HUMAN RESOURCE MANAGEMENT IN THE ERA OF ARTIFICIAL INTELLIGENCE: FUTURE HR WORK PRACTICES, ANTICIPATED SKILL SET, FINANCIAL AND LEGAL IMPLICATIONS

Fadi Sakka, Hamdan Bin Mohammed Smart University
Mohammed El Hadi El Maknouzi, Abu Dhabi University
Hicham Sadok, Mohammed V University in Rabat

ABSTRACT

This paper undertakes a three-pronged overview of the introduction of artificial intelligence (AI) to the human resource management (HRM) function. The first prong of analysis maps the promise of AI-assisted decision-making, which is bound increasingly to release human resources (HR) staff from routine operations and enable their more selective focus on strategic tasks. The second prong is to do with the changing position of the HR function within companies. HR departments are bound to become centres of strategic decision-making, as a consequence of AI enabling a shift from a reactive to a proactive posture in organisational problem-solving. The third prong concerns the financial consequences of AI adoption (with more ubiquitous decision-making being undertaken on cost-benefit principles) and a sketch of the legal questions connected to anti-discrimination concerns and to regulatory policy. The considerable promise of AI for organisational performance will only hold up when it is carefully followed through at the level of implementation. This will demand appropriate hiring, reskilling of HR staff (to act as effective intermediaries between machine-generated assessments and human stakeholders), and a policy of internal transparency to ensure AI does not become an instrument of control—but a facilitator of trust and commitment on the workplace.

Keywords: Artificial Intelligence, Human Resource Management, Reskilling, Cost-Benefit Analysis, Regulation, Virtual Work.

INTRODUCTION

Significant transformation sat the level of economic organisation, technological capacity, and social processes are bound to be reflected in the history of human resource management (HRM). The development of artificial intelligence (AI) constitutes one such transformation with wide-ranging implications, particularly for such fields as engineering, industrial organisation, and HRM. The promise of AI is that automated devices like machines, robots, and software might be able to perform routine tasks that were traditionally undertaken by humans (Danysz et al., 2019; Scherer, 2015).With specific reference to HRM practices, this means that a number of activities (like recruitment, performance management, determination of compensation and benefits, provision of training and development) could become automated to a considerable extent in the near future.

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This context creates an urgency to develop new sets of skills geared to interaction with technology that's been equipped with AI. For instance, in recent years, companies specialising in enterprise resources planning (ERP) software have begun to build AI modules to automate various business functions. This demands, in turn, that human staff (employed by the company using the software) must either help design or, at least, guide the AI algorithm. In the field of HRM, this has meant companies have found themselves short of staff with enough expertise in human resource (HR) data science to interact successfully with the algorithms integrated in business software.

In common parlance, AI has been dubbed as *"computer intelligence"*, *"human intelligence emulation"*, or *"mind machine"*, among others. Carrel's (2019) description is often rehearsed, whereby AI is 'the science and engineering of making intelligent machines'. An example of 'intelligent machine' would be a wrist band for which Amazon has filed two patents that tracks employees' activities, tasks, and location in a warehouse. Beyond simply tracking these data, the band is able to respond to the data it captures by vibrating, e.g., whenever a worker accesses the wrong shelf or finds him-/her in an incorrect location. The aim of a machine like this is to improve overall productivity by minimising average error and enhancing workers' efficacy (Oliveira, 2018; Delfanti & Frey, 2020).This is an example of how AI can help make machines that are responsive to their surroundings, as though they could think (Bryndin, 2019; Carrel, 2019; Paschen et al., 2020).

The implementation of AI takes a number of different forms. One possible form is robotics automation, which helps workers perform routine or repetitive manual tasks. Another form of AI implementation is machine learning, which allows computers to function without the need to implement recursive scripts (Soni et al., 2019). Instead, machine learning allows computers to collect and interpret input directly, analyse work and business processes, detect and translate languages, as well as design and automate production. An example of the power of machine learning would be the prototype of a self-driving car that is capable of discharging such tasks as picture acknowledgement, deep learning, and machine vision (Ernst et al., 2019; Soni et al., 2019).

