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SOCIAL PARTNERS TOGETHER TOWARDS A BETTER AND EFFECTIVE REGULATION OF ARTIFICIAL INTELLIGENCE FOR A JUST TRANSITION TO THE WORK OF THE FUTURE
TRANSFORMWORK 2 - 101145650

FINAL COMPARATIVE REPORT

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The project is implemented with the Financial Support of the European Commission – Employment, Social Affairs and Inclusion DG, SOCPL-2023-SOC-DIALOG

Sofia, 2026

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FOREWORD

Dear representatives of the social partners and interested readers,

The rapid advancement of artificial intelligence (AI) and algorithmic management systems is profoundly reshaping the world of work across the European Union. While these technologies promise increased efficiency, innovation and flexibility, they also introduce significant challenges, including risks to workers' rights, job security, health and safety, privacy and equality. Algorithmic decision-making can lead to opaque performance monitoring, automated task allocation, biased outcomes and even precarious employment relationships, often exacerbating inequalities and undermining the human dignity in the workplace. In this context, the need for a balanced, human-centred approach to AI governance has become urgent, ensuring that technological progress contributes to a just transition towards the work of the future - one where AI serves people, not the other way around.

It is against this backdrop that the EU-funded project TransFormWork 2 emerges as a timely and essential initiative. Building directly on the foundations laid by its predecessor, TransFormWork (which was focused on implementing the *European Social Partners Framework Agreement on Digitalisation* across seven EU Member States) and shifts the emphasis to the specific opportunities and risks posed by AI and algorithmic management. Promoted and coordinated by the Confederation of Independent Trade Unions in Bulgaria in consortium of fourteen national social partners, the project seeks to foster joint solutions through structured social dialogue. Its core objective is to manage the transformative effects of AI on employment relationships, working conditions and skills development, while promoting mechanisms for the timely anticipation of future skills needs and forward-looking upskilling and reskilling of the workforce. Ultimately, the project aims to contribute to an AI ecosystem that "works for all", aligning technological innovation with the principles of fair work, social justice and inclusive growth enshrined in the European Pillar of Social Rights.

The project's relevance is amplified by the evolving EU regulatory landscape on AI and digital labour. TransFormWork 2 is explicitly anchored in key EU instruments, including:

> The European Social Partners Framework Agreement on Digitalisation (2020), which provides a foundational blueprint for social partners to address digital challenges through collective bargaining and dialogue

> The EU AI Act (Regulation (EU) 2024/1689), the world's first comprehensive AI regulation, which establishes risk-based rules for AI systems, including prohibitions on certain practices and obligations for high-risk applications (with phased implementation ongoing as of late 2025)

> The Platform Work Directive (Directive (EU) 2024/2831), which introduces groundbreaking protections against algorithmic management in platform economies, such as a rebuttable presumption of employment, transparency requirements, **human** oversight of automated decisions and bans on processing sensitive data, such as emotional states

> The European Parliament's repeated calls, including resolutions urging a dedicated directive on algorithmic management at work to extend protections beyond platforms

> The anticipated Quality Jobs Roadmap (and associated initiatives under discussion in late 2025), aimed at modernising employment standards in a digital economy

> Complementary EU-level frameworks on data governance (e.g., Data Act, Data Governance Act), algorithmic transparency, and ethical AI use.

These instruments collectively signal a strong EU commitment to human-centred AI, yet their effective transposition and application at national level remain uneven. TransFormWork 2 addresses this gap by mapping the penetration of algorithmic management in partner countries and analysing existing national measures - ranging from legislation and collective agreements to sectoral practices and initiatives.

This Comparative Report synthesises these insights, offering a roadmap for social partners across the EU. It highlights best practices, identifies regulatory shortcomings and proposes concrete joint actions to ensure AI supports quality jobs, protects fundamental rights and fosters resilient labour markets. In doing so, it contributes to broader EU goals: implementing the AI Act and Platform Work Directive effectively, anticipating change through skills policies and strengthening social dialogue as the cornerstone of a just digital transition.

As Europe navigates the dual-edged sword of AI, initiatives like TransFormWork 2 project remind us that technology's impact on work is not inevitable but shaped by choice. By bringing employers and trade unions together, the project demonstrates that proactive, collaborative governance ensuring AI drives progress that benefits workers, businesses, and society alike. The recommendations herein aim to inspire national and EU-level action, paving the way for a future of work that is innovative, inclusive, and truly human-centred.

Plamen Dimitrov

President of CITUB

EXECUTIVE SUMMARY

The TransFormWork 2 project (*Social partners together towards a better and effective regulation of Artificial Intelligence for a just transition to the work of the future*), promoted by the Confederation of Independent Trade Unions in Bulgaria (CITUB), started on 1 April, 2024, and was focused on finding joint solutions by the national social partners from seven EU Member States (Bulgaria, Cyprus, Ireland, Italy, Malta, Poland and Romania) for managing the effects of AI and algorithmic management and its massive impact on the work of the future, to address the important issues related to the employment relationships and to find appropriate mechanisms, practices and initiatives for a timely anticipation of the skills needs of tomorrow and a forward-looking up and reskilling of the existing workforce - a fundamental to the success of an AI that works for all. The project seeks also to raise awareness of how with the implementation of right strategies and by guaranteeing the *Human-in-Control* principle, the AI could bring clear benefits and added value for employers and workers by providing new labour market opportunities, new ways of organising work and improvement in working conditions.

The project aimed to show to what extent algorithmic management, through the use of artificial intelligence, has entered the partner countries and what measures have been taken in national legislations and practices to regulate its application in view of algorithmic systems at work and on psychosocial risks as a prerequisite to preserve the dignity of workers and to counteract dehumanisation at work by initiating discussions and initiatives at national level for the delivery of skills needed for workers and enterprises to succeed; to support the creation of new approaches to adapt workers to the changing employment context within the companies; to provide essential education and training; to enhance the role of the social partners in the process of a just transition to the work of the future. The project also aimed to show to what extent artificial intelligence can influence the system of social dialogue, how the data from algorithmic management impact the collective bargaining and the conclusion of collective labour agreements and to support the European social partners in their endeavours for an adoption of an EU Directive of the European Parliament and the Council regarding the Algorithmic Management at work and to ensure that the EU AI Act meets the need to protect the dignity of workers into the future.

Through the implemented activities - National reports, Comparative analysis, Guidelines for monitoring and managing AI at company level, Policy briefs, Cross-country exchanges (three European Round Tables, seven National Discussion Forums and a Final Conference), and joint recommendations, the project partners have examined the extent to which AI-driven tools have entered workplaces in the participating EU Member States. The findings reveal a diverse picture: while some countries have begun adapting labour laws or negotiating collective agreements to tackle issues like automated monitoring and performance evaluation, others lag behind, leaving workers vulnerable to unchecked algorithmic power. Common challenges include limited transparency in AI systems, insufficient worker involvement in deployment decisions and inadequate skills strategies to mitigate job displacement risks. At the

same time, promising practices emerge, such as social partner-led training programmes and bipartite agreements on ethical AI use.

The project enhanced the capacities of the national social partners of the Consortium to effectively contribute to challenges deriving from digitalisation; to study the entry and impact of AI on industrial relations and the processes of interaction between human control and algorithmic management of data and decision-making processes in enterprises without compromising human dignity and without entering the field of personal data monitoring in the employment relations. It will also contribute to the adaptation of social dialogue and collective bargaining at the national level to the changes in employment and work, resulting from digitalisation. The participation of ETUC as associated partner in the project contributed to the wide dissemination of the project results to all members of this key European social partner organisation.

This Comparative report is part of the activities of the TransFormWork 2 Project, and through it, many different national practices for the introduction and implementation of the 2 pillars of the FA on Digitalisation a) the 'human-in control principle' in the management of workplace algorithms and b) respect of human dignity and surveillance have been highlighted.

1. INTRODUCTION TO THE PROJECT

The European social partners have been involved in the discussions from an early stage on the regulation of Artificial Intelligence (AI) in response to the emerging concerns with and challenges of digitalisation for labour markets, as well as for society as a whole, In 2020 they signed a *Framework Agreement* designed to encourage employers and workers in the EU Member States to be a leading force in the processes of digital transformations in the world of work. This *Framework Agreement* sets out guidelines and principles for the adaptation to new digital workplaces under four 'Pillars':

1. Digital skills and securing employment
2. Modalities of connecting and disconnecting
3. Artificial Intelligence (AI) and guaranteeing the Human in Control principle
4. Respect for human dignity and surveillance.[1]

The *Framework Agreement* also points to the fact that most businesses in Europe are still in the early stages of using new AI-based capabilities to optimise work processes or create new business opportunities, so it was important to explore the possibilities of using AI or machine learning for economic success and good working conditions. The digital transformation of economies, which brings increased use of AI systems into EU workplaces, is a topic that has a major impact on everyday life. EU Member States are dealing with these challenges in different ways, due to different social and economic situations, labour markets, industrial relations systems and existing initiatives, practices and collective agreements.

The increasing use of AI systems in the workplace is resulting in a new wave of digitalisation that differs significantly from previous technology developments, such as computerisation, automation and robotics. While previous workplace digitalisation was mainly characterised by technological innovations, this new digital phase is characterised by the enormous impact AI systems may have on the employment relationship in general and the danger it may pose to workers. If unregulated it could quickly result in the dehumanisation of work, including the dehumanisation of decision-making processes, especially if used, for example, as a human resources tool to recruit workers, monitor work, analyse behaviour, surveillance or even to terminate employment.

Therefore, the *Framework Agreement* emphasised the principle of respect for *human dignity*. Digital technologies and AI monitoring systems, together with data processing, offer the opportunity to provide a better working environment and ensure better occupational health and safety, as well as improving efficiency. At the same time, however, such monitoring systems increase the risk of compromising

1 This Framework Agreement was signed by ETUC; BusinessEurope; SME United and CEEP (now known as SGI Europe)
See: https://www.businesseurope.eu/wp-content/uploads/2025/02/2020-06-22_agreement_on_digitalisation_-_with_s ignatures-de0-1.pdf

human dignity, especially in cases of personal monitoring which can lead to a deterioration of working conditions and the welfare of workers. The minimisation and transparency of processed data, together with clear rules for their processing, limits the risk of intrusive monitoring and misuse of personal data.

The *European Union General Data Protection Regulation (GDPR)* [2] already provides rules regarding the processing of workers' personal data in the context of employment that must be followed. The social partners in this Framework Agreement point to Article 88 of the GDPR, which refers to the possibilities to determine, through collective agreements, more specific rules to ensure the protection of rights and freedom regarding the processing of employees' personal data in the context of employment relations.

Because of these concerns, a consortium of social partners undertook a study (TransFormWork VS/2021/0014) of the impact of and implementation of this Framework Agreement on employment relations in seven EU Member States. The first project examined how best to address the challenges faced by social dialogue deriving from the four pillars of the Agreement. As the study progressed, it became apparent that there were serious concerns among both trade unions and employers' organisations about the impact of Pillars 3 & 4 of the *Framework Agreement*. [3]

TransFormWork 2

This second project, *TransFormWork 2*, is also promoted by the Confederation of Independent Trade Unions in Bulgaria (CITUB) and was designed to contribute to the main objective and priorities of the European Commission, as it aims to enhance social dialogue at national levels and to build and strengthening the capacity of social partners to address the challenges of workplace digitalisation and, in particular, the application of AI and the algorithmic management of work tasks.

Therefore, within the context of these two Pillars and the findings of the *TransFormWork 1* study, this new project has focused on finding joint solutions by the national social partners for managing the effects of AI, of algorithmic management, the importance of respect for human dignity and the opportunities digital technology can provide for surveillance of workers.

The project also sought to raise awareness of how, with the implementation of the right strategies and by guaranteeing the *Human-in-Control* principle, AI could bring clear benefits and added value for employers and workers by providing new labour market opportunities, new ways of organising work and improvement in working conditions.

Therefore, on the basis of individual national studies by social partners from seven EU Member States: **Bulgaria; Cyprus; Ireland; Italy; Malta; Poland; and Romania** the key objectives are:

1. To study the national context, existing legislative measures and social partners' strategies and initiatives related to the impact of AI on industrial relations (and more precisely the regulations as envisaged by the Framework Agreement on Digitalisation and other key EU social partners' documents). Thus, the analysis will address issues like human-in control principle, algorithmic management and decision-mak-

2 See: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679

3 See: *Final Project Comparative Report – TransFormWork* Confederation of Independent Trade Unions in Bulgaria, Sofia, February, 2023

ing, protection of human dignity from the impact of algorithmic systems at work and from psychosocial risks, social partners training systems for employee retention (and AI usage in particular), how the data from algorithmic management impact the collective bargaining and the conclusion of collective labour agreements

2. To address the challenges faced by social dialogue deriving from two of the pillars of the Framework Agreement on Digitalisation: a) Artificial Intelligence and Guaranteeing the Human in Control Principle; and b) Respect of Human Dignity and Surveillance, and the new opportunities presented by digitalisation

3. To make a comparative analysis of the trends in the partner countries and to elaborate guidelines for monitoring and managing the AI at company level, based on the research and study in the seven partner countries and the European and national events conducted as part of the project

4. To support the European social partners in their endeavours for the adoption of an EU Directive on Algorithmic Systems at Work and to raise awareness and enhance the capacity of the national social partners to introduce, in their respective countries, new regulations on the use of AI and respecting the human in control principle when using algorithmic management

5. To improve the understanding of employers, workers and their representatives of the opportunities in and challenges to the world of work resulting from AI and to ensure a just transition to the workplace of the future

6. Within the context of the new employment relations imposed by the new technologies and especially AI, to organise discussions and exchange experiences and good practice examples and the role of the social partners and social dialogue in this process, in the context of its new dimensions at national and transnational levels

7. To promote good practices and positive outcomes deriving from social dialogue and collective bargaining related to the Human in Control principle when introducing algorithmic systems and the impact they have on the employment relations at national level by elaborating two Policy Briefs (one policy brief per year) and presenting the on-going policy debates at EU level on digitalisation, AI and algorithmic management

8. To explore the necessity for amendment of the existing national legal frameworks for better regulation of AI in order to enhance the implementation of the *Framework Agreement on Digitalisation* and to foster the adoption of the proposed EU Directives on Algorithmic Systems and Psychosocial Risks, including the AI Act Regulation (2024/1689) and to make suggestions to the national and European relevant institutions.

The project also addressed:

» The important issues related to the overall impact of digitalisation on the employment relationships

» What appropriate mechanisms, practices and initiatives for a timely anticipation of the skill needs of tomorrow might be implemented

» How to develop strategies for upskilling and reskilling existing workforces, which is fundamental to the success of AI that works for all.

Table 1: Beneficiaries/ Associate Partner Organisations / Affiliated entities

	Trade Unions	Employers	Academic
	ETUC*		
Bulgaria	CITUB	BIA* & CEIB*	
Cyprus	SEK	OEB	
Italy	CGIL		FDV**
Ireland	SIPTU	Ibec*	
Malta	GWU	Malta Chamber / MBB*	
Poland			SGH – Warsaw School of Economics
Romania		CONCORDIA	

**Associate partners*
***Affiliated entity*

The following employment sectors were the focus of the research in each participating country:

Education; Financial services; Health services; Industrial production; News media[4]

The completion of the seven national reports was followed by analysis of their findings, the objective of which was to show to what extent algorithmic management, through the use of AI, is now practiced in the partner countries and, in particular:

» What measures have been taken through national policies, legislation and practices to regulate the application of AI at work and on psychosocial risks as a prerequisite to preserve the dignity of workers

» How to counteract dehumanisation of work by initiating discussions and initiatives at the national level for the delivery of skills needed by workers and enterprises to succeed in an AI environment

» How to support new approaches to the adaption of labour markets to AI

» Provide essential education and training for workers using AI

» To enhance the role of the social partners in the process of a just transition to the workplace of the future.

4 For the field research project Beneficiaries had the option of selecting four out of these five business sectors

The project also aimed to show to what extent AI can be used in the system of social dialogue, how the data from algorithmic management might influence the conduct of collective labour negotiations and the conclusion of collective labour agreements. It can also support the European social partners and their endeavours for an adoption of relevant EU Directives on the use of algorithmic systems and to ensure that the implementation of the *EU AI Act (Regulation (EU) 2024/1689)*[5] meets the need to protect the dignity of workers into the future.

It is hoped that the findings of this project will enable the national social partners to effectively contribute to the workplace challenges expected to result from digitalisation, including the impact of AI on industrial relations and the interaction between the *Human-in-Control* principle and the algorithmic management of data and decision-making which does not compromise human dignity. It is also hoped that the outcomes from this study will contribute to the adaptation of social dialogue and collective bargaining at the national level to the changes in employment and work resulting from digitalisation and AI.

Methodology

The project was undertaken in four stages:

1. A study of the national policies and legal frameworks in each of the seven partner Member States, including the policies of the national social partner organisations to AI and algorithmic management, including collective agreements; skills training for digitalisation; and changes to the organisation of work tasks

2. A comprehensive social partner (for trade unions and employers' organisations) study based on two questionnaires for each of the employment sectors and a comparative analysis of the responses to these questionnaires

3. Conclusions and recommendations for the European Commission, EU and national employers' and trade unions' organisations and for national policy makers on AI and algorithmic management

4. Publication of this Comparative Report based on the analysis of the seven national reports, including the responses to the research questionnaires.

During the project a range of activities were undertaken and implemented, including:

» Six Steering Committee meetings to monitor and assess progress

» Three European Round Tables

» Two Policy Briefs (See Annex 1 and Annex 2)

» Seven National Discussion Forums

» Seven National Reports and a Final Comparative Report

» Guidelines for monitoring and managing the AI at company level

» Final conference

» Dissemination of the project results.

5 See: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202401689

2. OVERVIEW OF THE HISTORICAL TRENDS AND DEVELOPMENT OF DIGITAL TRANSFORMATION, AI AND ALGORITHMIC MANAGEMENT

Since the beginning of time human society has innovated and enhanced the implements it used to survive and to improve conditions of life. As part of this evolution, technologies have been a key component and from the mid-18th Century, as societies slowly changed from agricultural to urban / factory-based opportunities for employment, there has been a steady increase in innovation resulting in improved living and working conditions. There have also been challenges, in particular as 'cottage-based' jobs were replaced by 'factory-based' jobs and then as these 'factory-based' jobs were, in turn, replaced by machines as workplace tasks were automated and while workers lost jobs, new employment opportunities emerged.

This ongoing technology revolution led to the development of automated technology, which evolved during the early years of the 20th Century and resulted in the invention of the first digital computers that could be programmed to undertake complex tasks by the use of algorithms that are repeated through 'trial and error' to improve accuracy, such as with robots. This 'algorithmic' programming approach revolutionised many industries and replaced workers in performing repetitive tasks. This technological development continues to evolve with more sophisticated and more powerful abilities to speed up and solve complex problems. New skills and new employment opportunities are also developing to meet these changing societal demands.

