summary, every HR role brings specific issues and ways for people and robots to work together. The following section will mention factors to consider when selecting the best AI model for HR, using a well-defined approach to help in this decision.

Table 2: Mapping HR Services to Collaboration Models

HR Service Area	Most Viable Model	Justification
Recruitment & Sourcing	Collaborative AI	AI filters + human judgment for cultural fit
Learning & Development	AI-Guided Humans	Personalization with strategic human review
Performance Management	Human-Guided	Subjectivity, bias sensitivity
Employee Engagement	Collaborative AI	Sentiment detection + human interpretation
HR Shared Services	Agent-Led	Routine, rule-based, low risk
Workforce Planning	Collaborative	forecasts + strategic validation
Internal Mobility	Human-guided	Requires employee's aspirations + managerial context
Compliance & Risk	Human-Led	Legal exposure, ethical scrutiny
Onboarding	Agent-Led	High volume, low ambiguity

The image below illustrates the collaboration models across HR functions.

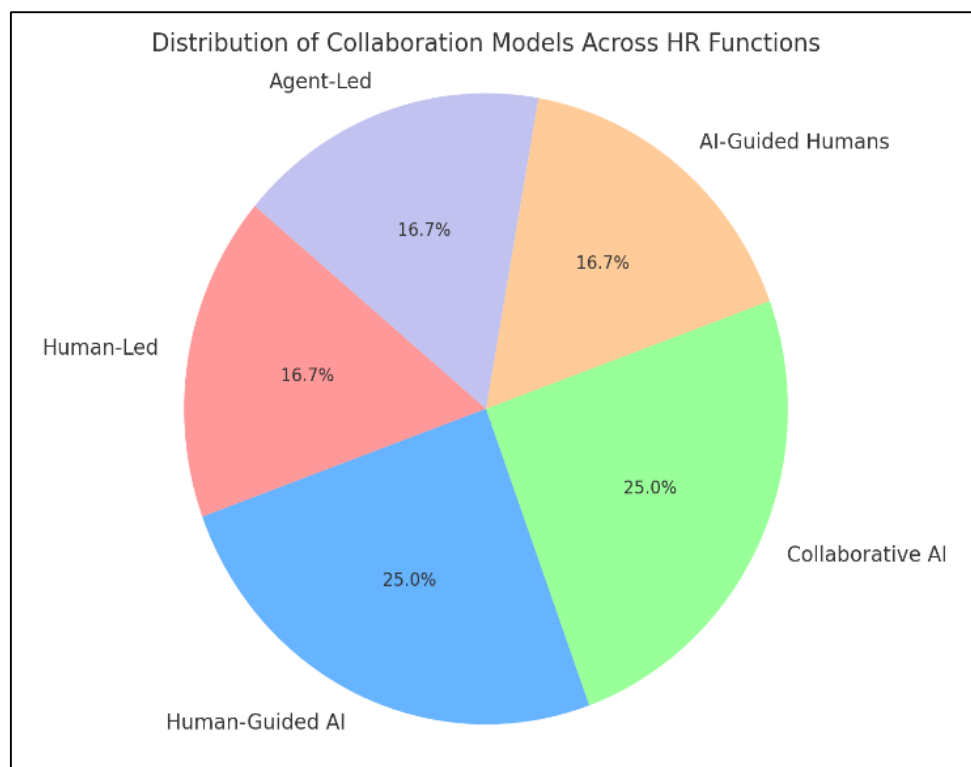


Fig 1: Distribution of Collaboration Models Across HR Functions.

3. Criteria for Model Selection

Using artificial intelligence (AI) in HR is different for all organizations. Based on the Human-Agent Continuum, the HR activity type helps determine which collaboration model will be most effective and beneficial. Appropriately choosing a model means looking at the environment, not only at what

is technically possible. In this section, we suggest six criteria that organizations should consider to determine which approach of human-agent teamwork fits their HR task well: (1) task complexity, (2) emotional and situational awareness, (3) risk of ethical and legal issues, (4) requirement for personalization or understanding, (5) how healthy decisions

can be explained and (6) how advanced the HR team and digital setup are.