It goes without saying that AI is bound to have a growing impact on employment in the coming years (Nankervis et al., 2021; Wisskirchen et al., 2017). A July 2018 economic forecast for the UK, issued by Price Waterhouse Coopers (2018), is one in a line of warnings that AI might foreseeably make certain tasks—and the associated jobs redundant. It is nevertheless worth taking any predictions with a grain of salt, since these might be overestimated. The risk of overestimation is attested, for example, by Carter (2018), who revises projected AI-related job loss by 2037 downward—from 30% to 20%.There is also a countervailing argument, that AI might create as many new jobs as it will make redundant. In this realm, initial estimates for the pay-out of AI have been progressively refined in relevant literature (Vrchota et al., 2020). For instance, Yano (2017) reports projections of employment growth in the range of 22% (healthcare sector), 16% (professional, research, and technological services), and 6% (education). Carter (2018) specifically envisions that new jobs might be created around growing technologies like AI, robots, drones, and driverless cars. Even if we grant plausibility to this argument, it is however unlikely that job loss and job creation would occur simultaneously: there is bound to be an adjustment window. In order to tackle this anticipated transition, Bhardwaj et al. (2020) suggest that re-skilling and up-skilling workforce will therefore become a high priority for company executives and government agencies.

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In this paper, we attempt to explore this suggestion further, by sketching an exploratory picture of the competencies that will emerge out of AI adoption—with particular reference to HRM functions within companies. Specifically, we attempt to track the qualitative differences that are to be expected at the level of HRM skills and competences, before and after the implementation of AI. We also chart the broader effects of AI implementation on the organisational mission of HR departments, and their possible reverberations on the allocation of financial resources and legal responsibilities. With this end in view, Section 1 will map the impact and promise of AI on four traditional HRM functions, namely: talent acquisition, performance management, training and development, and employee motivation and engagement. Section 2 explores possible changes in the organisational status of the HR function, brought about by the adoption of AI, and goes on to sketch the anticipated set of HR staff competencies that will be needed fully to inhabit the transformed organisational role of HRM. Finally, Section 3 discusses the cost-benefit implications of introducing AI in the field of HRM, as well some legal questions that might need addressing at the level of HR bylaws and protocols—to avoid, for instance, discriminatory decisions by algorithms. This is followed by a conclusion summarising our main findings and laying out some recommendations for HR executives and regulators.

The Impact and Promise of AI on HRM Practices

The concept of AI was first put forth at a conference at Dartmouth College, back in July 1956 (Reilly, 2018). The term was used by the pioneers of this field to portray the essence of intelligence—as the capacity to imagine and to think (Reilly, 2018). Further research in AI has been geared to the goal of making robots capable of telling the difference between their own operations and the external world (Carrel, 2019). The domain of AI is cross-disciplinary, drawing on inputs from a range of disparate fields, like systems thinking, probability theory, decision theory, management science, and linguistics. Paschen et al. (2020) suggest that AI today has the potential to mimic human intelligence, from performance of repetitive manual tasks, all the way to higher-level cognitive activity, including the pursuit of understanding, the solution of puzzles, and the making of choices between alternatives. These advances have received practical implementation by means of various technological innovations. As a consequence, the integration of AI with technology has raised a number of new issues around data protection, algorithmic prejudice, and integration with the workforce (Nankervis et al., 2021).Finally, these questions have sparked additional rounds of innovation in automation, robotics, and deep learning, so as to make AI-powered technologies more humane.