Information technology is another 'by-product' of this technology evolution that has made the use of significant computer power available to the wider population through the availability of AI systems on mobile 'phones, personal 'laptop' portable computers, access to the internet and to mass media, chatbots, etc., and allowing for greater flexibility in workplace relations and in communities.

Therefore, in the context of this social progress, the digitalisation of modern life has moved from its original applications in industries into every facet of life and society contributing to greater access to education, better health services, safer

workplaces, as well as instant global communications and 24-hour access to news media, online shopping, entertainment and many other societal developments that are depended on an increasingly digital global society. The emergence of social media, as part of this technological development, has resulted in 'instant' global communications, but also has presented societies with challenges of how to address 'false news'.

What is Artificial Intelligence (AI)?

AI is a new phase in this digitalisation of societies and, in its broadest sense, has the ability of computer systems to undertake complex and speedy calculations. Since the 1950s this digital evolution has led to the development of computer machine-learning progression to a stage where an increasingly multifaceted technology can be programmed to undertake complex tasks with increasing speed and is applied to a wide range of academic and industrial challenges. So, AI in its broadest sense, is 'intelligence' exhibited by machines that can access and process information at ever increasing speeds.

Financial investment in AI has grown substantially, both by governments and the technology industry, in the past two decades. This has resulted in a rapid development of AI in scaling up and the public releases of large language models (LLMs), such as OpenAI's (ChatGPT), Apple Intelligence, Alphabet AI Assistant and *DeepSeek.*[6] These models exhibit human-like traits of knowledge, attention and creativity. They can be applied to analyse, summarise and create content, process, understand and generate human language. AI systems have been integrated into various business sectors, resulting in further escalating investment in the technologies. However, concerns about the potential risks and ethical implications of advanced AI have also emerged, prompting debate about the future of AI and its impact on society and work.

What is Algorithmic Management?

Algorithms are fundamental to the operations of new technologies. They give instructions to the programmes that drive all computing systems, specific commands are 'fed' into a computer system to undertake specified actions on a predetermined 'step-by-step' procedure to solve specific tasks the computer is designed to solve. Algorithms are widely used throughout all areas of information technology and digitalisation and have also emerged as the key technology in platform work and AI.[7]

Important in this context is the *Platform Work Directive (Directive 2024/2831)*[8] which introduces groundbreaking protections of platform workers whose employment is determined by algorithmic management. It introduces the presumption of employment, according to which the contractual relationship of a person performing platform work is presumed to have an employment relationship.

6 See article by Ada Ponce del Castllo, ETUI, https://www.socialeurope.eu/author/aida-ponce-del-castillo

7 See: https://www.eurofound.europa.eu/en/topic/platform-work

8 See: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202402831

It also addresses other key challenges for platform workers, especially:

» The correct determination of employment status for the purpose of labour law

» The labour rights of persons performing platform work (including the self-employed) in relation to algorithmic management

» The enhancement of labour administrations' control over this phenomenon, most notably by improving transparency.[9]

Types of platform work include:

» Digital matching: Services are organised and matched between workers and customers through an online platform, often using algorithms

» Contractual relationships between the digital platform or intermediary and the individual worker

» Flexibility Platform work allows for flexible working arrangements, which can benefit both businesses and consumers.

In a major study of algorithmic management practices, the European Commission's Joint Research Centre (JRC)[10] and the International Labour Organisation (ILO) (February 2024) defined algorithmic management:

> *... as the use of computer-programmed procedures for the coordination of labour input in an organisation ... to open up new business opportunities, foster efficiency gains and streamline work processes.*[11]

The evidence from the case studies as part of this research:

> *... show that algorithmic management is already a reality ... A common element among these tools is that they are implemented and driven by the objective to maximise profit, increase productivity, improve the business model and foster efficiency gains ... have the potential to be used for the purpose of workers' monitoring and surveillance.*[12]

In another major survey of platform workers and crowd-workers (and/or their trade union representatives)[13], in nine EU Member States, the ETUC found that three quarters of the respondents were working in their local area and 17% work remotely i*n the cloud.* Other findings of this study are that:

» Forty-six per cent of the respondents were in the age group of 20 to 29 years of age

» Twenty-six per cent were in the age group 30-39 years of age

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9 See: https://www.etui.org/sites/default/files/2025-04/05_The%20Platform%20Work%20Directive%20a%20milestone%20or%20a%20nothingburger_Social_2025.pd

10 The JRC is an 'independent' research centre within the European Commission, however, its publications: ... do not necessarily reflect the position or opinion of the European Commission

11 See: https://publications.jrc.ec.europa.eu/repository/handle/JRC136063

12 In one case study relevant to the TransFormWork 2 project, in an Italian logistic company, workers reported that the adoption of the technologies resulted in safer working conditions ... lowering fatigue and stress levels.

13 See:https://www.etuc.org/sites/default/files/publication/file/2018-09/Voss%20Report%20EN2.pdf

» Just 5% were over 60 years of age.

With regard to incomes there was a 'mixed picture', indicating that platform work, for the majority of respondents, is not their main source of income:

» Just over 40% said they had no other income

» Twenty per cent were students

» Fifteen per cent were working full time in other jobs

» While just 7% had another part-time job.

European Commission's Quality Jobs Roadmap

Also related to the issue of protection for platform workers and after a public consultation:

> *In its February 2025 plan for EU competitiveness and decarbonisation (Clean Industrial Deal), the European Commission affirms that the Quality Jobs Roadmap, which is to be prepared together with social partners, will support Member States and industry in providing decent working conditions, high standards for health and safety, access to training and ensuring fair job transitions for workers and self-employed, and collective bargaining, with a view to attracting talent and contributing to the competitiveness of European industries.*
>
> *The Quality Jobs Roadmap should provide support to workers in transitions. Accordingly, the Commission will discuss with social partners a framework to support restructuring processes at EU and Member States level. The framework will be focused on just transition, on anticipation of change, quicker intervention when there is a threat of restructuring, and an improved information and consultation framework.*[14]

Definitions of Artificial Intelligence

As there are a wide range of definitions for AI, depending on what aspect of both are been referred to, an online search results in a wide variation of definitions for both these terms.

For example, the International Labour Organisation (ILO) defines AI as:

> *.... software that is developed with one or more of the techniques and approaches[...] that can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with.*[15]

In its *Communication on Artificial Intelligence (COM(2018) 237 final),* the European Commission defines AI as:

> *... Artificial Intelligence refers to systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals.*[16]

14 See: https://www.europarl.europa.eu/legislative-train/theme-supporting-people-strengthening-our-societies-and-our-social-model/file-quality-jobs-roadmap

15 See: https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40ed_dialogue/%40actrav/documents/publication/wcms_862207.pdf

16 See: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0237

The follow-up European Commission White Paper *Artificial Intelligence – a European approach to excellence and trust (COM(2020) 65 Final)* used a different, broader, definition:

> *AI is a collection of technologies that combine data, algorithms and computing power.* [17]

In addition, since the *AI Act Regulation* came into force in August 2024, there is now an EU-level legal definition of AI:

> *Article 3 (1): AI system' means a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments.*[18]

However, as this project began before the publication of the *AI Act Regulation* and its (now*) legal definition* and having examined a number of other possible definitions, for the purposes of this project the partners agreed the following:

Artificial intelligence refers to computer systems capable of performing complex tasks that historically only a human could do, such as reasoning, making decisions, or solving problems

With regard to *algorithmic management*, the ILO uses the following international definition:

> *Algorithms are a series of rules or instructions that from start to finish determining how to accomplish a task or solve a problem.*[19]

So, again, having explored several possible definitions, for the purpose of this TransFormWork 2 research project, the following definition was agreed:

Algorithmic management is used for computer-programmed procedures for the co-ordination of labour input in an organisation, for example:

> Production flows

> Co-ordinating work processes

> Assessing work performance

> Opening-up business opportunities

> Fostering efficiency gains

> Streamlining work.

17 See: https://commission.europa.eu/publications/white-paper-artificial-intelligence-european-approach-excellence-and-trust_en

18 See: https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng REGULATION (EU) 2024/1689 of 13 June 2024 laying down harmonised rules on AI

19 Ibid, ILO

2.1 Policies and Regulations for the use of AI and Algorithmic Management

European Commission

The European Commission first addressed AI with its publication of the 2018 *Communications.*[20] The Commission continued to evolve its approach with a number of policy documents that proposed accelerated investment in AI by Member States, the implementation of AI strategies and programmes and the alignment of AI policies to prevent fragmentation across the EU. The objective of these publications was to maximise Member States' potential to compete globally in the development of AI through a number of agreed actions and funding and for *the EU to become a leader in the AI revolution.*[21]

These plans were followed by the publication of the Commission's 2020 *White Paper* which sets out objectives to develop an AI ecosystem that brings the benefits of the technology to the whole of European society and economy:

» For citizens to reap new benefits for example improved health care, fewer breakdowns of household machinery, safer and cleaner transport systems, better public services

» For business development, for example a new generation of products and services in areas here Europe is particularly strong (such as machinery, transport, cybersecurity, farming, the green and circular economy, healthcare and high value-added sectors like fashion and tourism)

» For services of public interest, by reducing the costs of providing services, for example, transport, education, energy and waste management by improving the sustainability of products and by equipping law enforcement authorities with appropriate tools to ensure the security of citizens, with proper safeguards to respect their rights and freedoms

» Given the major impact that AI can have on our society and the need to build trust, it is vital that European AI is grounded in our values and fundamental rights such as human dignity and privacy protection.[22]

An updated plan was published in 2021, setting out a commitment, on behalf of the EU, to create global leadership in trustworthy AI. It set out a number of strategic actions for the Member States to follow:

» Accelerate investments in AI technologies to drive resilient economic and social recovery, aided by the uptake of new digital solutions

» Fully and promptly implement AI strategies and programmes to ensure that the EU maximises the advantages of being an early adopter.

» Align AI policies to remove fragmentation and address global challenges.

This updated plan also set out four additional key policy objectives, including fund-

20 ibid

21 See: https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence

22 ibid

ing mechanism, timelines and specific actions:

» Enabling conditions for AI development and uptake in the EU

» To make the EU the place where excellence thrives from the lab to the market

» Ensuring that AI technologies work for people

» Building strategic leadership in high-impact sectors.[23]

These policy publications were followed in 2024 by a further *Communication on boosting startups and innovation in trustworthy Artificial Intelligence*, which:

> *... sets out a strategic investment framework in trustworthy AI for the Union to capitalise on its assets, in particular its world-leading supercomputing infrastructure and to foster an innovative European AI ecosystem where startups and innovators can work closely with industrial users, attract investments in the Union and have access to the key ingredients of AI - data, computing, algorithms and talent.*

This *Communication* proposed:

» A strategic investment framework to leverage the EU's assets - such as supercomputing infrastructure - to foster an innovative European AI ecosystem

» Collaboration between startups, innovators, and industrial users, aiming to attract power, algorithms, and talent

» Actions and investments to support startups and industries in Europe to become global leaders in trustworthy advanced AI models, systems, and applications

» A package of measures (Under GenAI4EU) to support European startups and SMEs in developing trustworthy AI that adheres to EU values and regulations, including respecting privacy and data protection rules.[24]

2.2 EU Agencies and AI

To support the European Commission's strategy, a number of EU Agencies undertook key studies on AI systems related to their specific remits.

European Foundation for the Improvement of Living and Working Conditions (Eurofound) was established by Council Regulation (EEC) No. 1365/75, amended by Regulation (EU) 2019/127. It is the social policy and employment research agency of the European Commission and its focus is on the four key policy areas mandated in its Founding Regulation – working conditions, industrial relations, employment and living conditions.[25]

A Eurofound study undertaken on ethical digitisation at work in 2023 shows that in Western and Nordic EU Member States the focus and debate on AI started during the mid-2000s. These debates involved the national social partners and governments

23 See: https://digital-strategy.ec.europa.eu/en/policies/plan-ai

24 See; https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence

25 See: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0127

and, increasingly, focused on the ethical implementation of AI. In contrast, in Eastern and Southern Member States it is a new debate and the main concerns of both social partners and governments has been focused on the level of digitalisation and the challenge of skill levels within the workforce.[26]

Respondents to this survey were of the opinion that:

Opportunities for AI:

1. Productivity gains
2. Greater physical safety
3. Enhanced accuracy and reduced human error
4. Improved production processes or service delivery

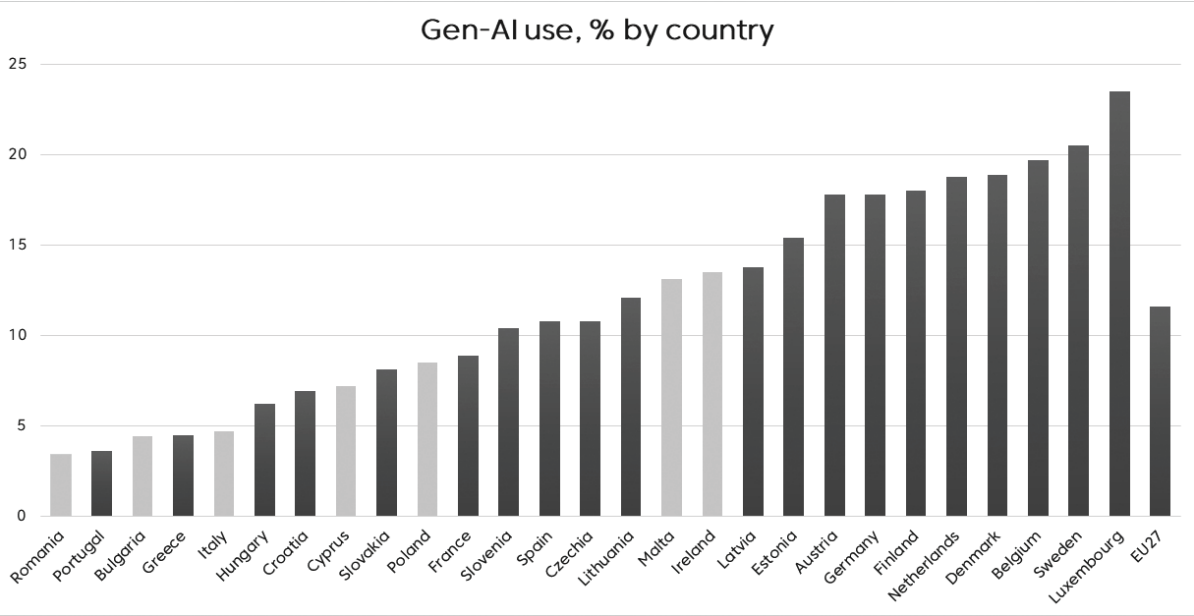
Obstacles to AI:

1. Limited investment in training and reskilling
2. Limited worker
3. No ethical thinking and human centricity in technology design and implementation.

The study showed that social partners also have concerns about their role in setting standards and policies and these processes are, very often, only 'consultative', with a limited focus on ethical issues. Social partners, therefore, called for greater attention to issues in sectors with widespread use of advanced technologies, such as banking and financial services.

The *European Working Conditions Survey (EWCS 2024)* included questions on Gen AI; Work platforms; and algorithmic management. The field survey was completed in November 2024 and the first results are set out below (Chart 1) (TransFormWork 2 participating EU Member States in grey):[27]

The survey also provides data on the use of Generative AI (GenAI) tools by gender and age in EU workplaces.[28]

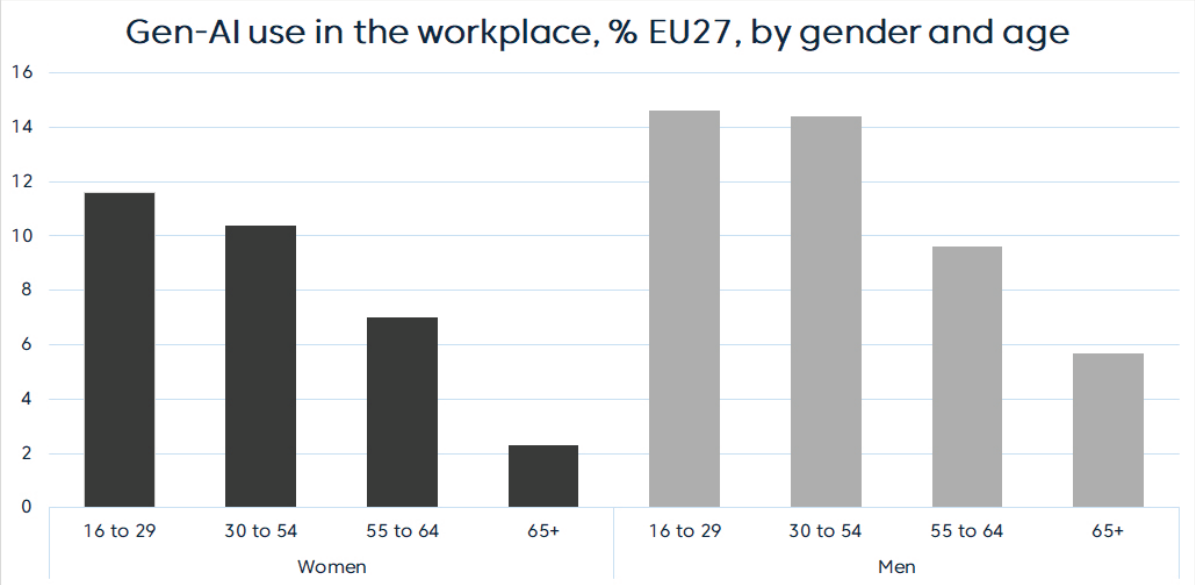


26 See: https://www.eurofound.europa.eu/en/publications/2023/ethical-digitalisation-work-theory-practice

27 Eurofound *European Working Conditions Survey, 2024 (preliminary data)* – Presentation to IIEA seminar, 21 May 2025 (TransFormWork 2 partner Member States outlined in red)

28 Generative AI is a type of artificial intelligence that creates new, original content, such as text, images, music and code, by learning patterns from existing data. It differs from traditional AI by focusing on creation rather than just analysis or categorisation.

Chart 2[29]



Key findings from this survey show that:

» Twelve per cent of workers report using AI tools in their jobs. These range from ...20% in some countries to less than 5% in others

» The impact of technologies appears to be more positive than in commonly perceived ... data show that technology creates more tasks than it removes and facilitates increased interaction among workers

It also examined algorithmic management practices and the extent to which computer programmes are used to assign workplace tasks, schedules and the monitoring of employee performance and found that:

» Seventeen per cent of workers reported that a computer programme monitors their work performance to a large extent

» Sixteen per cent reported that a computer programme is used to allocate their work tasks

» Ten per cent reported that a computer programme determines when they must work to a large or some degree

» The use of algorithmic programmes for work allocation (34%) and performance monitoring (35%) is most prevalent in financial services

» The use of algorithmic management for automated scheduling of work was reported in 18% of the transport sector. This sector has a higher-than-average proportion of workers reporting automated task allocation and performance monitoring to a large extent.

