

The Impact of New Technologies on Employment Relations

Professor **Georgeta MODIGA**¹

Abstract

Digitalization is accelerating the redefinition of employment relations, affecting both the organization of work activities and the structure of rights and obligations between employer and employee. Automation, artificial intelligence, telework, and the platformization of work (gig economy) are generating new models of work performance, in which algorithms manage recruitment, evaluation, and monitoring of employees. We are facing an evolution that raises many legal questions concerning the precariousness of certain forms of work, the risk of algorithmic discrimination, excessive digital surveillance, as well as the strain placed on classical principles of labor law, such as subordination, equal treatment, and the protection of privacy.

Keywords: *new technologies, labor law, artificial intelligence, automation and digital surveillance, data protection, employees' rights.*

JEL Classification: K24, K31

1. Introduction

In recent decades, employment relations have undergone profound structural changes, driven by the convergence of four interconnected phenomena: automation, artificial intelligence (AI), telework, and the platformization of work (gig economy). These transformations not only alter the way work is performed but also fundamentally reshape power relations, managerial control, and the role of algorithms in recruitment, evaluation, and monitoring of employees. Within the context of labor law, economics, and political science, fundamental challenges arise regarding workers' status, social protection, algorithmic transparency, and the balance between flexibility and security. The purpose of this paper is to provide a theoretical synthesis of these transformations and highlight their normative, economic, and political implications, arguing for the need for regulations adapted to the digital age.

2. Digital transformation

Automation, artificial intelligence, telework, and the platformization of work (or gig economy) have led to the emergence of new models of organizing and performing work, in which algorithms play a central role in managing employment relations. Digital transformation is a continuous process of change driven by technology within companies and society as a whole. It is about adopting disruptive technologies to increase productivity, create value, and promote social well-being².

¹ Georgeta Modiga - Danubius International University of Galați, Romania, georgeta.modiga@univ-danubius.ro, ORCID: <https://orcid.org/0009-0007-9539-4485>.

² Christof Ebert, Carlos Henrique C. Duarte. "Digital transformation." *IEEE SOFTWARE* 35, no. 4, July/August 2018: 16-21, doi: 10.1109/MS.2018.2801537.

Digital transformation shapes society at all levels: according to Norqvist³, it refers to “a process in which people reform the way society ‘functions’ through modes of interpretation and understanding of society, including the use of digital technologies in everyday life”. Artificial intelligence involves the transformation of businesses, organizational activities, processes, and required skills, and clearly has immense effects on the workforce and labor market. The Organization for Economic Cooperation and Development (OECD) estimates that 14% of workers face a high risk of having their tasks automated, while another 32% will experience major changes in their job tasks. The European Commission also estimates that millions of jobs will be at risk of automation in the coming decades, with the most exposed being those requiring relatively low levels of formal education or not involving complex social interactions. However, digital transformation in the labor market does not affect only low-skilled workers. Highly skilled professionals will also be impacted by new business processes brought about by digitalization, requiring a higher level of digital skills and a solid understanding of the trends of digital transformation over time, in business and society.

3. Labor market

Warhurst and Hunt⁴ emphasized that digital transformation impacts both work and employment, since it affects the activity itself (doing, therefore working) and the terms and conditions under which the activity is carried out (relations with employers, contracts, therefore employment). Jobs as such are the combination of work and employment. A clear example of how technology has changed jobs is the rise of platform work. Platform work is “a form of employment in which organizations or individuals use an online platform to access other organizations or individuals to solve specific problems or provide specific services in exchange for remuneration”⁵. The three players in the demand-and-supply process are the online platform, the worker, and the client: the client requests a product/service, the platform assigns the worker, and the worker performs the task. The platform work is the division of labor into tasks. Platform workers’ tasks may include professional tasks (e.g., software development), transport (e.g., food delivery), household tasks (e.g., cleaning), and micro-tasks (e.g., online labeling).

Facing digital transformation means dealing with the complexity of an evolving socioeconomic scenario that requires, in work environments, both cognitive and non-cognitive skills. As the range of content and tasks evolves, adaptability, communication, critical thinking, creativity, entrepreneurship, and willingness to learn

³ Lars Norqvist, "Analysis of the Digital Transformation of Society and its Impact on Young People's Lives." *European Union – Council of Europe Youth Partnership*, 2018, pp. 1-30, <https://pjp-eu.coe.int/documents/42128013/47262517/Analysis+of+the+Digital+Transformation+of+Society+its+Impact+on+Young+People+Lives+-+Lars+Norqvist.pdf>, accessed on 20 November 2025.