5.1 Task Complexity

When discussing task complexity, we mean the mental, process-related, and situational difficulties required to handle an HR task. Many complicated jobs require joining data sources, relying on opinion, and long-term planning. For example, when deciding on leadership succession or workforce planning, items like forecasting, considering many options, and studying culture are difficult to automate (Brynjolfsson & McAfee, 2017) ^[5].

Autonomous systems, by comparison, can easily manage tasks like enrolling in benefits or reviewing time off. The high level of task complexity tends to lead people to choose Human-Guided AI or Collaborative AI models to ensure the recommendations fit and align with the situation (Jarrah, 2018) ^[12].

5.2 Sensitivity to Human Emotion and Context

Among HR's duties are helping with challenges such as disciplinary matters, dealing with employee complaints, promotions, or layoffs, and using sharp interpersonal understanding and kindness in communicating with each situation. Although AI can deal with emotions very well, it still can't respond to feelings like humans can, despite the rapid growth in affective computing (Binns, 2018) ^[3].

Under these circumstances, models that are guided or operated by humans are most suitable. To illustrate, while AI can notice performance challenges, it is still essential for a human manager to handle the feedback and follow coaching, as that manager needs to consider emotions, relationships, and moods among colleagues (Dastin, 2018) ^[8]. An error at these times can result in employees feeling less secure, less motivated, or even facing legal consequences.

5.3 Ethical and Legal Risk

AI decisions made in HR can create significant ethical and legal problems related to hiring, promotional processes, dismissals, and supervising compliance. These choices can affect people's working lives, feelings, and earning abilities. In some cases, AI systems that use obscure or owned algorithms by mistake transmit bias and could break the rules set for data security.

This is why we need models in these situations that guarantee that humans remain in control. This often becomes known as Human-Led or Human-Guided AI. Consequently, businesses have to ensure their audit procedures are strict and document actions taken by employees to show they follow both the GDPR and developing AI regulations (Leicht-Deobald *et al.*, 2019) ^[14].

5.4 Need for Personalization and Empathy

Supporting career growth, coaching, and promoting internal shifts within the company require knowledge of a person's career ambitions, character, and aims. Though AI can pinpoint what employees need to learn, it lacks the background of real-life experiences to offer helpful feedback (Tursunbayeva *et al.*, 2018) ^[20].

For this reason, models that involve people and computers working together are the most appropriate. AI agents allow companies to provide personalized recommendations to many, but humans adapt them accordingly to informal factors, changing team preferences or personal ambitions.

Building trust and good relationships in HR situations where staff interact often depends highly on empathy (Wilson & Daugherty, 2018) ^[12].

5.5 Explainability and Transparency

Explaining its outcomes is essential if AI is called upon to make higher-level decisions. When AI systems produce outputs that can be presented to people, that's known as Explainable AI (XAI) (Binns, 2018) ^[3]. This is important in HR to gain employee trust, support ethical decision-making, and meet official guidelines.

Systems that use completely hidden processes and internal workings can increase the danger of mistrust, struggle for acceptance, and lawsuits. For this reason, clear explanations are essential in reviews or grievance situations, so Human-Guided AI is more useful. Organizations can use algorithms to explain and discuss their decisions using computer analysis and internal reasoning methods (Davenport & Ronanki, 2018) ^[9].

5.6 HR Team Maturity and Organizational Digital Culture

The overall digital proficiency of HR and the larger company plays a significant role in deciding if more autonomous approaches are achievable. A team that understands data comprehensively has used AI tools before and follows strong governance measures is better able to use AI-guided or Agent-Led models (Bersin, 2019) ^[1].

When HR staff don't trust robotics and the company's digital systems are broken into different parts, putting too much power into automation can result in system failures and worker resistance. Using first Human-Guided AI and then Collaborative AI gives the best results for sensitive issues. Additionally, making sure that staff are trained and ready for change helps achieve the project's aims in the long run.

In conclusion, finding the proper model for people and machines to work together depends on the organization's values, tasks, and workers. The following part of the document examines the risks and ethical factors related to agent-driven decisions and provides a warning regarding the use of AI in HR environments.