» Twenty-six per cent of respondents who reported that some elements of their work are decided by a computer programme, 15% of these said that there are clear procedures in place for raising issues in the event of a disagreement with 'automated' decisions.

29 Op. cit.

Table 2: Adapted from European Working Conditions Survey, 2024 – First Findings[30]

Forms of Algorithmic Management:			
TransFormWork 2 Sectors [31]	**...allocate work tasks (%)**	**...monitor work performance (%)**	**...determines when you have to work (%)**
Education	11.4	10.0	5.8
Health	16.2	16.2	10.0
Industry	17.0	19.8	10.1
Financial services	33.7	35.4	12.5

Data for 2024 and 2025 from Eurostat confirms that large enterprises used AI more than small and medium enterprises. In 2025 19.95% of all enterprises used AI technology. This Eurostat data by enterprise size shows that:

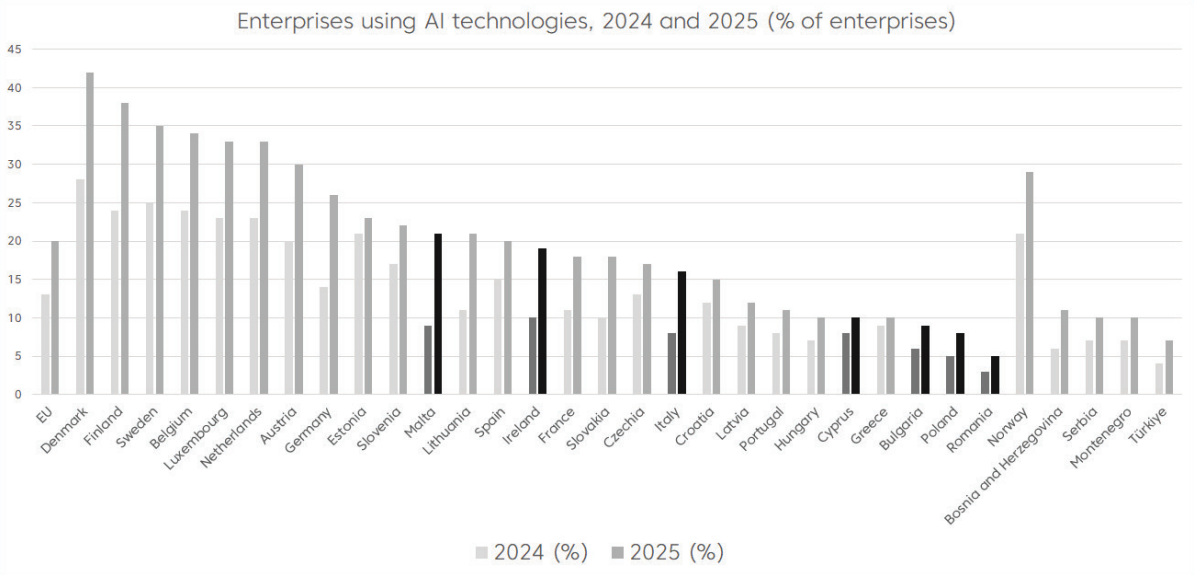
» 17% of small enterprises

» 30.4% of medium enterprises

» 55.2% of large enterprises used AI

» AI was used the most by enterprises in the information and communication sector.

This survey (Chart 3: published January, 2026), found similar levels of AI use as those in the EWCS 2024:[32]



European Centre for the Development of Vocational Training (Cedefop) was set up by Regulation (EEC) No 337/75 as amended by No 2051/2004. Its mandate is to support the promotion, development and implementation of EU policies on vocational education and training, as well as skills and qualifications policies, by working together with the Commission, Member States and social partners. It undertakes re-

30 See: https://www.eurofound.europa.eu/en/publications/all/european-working-conditions-survey-2024-first-findings

31 The media sector was not included in the EWC 2024 survey

32 See: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Use_of_artificial_intelligence_in_enterprises

search designed to support, enhance and disseminate knowledge, provide evidence and services for policymaking, including research-based conclusions, and facilitate knowledge sharing among and between Member States and national actors.[33]

A recent regional conference held in Bulgaria (October 2025) conclude a research project on work-based learning in the Balkan States, including Bulgaria and Romania. Among the key findings of this project were:

» The challenge of how to overcome the fragmented governance and limited coordination between the educational / training sector and employers

» The need to improve coordination and stakeholder engagement – i.e. employers and management of SMEs

» The need to align training content with the business needs of SMEs

» The need to support employer participation, in particularly from SMEs

» Improve quality assurance and feedback mechanisms

» With particular reference to Romania and Bulgaria, the stakeholders raised concerns about limited incentives for companies to host learners.[34]

Another survey of AI skills, titled *Skills empower workers in the AI revolution*, carried out in 2024, focused on the use and impact of AI in jobs. The study found that:

> *... more than a quarter of the European adult workforce is already experimenting with the use of AI at work. With 6 in 10 employees susceptible to some form of AI-related task transformation, it is obvious that upskilling, reskilling and investing in AI literacy will be crucial drivers of a human-centred AI revolution that can boost European competitiveness ... that the fast deployment of automation and AI could result in a 5% employment reduction, that is, a total of almost 7.5 million workers ...* [35]

With regard to training for AI, this Cedefop survey also found that:

> *Empowering social dialogue and a culture of workplace trust is a critical factor in ensuring that AI diffusion will not result in worker resistance. ... the survey confirms that AI take-op and training are higher in organisations where a trade union or other worker representation body is in place.* [36]

European Agency for Safety and Health at Work (EU-OSHA) was set up in 1994 (Regulation (EC) No 2062/94 and amended by Regulation (EU) 2019/126). The mandate of this agency is to make European workplaces safer, healthier and more productive – for the benefit of businesses, employees and governments. The agency promotes a culture of risk prevention to improve working conditions in Europe. [37] It's report (February 2025) presents the first findings of *its Fourth European Survey of Enterprises on New and Emerging Risks (ESENER 2024*). This survey, carried out every

33 See: https://www.cedefop.europa.eu/en/publications/9201

34 See: https://drive.google.com/file/d/1oeM2AJn1t9bxOOI9d9qMTT80g-mVDdoB/view

35 Op cit

36 ibid

37 See: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0126

five years, involved 41,000 establishments of all sizes, classes and business sectors in 30 countries. They were surveyed about occupational safety and health management, the main drivers and barriers for OSH, and worker participation.

This survey found a great diversity when it comes to the types of digital technologies reported by the survey respondents. Personal computers (PCs) at fixed workplaces (87% of surveyed establishments in the EU-27) and laptops, tablets, smartphones or other mobile devices (83%) are frequently reported across all activity sectors and establishment sizes. The use of other technologies considered were less widespread, but still some sectors report significantly higher than average shares:

» Twenty-one per cent of workplaces in information and communication report the use of machines, systems or computers that use artificial intelligence (AI) (EU-27 average: 7%)

» The use of machines, systems or computers monitoring workers' performance and/or behaviour is reported by 15% of establishments in transportation and storage (EU-27 average: 7%)

» Only 4% of surveyed establishments in the EU-27 reported using none of the digital technologies included in the questionnaire.

European Union Agency for Fundamental Right (FRA) was set up in 2007 by Council Regulation (EC) No. 168/2007, as amended by Council Regulation (EU) 2022/555. FRA's role is to ensure that the rights outlined in the *EU Charter of Fundamental Rights* [38] are considered by the EU institutions and Member States in the drafting of policies and enactment of legislation. The Charter includes the right to the protection of personal data (Art 6); to choose an occupation and engage in work (Art 15) and to set up a business (Art 16). Title IV (Solidarity) includes additional worker rights, including the right to information and consultation (Art 27) and the right to collective bargaining (Art 28). FRA's role includes promoting and protecting:

» The right to be free from discrimination on the basis of age, disability or ethnic background

» The right to have your personal data protected

» The right to get access to justice.

It does this by:

» Collecting and analyse law and data

» Providing independent, evidence-based advice on rights

» Identifying trends by collecting and analysing comparable data

» Helping better law making and implementation

» Supporting rights-compliant policy responses

» Strengthening cooperation and ties between fundamental rights actors.

While not specifically dealing with the impact of AI on employment, FRA takes a wider view of the impact of AI technologies on fundamental rights as set out in the EU Charter, including social and employment rights. It has published several reports

38 See: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12012P/TXT

and held meetings to publicise challenges to the Charter by AI technologies.[39]

European Labour Authority (ELA) was established in 2019 by Regulation (EU) 2019/1149) as the EU organisation to help strengthen fairness and trust in the internal employment market. The Authority has also been active in highlighting the impact of AI and algorithms management on EU employment. It has hosted a number of events, such as workshops and training sessions and, based on these events, has published a training handbook (September 2023) which is designed:

> *... to enhance the understanding of bias and related legal, ethical and practical issues that may arise in the development and utilisation of algorithms and Artificial Intelligence (AI) for risk assessment. It provides insights into relevant regulations and methods to mitigate bias and prevent discrimination.*[40]

2.3 Other recent developments regulating AI and the use of algorithms

Council of Europe Convention on AI[41]

The AI Act is 'underpinned' by the Council of Europe *Framework Convention on AI and Human Rights, Democracy and the Rule of Law* signed in Vilnius, September 2024.[42] This *Framework Convention* was drafted and signed by the 46 member States of the Council of Europe, with the participation of observer countries (Canada, Japan, Mexico, the Holy See and the United States of America), as well as the European Union, and a significant number of non-member States, such as Australia, Argentina, Costa Rica, Israel, Peru and Uruguay.

In line with the Council of Europe's practice of multi-stakeholder engagement, sixty-eight international representatives from civil society, academia and industry, as well as several other international organisations were also actively involved in the development of this Framework Convention, which sets out a range of legally binding obligations for the Council of Europe member States and the other signatories:

> *... that aim to ensure that the activities within the lifecycle of artificial intelligence systems that have the potential to interfere with the respect for human rights, the functioning of democracy, or the observance of rule of law in both the public and private sectors are in full compliance with this Framework Convention*

and

> *... is intended to address specific challenges which arise throughout the lifecycle of artificial intelligence systems and encourage the consideration*

39 See, for example: https://fra.europa.eu/en/news/2025/workshop-ai-fundamental-rights-impact-assessments

40 See: https://www.ela.europa.eu/en/publications/artificial-intelligence-and-algorithms-risk-assessment-handbook

41 See A Ponce del Castillo, ibid

42 See: https://www.coe.int/en/web/artificial-intelligence/the-framework-convention-on-artificial-intelligence FRA participated in this Council of Europe Convention, with a contribution on the Implications of AI for fundamental rights

of the wider risks and impacts related to these technologies including, but not limited to, human health and the environment, and socio-economic aspects, such as employment and labour.

The Convention sets out Fundamental Principles on activities within the lifecycle of AI systems that must comply with the following:

» Human dignity and individual autonomy

» Equality and non-discrimination

» Respect for privacy and personal data protection

» Transparency and oversight

» Accountability and responsibility

» Reliability

» Safe innovation.

It suggests remedies, procedural rights and safeguards, such as:

» Document the relevant information regarding AI systems and their usage and to make it available to affected persons

» The information must be sufficient to enable people concerned to challenge the decision(s) made through the use of the system or based substantially on it, and to challenge the use of the system itself

» Effective possibility to lodge a complaint to competent authorities

» Provide effective procedural guarantees, safeguards and rights to affected persons in connection with the application of an artificial intelligence system where an artificial intelligence system significantly impacts upon the enjoyment of human rights and fundamental freedoms

» Provision of notice that one is interacting with an artificial intelligence system and not with a human being.

It requires the signatory countries to implement risk and impact management protocols, such as:

» Carry out risk and impact assessments in respect of actual and potential impacts on human rights, democracy and the rule of law, in an iterative manner

» Establish sufficient prevention and mitigation measures as a result of the implementation of these assessments

» Possibility for the authorities to introduce of bans or moratoria on certain application of AI systems (“red lines”).

The Convention covers the use of AI systems by private workplaces and public authorities – including private actors acting on their behalf. It provides the signatories two options to comply with its principles and obligations when regulating the private sector:

» Parties may opt to be directly obliged by the relevant Convention provisions or, as an alternative, take other measures to comply with the treaty’s provisions while fully respecting their international obligations regarding human rights, democracy and the rule of law.

» Parties to the Convention are not required to apply the provisions of the treaty to activities related to the protection of their national security interests but must ensure that such activities respect international law and democratic institutions and processes. The Framework Convention does not apply to national defence matters nor to research and development activities, except when the testing of AI systems may have the potential to interfere with human rights, democracy, or the rule of law. [43]

Paris Charter on Artificial Intelligence in the Public Interest

In a related development, a follow-up conference, hosted by the French President Macron (10-11 February, 2025), a joint Statement was issued and signed by participant organisations from over 100 countries. This Statement highlights the need to ensure that AI is based on human and sets out a number of priorities:

» Promoting AI accessibility to reduce digital divides

» Ensuring AI is open, inclusive, transparent, ethical, safe, secure and trustworthy, taking into account international frameworks for all

» Making innovation in AI thrive by enabling conditions for its development and avoiding market concentration driving industrial recovery and development

» Encouraging AI deployment that positively shapes the future of work and labour markets and delivers opportunity for sustainable growth

» Making AI sustainable for people and the planet

» Reinforcing international cooperation to promote coordination in international governance.

To achieve these priorities, the Statement sets out a number of actions, including:

> *... the need to enhance our shared knowledge on the impacts of AI in the job market, though the creation of network of Observatories, to better anticipate AI implications for workplaces, training and education and to use AI to foster productivity, skill development, quality and working conditions and social dialogue.* [44]

United Nations Conference on Trade and Development (UNCTAD)

The UNCTAD *Technology and Innovation Report 2025* [45] provides a wide-ranging analysis of the impact of AI on the world of work. As the UNCTD Director, Rebeca Grynspan, Secretary-General of UNCTAD, points out in the Foreword to the report:

> *Frontier technologies, particularly artificial intelligence, are reshaping the functioning of economies and societies. However, their rapid and widespread diffusion is often outpacing the ability of many Governments to respond. ...*

43 See: https://rm.coe.int/1680afae3c

44 See: https://www.elysee.fr/en/emmanuel-macron/2025/02/11/statement-on-inclusive-and-sustainable-artificial-intelligence-for-people-and-the-planet

45 See: *Technology and Innovation Report 2025: Inclusive Artificial Intelligence for Development.* See also, Ch 2 G & H, pages 60 to 63 on *Workers throughout the AI life cycle* and *A worker-centric approach to AI* https://unctad.org/system/files/official-document/tir2025_en.pdf

With regard to AI and work, this report states that:

> *Achieving more inclusive and equitable technological development requires placing greater emphasis on workers and their professional growth. This involves broadening the focus of traditional goals of maximising productivity and efficiency, to foster skill development and empower workers to adapt to and thrive in a rapidly evolving technological landscape. ...*

and proposes that ...

> *A basic step is to empower the workforce with digital literacy, reinforced through all stages of education and lifelong training systems that incorporate digital skills in curricula and are tailored to different occupations, to prepare for possible future transformations. ...*

Furthermore ...

> *With regard to jobs that are highly exposed to AI automation, Governments need to help workers transitioning to new occupations and tasks, through reskilling training and tailored social protection measures, for a smooth transition process. Workers whose jobs are subject to AI augmentation can also benefit from upskilling programmes to acquire new complementary competences, in order to make use of the latest technologies, and enhance their roles to include high-value tasks.*

The report also examines a number of business sectors, include manufacturing and healthcare.

Organisation for Economic Cooperation and Development (OECD)

The OECD *AI Principles* are designed to promote the use of AI that is innovative and trustworthy and that respects human rights and democratic values. They set standards for AI that are practical and flexible enough to stand the test of time. Adopted in 2019 and updated in May 2024, the *Principles* are designed to guide AI actors in their efforts to develop trustworthy AI and provide policymakers with recommendations for effective AI policies.

Member countries are requested to use these *AI Principles* and related tools to shape policies and create AI risk frameworks, building *a foundation for global interoperability between jurisdictions*. Today, the European Union, the Council of Europe, the United States, the United Nations and other jurisdictions use the following OECD's definition of an AI system and lifecycle below in their legislative and regulatory frameworks and guidance:

> *...a system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of*

autonomy and adaptiveness after deployment. [46]

The OCED has had a particular focus on AI and education, arguing that an educational rethink is required as the capabilities of AI systems continue to develop and as the understanding of how AI can affect economy and society – and the education system that prepares students for both:

> *... requires an understanding of the capabilities of this technology and their development trajectory. Moreover, AI capabilities need to be compared to human skills to understand where AI can replace humans and where it can complement them. This knowledge base will help predict which tasks AI may automate and, consequently, how AI may shift the demand for skills. Policy makers can use this information to reshape education systems in accordance with future skills needs and to develop tailored labour-market policies.*

As AI rapidly advances, it's becoming evident that it is starting to outpace humans in critical areas such as reading, mathematics and scientific reasoning. This prompts us to reconsider our educational approach. We must determine which skills to prioritise, which to phase out, and where to place greater emphasis in an AI-influenced world. We need to anticipate how learning methods and teaching practices will evolve. At the same time, more profound questions about the overall goals of education are emerging as the cognitive, physical and social capabilities of AI continue to rise. [47]

International Labour Organisation (ILO) [48]

The ILO is the World's oldest international organisation, having been established under the auspices of the League of Nations in 2019. It brings together governments, employers and workers from 187 Member States, to set labour standards, develop policies and devise programmes promoting decent work for all. It sees the digitisation of work and the impact of AI as key developments and has undertaken studies of their impact on employment globally.