⁴ Chris Warhurst & Wil Hunt. "The Digitalisation of Future Work and Employment. Possible impact and policy responses." *European Commission*, 2019, <https://publications.jrc.ec.europa.eu/repository/handle/JRC117404>, accessed on 20 November 2025.

⁵ Eurofound. "Platform work." 2018, <https://www.eurofound.europa.eu/en/topics/platform-work>, accessed on 20 November 2025.

become increasingly important⁶.

For this reason, being “digitally skilled,” in terms of technical abilities, is not sufficient either to find or to keep a job. To participate in the knowledge-based workforce, individuals should develop a broad set of skills that operate in the digital world: the digital citizen should therefore be equipped with a combination of soft and hard skills, attitudes, capacities, and capabilities, and above all, be aware, responsible, and proactive regarding their own life design.

The world of work is affected by a fourth industrial revolution, transformed by artificial intelligence and other emerging technologies. Given forecasts suggesting large shares of workers displaced by automation who will need upskilling/reskilling, it is necessary to design active skills policies. Conventional methods used to anticipate technological changes and shifting skill needs, such as surveys and qualification forecasts, have limited scope in providing insights into emerging trends. With the increasing use of big data and AI methods, analysts now have new “real-time” tools at their disposal. Skill-forecasting techniques are also increasingly used to assess detailed stakeholder information about future technologies and skill requirements.

4. Changing the Work Paradigm: From Automation to Platformization

Initial automation targeted repetitive or mechanical tasks, later extended with the help of AI to cognitive tasks—decision-making, prediction, evaluation. With digitalization and the expansion of remote work (telework), the employee–employer relationship is often mediated by technology. In parallel, the platformization of work (gig economy) introduces a model in which service providers are connected through digital platforms, and algorithms decide task allocation, performance evaluation, remuneration, and even suspension of access. From a theoretical perspective, labor process theory provides a useful framework for understanding how work is increasingly digitally mediated, with managerial control exercised through ratings, feedback, and monitoring algorithms. In this context, the employee becomes a “resource” monitored algorithmically, while the manager becomes a technological system rather than a traditional human agent.

5. Algorithmic Management: Recruitment, Evaluation, Monitoring

A central component of new work models is what we can call “algorithmic management” — algorithms that handle:

- recruitment of candidates;
- performance evaluation;
- activity monitoring.

This type of management generates numerous normative issues: lack of transparency, the possibility of algorithmic discrimination, difficulty in contesting automated decisions, concerns about personal data protection, and worker autonomy.

⁶ Maria Chiara Morandini, Anna Thum-Thysen, and Anneleen Vandeplas. "Facing the Digital Transformation: are Digital Skills Enough?" *Economic Brief 054*, 8 July 2020, Brussels, https://economy-finance.ec.europa.eu/publications/facing-digital-transformation-are-digital-skills-enough_en, accessed on 20 November 2025.

In labor law, questions arise as to whether the worker has access to a human decision, whether they can challenge an algorithmic decision, or whether the algorithm functions as an uncontrolled “arbiter.”

From an economic perspective, these technologies aim to optimize labor costs, reduce uncertainty, and increase productivity, but they can also produce adverse effects: precariousness, loss of collective solidarity, work intensification, and continuous surveillance. At the political level, a tension emerges between flexibility (promoted by telework and the gig economy) and security (rights, social protection). Thus, algorithmic management raises not only technical challenges but also challenges of regulation, workplace democracy, and equality.

6. Teleworking and remote work: opportunities and risks

Telework and remote work are becoming increasingly widespread, facilitated by digital technologies and global contexts (e.g., the COVID-19 pandemic accelerated the process). This mode of work offers flexibility, reduced commuting time, and potentially improved quality of life for employees. However, major risks arise: the blurring of boundaries between professional and private space, digital surveillance (e.g., trackers, activity-monitoring software), heightened emphasis on individual performance, and loss of collective solidarity.

From the perspective of labor law, remote work generates challenges regarding ergonomics, data security, health protection, and excessive monitoring that may exceed the limits of traditional regulation. At the same time, telework involves changes in how “workplace”, “working hours,” and “supervision” are defined — terms traditionally linked to physical spaces and fixed times. This flexibilization can lead to a form of intensified self-discipline, where algorithms or management software take over the role of the human supervisor. Consequently, the worker may be subjected to permanent pressure, with increased responsibility and apparent autonomy, but reduced protections.