4. Risks and Ethical Considerations

Bringing AI into HR systems increases effectiveness in many areas but also creates interesting ethical and operational problems. Especially when AI makes bigger decisions, these risks become more serious. Lacking proper defenses, organizations may encounter operational errors, issues with regulations, image harm, and the loss of employees' trust. We look at the main ethical issues linked to agent-driven decisions in HR, such as bias and discrimination, placing too much trust in machines, lack of clarity in explained decisions, following regulations, and looking after private data.

6.1 Bias in Agent-Driven Decision-Making

Often, AI in HR depends on workplace data that already contains clear signs of bias. Deploying these systems without careful monitoring can help them become part of the system's discrimination. Amazon found their AI recruitment system was unfair to women because it repeatedly penalized résumés with the word "women's" due to the data used during its training (Dastin, 2018) ^[8].

Deep learning systems make it challenging since their decisions may be accurate, but it's often hard to understand why. HR cannot tolerate practices that are this vague. All

hiring, promotion and performance decisions should be both fair and clearly seen to be fair. If the fairness of algorithmic decisions is not monitored, organizations face trouble with ethical behavior and may be taken to court for discrimination (Raghavan *et al.*, 2020) ^[16].

6.2 Over-Reliance on AI and Loss of Human Oversight

There exists a chance that when AI is autonomous, HR professionals won't challenge what the technology recommends. Sticking to what an AI model shows can sometimes cause harm, mainly when it is applied outside the scope for which it is proven (Jarrahi, 2018) ^[12].

Dealing with situations like grievances, handling layoffs, and breaking compliance depend greatly on human understanding. Dependence on AI alone can disconnect ethical applications from their use. Therefore, keeping human-in-the-loop governance is necessary in Agent-Led models to maintain accountability and value matching.

6.3 Explainability and Trust in Automated Outcomes

For AI in HR systems to work well, employees must trust the process. But when things feel opaque and unpredictable, trust levels fall. This issue appears in "black-box" models, where telling non-technical audiences why an outcome happened is quite difficult (Binns, 2018) ^[3].

Ethics require employees involved in HR to describe decisions affecting their jobs and personal lives. As a result, using XAI is important so that the results from systems are easy to explain and interpret. Organizations should explain how communication with AI decisions should happen so employees can respond if they have concerns, maintaining procedural justice (Leicht-Deobald *et al.*, 2019) ^[14].

6.4 Regulatory and Compliance Implications

Both governments and regulators are paying more attention to AI's role in hiring and work. The European Union (EU), California, and Canada have passed laws that make it necessary to use data carefully, be transparent about algorithms, and hold those who make decisions accountable. People have the right, under Article 22, to be excluded from decisions based only on automated sources. Because of this limitation, full autonomy in Agent-Led approaches is possible primarily only in routine tasks like data analysis and not in major HR choices such as recruitment or removal. Furthermore, new standards for AI—such as those described in the EU Artificial Intelligence Act—consider the employment of AI tools as high risk and require extensive documentation, effect assessments, and supervision by people (Veale & Borgesius, 2021) ^[21].

6.5 Data Privacy in Employee Analytics

AI typically uses a lot of personal and activity data in HR, including logs, email details, and both biometric and psychometric information. Collecting and using these data harms user privacy and might increase surveillance. Private information can often be exposed when anonymized datasets are combined with other public details, which is a violation of trust (Tursunbayeva *et al.*, 2018) ^[20].

Organizations should operate according to the rules of purpose limitation, data minimization, and informed consent. To do this, companies should only collect the data they really need, outline the purposes for data use, and use strong security methods. Failing to have adequate safeguards may seriously harm both employee trust and the legitimacy of the

organization.

5. Recommendations and Future Roadmap

To benefit from involving agents in Human Resource Management (HRM) and prevent related risks, organizations should create purposeful hybrid use instead of just adding artificial intelligence to traditional HR practices. The kind of autonomy should depend on how sensitive the task is, what the organizational culture is like, and the rules of the relevant fields. Here, you'll find suggestions and a clear path for HR leaders to set up, manage and improve AI-based HR systems within the Human-Agent Continuum.