The *Observatory on AI and Work in the Digital Economy* was launched at an online conference in September, 2024, and it is hoped that it will be the leading international *knowledge hub* on the impact of AI and the digital economy on the world-of-work. It is intended to serve as a platform for increasing the volume and profile of evidence, analysis and dialogue in these areas. [49]

As a follow-up, a number of key ILO studies have been published, such as:

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46 See: See: https://rm.coe.int/1680afae3c
See: https://www.elysee.fr/en/emmanuel-macron/2025/02/11/statement-on-inclusive-and-sustainable-artificial-intelligence-for-people-and-the-planet
See: *Technology and Innovation Report 2025: Inclusive Artificial Intelligence for Development.*
See also, Ch 2 G & H, pages 60 to 63 on *Workers throughout the AI life cycle* and *A worker-centric approach to AI* https://unctad.org/system/files/official-document/tir2025_en.pdf

47 See: https://www.oecd.org/en/topics/artificial-intelligence-and-education-and-skills.html

48 See: https://www.ilo.org/about-ilo

49 See: https://www.ilo.org/artificial-intelligence-and-work-digital-economy

> How reskilling for AI could unlock new and better jobs

Education and reskilling are key if we are to ensure that AI is beneficial to workers. It has the potential to enhance job quality, create new roles and elevate the value of uniquely human skills, such as creativity, critical thinking and emotional intelligence. (January 2025) [50]

> Digitalisation and blending of training programmes: A practical guide for skills development

This guide offers a structured, step-by-step approach for transitioning traditional, face-to-face training programmes into blended and digitally enabled formats (April 2025) [51]

> Revolution Health and Safety: The role of AI and digitalization at work

Digitalisation and automation are impacting millions of jobs worldwide, presenting unprecedented opportunities to enhance occupational safety and health. Automation and smart monitoring systems can reduce hazardous exposures, prevent workplace injuries and improve overall working conditions (May 2025).[52]

> Global case studies of social dialogue on AI and algorithmic management

This working paper explores how social dialogue is shaping the use of AI and algorithmic tools in workplaces across five continents. Through case studies, it highlights how worker representatives are influencing AI-related decisions in areas like employment, algorithmic management, and working conditions - pushing for more equitable and inclusive approaches to the adoption of AI (July 2025).[53]

The platform economy is also an important focus for the ILO, as sees this as one of the most significant workplace changes resulting from digitalisation and this was the agenda of the International Labour Conference (June, 2025) and will be on the agenda again for the 2026 conference. So as to set global standards for platform work:

> *An important component of the platform economy is digital labour platforms, which include location-based platforms, where the services are provided by individuals in a specific location, and online platforms, where workers provide their services remotely. Its growth over the past decades has opened up new markets for businesses and created new employment and income opportunities, offering flexibility for some workers and characterized by low entry barriers. It has also significantly transformed how work is organized and performed, with challenges in ensuring that workers on platforms have access to decent work.* [54]

50 See: https://www.ilo.org/resource/article/how-reskilling-ai-could-unlock-new-and-better-jobs

51 See: https://www.ilo.org/publications/digitalisation-and-blending-training-programmes-practical-guide-skills

52 See: https://www.ilo.org/publications/revolutionizing-health-and-safety-role-ai-and-digitalization-work

53 See: https://www.ilo.org/publications/global-case-studies-social-dialogue-ai-and-algorithmic-management

54 See: https://www.ilo.org/digital-labour-platforms

World Health Organisation (WHO) [55]

The WHO's strategic approach to AI was published in its serious of reports in 2024 and centres around three pillars that will ensure trust and ethical practices in the application of AI:

» To *enable* the use of AI in health services by setting standards; governance policies; and guidance on research-based AI for health

» To *facilitate* investment and a global community of experts

» To *implement* sustainable AI programmes at country-level.

The WHO estimates that by 2030 there will be a worldwide shortage of approx. 11 million healthcare professionals and AI will be important in providing technology support for speedy diagnosis and analyse of, for example, X- rays, CAT scans, MRIs and providing precision by the use of robotic surgery, etc. All these applications can complement the work of health professionals and free them to provide better care to more patients.[56] As Tedros Adhanom Ghebreyesus, WHO Director-General, pointed out in his introduction to the section on AI on the WHO website pages on AI:

> *AI is already playing a role in diagnosis and clinical care, drug development, disease surveillance, outbreak response, and health systems management ... The future of healthcare is digital, and we must do what we can to promote universal access to these innovations and prevent them from becoming another driver for inequity.*

2.4 Summary

In recent years there has been growing institutional interest within the EU, in the Member States, within the wider European and internationally communities, through research and legislative actions, on the application and use of AI and algorithmic management in workplaces. Many of the studies' findings, declarations, actions and observations by these organisations and international agencies outlined above show the growing concerns and the need to ensure the application of AI and control of algorithms in workplaces across all business sectors are subject to legal controls and that the *Human in Control* principle, set out in the *Social Partners' Framework Agreement,* is enforced and respected.

The Joint Research Centre of the European Commission [57] published the results of a new survey, conducted in 2024 and 2025 in collaboration with the Directorate-General for Employment, Social Affairs and Inclusion. The survey involved 70,316 workers from all 27 EU Member States, and the findings are published in the JRC study *Digital monitoring, algorithmic management and the platformisation of work in Europe.* This study focuses on the use of digital tools in the workplace, including AI, and examines the prevalence and characteristics of digital monitoring, as well as the extent and variations of algorithmic management throughout the EU. It found that:

55 See: https://www.who.int/teams/digital-health-and-innovation/harnessing-artificial-intelligence-for-health

56 See: Financial Times editorial, 11 / 12 October, 2025

57 See: footnote 10

... 90% of EU workers rely on computers, mobile devices and office software to perform their work, while 30% use AI tools, in particular AI chatbots powered by large language models (LLMs). Nearly four out of 10 (37%) employees in the EU are monitored for their working hours... writing accounts for 65% of all uses, followed by translation (59%), processing of data and discussion of ideas (38%), transcription (28%), image generation (27%), planning and scheduling (24%) and customer advice (19%). AI use is notably high in Northern and Central European countries. The employment of AI varies considerably among different occupational sectors, with office-based jobs leading adoption.
The survey results also indicate that 24% of EU workers have their working time allocated automatically. This approach is often paired with algorithms that determine task prioritisation.
Another present yet less common form of algorithmic management concerned 13% of EU workers, where performance is assessed and rewarded automatically. [58]

Within the context of the findings of the various research projects outlined above and the JRC overview study, the EU AI Act Regulation (see below) and other EU-wide legislation [59] are essential and set an international benchmark for transnational governance of AI systems and a legal environment within which AI is used in European workplaces. Together they are the legal basis for the use and application of AI systems and arithmetic management. They take a risk-based approach by having stricter rules for AI applications that pose a higher risk to safety and fundamental rights. The AI Act also sets out strict rules for their application in various workplace scenarios, protecting individual rights, respecting personal data, protecting workplace safety and health rights, requiring transparency and ensuring high standards in the use of AI systems in all EU workplaces.

58 See: https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/impact-digitalisation-30-eu-workers-use-ai-2025-10-21_en

59 The list of relevant EU-level legislation include: 1) the AI Act Regulation (Regulation (EU) 2024/1689); 2) Platform Work Directive (Directive (EU) 2024/2831);3) General Data Protection Regulation – GDPR (Regulation (EU) 2016/679); 4) Data Act Regulation (Regulation (EU) 2023/2854); 5) Digital Services Act (DSA) (Regulation (EU) 2022/2065); 6) Digital Markets Act (DMA) (Regulation (EU) 2022/1925); 7) Data Governance Act (DGA) (Regulation (EU) 2022/868); 8) Network and Information System 2 (NIS2) Directive (Directive (EU) 2022/2555)

3.EU LEGAL FRAMEWORK

Legislation

Because of the potential ability of AI to destabilise both work and society, many international agreements have been signed to provide some control over any possible abuse of these digital systems. Furthermore, at the European Union level, following the publication of the policy plans and updates (2018 and 2024), legislative controls have been imposed by a range of Directive and Regulations, such as the *Digital Services Act Regulation* which came into effect in February, 2024, and applies to all digital platforms. This legislation is designed to protect consumers and their fundamental rights online by setting clear and proportionate rules, such as:

For citizens:

» Better protection of fundamental rights

» More control and choice, and easier reporting of illegal content

» Stronger protection of children online, such as the prohibition of targeted advertisement to minors

» Less exposure to illegal content

» More transparency over content moderation decisions with the DSA Transparency Database.

For digital service providers to provide:

» Legal certainty

» A single set of rules across the EU

» Easier to start-up and scale-up in Europe.

For business users of digital services:

» Access to EU-wide markets through platforms

» A level-playing field against providers of illegal content.

For society:

» Greater democratic control and oversight over systemic platforms

» Mitigation of systemic risks, such as manipulation or disinformation.

This legislation was followed by the *Digital Markets Act, (Regulation (EU) 2022/1925)* which is designed to make digital sector markets fairer and more competitive and it sets out a number of objectives to identify, what are referred to as 'gatekeepers'. These 'gatekeepers' are the large digital platforms providing core platform services, such as search engines, app stores and messenger services. The legislation is in keeping with the overall EU competitiveness laws and has designated Alphabet, Amazon, Apple, ByteDance, Meta and Microsoft as covered by this legislation.

However, the key EU legislation is the *AI Act Regulation (Regulation (EU) 2024/1689)* which harmonises legislation to control how AI is operated across all Member States. Internationally, it is the first such comprehensive legal framework for the control and use of the various possible applications of AI. Coming into force in August 2024, it will be fully phased into EU and Member States' laws by August 2027.

The AI Act is designed to provide a high level of protection to people's health, safety and fundamental rights and to promote the adoption of AI that can be trusted and that the Human-in-Control principle is respected. It also applies equally to uses of AI systems in both the public and private sectors. However, certain applications of AI relating to such areas as national defence; national security; scientific R&D; open-sourced models; R&D for AI systems; and personal use are exempt.

There are four risk categories set out in the legislation:

a) Unacceptable risk

b) High risk

c) Limited risk

d) Minimal risk.

The Act adopts a risk-based approach, based on these four risk categories in order to ensure that its measures are targeted and proportionate. The Act also makes allowance for the unique circumstances of SMEs. It includes a number of safeguards for impacted employees. For example, Art 4 on the need to develop employees' AI literacy; Art 26 on the provision of relevant information; Art 67 (and Recital 150) on the establishment of an advisory forum; and Recital 165 on the employee involvement in the design and development of AI systems.[60]

Member States are required to designate 'competent bodies' as sectoral regulators (Article 70), to be followed by designation of national public authorities to supervise or enforce the respect of obligations under Union law protecting fundamental rights, including the right to non-discrimination, in relation to certain high-risk uses of AI systems specified in the Act (Article 77).

The *Platform Work Directive (2024/2831)*: The application of algorithmic management to jobs in the 'gig economy' are legislated for by this Directive. It aims to improve the working conditions of those working through digital labour platforms by ensuring they have access to labour rights and social protection. It strengthens EU and national labour legislation by introducing a number of protections for these workers, including a presumption of employment, clearer rules on the use of algorithmic management, stronger collective labour rights and enforcement safeguards. By granting algorithmic management and collective rights to genuinely self-employed platform workers, the Directive significantly expands the personal scope of application of labour rights:

> *By establishing a comprehensive framework for algorithmic management and data rights at both the individual and collective levels, the Directive highlights the urgent need for a new EU instrument regulating data-driven technology in the workplace, applicable to workers across all conventional sectors.* [61]

60 See: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202401689

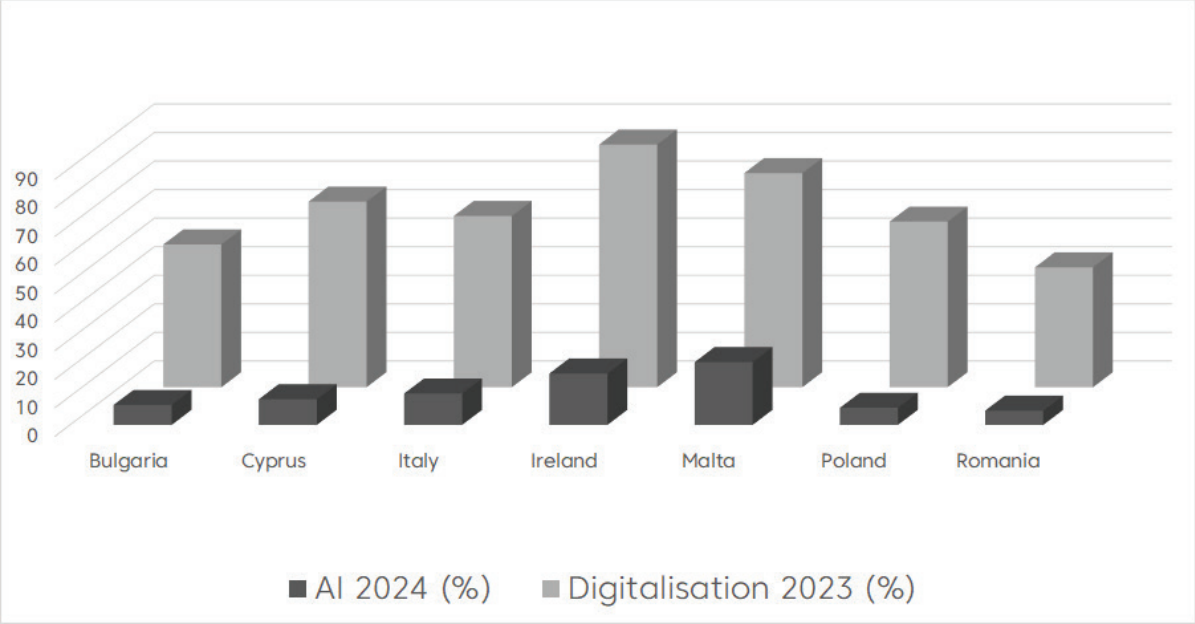
61 See: https://www.etui.org/publications/eu-platform-work-directive

4. OVERVIEW OF NATIONAL POLICIES, BUSINESS SECTORS AND REPONSES TO THE PROJECT SURVEY

Governments in each of the seven participating countries have been active in developing national strategies and policies for the application of digital technologies and AI within their economies, such as in private enterprises and also in public services. This includes a focus on the development of skills for the future digital workplace. In parallel with the policies and objectives all seven Governments are also implementing legal changes as required by the AI Act Regulation and the possible implications of the General Data Protection Regulation (GDPR).

While the use of digitalisation has been part of the workplace for many years, in comparison, the use of the various forms of AI are still low within the seven Member States. Already there are indications from the 'desk research' that there are contrasting experiences across the seven countries with regard to the use of digital technologies and AI in particular. It suggests that there is a long way to go to achieve a substantial and equal application of AI in all EU Member States. Chart 4 shows the penetration of both digitalisation and AI across the project partner Member States (2024).

*Chart 4: **European Commission Digitalisation in Europe (2024)***



This European Commission report also shows that some 90%+ respondents use the internet at least once a week and 56% have basic or above basic digital skills. In addition to the possible challenges set out in Chart 4, Table 3 shows the percentages for the use of AI by size of enterprise in the partner Member States and this is an indication that there is a substantial difference in the penetration of AI technologies in larger enterprises, but the use of AI is not as prevalent in smaller or medium size enterprises. This would suggest that there is a growing gap between enterprise size, with smaller companies falling behind in the use application of AI, but also in digital technologies in general.

*Table 3: **Level of use of AI systems and digital solutions in enterprises in selected countries:***

TransFormWork 2 Partners	Using AI (% 2024)	By Size of Enterprise %	
		SMEs	Large
Bulgaria	8.5	-	26.2
Cyprus	9.3	11.0	35.1
Italy	16.4	10.5	63.0
Ireland	20.0	23.0	57.7
Malta	21.6	50.0	75.0
Poland	8.4	16.1	21.0
Romania	5.2	-	-
EU 27	20.0	23.7	55.0

Source: Eurostat, Eurofound and national statistics.

4.1 NATIONAL POLICIES AND RESPONSES FROM MANAGEMENT AND TRADE UNION REPRESENTATIVES IN SEVEN EU MEMBER STATES

Based on this overview, this chapter sets out the findings of both the 'desk' and questionnaire-based research in each of the seven EU Member States:

4.1.1 BULGARIA

Bulgaria is coming from a low uptake of digital technologies, despite the ongoing digital transformation of the education and university systems and the country's participation in the *European Roadmap for Research Infrastructures*. The adoption of AI technologies remains relatively low. In 2024, more than 80% of Bulgarian enterprises had internet access and 76% provided employees with remote access to email, documents and applications. However, according to the National Statistical Institute, only 6.5% of enterprises used AI technologies. Adoption, however, is higher in larger enterprises (≥250 employees) at 20.2%, compared to 10.0% in medium-sized enterprises (50–249 employees) and 5.5% in small ones (10–49 employees). [62]

Following the *European Autonomous Framework Agreement on Digitalisation* and after almost a year of negotiations between the national social partners, the Bulgarian National Assembly adopted amendments to the Labour Code in March, 2024. These amendments improve the regulation for remote work and include:

» Mandatory human oversight of all automated systems affecting workers' rights

» Requirements for recording working time when algorithmic systems are used

» Permission for employees to have more than one remote workplace for up to 30 working days per calendar year

» First-ever regulation of occupational accidents for remote workers and the conditions under which employer liability may be limited

» Introduction of the right to disconnect for all workers.[63]

The government has adopted and subsequently updated a national strategic framework for digital transformation[64] and the Concept for the *Development of Artificial Intelligence in Bulgaria* until 2030.[65] Regrettably, these documents were developed without structured participation of the social partners in Government-led working groups, nor were there formal mechanisms for incorporating their views and recommendations on the deployment of AI.

In October 2025, a draft law transposing the EU AI Act was published.[66] Under this

62 See: https://www.nsi.bg/index.php/en/statistical-data/312/895

63 See: https://kpmg.com/xx/en/our-insights/gms-flash-alert/flash-alert-2024-078.html

64 See: https://www.mtc.government.bg/sites/default/files/cifrova_transformaciya_na_bulgariya_za_perioda_2020-2030.pdf and https://egov.government.bg/wps/wcm/connect/egov.government.bg-2818/b05137b5-d893-40fc-99f8-876c8c2a0745/Strategy+Digital+Transformation2024-2030.pdf?-MOD=AJPERES&CVID=oWZjkEi

65 See: https://www.mtc.government.bg/sites/default/files/conceptforthedevelopmentofaiinbulgariauntil2030.pdf

66 See: https://www.parliament.bg/bg/bills/ID/166661

draft the Ministry of E-Government and the Ministry of Innovation and Growth would be responsible for the implementation of AI policies. The draft also creates the new post of *National AI Coordinator,* who would oversee regulatory 'sandboxes' established by the two ministries. These 'sandboxes'[67] are intended to provide controlled environments that would foster innovation and support the development, training, testing and validation of innovative AI systems.

Social partners have expressed willingness to engage with the draft legislation. The Confederation of Independent Trade Unions in Bulgaria (CITUB) has already submitted comments and proposals, insisting on active trade-union representation in the planned Consultative Council, which will oversee AI deployments. Participation in this council would strengthen unions' influence on AI policymaking, enhance worker data protection and ensure effective application of the *Human-in-Control* principle. CITUB is also closely monitoring the *Digital Omnibus Regulation Proposal* (published in November 2025) and its potential impact on the transposition of the EU AI Act and related national initiatives.

Policies and Positions of Social Partners

In 2022, CITUB proposed a National Agreement on the implementation of the European Social Partners' Autonomous Framework Agreement on Digitalisation. The draft addresses four key areas:

» Digital skills needed to maintain competitiveness and job security

» Modalities of connection and the right to disconnect in digital work environments

» Artificial Intelligence and the *Human-in-Control* principle

» Respect for human dignity in digital workplaces.

The proposal has been submitted for discussion with national representative employers' organisations, but no final compromise text has yet been agreed.

In 2023, CITUB and the Bulgarian Industrial Association (BIA) jointly prepared a National Report on the Implementation of the *European Framework Agreement on Digitalisation* within the EU-funded project TransFormWork 1. The report confirms that digital technologies and AI are being actively analysed by various stakeholders in Bulgaria.