HRM is the generic name for a range of different practices connected with the human factor in organisations. It encompasses various procedures for managing human skills and competencies: from the acquisition of talent, to the management of employees, to the optimisation of their performance (Bhardwaj et al., 2020; Soni et al., 2019). In relation to such procedures, HR departments can be supported by AI applications to help build stronger teams, reduce employee turnover, and enhance employee experience (Danysz et al., 2019). Among the areas of HRM practice where AI has yielded the strongest outcomes are: performance management, workforce planning, people analytics, virtual assistants for self-service/HR service delivery, career patching, leadership, and coaching (Berhil et al., 2020). More generally, AI is reshaping how corporations manage their employees, create HR schedules, measure productivity,

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grow efficiency, provide instant feedback, and improve overall employee participation. The following sub-sections go into these initial considerations in greater detail.

Talent Acquisition and Management

In a service-based economy, where labour is an essential asset, AI-powered decision support can provide an important form of competitive advantage (Nawaz, 2019; Semmler & Rose, 2017). Bryndin (2019) has recently reported the example of a company that used AI to sift applicant videos according to personal analysis parameters, helping the HR function quickly sort hundreds of applicants. AI applications can also assist HR departments in monitoring crucial indicators in real time (Dhanpat et al., 2020; Geetha & Bhanu, 2018). This is no small contribution, since the ongoing review of indicators concerning the workforce can help track variables like personnel motivation, and thereby help secure ongoing commitment through the development of supportive compensation policies.

These introductory considerations substantiate the claim that AI can be a useful tool for assisting HR departments in their mission of securing and developing talent for the organisation. A possible starting point for mapping the impact of AI is the field of talent acquisition. This is a function of organisational objectives (Jatobá et al., 2019a)-in the sense that an organisation's priorities narrow down the roles that are required and the profile of suitable applicants (Carter, 2018). Developing a long-term human capital strategy also presupposes the adoption of a talent management program for existing employees (De Mauro et al., 2018; Pandya, 2019). Talent management involves the implementation of coordinated methods or processes intended to enhance people's continual professional development, to preserve existing talent, and to adjust to current and future organisational needs.

Methods of talent acquisition have been undergoing a steady transformation in the context of a globalised business environment (Bryndin, 2020; Yawalkar, 2019). For example, the use of technology and AI has enhanced the information processing capabilities of HR departments. Talent acquisition software can now help scan, read, and assess applications. A study by Ahmed (2020) reports that software-assisted recruitment practices can help narrow down the applicant pool by 75%. This is a substantial advantage, because it allows to focus the task of evaluation on a smaller pool of eligible candidates. These kinds of outcomes significantly raise the efficiency of recruiting decisions.

Other time-saving applications of AI to an organisation's HR function involve the use of robots to address common staff queries, e.g. figuring out the balance of an employee's remaining annual leave (Savola & Troqe, 2019). Offloading routine interactions helps focus the attention of an HR analyst on problems involving a greater degree of nuance (Abdeldayem & Aldulaimi, 2020; Berhil et al., 2020). These are significant advantages made possible by AI adoption, as they focus the resources of HR departments on strategic tasks, and thereby reduce the cost of poor recruiting decisions. Meanwhile, AI applications can take care of routine information-processing functions, such as the review and initial selection of applicants, or addressing frequently asked questions.

A regularly updated personnel database also allows managers to have access to the most appropriate individuals for different tasks. This, because it can form the basis for charts drawn up through predictive analytics tools, which track the sort of skills the organisation needs over time. This sort of informational resource might be crucial to identify instantly those profiles that are

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most in tune with the nature of organisational needs at any one time. More generally, AI-based predictive analytics could foreseeably supply forecasts on the basis of company records, in response to appropriate query parameters (Johnson et al., 2019). Managers could for example use AI to improve the forecasts at their disposal, on such matters as: potential vacancy rates, workforce turnover, fluctuating levels of employee commitment, rates of internal complaints, onset of project execution incidents, and other potentially unforeseen problems that are expected to be time-consuming (Bhardwaj et al., 2020; Jackson, 2019). Similar tools, to aid predictive talent assessment and to supply risk models for executive decision-making, can revolutionise the role HR department's play in managing organisational workforce. Nevertheless, human intervention would still be needed to fine-tune these AI tools, for instance in building robust health and safety risk models (Ivanov & Webster, 2017).