7.1 Design Hybrid Models Aligned with HR Service Types

The initial advice is to deliberately set up the AI-human team based on the characteristics of every HR service. I previously pointed out that different models are needed for different contexts. Companies need to apply the continuum framework to decide what amount of emotional intelligence, regulatory oversight, and personal options are important for various tasks.

Onboarding and ticketing are the best places for AI with agents to guide, whereas HR departments do well with AI that helps people or interacts with both people and technology. In order to improve, HR departments should start using AI in roles and tasks, not just across the entire department (Jarrahi, 2018) ^[12].

7.2 Develop AI Fluency Across HR Teams

AI doesn't only change technology; it also requires people to adapt their skills. One main difficulty with adopting technology is that many HR professionals are not confident with digital tools. Since this can happen, companies should have ongoing training programs to show HR personnel how to work with AI, interpret the data it produces and how to recognize when artificial intelligence should be overridden (Bersin, 2019) ^[1].

Besides tech skills, people with AI fluency can evaluate information and stand up against algorithmic problems or biases. In other words, people from HR will no longer sit by and wait to be helped by AI, but instead will help design and manage its functioning to ethical standards.

7.3 Establish Human-in-the-Loop Governance Mechanisms

Businesses should create procedures that involve humans in critical tasks. Because of these arrangements, a person checks and can change or confirm the decision of AI before a risky action is taken—for example, when rejecting a candidate, giving out discipline or flagging non-compliance.

They are used for reasons that are practical and follow ethical principles. They offer practical help by reducing the chance of false positives and by avoiding algorithmic problems. They preserve human dignity and responsibility when making choices that touch people's lives (Binns, 2018) ^[3]. A writing of HITL governance in the HR rules and continuous auditing of it allows digital tools to help employees rather than being extra work.

7.4 Continuously Audit for Fairness, Transparency, and Relevance

AI systems are not fixed, but can be changed. With time, businesses find their models drifting, targets change and their data matures. As a result, organizations must regularly check that their AI systems meet fairness, transparency and

relevance standards. Both the performance and ethics of the system (like its accuracy, speed and fairness) should be studied in these audits.

KPIs are important and they are needed to support trustworthiness and inclusivity too. In fact, checking whether AI tools in hiring tend to exclude or give preference to certain demographic groups is necessary to stop discrimination (Raghavan *et al.*, 2020) ^[16]. For these audits to be effective, groups from HR, legal, ethics and IT should participate to assess issues and offer different ways to move forward.

7.5 Build Agility into Operating Models

Because workplace environments and AI keep evolving, organizations ought to use agile HR models that make it simple for people to keep adapting along the Human-Agent Continuum. Instead of encountering one collaboration model for all tasks, HR systems ought to change according to the unique situation. When there is a crisis, such as when jobs are reduced or merged, the automated onboarding might need extra people to guide employees through their feelings.

To build Agile AI systems, the AI architecture is modular so roles of humans and AI agents can be adjusted and immediate decision making involves considering legal obligations, past history or the general mood of employees. By doing this, HR greatly improves its responsiveness, caring for employees and ethical positioning in all types of circumstances (Wilson & Daugherty, 2018) ^[12].

6. Conclusion

Using artificial intelligence in HR management is now important for organizations dealing with the Future of Work, as it is not seen as speculation but an urgent need. But, on the other hand, we must value the unique abilities of humans in situations that need judgment, care and careful ethics. This article has described and explained the Human-Agent Continuum which outlines different forms of collaboration between human specialists and AI tools in human resources. If HR functions are mapped to different types of collaboration, where some tasks are led by humans and others by agents and if certain criteria such as the complexity of the task, are important, the continuum becomes a useful choice tool. It brings up the point that there are some HR parts that don't fit well with automation and that other factors need to be considered to pick a suitable way for HR teams to team up.

In the end, combining human judgment with technology makes the most sense for HR instead of only one approach. AI in this scenario adds power to humans and is controlled intentionally by them, to ensure accountability. Businesses that flourish will bring more knowledge of AI in their teams, create flexible models for fast response and ensure rules and processes support fairness, openness and faith in the system. The Human-Agent Continuum is more than a technological idea; it reflects changes in philosophy and organizational structure. The concept calls on HR leaders to lead the way in making AI flexible, ethical and suited to the well-being of employees.

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