At sectoral levels there are no joint social-partner initiatives on AI. The topic remains insufficiently studied by sectoral trade unions and employers' organisations and social dialogue is either absent or underdeveloped in many sectors. Sectoral collective labour agreements do not yet explicitly regulate AI, although there are indirect references in the brewing industry (e.g. *Requirement to Establish Change Management Teams for Digitalisation*) and in the banking sector (e.g. P*rovisions on Layoffs Linked to Digitalisation).*

Nevertheless, there are a number of individual initiatives. Trade unions in the education sector are discussing possible AI clauses in their sectoral collective agreement, including funding for AI tools beneficial to schools. Employers are running dedicated

67 In the context of computers, 'sandbox' is a testing environment in a computer system in which new or untested software or coding can be run securely.

projects (e.g., VELES – HORIZON-WIDERA-2022-ACCESS-04; European Digital Innovation Hubs 2.0; European Partnership One Health AMR) and organising events such as *Spinoff Bulgaria*, *AI hackathons* and technology-transfer labs. In 2025, BIA published its own analysis with recommendations for AI regulation.[68]

Field Research

Education

Eight managers, twenty-seven trade-union representatives and one sectoral organisation (Independent Teachers' Union – CITUB) participated in the survey.

Key findings:

» The use of AI is increasing, including with information and consultation procedures, along with staff training, are generally applied before the adoption of AI systems

» The views on AI's efficiency and its impact vary considerably

» AI has not yet significantly altered tasks or working time

» Written AI rules remain rare

» Digital surveillance is widespread and supported by good information and consultation practices.

» Platform work is virtually non-existent and awareness of the *Platform Work Directive* is correspondingly low.

Trade unions emphasise transparency, accountability, personal-data protection and non-discrimination. They insist on mandatory training for both teaching staff and managers (including how to interpret AI-generated data responsibly) and on sectoral monitoring of AI through existing social-dialogue structures and collective agreements. Unions support new legal frameworks that guarantee workers' rights when algorithmic systems are used.

The Independent Teachers' Union (CITUB) proposes the following measures to ensure human-in-control principle in education:

» Develop ethical and legal guidelines (transparency, data protection, fairness, right to explanation)

» Provide training and support for staff (possibly via trade unions)

» Conduct risk assessments for discrimination and bias

» Establish expert groups including teachers and unions

» Agree sectoral ethical AI frameworks

» Prohibit AI from taking final decisions on dismissal, demotion, or contract awards

» Guarantee the right to challenge algorithmic decisions

» Prevent bias on grounds of gender, ethnicity, age, subjects taught, etc.

» Assess AI's impact on workload and compensate or reduce other administrative duties if necessary.

68 The BIA analysis is available at: https://www.bia-bg.com/analyses/view/34190/

Financial services

Five managers and five trade-union representatives responded to the quantitative survey; two sectoral organisations (National Banking Union – CITUB and Federation of Financial Sector Trade Unions – CITUB) participated in the qualitative interviews.

Key findings:

» AI is becoming more autonomous and is integrated into various banking functions

» Surveillance is widespread and GDPR-compliant, but consultation on ethical aspects could be strengthened

» Some *platform-like / out-of-office* work patterns exist

» Awareness of the *Platform Work Directive* remains low

» Trade unions have call for enhanced information and consultation on AI's effects on employment and occupational structure, enabling negotiation of job-retention measures and targeted retraining

» Trade unions support new legislation ensuring human oversight and worker protection.

Health services

Five managers and five trade-union respondents completed the quantitative survey; the Federation of Trade Unions – Health Services – CITUB and the Health and Life Sciences Cluster provided qualitative input.

Key findings:

» The application of AI reduces workload but has had no significant negative employment effects

» AI is used in medical treatment, hospital CRM systems (with challenge procedures), and administrative services

» Surveillance is common, but GDPR-compliant, though ethical consultations could be improved

» No platform workers were reported

» Awareness of the *Platform Work Directive* is low

» Progress depends on expanding high-quality databases, while ensuring transparent, legal and patient-safe data sharing

» Both sides value sectoral social dialogue as a vehicle for supporting government policy and shaping AI legislation

» Unions particularly stress the need for binding *Human-in-Control* principle and strengthened cyber-security.

Industrial production

Five managers and twelve trade-union respondents completed the quantitative survey; eight sectoral organisations (five trade unions and three employers' organisations) participated in interviews.

Key findings:

» Further AI deployment is expected

» AI is used in both production and management (including HR)

» Satisfaction with AI in production is generally high and employers provide training

» Pre-adoption consultation and transparent written rules need to improve

» Digital surveillance is widespread, supported by consultation and rules to prevent abuse

» Minor workforce displacement has occurred in some sub-sectors

» Both unions and employers support government-led AI initiatives and effective transposition of EU legislation

» They see sectoral and company-level social dialogue as essential for strengthening information/consultation rights, qualification programmes and collective-agreement clauses on data management and decision-making

» Awareness of the Platform Work Directive is higher than in other sectors

» Employers propose mandatory labelling of AI decisions and strict application of the *Human-in-Control* principle alongside company-level digital / AI skills training.

Media

Six managers and five trade-union respondents completed the quantitative survey.

Key findings:

» AI affects occupational structure and employment, especially in print media

» In TV and radio, AI improves company performance, with further integration planned for journalistic tasks (none reported in HR)

» Deployment requires better-trained staff and company-level rules on ethics, human oversight, occupational health and safety, content reliability and copyright.

» Worker surveillance is not dominant and consultation procedures before introducing such systems are recommended

» Platform work is emerging

» Awareness of the EU Platform Work Directive is low, particularly among managers, suggesting a need for targeted information campaigns.

4.1.2 CYPRUS

In Cyprus, according to the *European Commission Digitalisation in Europe, 2024*[69], almost 50% of enterprise use digital technologies and almost 8% use AI (EWCS 2024). The application of new technologies results from the strategy implemented since 2020 through the *National Action Plan for Digital Skills, 2021-2025*.[70] This *Action Plan* was also part of the Cypriot participation in the EU's post-COVID *Recovery and Resilience Plan.*

69See: https://ec.europa.eu/eurostat/web/interactive-publications/digitalisation-2024#digital-skills

70 See: https://dig.watch/resource/cyprus-national-action-plan-for-digital-skills-2021-2025

It set out how the Government proposed to develop its policies, to promote, regulator and coordinate change through the application of digitalisation, working together with social and economic actors, including the social partners. A target was set to have 80% of all adults with basic digital skills by 2030. It also has a clear focus on an 'ethical' approach to the introduction and use of AI and, in this context a *National Committee of Ethical and Reliable AI*[71] has been established to monitor the implementation of AI systems.

The office the Deputy Minister of Research, Innovation and Digital Policy is responsible for the implementation of the *Action Plan*. The *Digital Skills and Jobs Coalition* works with the *Digital Champion* within this Ministry and consists of representative from both public and private sectors. The objective is to bridge the digital gap by promoting education and training programmes for workers (including unemployed). In particular, the emphasis is on vulnerable groups and those living in remote parts of the island, including developing digital skills and promoting STEM (Science, Technology, Engineering and Mathematics) subjects in education and training and ensuring a digital literate workforce into the future.

Cypriot policies largely follow EU legislation, such as the GDPR and the *AI Act Regulation*, in 'policing' the use of AI and digitalisation in employment and the use of algorithmic tools. The *National Committee* is tasked with drafting guidelines on the use of AI, in line with Cypriot social and legal values and fundamental rights.

However, the initial findings from the TransFormWork 2 research show that:

» The adoption of AI remains at an early stage with limited application in many enterprises and sectors

» Employees have little involvement in the design and implementation of AI systems and are not sufficiently informed about AI. This lack of transparency and employee participation is an obstacle to the acceptance of AI

» Where AI has been introduced, there is insufficient training on these new systems

» There is a lack of clear rules for the Human-in Control principle and minimal transparency on the use of AI systems for internal auditing of work

» There are insufficient measures to protect personal data

» Knowledge of algorithmic management is very low, resulting in uncertainty and risks in the protection of employees' personal data.

The social partners are playing a key role in the development of AI technologies and agree that they will have a positive impact and open up opportunities. Employers believe that AI can:

» Increased productivity

» Improved customer service

» Make for better data driven decision-making

» Improved workplace safety,

> *... and that AI is a 'game-changer'. While recognising the challenge of 'job displacement', employers believe that AI also has the potential to create*

71 See: https://www.google.com/search?client=firefox-b-d&q=National+Committee+of+Ethical+and+Reliable+AI+Cyprus

new jobs. They consider it important that the key for the positive implementation of AI should include:

» Access to continuous learning and workplace skills

» A collaborative strategy for economic growth.

Employee representative organisations also see opportunities for AI to:

» Allowing for flexible workplace arrangements

» Personalised learning and development opportunities

» The automation of repetitive tasks, resulting in improved working conditions and enhanced job satisfaction

» Better workplace safety.

However, both social partners agree that AI presents ethical and rights challenges, such as:

» Protection of privacy, personal data, and displacement of workers and jobs

» The danger of bias in hiring and promotions

» The use of surveillance AI technology to monitor performance and infringement of workers' rights.

As part of the national strategy a number of *Digital Innovation Hubs* have been set up to support business centres and to provide opportunities to adopt digital technologies. These hubs also provide for opportunities for government agencies, academic institutions and enterprises to build a more digitally knowledgeable society. It is hoped that these hubs will make the integration of AI into different business sectors as effective as possible.[72]

Field Research

Education

As noted above, there is a commitment to bridge the digital gap through the educational system, therefore, the implementation of AI systems is strong in the Cypriot education sector, across all levels – primary, second level and third level. The sector is made up of a wide range of institutions, from very small to large centres of education.

Staff membership of trade unions and other employee representative organisation is high and collective agreements covering working conditions are in place across both the State system, in private primary and second-level schools and private third-level educational institutions. AI is used in the education sector for general management and administrative. However, its use in HR management is minimal and none of the organisations that responded to the field survey use AI to monitor employees.

72 See: https://www.diginn.eu/

Financial services

This sector is also unionised and collective agreements are found in a majority of enterprises. AI systems are used for automatic data management and analysis, improving greater accuracy and efficiency. While most respondents stated that they do not use AI, specific training is provided for employees who do for their particular responsibilities.

There were no significant changes observed to work tasks, such as to working time and work procedures, as a result of the introduction of AI, Just one of the financial organisations reported that the workforce was consulted before AI was introduced.

The *Human-in-Control* principle was not known and those respondents who indicated that workplace monitoring is in place, for example for timekeeping, did not think an AI system was used.

Health services

There is no clear evidence that AI is in use in the Cypriot health services for diagnostics or administration and no indication that AI will be introduced in the near future. The sector is predominantly unionised and has universal collective agreements coverage, but, again, there is no clear indication that workers might be impacted by the introduction of AI systems are consulted before their introduction. Consequently, the *Human-in Control* principle is not a priority.

AI is not used for HR administration and where AI is in place the quality of service has only *somewhat improved* and working time has not been affected. Furthermore, questionnaire responses indicate that training provided to workers in the use of an AI system is limited and there are mixed opinions on the quality of training.

Industrial production

This sector is also predominantly unionised and has universal coverage of collective agreements. A minority of the enterprises in have introduced AI. However, neither the workers affected, nor their representatives, were consulted on its introduction. Training was provided to those workers using AI and robotic systems and this training was considered *effective.*

The study suggests that approximately 60% of industrial enterprises are using AI for the automation of the production processes, repetitive tasks and to increase efficiencies. Consequently, AI has had a significant impact on the quality of products and of services.

None of the enterprise respondents use AI for personnel administration or to monitor the workforce but the *Human-in-Control* principle is largely unknown.

Media

Again, this sector is unionised and comprehensive collective agreements are in place. AI is widely used in production process, such as composition and reporting, which can be more efficient and speed output. While the introduction of AI is not widespread, where it is used it is considered positive, with perceived improvements

in a quality of services and more efficient work. However, training for the use of AI is not considered adequate.

Workplace monitoring is not a feature of the media sector, while platform workers are an established part of its operations, the Platform Work Directive is not widely known

4.1.3 IRELAND

Dating back to the 1970s, Ireland has been an early participant in the digital age and the sector contributed an estimated €48 billion to the Irish economy in 2024. It is estimated by the Industrial Development Authority (IDA) that there are almost 1,000 tech companies based in Ireland, ranging from the global superpowers to embryonic start-ups. These include 16 of the top 20 global tech companies and the top 3 enterprise software providers, such as Apple, Microsoft, Dell, Intel, IBM, SAP, Facebook, LinkedIn, Twitter, HubSpot, eBay and PayPal, many with their Middle East and Africa (EMEA) headquarters in the country and employing more than 106,000 workers.

Recent statistics for 2024 (February, 2025) from the Central Statistics Office (CSO) indicate that an estimated 95% of the Irish population use the internet on a daily basis in January, 2023.

> An estimated 15.2% of all enterprises indicated that they used AI technologies in some capacity. The use of AI for natural language generation (7.4%) was the most common AI technology used among businesses in Ireland, followed by AI use in data mining (6.5%) and in automating workflows or assisting in decision making (6.4%).[73]

Other CSO technology / internet statistics show that

» For small enterprises (between 10 and 49 people employed), 38% used the internet for sales, compared with 51% of medium enterprises (between 50 and 249 people employed), and 54% of large enterprises

» Twelve per cent of enterprises had a security incident leading to the temporary unavailability of ICT services in 2024

» Almost a quarter (24%) of enterprises targeted advertising based on users' web content or searches. [74]

However, an annual study undertaken by the University of Dublin, Trinity College, in conjunction with Microsoft Ireland, show that in 2025 there was a significant decline in resistance to AI, with only 9% of organisations reporting *that they do not use AI in any form, compared to 51% in 2024, indicating a significant shift towards the adoption of AI.*

This research also found that smaller organisations (defined as: revenues under €10 million) are lagging behind larger enterprises in the adoption of AI – in 2024 only 30% of these organisations had adopted any AI, in comparison with 50% in the 2025

73 See: https://www.cso.ie/en/releasesandpublications/ep/p-isse/informationsocietystatistics-enterprises2024/artificialintelligence/

74 See: https://www.cso.ie/en/releasesandpublications/ep/p-smrt/smarttechnology2024/

survey.[75]

Ireland as the EU Technology Regulator:

The Data Protection Commission (DPC)[76] is the Irish supervisory authority for the General Data Protection Regulation (GDPR) and has already intervened in a number of cases because of data privacy concerns about AI proposals. It has a key and important role at the EU level, given that the European headquarters of most large tech companies are based in Ireland, so it acts as the lead EU regulator for these major tech companies. Some 85% of GDPR-related fines issued across Europe in 2023 - including the EU, EEA and UK - were issued by the DPC, As a consequence Google, Meta, X and LinkedIn have all paused or delayed AI projects in the European Union based on data privacy concerns.

Government policies

The Government published its first policy document in 2021, *AI – Here for Good*[77], which sets out how the country can become:

> *... an international leader in using AI to benefit our economy and society, through a people-centred, ethical approach to its development, adoption and use.*

It proposed to achieve this under eight policy strands:

1. AI and Society
2. Governance Ecosystem that Promotes
3. Trustworthy AI
4. Driving Adoption of AI in Irish Enterprise
5 A strong AI innovation ecosystem
6. AI education, skills and talent
7. A supportive and secure infrastructure for AI
8. Implementing the Strategy.

This document was followed by two further policy papers:

Harnessing Digital – the Digital Framework in Ireland (February 2022)[78]

> *...which set out an overall approach to maximising the economic and societal benefits of digitalisation and to ensure that every citizen is in a position to enjoy those benefits*

and ....

> *Artificial Intelligence: Friend or Foe (June 2024) incorporated three separate reports on:*
> *- Public sector policy considerations*
> *- Review of how AI could Impact Ireland's Economy*

75 See: The AI Economy in Ireland 2025: Trends, Impacts & Opportunity https://www.tcd.ie/media/tcd/business/pdfs/research/Microsoft-Report.pdf

76 See: https://www.dataprotection.ie/en

77 See: https://enterprise.gov.ie/en/publications/national-ai-strategy.html

78 See: https://assets.gov.ie/static/documents/harnessing-digital-2022-progress-report.pdf

- Analysis of How AI Could Impact Ireland's Labour Market.[79]

The 2021 Policy Paper was updated in November, 2024, to take account of the major developments in AI technologies in the previous four years and that are now available to tech users and businesses. It also considers new regulations, such as the AI Act Regulation. In this updated policy paper, the Government is targeting to have, at least, 75% take-up by Irish enterprises of AI, Cloud and Data Analytics by 2030.

It also places an emphasis on digital skills training:

> *With AI set to transform a wide range of industries and occupation, skills will play an important part in our success. Our range of digital upskilling and reskilling initiatives, including those available via Skillnet Ireland, SpringBoard+, and future human capital initiatives, will be expanded as part of the refreshed AI strategy. Enterprise will need to be proactive in upskilling its workforce to develop AI skills and knowledge necessary to leverage the technology.*[80]

Implementation of the AI Act Regulation

As required by Article 70 of this Regulation, the Government have designated eight public bodies as 'competent authorities' responsible for its implementation and enforcement. In addition, powers have also been assigned to a further nine key State organisations to protect fundamental rights under the 'high-risk' hierarchy of the legislation. These powers will take affect from August 2026.

Public Sector Agreement, 2024

The Government and the trade unions representing public sector employees reached a new agreement on *pay and conditions* in which the parties acknowledgement:

> *...that national competitiveness will depend on the degree to which Ireland can successfully embrace and adapt to developments to do with digitalisation and artificial intelligence (AI). The parties further agree that the public service must play its part in taking a lead role, building on commitments made in previous agreements, the parties will continue to embrace and support transformation through the use of technology.*[81]

These include the agreement *Harnessing Digital – The Digital Ireland Framework*[82] which sets out an ambitious target of 90% of applicable public services to be online by 2030. The parties to this Public Service Agreement, through early consultation and engagement close to the level of impact, commits the parties to support the achievement of the goals through:

» Cooperation with change and the use of technology to deliver services digitally, including maximising the benefits of modern and emerging information technology

79 See: https://www.gov.ie/en/publication/6538e-artificial-intelligence-friend-or-foe/

80 See: https://enterprise.gov.ie/en/news-and-events/speeches/statement-niamh-smyth-19-02-2025.html

81 See: https://www.gov.ie/en/department-of-public-expenditure-infrastructure-public-service-reform-and-digitalisation/publications/public-service-agreement-2024-2026/

82 See: https://www.gov.ie/en/department-of-the-taoiseach/publications/harnessing-digital-the-digital-ireland-framework/

including Artificial Intelligence and related technologies, such as Robotic Process Automation (RPA) and Data Analytics

» Collaboration across the civil and public service to deliver a seamless public service user experience

» The integration of shared service functions, including for customer-facing services, by utilising assets to deliver a host of public services in a "one-stop-shop" approach. This may involve:

- The reallocation of resources, to support digital inclusion for the public
- The standardisation and streamlining of systems and processes to deliver inclusive and integrated online and offline services with a particular emphasis on reshaping offline services in support of digital inclusion
- Acquiring digital skills necessary to perform effectively in an increasingly digital environment.