Last, but not least, AI can help design personal on boarding activities for new staff (Garg et al., 2018). On boarding protocols typically serve to introduce new hires to an organisation's strategic priorities, culture, management team, business model, as well as levels of work commitment and expectations (Wisskirchen et al., 2017). AI can help devise more tailored on boarding processes for specific roles, and this—in turn—would help improve retention rates, since these are positively correlated with well-organised on boarding procedures.

Performance Appraisal

Employees that display high levels of on-the-job efficacy, productivity, and participation are a source of value added to an organisation (Howard, 2019; Mahmoud et al., 2019). At the same time, these variables are difficult to assess from the company's side using conventional success metrics, since these are often too crude.AI can enhance the granularity of performance appraisal by HR administrators by making it possible for them to assess performance over smaller ranges of observation (Bhardwaj et al., 2020; Mahmoud et al., 2019). Target-setting over smaller increments of activity is simpler to follow and analyse, and can therefore contribute to more precise interventions for improving cumulative performance.

One of the main tools for optimising work performance is through developing a work schedule that spells out targets and introduces windows for the appraisal of results. AI can play a role in quickly comparing performance outcomes with initial targets (Radonjic, 2019; Rastgoo, 2016).Greater efficiency in performance appraisal can result in more effective motivational strategies by specifying appropriate rewards (Anderson et al., 2018). For managers, AI can improve the accuracy of the data on which they rely for making employee performance assessments decisions (Williams, 2019). In particular, rather than matching performance with targets only at the beginning and end of a specified weekly/monthly/quarterly/yearly timeframe, AI can make this process ongoing and real-time.

Currently, organisations routinely store pay and remuneration data. AI could help query those data more effectively, particularly in large organisations (Semmler & Rose, 2017). Secondly, greater refinement in processing remuneration data—as would be allowed by AI—would help improve the perception of organisational equity, which in turn helps boost organisational performance (Sakka et al., 2020).

Training and Development

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Training is particularly crucial to keep abreast with the pace of technological development (Tambe et al., 2019). AI can play a role in this respect, at the level of scheduling, arranging, and coordinating virtual training activities, such as online courses and remote classrooms. Beyond these logistical tasks, AI can also play a higher role in assigning employees to tailored training activities, based on their personal needs. Studies suggest that the typical worker has less than 25 minutes (weekly) to devote to continuing professional development: this makes it particularly vital to optimise the effective use of such time—a task where AI can be of use (Scherer, 2015; Vrchota et al., 2020).

Employee databases can, if properly queried, be a source of useful information for directing workers to appropriate training opportunities, since they store information on the specific expertise and competencies of different employees (Wright & Schultz, 2018). Such databases can also be queried to track the impact of any training in the employee's subsequent history within the organisation.

Finally, AI can improve talent retention, by making it possible to respond proactively to staff members' needs. In particular, AI-assisted applications can be used to assess individual traits, compose a richer picture of an employee's performance, and so do justices to hard-working staff (Tambe et al., 2019). By paying attention to these data, talent retention difficulties can be caught before they manifest.

Employee Motivation and Engagement

AI provides the information processing muscle to parse and learn from big data, mobilising vast and diverse datasets, for instance several terabytes' worth of professional biographies and performance appraisal histories. This is bound to result in more effective management interventions, as well as in more fitting opportunities for professional development in line with individual needs (Margherita, 2021). AI tools are therefore bound to play a significant role as a *"connective tissue"* between organisations and talented workers, by increasing the precision of information and the accuracy of matching (Reilly, 2018).

An emerging field in this respect is that of *"emotion analysis"*, which is based on processing data from employees' social media activity to gauge their positive and negative feelings, as well as their possible biases (Williams, 2019). For instance, user responses can be arranged into a lexicon, so that positive or negative scores might be associated to specific expressions, as being disclosive of particular emotions (Dhanpat et al., 2020). An intelligent use of such tools could put emotion analysis software at the forefront of HRM practice, in order to enable organisational responsiveness to employee sentiment and motivation.