7. Platformization of work (gig economy) and atypical employment relations

The gig economy model is based on digital platforms that mediate access to tasks, payments, and evaluations — for example, delivery platforms, ride-hailing services, and freelance work. This model has been described as a “commodification of labor” or as a variant of “platform capitalism.” A study conducted in Portugal highlights how the gig economy becomes a laboratory for platform capitalism, reflecting neoliberal logics of minimal state intervention.

From a legal perspective, the issue arises regarding the status of the worker—employee or independent contractor—and the consequences for social protection, minimum wage, social insurance, etc. From an economic perspective, platformization allows for flexible jobs, but ones that are fragile, with managerial control exercised through algorithms (ratings, rankings, bans) rather than traditional hierarchies. From a political and social perspective, there is a risk of labor force fragmentation, reduced collective negotiation power, and increased precariousness.

7.1. The Issue of Dismissing Employees Replaced by Artificial Intelligence

This matter has been discussed in French legal doctrine⁷, triggered by the announcement of a service company regarding the dismissal of more than 200 employees — almost half of its workforce — in order to replace them with algorithms. As a result, the question arose about the legal basis of such an action in the absence of specific regulation.

Another similar case highlighted the dilemma: on the one hand, the need for machines to achieve greater efficiency in compiling, aggregating, and synthesizing data at extraordinary speed; on the other hand, the social and legal implications of (mass) dismissals generated by such automation. It is considered that AI is already affecting various sectors, including technology-media giants and others.

It is estimated that the current state of generative artificial intelligence machines has the medium-term potential to automate between 60% and 70% of the work currently performed by employees. AI presents two major axes of benefits: productivity optimization and cost reduction. Reducing the number of employees — and consequently the wage bill — can offset the costs of acquiring AI equipment.

The question has been raised whether an employer, given the high efficiency of algorithmic work compared to human labor, can legally terminate employees' contracts on the grounds that their positions have become, totally or partially, obsolete due to the digital machinery with which the company is equipped.

In French doctrine and jurisprudence, it is argued that a technological shift can, in itself, justify dismissal for economic reasons. Moreover, according to Article 1233-3 of the French Labor Code, dismissal for economic reasons is defined as that carried out by the employer for one or more reasons not inherent to the employee, resulting from the elimination or transformation of the job, or from a modification — refused by the employee — of an essential element of the employment contract, as a consequence of economic reasons, technological changes, company reorganization necessary to safeguard competitiveness, or cessation of activity.

7.2. Similar situation in Romania

According to Article 65 of the Romanian Labor Code, the dismissal in question is “determined by the elimination of the job held by the employee, for one or more reasons unrelated to the employee” [para. (1)]. This refers mainly to economic difficulties, technological transformations, or organizational restructuring. However, the elimination of the job must have a *real and serious cause* [para. (2)].

The Constitutional Court has held that *the cause is real when it presents an objective feature, imposed by the need to overcome technical or economic difficulties, by the economic imperative of increasing labor productivity, or by adapting to the evolution of new technologies*.

The acquisition of new machines enabling task automation or the implementation of new software may lead to the elimination of part of employees' duties and can justify dismissal on this ground.

⁷ Gilles Anzero, Dirk Baugard, and Emmanuel Dockes. *Droit du travail [Labor Law]*. Paris: Dalloz, 2022, p. 230 et seq.

Technological innovation, in order to be considered a cause for dismissal, should be assessed concretely⁸, in relation to the entity's prior technological state and the acquisition or possession of AI tools. Under these conditions, the employer may decide on restructuring based on technological change, with the consequence of job losses and subsequent dismissals.

It should be noted, however, that one of the main objectives of employee training is "professional retraining determined by socio-economic restructuring" [Art. 192 para. (1) of the Labor Code], and professional training may also be carried out through "adaptation internships to the requirements of the position and workplace" [Art. 193 lit. b) of the Labor Code]. Furthermore, the employer "is obliged to ensure participation in professional programs for all employees" [Art. 194 para. (1)].

Thus, the employer has the obligation to organize the professional adaptation of employees to new technologies and only ultimately may decide dismissal caused by the use of AI tools⁹. An employer who undertakes digital transformation must simultaneously carry out training actions to develop employees' skills in line with new technologies. The relevance and justification of an economic dismissal cannot be conceived independently of fulfilling the employer's obligation to train and adapt employees. Recognition of such an obligation represents one of the strongest barriers against economic dismissal for technological change¹⁰.