Social partners' policies:

Both the Irish Congress of Trade Union (ICTU) and Irish Business and Employers' Confederation (Ibec) have made submissions to government on AI in advance of the publications of these policy documents and employers are strongly represented in the AI-related bodies that have been established by Government, while trade union representation is limited.

Trade unions

However, the trade unions are *curious but cautious* about AI, seeing a number of benefits, but also concerns and they have looked for full information, consultation and negotiation on the deployment of AI, such as how it might result in:

» Job displacement

» Dehumanisation of decision-making

» A lack of information and training

» Risks to workers' physical safety and mental health caused by the use of algorithmic management.

In a statement to the Joint Oireachtas (Parliament) Committee on Enterprise, Trade and Employment (June 2023), the ICTU set out its policy on AI:

> *Trade unions acknowledge that artificial intelligence (AI) systems offer immense opportunities for improving work and workplaces. For example, AI tools can improve worker safety, productivity and freed them up do more rewarding work. At the same time, however, without appropriate regulation the increased usage of these largely invisible technologies poses potential risks to workers which is why we strongly endorse the European Trade Union Confederation (ETUC) calls for a dedicated EU directive on AI in the workplace.*[83]

Following on from this statement, the ICTU biennial conference (July, 2023) adopted a detailed resolution, setting out the trade unions' policy on the introduction of AI

83 See: https://www.ictu.ie/news/artificial-intelligence-workplace-dr-laura-bambrick

systems, including:

» The development of a comprehensive policy on the use of AI in the workplace, with a focus on the protection of workers' rights, including the rights to information, consultation, and participation and with due regard to health and safety legislation, equality and the right to dignity at work

» A campaign for an EU Directive on Algorithmic Systems at Work

» To lobby at national and EU levels to ensure that EU policy is predicated on the 'humans-in-control' principle

» To consider holding a seminar for affiliates on the implications for trade union organisation and representation of AI

» Ensure that any legislative protections apply to all workers across the Island of Ireland.[84]

In addition, a number of other areas were identified, such as:

» Job security and the need for training on AI systems for impacted workers

» Policies, based on consultation, for the use of AI for workplace monitoring, ensuring the privacy of workers and the application of EU and national legislation, such as GDPR and the AI Act

» Transparency of the use of algorithms for the assign of work tasks, setting pay rates and determining work schedules.

Employers:

In its publication *Smarter technology for a better future*[85] Ibec sets out its vision of a future Ireland:

» As a more competitive, smarter low carbon economy, with a sustainable enterprise base that provides quality jobs and enables a high quality of life

» An inclusive Ireland at the heart of an outward looking, dynamic and successful EU that provides the conditions for organisations and individuals to adapt to technological change and reach their full potential.

Under the right conditions, this publication suggests that AI can be a *suite of transformative technologies* that can enable that future, indication that Ireland has a positive baseline in certain aspects of digital development, but its economy and society must be prepared to work and compete in a world that is subject to further technological change.

A more recent Ibec publication[86] sets out the findings of a new comparative study to employees' attitudes to the adoption of AI, which found that:

» Forty per cent of employees reported using AI in their workplace tasks (compared to 19% in 2024)

» The use of AI in specific roles increased to 33 % (12% in 2024)

84 See: https://www.ictu.ie/publications/bdc-2023-agenda

85 See: https://www.ibec.ie/-/media/documents/influencing-for-business/digital-policy/ibec-national-ai-strategy-priorities.pdf

86 See: https://www.ibec.ie/influencing-for-business/ibec-campaigns/ai-hub/guidance-on-embracing-ai

» Eighty per cent of respondents reported that AI improved productivity

» Seventy-five per cent of respondents said that AI allowed them to focus on other aspects of their duties

» Eighty-one per cent said that additional training helped them make better use of AI

» However, 27% of respondents had not received formal training on AI systems, while 81% indicated that they needed more training on AI systems.

Field Research

Education

Employees in the education sector are covered by the Public Service Collective Agreement[87], in which, the Government committed €50 million to the provision of digital technology infrastructure in first level and second level schools, in its associated policy paper, *Digital Strategy for Schools*[88]. This was followed by the *National AI Strategy – Refreshed,* which committed the Department (Ministry) of Education and Youth (DfE) to *develop guidelines on the use of AI for teachers and school leaders.*[89] These guidelines were published in *Guidance on Artificial Intelligence (AI) in Schools*[90] (October 2025) which outlines how an understanding and knowledge of AI can be developed for teaching. It draws on best practice as set out by UNESCO and the EU and from research findings of the OECD:

> *... shows that digital technologies can support and enhance teaching and learning when used purposefully. The role of the teacher is more critical than ever.*[91]

To support schools and colleges in the introduction and teaching of digital and AI systems a new agency, Oide, was established (Sept 2023) to provides a range of professional learning opportunities for teachers, including advice on the use of technology in education. In October 2025 Oide published extensive teaching aids and provides a key resource for education in AI systems.[92]

The AI Advisory Council has also provided advice on the supporting principles to ensure that AI tools used by students are private, secure and free, and that data is not used for training AI models. Guidance on the use of AI has also been published by the Higher Education Authority, which examines AI in the broader educational landscape - *AI for Further Education and Training and Higher Education.* This report outlines the views of staff, students and leaders across the higher education system on the opportunities and challenges posed by AI and sets out a range of insights, such as:

87 Op cit. (Footnote 87)

88 See: https://assets.gov.ie/static/documents/digital-strategy-for-schools-to-2027.pdf

89 See: https://enterprise.gov.ie/en/publications/national-ai-strategy-refresh-2024.html

90 See: https://assets.gov.ie/static/documents/digital-strategy-for-schools-to-2027.pdf

91 See: https://www.oecd.org/en/publications/the-impact-of-digital-technologies-on-students-learning_9997e7b3-en.html

92 See: https://www.oidetechnologyineducation.ie/courses-practice/ (Oide is Gaelic for 'teacher')

» The educational sector is moving rapidly but unevenly, so a coordinated national approach is needed

» The educational purpose of AI should be re-examined as it challenges fundamental values of authorship, assessment, and academic integrity

» Inclusion and equity must be embedded to ensure AI supports, rather than undermines, accessibility

» Assessment practices should evolve towards authentic, process-based models that reflect AI realities

» Staff and students need structured support, professional development, and partnership opportunities

» Governance and infrastructure should extend beyond tools to ethical frameworks, procurement guidance and institutional readiness

» Leadership should shape the AI transition through vision, values and national coherence.[93]

Financial services

The financial services sector is a huge part of the Irish economy, particularly the highly successful International Financial Services Centre (IFSC), based in Dublin. Supported by a Government strategy, *Ireland for Finance*[94], Ireland has built a significant and specialist international financial services sector over the last 40 years. It is home to approximately 600 international financial services companies employing 60,100 workers - representing a 50% increase since 2015. Ireland is home to some of the world's largest international financial services companies, such as banking, funds, asset management and investment, insurance and reinsurance, fintech, and aircraft leasing.

Banks and other financial groups are using AI for many aspects of their operations, such as:

» Improving customer services

» Anti-money laundering documentation processing

» Credit assessments

» Claims management

» Customer behaviour analysis

» Cyber security, tracking and preventing fraud and enhancing company security.

The Financial Services Union (FSU) is the trade union that has been to the forefront within the ICTU in addressing AI. It has commissioned extensive research in recent years on the likely impact of AI on its members[95].

It also entered into a framework agreement with the Bank of Ireland (BoI) (March 2025), which sets out broad principles on the planning and deployment of AI. FSU

93 See: https://hea.ie/2025/09/17/generative-ai-in-higher-education-teaching-and-learning-sectoral-perspectives/

94 See: https://www.ireland.ie/en/invest/ireland-for-finance/

95 See: https://www.fsunion.org/latest/employee-experiences-of-technological-surveillance-in-financ/

is also in advanced discussions with other banks operating in Ireland to negotiate similar agreements. The FSU / BoI agreement is important in establishing a precedent that can be followed in other business sectors.

Health Services

As in the Education Sector, there are private providers in the Irish healthcare sector, but the vast majority of services are provided by the State agency, the Health Services Executive (HSE). While AI is already use extensively in various parts of the health service, there is as yet no formal collective plan on how the technology can and should be applied by the HSE in the provision of healthcare.

A national digital health strategy, *Digital for Care: A Digital Health Framework for Ireland 2024-2030*

was published in May, 2024, sets out the *ethical use of AI technologies*, based on reliable data and digital infrastructure, has the potential to revolutionise how healthcare is provided into the future by:

> *... harnessing the power of data, digital technology and innovation, to widen access to health and social care services, provide improved affordable and equitable care, better patient safety and greater productivity. It presents a vision for how we will use data and digital technology to improve our population's health and well-being, enabled by seamless, safe, secure, and connected digital health systems. Using data and digital, we see a future where our population, our patients and those who care for them — are empowered and better informed about their care.*

However, this document also states that while AI can be deployed to support clinical decision-making for diagnostic precision and powering medical devices for improving treatments:

> *... the role of AI is to support the healthcare professional who remains the final arbitrator in decisions directly related to patient care and treatment.*[96]

The HSE has also established the *Robotic Process Automation (RPA) Centre of Excellence*[97], which oversees projects, identifies opportunities for the application of AI systems and to provide centralised governance, to ensure best practice coding and security standards. The technology allows computer programmes (or robots) to replicate otherwise manual processes in an automated, repeatable, and reliable manner. Robots can be developed to mimic repetitive, mundane, and labour-intensive work, freeing up staff to focus on higher value activities.

The HSE has also established an *AI and Automation Centre of Excellence* which helps it deliver faster and more responsive care to:

» Support clinical decisions

96 See: https://assets.gov.ie/static/documents/digital-for-care-a-digital-health-framework-for-ireland-2024-2030.pdf

97 See: https://www.ehealthireland.ie/technology-and-transformation-functions/corporate-delivery/digital-workflow-automation/robotic-process-automation-rpa-centre-of-excellence/

» Reduce manual tasks

» Allow staff to focus more on patients.[98]

It also sets rules for how AI tools should be used and supports new ideas and innovation. A growing expertise on AI and automation community also helps to bring together HSE staff who champion the use of AI, which is also used across a number of other HSE services, including:

» HR shared services

» Health Business Services (HBS), finance

» The Mater Hospital.[99]

These services have introduced robotic process automation (RPA) software to carry out repetitive administrative tasks, such as:

» Data entry and file processing

» Hospital Automation – e.g. the University Hospital, Galway, introduced *Ruadhán the Robot*, a software robot to assist with patient referrals, reduce waiting times and speed up the arrangement of appointments

» Automation has improved the speed and accuracy of processing test results in cancer screening programmes

» Microsoft Power Platform is a suite of tools used to assist teams to automate workflows, build custom applications and data analyse, which has resulted in faster problem-solving and better service delivery.

The Mater Misericordia University Hospital (MMUH), located in Dublin, has become the first hospital in Ireland to establish a *Centre for AI and Digital Health*. The Mater Hospital's new hub for AI-driven medical advancements is overseeing the adoption of AI and engaging in research across multiple medical specialties, including radiology, oncology, cardiology, and ophthalmology.

Another State agency, the Health Information and Quality Authority (HIQA), is the authority with responsibility to monitor and improve health and social care services[100], also published a scoping consultation (April, 2025), to inform the development of a *National Framework for the Responsible and Safe Use of Artificial Intelligence in Health and Social Care.*[101] Trade unions contributed to this consultation.

Industrial production

AI is being used across the Irish industrial sector - particularly in manufacturing (including pharmaceuticals, life sciences, med-tech, and engineering) - primarily to enhance operational efficiency, quality, and competitiveness, fitting into the country's broader *Industry 4.0 Strategy.*[102]

98 See: https://about.hse.ie/our-work/digital-health/ai-and-automation-centre-of-excellence-coe/

99 See: https://www.medicalindependent.ie/in-the-news/breaking-news/mmuh-launches-irelands-first-ai-centre-in-a-clinical-setting/

100 See: https://www.hiqa.ie/

101 See: https://www.hiqa.ie/sites/default/files/2025-04/AI-Framework-Scoping-Consultation-Brief.pdf

102 See: https://enterprise.gov.ie/en/publications/publication-files/irelands-industry-4-strate-

With full-time employment in all industrial sector companies reaching 297,670 (June of 2025)[103] is a cornerstone of the economy. However, according to a PwC report (May, 2025)[104], while the adoption of AI is widespread, with many companies piloting projects, full-scale integration and significant investment currently lags behind other EU Member States.

Key AI applications in the industrial sector include:

» Predictive Maintenance: AI algorithms analyse data from sensors on machinery to forecast equipment failure before it happens. This allows companies to schedule maintenance proactively, significantly reducing costly unplanned downtime and extending the lifespan of assets

» Quality Control and Assurance: AI-powered computer vision systems (cameras and sensors) are used on production lines to automatically inspect products for tiny defects that the human eye may miss. This ensures higher product quality and reduces waste

» Operational Efficiency and Cost Reduction: AI optimises complex processes, such as supply-chain management, inventory management and production scheduling. By improving demand forecasting and resource allocation, companies can reduce operational costs (including energy costs) and increase overall productivity

» Data-Driven Decision-Making: AI and machine learning are used to process and analyse vast amounts of production data, providing manufacturers with deeper insights for faster, more informed decision-making on the shop floor and in strategic planning

» Sustainability and Resource Efficiency: AI is deployed to track and optimise energy consumption and material usage, leading to more efficient and flexible production processes that support Ireland's climate action and sustainability goals.

Media

The National Union of Journalists (NUJ) and the Irish Writers Union (IWU, an affiliate of SIPTU) have serious concerns about the use of AI in the news media and creative sectors, in particular its threat to job security, intellectual property rights and journalistic ethics. The NUJ's position is that AI is not a substitute for *human* journalism and, through its recent public campaign, *Artificial intelligence: journalism before algorithms,* it emphasised that the primary value in journalism is in the human talents of creativity and the expertise of journalists.[105] Protection of Intellectual Property is a critical concern for both the trade unions and they are actively campaigning against the unauthorised "scraping" of copyrighted material (articles, books, etc.) by tech companies to train Generative AI models without consent or compensation.

The Irish Writers Union (IWU) has called on the Irish government to protect authors from massive copyright infringement by tech giants in the development of AI. Both

gy-2020-2025.pdf

103 See: https://tradingeconomics.com/ireland/employment-manufacturing-eurostat-data.html

104 See: https://www.pwc.ie/media-centre/press-releases/2025/ai-in-operations.html

105 https://www.nuj.org.uk/resource/artificial-intelligence.html

organisations have demanded that any licensing agreements between media owners and AI companies must include provisions for journalists and creators to receive a fair payment for the use of their work in the further development of AI systems.

The NUJ also insist that management must engage in meaningful consultation with the trade unions and agree collective agreements before implementing AI in newsrooms. They are also opposed to the use of AI for staff surveillance, monitoring, work allocation, or appraisal without explicit collective agreement.

The NUJ Ethics and Equality Council have described the AI Act Regulation as an important step amid fast-paced AI developments....

> *Approval of this Act is crucial in ensuring necessary governance of artificial intelligence, with developers rightly sanctioned for breaches. AI firms must not be granted free reign to use copyright material of journalists who face battles against tech giants currently acting with impunity.*
>
> *AI's use to spread misinformation and disinformation or to generate deepfakes is particularly worrying to NUJ members who fear an erosion of public trust and confidence in journalism. The AI Act will support efforts to prevent harm caused by some technologies including those that perpetuate biases impacting marginalised groups. We welcome the prohibited use of technologies to categorise individuals using biometric data including in efforts identify their race, political beliefs, trade union membership and sexual orientation.*[106]

Many news organisations have not yet developed any formal policy on AI. As one respondent to the survey questionnaire noted:

> *Our organisation is just starting the process of forming a corporate strategy for AI use and so staff use AI informally according to personal knowledge and preferences but there is no cohesive policies, procedures or practices as yet. A staff questionnaire is being used to ascertain how much workers currently use AI before the company decides it's corporate strategy. However, in the recent past the organisation has consistently employed staff "engagement" as a box ticking exercise, leaving staff with no real influence on strategy.*

4.1.4 ITALY

In Italy the Government has taken a different policy approach by focusing on legislation through the implementation of the AI Act Regulation. For example, Law 11 (September 2020) n120[107] sets out:

» The creation of a single personal digital identity (SPID)

» A State-controlled app for access to public services that, in future, will be accessible online

106 See: https://www.nuj.org.uk/resource/artificial-intelligence.html

107 See: https://www.google.com/search?client=firefox-b-d&q=Law+11+%28September+2020%29+n120+Italy

» The setting up of a National Platform for Public Administration

» Establishment of a code-of-ethics

» Design (but not implementing) a National cloud system for data storage.

To further incorporate the AI Act into law the Council of Ministers adopted draft legislation in 2024 (*n.78 of April 23, 2024).* This Bill was approved by the Senate, March 2025, and is now before the Chamber of Deputies.[108]

The objective is to promote:

» A correct, transparent and responsible use, in an anthropocentric dimension, of artificial intelligence, aimed at seizing the opportunities (Article 1)

» To improve the living conditions of citizens and social cohesion.

When passed by Parliament, this legislation will introduce regulatory criteria, principles and sector specific rules so as to find a balance between the use of new digital technologies and the risk associated with their improper use. Rules are outlined for five areas of the national strategy:

» National authorities

» Promotion actions

» Protection of copyright

» Criminal sanctions

» Delegation to Government for adaptation to the European Regulation and for the regulation of hypotheses of the use of artificial intelligence for illicit purposes.

In 1999[109], the *Politecnico di Milano* established its *Digital Innovation Observatories*. In the observatory's research into AI, it identified eight key applications for AI:

» Autonomous vehicles

» Autonomous robots

» Intelligent objects

» Virtual assistant and chatbot

» Intelligent data processing

» Recommendation

» Image processing

» Language processing

Within the context of these eight applications, AI is found mostly in large enterprise, with over 24% saying they use AI systems, while in small enterprises (with less than 10 employees) it is only 6.2%.[110] Surprisingly, AI is used in only 18% of public administration offices.

One aspect of the workforce that is of concern is the large number of platform workers in the 'gig' economy, with 1.5% of the total 15 to 64 working age population

108 See: https://www.advant-nctm.com/en/news/ddl-intelligenza-artificiale-dal-senato-la-prima-approvazione

109 See: https://www.osservatori.net/

110 See Table 3, page 25

working in these insecure jobs. They are usually self-employed, have precarious jobs and low pay, less than 17% of these 'remote' workers have an employment contract. They have legal protection under *Law Decree No 101, 3 September 2019*, but there are concerns as to how effective these legal protections are. [111]

In addition, *Article 4 of the Workers' Statute (Law no 300/1970)* [112] provides protection for workers using technologies, such as any intrusion considered 'offensive to their dignity and / or privacy'. Employers, introducing digital technologies are obliged to inform and consult with workers' representatives. There is further substantial legislation that provide broad legal and contractual protection. Also, substantial occupational safety and health legislation applies to the digitalisation of and the use of AI in workplaces. Government plans and policies related to digitalisation, including on digital identity and the digitalisation of Public Administration.