As we come to the end of the first part of the paper, it is useful to note the considerable promise attached to AI adoption for improving HRM function within organisations. However, there remains a gap between the fulfilment of such promises and on-the-ground experience with AI. The increase in information-processing power that AI would afford requires a matching increase in the capability of HR staff to query and interpret AI applications meaningfully (Bhardwaj et al., 2020). This is where there is an extant skills gap. These considerations set the stage for the focus of the next section, which looks in greater detail at the anticipated skill sets that AI introduction would require organisations to have at their disposal.

Anticipated Skills for Governing AI in HRM Processes

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AI applications impact HRM by making it possible to shift from a reactive to a proactive posture in relation to organisational matters. In response to this transformation, dedicated forms of knowledge and skill are emerging to cope with the introduction of AI to HR departments.

A practical example of the shift from a reactive to a proactive posture, mediated by the introduction of AI, would be the trend towards adoption of an Organization Guidance System (OGS), which opens the possibility of HR *"guidance"* (Bryndin, 2020; Guenole & Feinzig, 2019). An OGS defines desirable results with respect to four vital domains of corporate success: talent, organisation, leadership, and human capital. It is able to suggest proactive interventions (guidance), even in the presence of satisfactory results: guidance in this case concerns less what has been achieved and more what could be done further (Bryndin, 2020). A system like OGS responds to the pressing demands for quick-response adaptation that have arisen during 2020 as a result of the pandemic, of social unrest, and of economic difficulties (Ben-Ari et al., 2017; Bryndin, 2020; Wisskirchen et al., 2017).In this context, AI can shift digital knowledge away from reliance on old-fashioned information dashboards and scorecards, and towards the use of big data as a more sure-footed guide for corporate practice.

Re-assessing the Place of HR within Organisations

The enhanced effectiveness of HRM practices, which AI makes possible, justifies upgrading the HR function to the status of a value-creating activity that can contribute to shareholder value (Ben-Ari et al., 2017; Bryndin, 2020; Wisskirchen et al., 2017). This simple annotation suggests a portfolio strategy of allocating resources to HR programs, in light of their contribution to organisational effectiveness—for instance, by promoting staff re-training to make it possible to interact proficiently with AI applications. On the basis of these considerations, one might say a trend is afoot, whereby HRM is being increasingly acknowledged as being closely aligned to corporate priorities, and therefore deserving of greater organisational prominence (Paschen et al., 2020).

This hasn't always been the position of the HR function within organisations, even though the rapid pace of change has placed increasing pressure on HRM practices to facilitate adaptive behaviour at the organisational level. Building on Storey's (1992) binary distinction between a strategic and a tactical paradigm in HRM, the literature has enriched that picture by detailing four possible positions of the HR function, namely as Handmaiden, Lawyer, Regulator, and Change-maker (Caldwell, 2003). These positions were later revised into those of Advisor, Change Agent, Regulator, and Service Provider (Caldwell, 2003; Rastgoo, 2016). Ulrich et al. (2007) have supplemented these models by suggesting that HR skills could be catalogued into two main classes. The first class of skills ought to be modelled by the roles of practitioner and executor. The second class of skills could instead be modelled by the roles of business partner, strategic partner, change agent, employee champion, and administrative expert.

Guenole & Feinzig (2019) have provided strong empirical challenge to Caldwell's fourfold model, through evidence from 15 major organisations. In response, Caldwell revised those initial models, and came up with the descriptive positions of Champion, Converter, Expert, and Synergist (Caldwell, 2008). This revised classification also kept into consideration Ulrich's (1996) taxonomy of HR skills, by accounting more precisely for the latter's portrayal of a 'change agent' or 'shift agent' skill set (Meister, 2019). Caldwell's revised model focuses specifically on the possible roles of the HR function in the process of organisational change

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(Nawaz, 2019). Instead, Ulrich (1996, 1998) and Ulrich et al. (2007) have tended to emphasise the role that HR competencies play in the ongoing functioning of a company. This has resulted in the following list of roles within HRM: strategic partner, technical specialist, employee representative, human resource creator, and human resource chief. These roles are similar to Storey's (1992) twofold classification, in that they capture the combination of organisational (tactical) and strategic roles that can be taken up as part of HRM (Hmoud & Laszlo, 2019; Meister, 2019).