Termination of the individual employment contract caused by the introduction of artificial intelligence should occur with respect for the necessary legal security, which may include, where appropriate, compensation for employees replaced by algorithms or other appropriate benefits.

7.3. Normative and Economic Implications

The regulatory and economic implications are the following:

a. Labor Law. New work models require normative adaptations. For example:

- clarification of worker status in the gig economy;
- regulation of monitoring algorithms;
- guaranteeing the right to challenge algorithmic decisions;
- protection of personal data;
- transparency of automated evaluation systems. Additionally, new forms of

remote work must be reconsidered from the perspective of occupational safety, health, and fairness.

b. Economy. From an economic perspective, these transformations bring potential for productivity growth and increased flexibility, but also risks:

- labor market segmentation;
- wage reduction;

⁸ Ovidiu Predescu. "Nevoia de reglementare a inteligenței artificiale [The need to regulate artificial intelligence]." *Palatul de Justiție*, June 2023, <https://www.universuljuridic.ro/nevoia-de-reglementare-a-inteligenței-artificiale/>, accessed on 20 November 2025.

⁹ Loïc Malfettes. "La perte d'emploi liée à l'intelligence artificielle [Job losses linked to artificial intelligence]." *Revue de droit du Travail* 12 (decembre, 2023): 769-773, <https://shs.hal.science/halshs-04360459v1>.

¹⁰ Alexandru Țiclea. *Tratat teoretic și practic de dreptul muncii [Theoretical and practical treatise on labor law]*. Bucharest: Universul Juridic, 2nd edition, revised and added, 2024, p. 648 et seq.

- work intensification;
- decreased investment in human capital (reskilling). The relationship between flexibility and security (“flexicurity”) must be carefully evaluated.

c. Political Science and Labor Studies. At the politico-institutional level, questions arise regarding the regulatory regime: how international labor standards, European legislation, digital rights, and freedom of association intersect. Another issue concerns the relationship between technology, power, and democracy: algorithms become instruments of workplace governance, with potential for surveillance and control.

In an era described by Shoshana Zuboff¹¹ as “surveillance capitalism,” the emeritus professor at Harvard Business School — recognized for her research on the economic and social consequences of digital transformation — analyzes how companies collect and monetize personal data. In her book *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*, she describes how human experience is treated as raw material for profit, highlighting the profound impact of technology on society and capitalism.

d. Challenges and Regulatory Directions. From a regulatory perspective, several emerging directions include:

- mandatory algorithmic transparency and independent auditing of algorithmic management systems;
- guaranteeing the right to contest automated decisions;
- clear definition of the status of platform workers (employees vs. independents) and extension of social protections;
- adaptation of legislation regarding remote work: equipment, cybersecurity, health, and social protection;
- promoting a balance between flexibility and security, so that new forms of work do not become synonymous with precariousness.

Moreover, a public policy vision is needed that recognizes that platformization and algorithmic management transform not only the workplace but the very nature of work, implying a reconsideration of the fundamental principles of labor law (equality, security, social dialogue).

7. Conclusions

The transformations induced by automation, AI, telework, and platformization lead to a profound restructuring of employment relations: algorithms become key actors in recruitment, evaluation, and monitoring; workers become increasingly “digitally manageable”; and the traditional employment relationship is redefined. In this context, labor law, economics, and political science must respond not only with technical adjustments but with a re-politicization of work in the digital age: who controls the algorithms, who sets the rules, and how rights are ensured. Without adequate regulation, risks include labor precariousness, fragmentation of solidarity, loss of autonomy, and growing inequality.

It is essential to ask whether technological flexibility will lead to emancipation

¹¹ Shoshana Zuboff. *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. New York: PublicAffairs, 2019, p. 70 et seq.

or to a new form of digital subordination — in the end, whether we can build work that is not only efficient but also dignified and fair.

Although in certain work environments new technologies may be viewed with reluctance, their introduction most often has positive effects. The world is in continuous change, and new technologies emerge in different corners of the globe; organizations should keep pace with change, understand the benefits of embracing innovation, and take advantage of them. There is also the possibility that some employees may not welcome new technologies. To prevent them from perceiving these as a burden — or worse, as a threat to their jobs — it is advisable to provide training sessions that explain, among other things, the advantages of using them.

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