Apart from legislation, a number of national sectoral-level collective agreements also cover the use of digital technologies and AI. These cover the rights of workers working 'remotely', courses for training workers in the use of AI, including data these technologies are able to generate. Other collective agreements in the banking sector on the impact of the digitalisation of banking services and in retail shopping services requiring such enterprises to inform customers of the new technology.

There are also a wide range of collective agreements at company / enterprise levels on the use of digital and AI technologies.

Field Research

Education

The TransFormWork 2 study focused on second-level education. In recent years, schools have been introducing AI-based systems, mainly for teaching and for administration. In 2024 the Italian *Ministry of Education and Merit* undertook a limited pilot study to monitor the use of AI in the education sector, with the intension of using the results to re-shape *learning pathways*.

The study showed that teachers can prepare lessons much more quickly using such AI systems as ChatGPT EDU. [113] It found that many second-level students already use AI tools for i) translations; ii) to generate summaries; and iii) draft essays. AI is frequently used by schools for tracking students' performances, tutoring, language teaching and translations.

There are no indications that AI is used by schools for personnel management procedures, such as recruitment, teaching evaluation, promotions or sanctions. However, AI is used for certain organisational tasks, such as absences, school performance statistics and the distribution of teaching hours.

The education trade unions have insisted on regulations that require all final decisions respect the *'Human-in-Control'* principle. However, there was very little genuine consultation with the unions or with staff representatives prior to the introduction of the AI systems.

111 See: https://commission.europa.eu/system/files/2023-11/it_ssc_59_2021.pdf

112See: https://www.google.com/search?client=firefox-b-d&q=Article+4+of+the+Workers%E2%80%99+Statute+%28Law+no+300%2F1970

113 See: https://chatgpt.com/business/education/

Financial services

Almost all of the questionnaire responses indicated that banks are already using AI systems to enhance operational efficiency and customer services, such as:

» Mobile banking

» Contactless payments

» Advanced cyber security

» Blockchain

» Predictive analytics based on machine learning.

Over 80% of banks have already introduced home banking services and AI systems are used by 65% of banks to analyse risks and customer behaviour. Also, many repetitive tasks have been automated, such as those necessary for branch operations. This has resulted in the reduction of staff in branches, while, at the same time, the demand for staff with relevant digital skills has increased. Interviewees expressed concerns about the growing practice of *some selected workers* having access to AI systems.

The banking national agreement in 2022 included clauses on the updating of digital skills and the adoption of new working arrangements, such as smart working. However, there was no consultation with affected workers and/or their representatives before the introduction of AI systems and there was no involvement of affected workers in planning their introduction.

Industrial production

The focus of the Italian research was on the metalworking industry. The findings indicate that the impact of AI extends across all aspects of the production process, including:

» Data analysis in 'real time'

» Reducing errors, waste and costs

» Increasing warehouse and plant efficiencies

» Improving manufacturing accuracy and quality control.

The potential of AI for the use of machine 'learning technology' and robotic 'intelligence' has the potential to improve manufacturing and the development of machines that can perform tasks and functions of existing workers, thus resulting in the replacement of jobs and skills across the workforce not only for 'blue-collar' workers, but also for administrative and office workers. A further application of AI can be to improve efficiencies in its sales, customer service and external contact with the enterprise's customer base.

However, the use of AI and robotics in manufacturing is largely confined to large-scale enterprises and is still in the 'experimental' phase due to the very large initial investment in this new technology and the need for specialist operators. The application of AI powered machinery can perform tasks and functions that, until now, were the exclusive prerogative of 'human' workers. The introduction of AI systems can, therefore, impact on 'blue-collar', 'white-collar' and engineering jobs.

Trade union involvement is generally at the 'information' stage. To date, there have not been any company-level or group-level bargaining on the introduction of AI manufacturing technologies. However, the leadership of the unions are aware of the need for greater union involvement as the introduction of AI technologies move past the experimental phase.

As AI technologies move to the 'mainstream', concerns are expressed by survey respondents regarding the provision of training for new technologies. Many respondents said that the introduction of technology is not always accompanied by training of those whose jobs are impacted and that it is important for union representative to ensure that training always accompanies its introduction if jobs are threatened. Retraining is also important, particularly for older workers who are less familiar with digital technologies, especially AI, and are at risk of been digitally 'left behind'.

Generally, the research responses were positive regarding the impact of AI systems on improving workplace safety. However, there are concerns about it leading to a worsening of working conditions and increased stress, including on:

» Changes in working hours

» Changes in the organisation of work

» Increased pace of work and workload

» Reduced 'down-time'

» Reduced worker control

» The possible use of AI systems for increased workplace surveillance.

In addition to these challenges, respondents also expressed concerns that after a transition from 'paper' to 'digital' records and the use of digital boards to display production data, workers and their representatives have less access to information which has reduced their ability to represent members – *...in the end, we don't know if the data displayed is true. We have no access, we can't check!* Therefore, the *Human-in-Control* principle is negated and stress levels have increased by the introduction of AI and robotic systems.

This also links into concerns expressed by respondents about the possible lack of transparency of how the extensive data produced by a 'digital' factory is used, including for monitoring of working hours or for staff surveillance (which is illegal under the 1970 Workers' Statue legislation (Law No. 300 of 1970).

Media

With regard to the responses to the research questionnaires on the use of AI by media and editorial trade union delegates (especially in large companies). Media is a sector where repetitive and unskilled jobs, but also skilled jobs, such as those professionals who 'create' content are challenged by the application of AI systems that can result in the radical transformation and organisation of work in this sector.

However, overall, the questionnaire responses indicate that the percentage of employees using AI is relatively low and at an experimental stage. While the survey findings indicate that, where AI is used, it is mostly for routine and repetitive tasks, such as:

» Text editing

» Transcriptions and translations

» Generating summaries, headlines, and subtitles

» Filtering news and adapting it for different platforms

» Archive searches (e.g. news and photos)

» Moderation of social media pages

» Audience profiling and advertising targeting.

While there are some large media enterprises experimenting with AI, the bigger publishing companies are cautious about introducing new technologies. In some cases, union representatives have been involved in these experiments and, possibly, in implementation, while workers who could be directly impacted are not involved. The questionnaire responses also show that respondents are concerned that their union delegates are not always directly involved throughout the introduction of AI systems or are as up to date as possible on the debate, development and introduction of AI systems.

In some branches of media, for example online journalism, AI is sometimes used to generate entire articles, but usually only in specific areas, such as sports, finance, weather, health reports, or short items on local news. All interviewees expressed concerns about potential layoffs and the use of AI to reduce workers' bargaining power – '*Accept our conditions, because soon we might not need you!!*

It is also the experience of respondents that AI does not reduce working hours. On the contrary, in areas such as 'translating' and 'dubbing' workers are now expected to do more work in the same time period as previously, as, it is argued, that software has already done part of these jobs.

The questionnaire responses also found that AI can simplify certain tasks, such as the production of videos. However, this also means that journalists are now expected to do everything involved in there production! There are also concerns about new forms of stress, new work practice, fewer rights and deskilling. Some respondents reported, where AI is used, the risk of loss of their professional expertise and, consequently, even a reduction in incomes.

Another important issue highlighted by the questionnaire responses are concerns about data ownership, copyright and intellectual property. [114] The developers of AI systems need a large amount of data to 'train' AI models. However, workers who originally created this content are rarely acknowledged or compensated. Furthermore, workers who create data for free and subsequently that data helps develop AI systems that may later replace their jobs!! Thus, there is a power imbalance between *Big Tech* and publishers and between publishers, journalists and other workers in this sector. The creators (the workers) are the weakest link in the chain.

114 Such copyright in the digital market Is legislated for by EU Directive 2019/790: See: https://eur-lex.europa.eu/eli/dir/2019/790/oj/eng

4.1.5 MALTA

Malta was also an early adopter of AI and has the objective to be a global leader in the application of this new technology, thus gaining a strategic competitive advantage in the global economy which sets out in the policy paper, *Strategy and Vision for Artificial Intelligence in Malta 2030* [115] published in 2019. This document outlines *the National AI Strategy,* which was developed by the Government to focus on policies and actions, including, competitiveness, investment and resources that maximise the benefits for Malta in the EU and the wider global markets.[116] It sets out the national approach in three stages: Investment, start-ups and innovation, Public Sector adoption and Private Sector adoption.

Due to the successful implementation of most of the planned measures, and as other measures became redundant, in November 2025, the Maltese Government issued for public consultation the new strategy titled *Malta AI: Where Innovation Meets Trust for Well-Being*. It aims to shift from a technology-focused approach to one that emphasises societal well-being, trust and sustainability. The new vision seeks to establish a trusted AI ecosystem that promotes inclusive social and economic development. The strategy is based on two leading enablers: developing an informed public and a skilled workforce and strengthening regulatory, policy, security and support systems. It supports three growth pillars: enhancing data access and infrastructure, using AI to improve public services and business competitiveness and fostering research and innovation. It highlights five core principles: fairness and inclusion, accountability, transparency and human oversight, safety, and robust data governance. Aimed at being flexible and long-term plan, the strategy contains 83 measures to guide Malta towards sustainable, AI-driven progress.

The Government also published a series of sectoral policy documents, which refer to the need to adopt AI, including:

» A National Heathe Systems Strategy (2023-2030)

» A Digital Education Strategy ((2024-2030)

» Delivering Transformation (2023-2025)

» National Cultural Policy (2021)

» Strategy for Financial Services (2023).

As part of the AI strategy, the *Digital Innovation Authority* (MDIA) [117] was established by legislation in 2018 as the national focal point to direct and facilitate the optimal uptake of digital innovation. The Authority has also ensured that Malta remains at the forefront in the regulation of AI, through the legislative framework, including the AI Act Regulation, is kept up to date and also sets out a number of strategic targets, such as:

» Investment in start-ups and Innovation

» Initiatives aimed at generating investment to position Malta as a frontrunner in AI

115 See: https://mdia.gov.mt/app/uploads/2025/11/MALTA-AI-WHERE-INNOVATION-MEETS-TRUST-FOR-WELL-BEING.pdf

116 See: https://mdia.gov.mt/national-strategies/malta-ai-strategy-and-vision/

117 See: https://mdia.gov.mt/about/

technologies.

» The adoption of AI in the Public Sector

» Deployment of AI in public administration to improve citizens' experiences and expand access to public service

» Private Sector adoption

» Encouragement of AI use by businesses of all sizes, with particular attention to SMEs.

In April 2025 the Maltese Government published its *Vision 2050*, a national initiative shaping Malta's long-term development which:

> *.... sets a clear direction with measurable targets for 2035 and beyond, unifying various sectoral strategies under one comprehensive framework to guide national progress until 2050.* [118]

It also includes a commitment to *Digital Transformation*, including AI in services, smart infrastructure and digital governance and will act as a critical 'accelerator', with investment in digital infrastructure for e-government services, including transparency, traceability and environmental sustainability.

International Monetary Fund (IMF) report

An IMF (February 2025) report into the use of AI found that:

> *.... in 2023, 13.2% of companies in Malta, excluding agriculture, fishing, mining, and the financial sector, used at least one AI technology, which is relatively high in Europe ... Most of AI-using companies are large with more than 50 employees (83%). While the share of AI-using companies in the information and communication sector is the highest (35.3%), the use of AI is also high in other sectors, compared to other EU countries, such as:*
> *- Administrative and support service activities (12.4%)*
> *- Manufacturing (10.1%)*
> *- Wholesale and retail trade (9.4%)*
> *- Accommodation and food services (7.6%).*
> *However, a large majority of firms in Malta, especially SMEs, have yet to adopt AI technologies, suggesting a high potential for further use of AI.*[119]

Another estimation in 2024 is that, overall, 17.3% of enterprises across a number of business sectors were using AI, and this is driven by the current healthy state of the Maltese economy.[120]

Social Partner polices:

The General Workers' Union (GWU) and the Malta Chamber:

> *...strongly believe that any digitalisation and AI should still be human focused and led. Social dialogue continues to be vital for a strong democracy and*

118 See: https://www.gov.mt/en/publicconsultation/Pages/2025/NL-0012-2025.aspx

119 See: https://www.imf.org/-/media/files/publications/selected-issues-papers/2025/english/sipea2025008.pdf

120 See: https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/malta-strategy-and-vision-artificial-intelligence

good industrial relations. Through this partnership, The Malta Chamber and the General Workers Union acknowledge the importance of the digital transition, the opportunities it brings to the workplace, but also the impact it may have on workers[121]

The Malta Council for Economic and Social Development (MCESD) includes representatives of employer and trade union representatives. The implications of AI for the Maltese economy and society have been discussed many times by this Council.

Field Research

Education:

The survey was conducted in two educational institutions, focusing on the adoption and use of AI, its effects on staff and educational quality and existing governance frameworks. Although the sample size is limited, the responses offer valuable insights into the current status of AI systems integration and the associated challenges and opportunities it presents. The education sector is undergoing a digital transformation, with AI becoming increasingly essential for administration, teaching methods, and human resource management.

One of these institutions indicated that its employees are members of a trade union reporting a 52% union membership, while the other institution didn't have any such representation. The application of AI systems is limited to general administration, internal finance and accounting, as well as large language models (LLMs) for the automation of office tasks.

There were no responses to the questionnaires regarding the use of AI in direct teaching, which may suggest that institutions are focusing more on enhancing 'back-office' efficiency. Only one respondent noted that working conditions were covered by a collective agreement. The AI systems are also used for managing personnel and time keeping, as well as for safeguarding personal data, including how it is retained and processed. It is indicated that adequate training was provided to employees who are responsible for using this AI systems.

Respondents noted that there was a shift away from manual processes and improved efficiency in data capture and processing. These changes are having a positive influence on operational efficiency. Also, junior staff have acquired new digital skills, which suggests that AI can serve as a catalyst for upskilling and workforce development. However, the impact on AI systems on working hours is more complex, with one respondent citing reduced autonomy in self-management and changes in overtime work.

Some concerns were also expressed by respondents about the possible use of AI for internal staff monitoring and staff surveillance (one respondent indicated that staff were consulted about these monitoring systems to ensure compliance with GDPR) and strict protocols are in place to minimise the risk of intrusive monitoring of employees. However, employee representatives indicated that they were not aware of,

121 See: https://maltachamber.org.mt/ai-and-digitalisation-should-still-be-human-focused-and-led/

or involved in, discussions related to the introduction of AI and, consequently, there is uncertainty about whether there are procedures for the governance of AI systems.

Financial services

The financial services sector is a crucial part of the Maltese economy and is the centre for many financial institutions, such as retail and commercial banking, insurance and fund management. This sector is using digitalisation and AI for its global transactions.

The staff of enterprises that responded to the field survey are unionised, with one exception, but do not have collective agreements. AI systems are used in one third of these enterprises, for:

» General administration

» Data management

» Internal financial controls and accountancy

» Personnel (such as for occupational safety and health; time management; and staff training);

» Duty management.

Two-thirds of respondents indicated their employer plans to introduce AI systems within the next two years. Just 50% of respondents indicated that they have been consulted by management prior to the implementation of AI systems.

All respondents stated that their organisations do not use AI and digital tools to monitor employees. However, 66.7% of respondents say that their organisations lack guidelines for the control of such AI systems, but the adoption of AI within enterprises in the finance sector is increasing, with an initial focus on operational tasks.

Health Sector

The National Health Systems Strategy 2023-2030 [122] (updated Sept 2024) recognises the importance of:

> *... big data, machine learning artificial intelligence and other emerging digital technologies for the innovation in health, enhancing performance and outcomes for patients.*

Key initiatives include modernising hospitals, reconfiguring services and implementing the Digital Health Strategic Roadmap [123] to enhance care through technology. The strategy also emphasises a whole-of-government approach and addresses the social and economic determinants of health.

Consequently, AI has become integrated into the Maltese health services which is

122 See: https://health.gov.mt/wp-content/uploads/2023/04/A_National_Health_Systems_Strategy_for_Malta_2023_-_2030_Investing_Successfully_for_a_Healthy_Future_EN.pdf

123 *The Digital Health Strategic Roadmap*, which is part of the National Health Systems Strategy, addresses the needs of citizens, patients and health professionals, ensuring patient-centred care with a particular focus in achieving tight system integration and continuity of care across the whole healthcare ecosystem.

progressively adopting AI to improve its service delivery. AI systems are in place to promote its responsible use, which included procedures that allow employees to contest AI-driven HR decisions and internal health and safety regulations, to ensure that the AI systems meet safety standards and that the *Human-in-Control* principle is respected.

Respondents also indicated that staff involved in the use of AI systems were consulted about their implementation in advance. Since its introduction, AI has been used for general administration, including personnel and time management; patient records; medical diagnosis; and the management of healthcare data. It was also indicated by respondents that the provision of healthcare had *somewhat improved* with the use of AI. However, AI has also resulted in significant changes in work tasks, such as personnel-related functions, working time and self-management of work schedules. Respondents agreed that 'sufficient' training was provided before the introduction of AI.

Respondents also noted that health organisations have implemented measures for transparency and protection of employee data. AI is used for the surveillance of employees, but before this was introduced staff were consulted and, as a result, various safeguards were put in place, such as restricted access, regular deletions of data, compliance with GDPR and a guarantee of staff access to manage and delete their prosomal data. Trade unions also participate in decisions related to staff monitoring.

Industrial production

The enterprises where the respondents are employed are non-union. Just one respondent confirmed that their workplace had introduced AI, robotics or automated systems. These systems have resulted in the automation of manual work and have improved quality and output without impacting on working time, but there were some job losses. Collaborative robots (cobots) are working alongside human workers and also computer vision systems for detecting defects are also in place. In this enterprise, working hours have been impacted, with reduced hours, alterations to overtime work and less autonomy for an individual to management their work.

It was also noted that health and safety protocols with regard to robots are followed, but the workforce have had minimal input or were even consulted on the planning for or introduction of AI. AI systems were not used for personnel management purposes and these systems are not used to monitor or for surveillance of employees. With regard to the use of AI for monitoring / surveillance, respondents confirmed that employees and where trade unions represent the workforce, were consulted (or informed) in advance of its introduction regarding data privacy protection.

Media

AI systems are revolutionising the media sector. They are increasingly used in newsrooms for data analysis, fact-checking, even for generating articles, which all resulting in faster and more streamlined workflows. It is noted that the quality of the produces has improved as media enterprises move from 'the old system, to, what is considered, a more accurate system and 'online news portal'. To facilitate this

change, respondents agreed that the training they received was 'adequate'. Responses also indicate that these AI systems are not used for monitoring work or the surveillance of employees. AI is used for some or all of the following:

» General administration

» Data and archive management

» Internal finance and accounting

» Editorial issues

» Personnel management.