An agreed picture of HR function within the organisation remains elusive. The foregoing models leave contradictions and ambiguities unresolved between the different roles they try to describe (Geetha & Bhanu, 2018). In general, they appear to suggest that the transition from viewing HRM as primarily operational to being a strategic function in its own right is still incomplete (Geetha & Bhanu, 2018).On this point, Abdeldayem & Aldulaimi (2020) suggest that a greater strategic role for HRM within organisations would need to be followed through carefully, for instance by working out the detailed repercussions of employee well-being on operational productivity, and thereby on the attainment of strategic goals. Vrontis et al. (2021) present a case study from a chain of supermarkets that exemplifies exactly the position that has just been articulated. Namely, that the formulation of strategic priorities for HRM is ultimately dependent on careful follow-through at the level of implementation—in their study, this was exemplified by the 'bottleneck' of the line manager's ability to implement strategic priorities (Hmoud & Laszlo, 2019; Vrontis et al., 2021). These considerations bring home the fact that, should AI play a role in bringing HRM more to the centre of organisational life, this technological step is still one that needs to be followed through closely, to make sure that the concrete conditions exist for it to yield fruit.

Anticipated Skill sets for Active Engagement with AI

In this paper, we have been focusing on the impact and promise of AI for HRM. In view of this, the future of HR appears to be both human and digital (Margherita, 2021). A consequence of this prospect is that managers and employees might need to develop proficiency in AI, while at the same time reimagining HRM so that it retains a human face—one that addresses individual needs, whilst remaining intuitive to navigate.

These changes will demand a transformation at the level of the organisation of HR tasks, in order to accompany the increasing centrality that HRM is expected to enjoy within the company structure (Johnson et al., 2019). Indeed, with the integration of AI-assisted technology, HR managers will need to make decisions as to how to engage with AI tools, how to direct staff to interact with AI applications, and how the ensuing changes at the level of HRM practice might be received organisation-wide (Jatobá et al., 2019b; Williams, 2019).

Margherita (2021) has projected that AI and robotics are bound to change the skill set demanded of the workforce by an estimated 85% by 2030. The same study also indicates that AI is already being used as knowledge support within the HR departments of about 40% of companies with an international reach (Margherita, 2021).Secondly, considering that autonomous computing is bound to take over certain routine tasks within HR departments by 2030 (Strohmeier & Piazza, 2015), this suggests a new edge of work around the ongoing revision of virtual HR operators (i.e. operators simulated by AI) in the light of their performance.

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In the face of increasing takeover of HR tasks by AI applications, HR practitioners are expected to concentrate their capabilities around productivity and performance enhancement, cost reduction, facilitation of service changes, partnership management, personality management, networking, change management, and information management (Margherita, 2021). Moreover, as some HR roles will be increasingly outsourced, another set of skills for in-company HR practitioners will be the ability to juggle relationships with external consultants (Margherita, 2021).

Limited academic research exists to map the anticipated skillset of future HR practitioners needing to interact with AI. In this respect, Jatobá et al. (2019b) suggest that versatility and data awareness are becoming critical in the AI era, complemented by adaptability and the propensity for lifelong learning. Moreover, as work moves to virtual environments, the capacity to handle teams that involve computing machines and human telecommuters will also become an emerging frontier (Earnst et al., 2019). Last, but not least, HR staff will have to develop confidence, strategic thought and innovation, the ability to redesign work, and data storytelling (Bhardwaj et al., 2020).

By finding themselves at the point of contact between human employees and AI-assisted applications, HR professionals will need to develop communication skills for solving employee grievances empathically and for controlling efficiently any internal conflicts (Rastgoo, 2016). They will also need to be able to communicate effectively on the basis of figures, numbers, and metrics delivered through AI-assisted information processing. To prevent miscommunication, HR staff will have to be able to translate knowledge obtained through AI systems effectively, in order to bring such findings before managers and employees.

Through the gradual shift towards AI, HRM executives must anticipate the need for these emerging skills (Nankervis et al., 2021) and, at the same time, develop new strategies to keep the work environment motivating and safe. Organisations should also consider re-training HR staff in the light of these revised needs, if they are to enjoy a smooth transition to AI. Technical staff should also be integrated into HR departments, in order to build data analytics algorithms uniquely suited to the company's needs. Ensuring these transitional resources are in place will be of paramount importance to migrate HRM activities across to an AI-supported environment, whilst retaining a strong focus on traditional HR functions like administrative support, coaching, advisory, employee advocacy, and strategic partnership. On a closing note, the introduction of AI will also demand that organisations place attention on ensuring that employees perceive the data-gathering activities of the HR department as being undertaken with a countervailing concern for their privacy.

Financial and Legal Implications of AI Adoption in HRM

The introduction of AI to HRM will strongly develop the quantitative profile of this business function. This means that it will also make it more amenable to cost-benefit calculations. Cost-benefit analysis is a methodology for decision-making that includes explicit consideration of the consequences (benefits) of a decision against its unfavourable effects (costs) (Qiu & Zhao, 2018). AI really foregrounds this methodology as a tool for decision-making. Moreover, cost-benefit analysis makes it more accurate to account for decisions and judgements before stakeholders. Cost-benefit analysis has long been a hallmark of marketing, finance, and

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operations within companies, whereas HRM had hitherto remained relatively isolated from the comparative consideration of costs and benefits.

It might be that the lack of quantitative indicators as part of conventional HR practice might have also led to its historical marginality, as described above in Section 2.1. This is because, when needing to allocate scarce financial resources to different company functions, it might be that managers suffer from a bias for quantifiable outcomes that can provide measurable evidence of effects (Haenlein & Kaplan, 2019; Steinwendner, 2018). In response to these findings, practitioners and researchers in the field of HRM had already begun concentrating their efforts on the systematic development of quantitative parameters to inform cost-benefit decision-making. Within this trend, it is foreseeable that the use of AI—with its attendant opportunities for closer monitoring and assessment—will bring HRM into closer alignment with other business functions.

The introduction of AI to HRM, however, also poses important challenges, particularly at the level of labour relations within an organisation (National Digital Council, 2017). From a legal standpoint, it is particularly significant that the trend in AI development appears to be moving towards increasing autonomy, on the part of AI-assisted applications, concerning the making of decisions (Chapuis, 2018). Moreover, AI is liable to come in at important moments of the employment relation, such as at the stage of performance appraisal, evaluation of workplace safety, granting of employee social benefits, and addressing forms of harassment within the organisation. In this sense, it is foreseeable that workers might be confronted with decisions made either by—or on the basis of information produced through—an AI algorithm, This raises questions, for instance, around discrimination on the workplace (De Stefano, 2019; Pandya, 2019). Anti-discrimination rules cover recruitment procedures, the terms and conditions attached to the employment contract, the allocation of compensation and rewards, and the making of decisions concerning job relocation, employment termination, and job redundancy. These decisions cannot be adopted on the basis of sensitive factors, such as gender, ethnicity, sexual identity, and faith. Employers must also ensure that bias dependent on marital and family background, disability, or veteran status is eliminated (Melnychenko, 2020; Nankervis et al., 2021). There is usually a demand that employers proactively inform their employees of their rights in this respect, so that employees might be in a position to seek legal redress (Pandya, 2019). When decisions concerning employees are made on the basis of algorithms trained on raw data, it is possible that discriminatory outcomes might come about, due to indirect correlation between apparently non-discriminatory variables (e.g. education) and traits covered by anti-discrimination legislation (like race or ethnicity). In such cases, it cannot be excluded that materially discriminatory decisions might come about, thereby confronting HR departments with the difficult task of putting safeguards in place, in their operational bylaws, to ward off such an outcome.

A slightly different question pertains to the degree of legislative intervention that will be called for, in the light of the central role that AI applications are bound to play in organisational life. While there is no doubt that legal change will be one of the outcomes of the introduction of AI to HRM (France Strategie, 2018), diverging views exist as to the regulatory strategy to which it ought to conform. Some commentators, like Smith & Neupane (2018), suggest taking a long-run view, and advice delaying comprehensive legal intervention until AI technologies will have reached maturity. In the interim, they advise to keep applying existing legal safeguards concerning the workplace. Other commentators, like Risslandt (1990), are of the view that the

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development of AI isn't geared to *"doing away"* with human intervention, and is more to do with enabling different configurations of human input. The same commentator also stresses the ongoing development of this process of technological innovation. As a consequence, her suggestion is that legal interventions are bound to lag behind the pace of technical change.

In view of the foregoing positions, it is likely that managing the legal risks connected with AI use will realistically require a mix of legislative intervention and voluntary restraint at the company level (some of which will take the form of amended internal company bylaws). In line with this proposition, for example, some organisations have taken concrete steps to ensure that decisions made by an automated system remain transparent to scrutiny. This has been buttressed by legislative interventions holding machine-made decisions to the account of courts (De Stefano, 2019). Collective labour agreements, as they exist for example in countries like France, will also play a role in regulating the use of AI in the company. For example, they might establish a 'human-in-command' principle, as well as restrict the scope for AI-assisted decision-making within the company to specific domains only (Pérez Bayón & Arenas Falótico, 2019).

CONCLUSION

In this article, we have sought to provide a realistic assessment of the impact that the introduction of AI applications is to have on HR function within business organisations. Section 1 has suggested, for example, that one of the outcomes of AI could be to increase the information-processing abilities at the disposal of HRM staff. This will have tangible impacts on the streamlining of talent acquisition procedures, on ongoing assessment of employee performance, on the provision of continuing professional development opportunities uniquely targeted to individual professionals, and on the possibility for organisational responsiveness to employee sentiment. Taken together, these changes—made possible by the introduction of AI—are bound to shift the work of HRM from one of reacting to external variables, to one of proactive response to foreseeable challenges.

One of the consequences of this change is that HR departments' roles within the organisation might acquire greater centrality. In particular, they might move from being predominantly tied to the on-going operation of a business, to becoming sites where strategic outcomes and decisions also take place. All of this, however, requires that the promise of AI find sufficient skills—within the HRM function itself—to be put to profitable use. This poses a challenge for companies to begin sourcing employees with a new anticipated set of skills, such as the capacity to operate in virtual environments, being able to liaise between machine and human actors, as well as to translate machine-provided figures so that they make sense to a wide range of human stakeholders. Last, but not least, the decision-making authority that will increasingly be vested on AI-assisted machines poses specific legal questions, for instance around the prevention of discrimination, and will demand a new generation of legal instruments, company bylaws, and contractual arrangements to ensure accountability, transparency, and respect for workers' privacy.

In closing, the foregoing findings warrant a few recommendations. For instance, AI output yields definite promise for productivity growth. Yet, this promise needs to be counterbalanced with protection for employees' privacy, particularly at the level of data gathering activities. Secondly, HRM and organisations managers should refrain from using AI output as a tool to police and control employees. Rather, it should be embraced insofar as it helps

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increase their commitment, engagement, trust, and overall motivation. The condition for this to happen is to equip HR departments with an adequate knowledge of data science, alongside sophisticated interpersonal communication skills. One last consideration pertains less to internal organisational matters, and is more to do with the regulatory debate around AI. Here, it seems that a reasonable policy would be to track the development of AI-related organisational practices, whilst adopting an attitude of initial restraint, in order to avoid interventions that might stifle this emerging sector in its early stages of development.

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