One respondent working in this sector stated that AI systems are not used in their workplace for its operations or to monitor employees. Workers are not represented by trade unions and there are no structures for collective agreements in place

In this sector, platform workers form part of the production and delivery process and are a important link in the distribution process. None of the respondents were aware of the Platform Work Directive.

4.1.6 POLAND

In Poland the Government has been active in developing policies for the use of AI. In 2020 it passed a resolution on a *Policy for the Development of AI in Poland 2019–2027*, which defines six strategical areas for development of AI:

» Society

» Innovative companies

» Science

» Education

» International cooperation

» The public sector.

The Policy Paper was updated in November, 2024, and sets out key objectives:

> *... to include expanding AI adoption in businesses, enabling full electronic management of public services, increasing AI use in healthcare, and promoting the digital identity wallet. The strategy also envisions dedicating 5% of Poland's GDP to digital governance by 2035.*[124]

AI has also been discussed in subsequent sectoral strategic policy documents. Specific actions are planned in the *National Recovery and Resilience Plan (NRRP*). In the NRRP, the Government assumes the potential for State intervention in the *technological megatrends* that makes up the digital transformation including AI, internet of things (IoT), 5G, blockchain, cloud services, data opening and data sharing, robotics, autonomous vehicles, drones, high-power computers (HPC) and quantum technologies. Government institutions are also producing domain-specific reports, such as the use of AI by the judiciary, while many ministries are conducting analysis on the possibility of using AI systems in the administration.

124 See: https://www.google.com/search?client=firefox-b-d&q=Policy+for+the+Development+of+AI+in+Poland+2019%E2%80%932027%2C+

The Ministry of Digital Affairs has created an AI Fund for small and medium-sized companies that are looking for funds for projects using AI, as well as an AI Working Group. Research institutions have also been established, including at the *National Centre for Research and Development*, which is conducting AI analyses in its use in economic development or in public administration. [125] The Ministry of Digital Affairs has also financed the creation of a Polish large language model (PLLuM).[126] Future plans are to create a digital assistant to deal with administrative matters, on which work was completed at the end of 2024.

Many experts point out, however, that public authorities are not able to produce rational structures and activities that would enable the rapid and widespread use of AI in enterprises and in the public sector, which would raise productivity. Synergies between all actors and actions are difficult to achieve. In addition, there are many disruptions at the intersection between specialist and political activities, for example, due to the politicisation of the system of nominations for positions in public institutions (political clientelism), analytical potential within public administration is poor.

Social Partners policies

The Leviathan Confederation (employers) and NSZZ Solidarnosc (trade unions) have worked together on a draft AI National Action Plan for the implementation of the *European Social Partners Framework Agreement on Digitalisation*. [127]

Trade unions recognise that automation and innovation can contribute to strengthening the efficiency and competitiveness of Polish enterprises on the global market. However, action will also be required to limit the potential negative effects of technological transformation – *changes in workplaces cannot be at the expense of employees!* The main concerns of NSZZ Solidarność are:

» Stability and security of employment

» Updating of skills and plans for retraining and the availability of financial resources to fund retraining programmes

» Consultation with trade union representatives and employees to ensure that these new technologies serve their interests and do not infringe on their legal employment rights.

» Tripartite cooperation between trade union, employers and the relevant State institutions is essential in jointly creating appropriate support tools to ensure a smooth transition to newly created jobs.

» AI algorithms should be fully transparent and protect personal data

» Algorithms should not be fully automated and should be regularly audited and adapted to equality and non-discrimination standards

» Employees and their representatives should be aware of what data is collected.

While the Leviathan Confederation support a regulatory approach, it is concerned

125 See: https://pie.net.pl/wp-content/uploads/2024/10/AI-on-the-Polish-labour-market.pdf

126 See: https://pllum.org.pl/

127 Op. cit. (page 4)

about over-regulation that would hinder or block developments in AI. It wants Government to support Polish enterprises that propose solutions based on AI. It also proposes:

» The security of personal data in AI-based systems, including creating a uniform standard for marking content generated using AI systems

» The importance of copyright law in the context of AI

» That the State have oversight of AI to ensure non-discrimination in the way AI systems operate

» *The impact of AI-based solutions on the labour market is constantly monitored*.

The two largest trade unions represented in the Council for Social Dialogue were engaged with AI-related issues in 2022 and started to cooperate with the Sejm (Parliament) Committee for Digitalisation, Innovation and Modern Technologies. Finally, this Committee produced a draft amendment to the Trade Union Act [128] in which the amendment (Article 28) would oblige the employer to provide, at the request of a trade union organisation, information on the *parameters, rules and instructions, on which algorithms or artificial intelligence systems are based...,* and in particular, about such algorithms or artificial intelligence systems that affect *work and pay conditions, access to employment and its maintenance, including profiling.*

This first legal initiative did not succeed before the end of the 2023 session of the Sejm. There was a second attempt in 2024, shortly after the new Sejm took office. The unions having encouraged the new members of the Committee to *pick up the reins on AI.*

Norbert Kusiak, OPZZ, in an interview as part of the TransFormWork 2 project, indicated that the Polish draft law may be considered to be in accordance with the direction indicated by the AI Act Regulation. The adoption of this EU-level legislation has provided trade unions with another strong argument in the discussion. AI systems should be fully transparent, which means, among other things, the obligation to inform users about the principles of their operation and the impact they have on decision-making processes. Norbert Kusiak further pointed out that the topic of AI is gradually gaining importance in discussions within OPZZ - *although we have not yet taken further legislative or strategic actions.*

Field Research:

Education

While the Government has stressed the importance of AI for education, [129] apart from some experimental application by some staff, there is no planned use of AI systems in the educational system. Training courses on digitalisation and AI systems are in place and available to teachers.

The survey responses indicate that a few teachers are already using AI and many are using it on a daily basis, in particular those teaching older students, in particular

128 Druk nr 2642 - Sejm Rzeczypospolitej Polskiej

129 Ibid.

for older primary and for second-level students. They don't see AI as a treat to their jobs and they make their own decisions about when and how to use AI. For example, it is used for computer-based learning; online learning; educational games; chatbots; automatic assessment and feedback; detecting plagiarism; and report writing.

In third level institutions and universities there is a wide range of approaches, with some institutions using AI sparingly, while others use a broader range of AI systems. While the AI system that is used in all third level institutions is to detect plagiarism, other application used across these institutions are for grade assignments and laboratory exercises.

There is no indication from the responses that AI are used for HR management, such as employee performance monitoring, recruitment, promotions, or other personnel decisions. There were no concerns expressed by respondents regarding any infringement of data security or on of their teaching autonomy The *Human-in-Control* principle is respected.

Management in the education sector is positive about the use of AI, which they see as a support for dealing with teaching workloads and not as a HR management tool. AI is seen as a way of overcoming the growing shortages across the educational sector, where AI could assist with administration, student assessment and the development of teaching materials.

However, trade unions are concerned about the use of AI systems to monitor the work of teachers and, at present, there are no arrangements or regulations to protect them. The trade unions only get involved when there is an issue relating to job retention or working conditions.

Financial services

The financial sector is undergoing a radical change and AI algorithms are part of this transformation. Most respondents expressed enthusiasm for the possibilities of using AI tools. Therefore, AI is used (to different extents across the sector) for information processing; customer service; documentation; HR management; the implementation of procedures in administration, back office and organisational tasks. AI can also be important for identifying and addressing fraud, extortion or money laundering.

Decisions to introduce AI systems are often the result of top-down management decisions. This is the case, in particular, when AI is introduced to improve company security. However, in some cases the new systems can also automate work tasks and can involve the monitoring of, or a reduction of staff. In general, employees support the introduction of AI, as it significantly streamlines and shorten many tasks and do not eliminate the 'human' input.

Banks, in particular, recognised the advantages of using AI, so they are well advanced in employing varies AI systems, such as data processing; automated systems; and 'cloud' services. However, there are concerns that it is difficult to fully automate customer services and contacts.

The use of AI for personnel monitoring, employee evaluation and HR management is

controversial. However, none of the management respondents said that this would be an issue, as it is considered illegal under the Polish Constitution. Consequently, there is no indication from respondents that AI is used in this way, possibily because of the legality of using such applications and, possibly, ethically inappropriate.

Health services

AI in the health services is described as 'modest' but growing. However, some systems have been in use for a number of years, such as CT and MRI scans, in larger hospitals and clinics. There is wide support among patients and the medical professions for plans to expand AI systems and there are already plans in place to introduce them for:

» Patient records

» The collection of medical data

» To support clinical decision making.

There are, however, some areas where the concerns with AI are greater that in others – for example, in data processing and medical records. Many fear that AI will rapidly encroach on the work of various medical specialists, creating a sense of uncertainty about the future! Radiologists, in particular, are sceptical about AI. However, it was noted that AI algorithms are already improving imaging, stronger signals and reduced noise, are been continually improved and could result in additional work for radiologists.

As there are staff shortages in many areas, it is envisaged that AI will support, for example, the legal department by verifying compliance with supplier contracts and internal procedures, such as confidentiality, data processing and security, which are considered essential because of staff shortages. However, a branch of NSZZ Solidarność is working on a document to assess the potential impact of AI on employees, including negative consequences in the health service.

Industrial production

It is noted that in industry production AI systems are not widespread. However, one exception is in the numerous motor manufacturing plants in Poland, which has been using robotics and digitalisation systems for three decades, which is described by one respondent *as the most disruptive change in the auto industry to date, with a reduction in employment of up to 50% in some plants*

The application of robotics and the application of AI systems are to be found in welding and paint shops in many of these car assembly enterprises. From 2008, with the introduction of AI algorithms, welding, for example, has been monitored by sensors controlled by algorithms, allowing for the automatic adjustment of welding speed and force when there is a deviation from the programmed standards.

AI has proved to be particularly useful where a car assembly site produces multiple models, as it allows for speedy adjustments for the production process. For example, AI algorithms allow for the fine-tuning of paint coatings and is also used for sales planning by the monitoring and collection of sales data that 'feed into' pro-

duction planning.

Decisions for the introduction of digital technology and AI systems are made by senior management in corporate headquarters, which are mainly located outside Poland, So, trade union respondents say that employers rarely inform employees or their trade unions about plans to introduce AI algorithms and there have not been any collective agreements at the sectoral or with individual companies, nor has there been consultation with staff who might be impacted by them (or their representative trade unions) before new technologies were introduced.

With regard to the food production sector, for several years, brewing companies have undergone intense automation, in particular for production, warehousing and distribution. Bottling lines and pallet conveyors in warehouses, are now fully computer-controlled, with the 'human' input mainly supervisory. AI algorithms collect data from production lines, which is then incorporated into sales data and this information is used to plan production volumes and mange distribution logistics.

Impacted employees, or their trade union representatives are rarely informed about planed changes or the introduction of automated systems and, as with the automotive sector, there have not been any collective agreements at either the sectoral level or with individual companies. There are now concerns about the plans to introduce further AI algorithms, such as fully AI controlled warehousing, and the expected reduced employment in a range of services within the enterprises, such as in production planning, marketing analysis, accounting, or IT services,

Media

In Polish media organisations, AI is seen as a supportive and innovative tool, not a replacement for human input and the *Human-in-Control* principle is paramount in all editorial processes. In one radio station, AI is in the early stages of been implemented for research, sound editing and paid access to ChatGPT.

AI began as a 'bottom-up' use. It is now used to support a range of journalistic tasks, such as headline composition, 'suggesting' relevant images, composing official communications, marketing and for HR management. It is noted that AI has speeded up workflows without any negative impacts on employment levels. It is seen as an 'assistant' in journalists' work, data sources are carefully vetted and checked and they make the final decisions on AI-assisted content, ensuring editorial integrity and minimal misinformation.

However, while there is a focus on voluntary training, workshops and the use of an AI 'ambassador' network, there were no formal staff negotiations or a possibility for staff to challenge AI-related HR decisions or request clarification. While there are some concerns about future employment and increased workload, with management pushing employees for higher output from smaller work teams, trade unions are not equipped with the technical expertise to support members exposed to these changes.

4.1.7 ROMANIA

The Romanian Government has come 'late to the party' and the adoption of digital technology and AI in the public sector has been slow. The OECD, in its assessment of AI in Romania, states that:

> *The overall objective of the project was to link international strategies, related to the use of innovative technologies in public administration, with the national context and the elaboration of strategic directions for the period 2021-2027. These strategic directions are mainly aimed at making public institutional activity more efficient in relation to citizens and better development and coordination of these national institutions.*
> *... and*
> *The objective of the National Strategic Framework for Artificial Intelligence (CSN-IA) is to contribute to the strategy Romania's strategy for the adoption of digital technologies in the economy and society in conditions of respect for the rights and promoting excellence and trust in AI.*[130]

Many Government agencies and public services are still in the early stages of adopting these technologies. The Government first published its *National Strategy for Artificial Intelligence in 2024-2027* [131] in July, 2024, which outlines the country's approach to integrating AI technologies across various public and private sectors, but, in particular, with a special focus on public services. It sets out strategies to use AI to promote economic growth, social well-being, democratic values, stability, national security and the quality of life of citizens by improving working conditions and enhancing the digital skills of employees.

The *National Strategy* also aims to promote innovation, improve service delivery, economic competitiveness. It includes plans to build capacity for training and education of AI specialists, including through the educational system, and among the general population and in businesses.

While these national policies have been adopted later than in other EU Member States, there have been indications of growing interest in private sector organisations in, for example, healthcare, finance and e-commerce. However, the challenges are great, as there is limited access to capital finance and a very limited domestic market. There is also the challenge of developing indigenous research capability, as tech enterprise mainly focus on outsourcing services from outside Romania. This has resulted in most foreign investments in technology development been on software development and IT services, resulting in the neglect of the development of AI systems.

With the establishment of ECCC (European Cybersecurity Industrial, Technology and Research Competence Centre) in 2021, together with the Network of National Coordination Centres (NCCs)[132] in Romania there is the opportunity to speed up the introduction of AI and digitalisation in its economy.

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130 See: https://oecd.ai/en/dashboards/policy-initiatives/http:%2F%2Faipo.oecd.org%2F2021-data-policyInitiatives-27581

131 See: https://dig.watch/resource/romanias-national-artificial-intelligence-strategy-for-2024-2027

132 See: https://cybersecurity-centre.europa.eu/about-us_en

So, there is a growing interest in AI and a 2023 survey showed that while just under 2% of Romanian enterprises have already adopted AI, while 40% of enterprises' CEOs indicate that there is planning underway to use AI technology within the next five years. [133]

The Government, in particular the Ministry for Economy, Digitalisation, Entrepreneurship and Tourism (MEDET), has set out the national strategies for information technology, digitalisation and AI, other key governmental organisations such as:

» *Authority for Digitalisation of Romania* – develops and coordinates the implementation of the *National Strategy* and coordinates the work of the Digital Innovation Hubs, in keeping with the European Commission's *Digital Europe Programme*

» *Romanian Committee for AI* – develops and updates strategic projects, supports the implementation of the National Strategy and facilitates national and international cooperation

» *Scientific and Ethical Council on AI*: provides advice on the responsible and ethical use of AI by both Government and national agencies.

Complementing these governmental agencies, there are also a number of private sector and academic organisations that are playing a key role in the implementation of national policies, in particular:

» Employers Association for the Software and Services Industry (ANIS)

» National Trade Union Bloc (BSN)

» Romanian Association for AI (ARAI)

» Artificial Intelligence Romania (AIR)

» Research Centre for AI "Mihai Drãgãnescu" (ICIA).

ANIS, in particular, has set a strategy to position Romania as a regional leader in digital innovation, highlighting its importance of stable Government policies and proactive digital transformation to industrial policies and growth. The information technology and digital sector are optimistic about growth in 2025.

Many of the Romanian universities are also involved in research, development and implementation of digitalisation and AI systems, for example:

» Technical University of Bucharest

» University of Bucharest

» "Politehnica" University of Bucharest

» "AI Cuza" University of Iași

» West University of Timișoara.

In addition to the above, the University of Brașov is involved at the European level through its membership of the Confederation of Laboratories for AI Research in Europe (CAIRNE) and participation in its research. [134]

It is estimated that information and communications technology (ICT) contributed 7% in 2023 to national GDP (approx. €9 billion) and this is expected to reach 10% in

133 See: https://www.romania-insider.com/15-romanian-companies-used-ai-2023-oc-2024

134 See: https://cairne.eu/about/

2025. This is mainly resulting from software development, IT services and telecommunications. However, these services are mainly concentrated around Bucharest, which is responsible for approx. 60% of the services.

Field Research

Education

The public pre-university education sector is highly unionised, with a collective agreement in place at national level. This is in contrast to the questionnaire responses in our sample, all of which reported *no union representation* or *collective bargaining coverage*, most likely come from private institutions or from the higher education sector, where unionisation exists but is not widespread. The responding organisations were small, with a range of up to approx. 50 employees. The majority of respondents were employees, with only one representing management.

Responses indicated a very limited adoption of artificial intelligence and digital systems. Some organisations reported that AI was not used, while others mentioned early-stage or experimental use in administrative or teaching-related support. Where the use of AI was acknowledged, it was described as exploratory rather than systematically integrated into teaching or management processes.

Two respondents reported that, with the use of AI, the quality of education and training provided had *significantly improved*. One respondent explained that AI tools support their research activities, while another highlighted that courses had become more interactive and that student assessment methods were enhanced. These concrete examples illustrate the potential of AI to add value in both academic and pedagogical dimensions. The overall picture is one of isolated positive experiences, rather than sector-wide transformation.

The absence of union representation reported across all responses reflect the specific type of institutions represented in the sample (private or higher education), where formal social dialogue structures are less prominent. As a result, any consultation with employees about AI or digitalisation is likely to be on an *ad hoc* basis. Individual staff members may independently decide to use AI for their own tasks – for example, researchers applying AI to support their projects, or teachers using it to prepare course materials, organise lessons, or develop student assessments. In such cases, employees may not perceive consultation as relevant, since adoption was not a top-down organisational decision but rather a self-initiated practice.

The responses provided little consistent information on whether training had been offered to staff in relation to AI tools. In some cases, respondents explicitly stated that they did not know whether training was available, again underlining the early stage of adoption. The absence of clear answers suggests that systematic training provision is not yet a provided.

Awareness of the EU Platform Work Directive varied, with some respondents indicating familiarity and others not aware or uncertain. This mixed result is consistent with the overall picture of limited structured engagement with policy debates at the institutional level.

The education sector responses suggest that AI adoption is at a very early stage in the small institutions covered by this sample. Reported use of AI was minimal, impacts on work and services were limited, and governance structures are not yet in place. The absence of unions and collective bargaining frameworks in the responses reflects the likely profile of the respondents (private or higher education institutions), rather than the sector as a whole, where unionisation is normally high. Overall, the findings highlight the lack of widespread adoption or structured policies within the specific institutions surveyed, but they cannot be assumed to represent practices across the broader education sector.

Financial services

The financial services sector respondents represented a large enterprise a few thousand people, with a strong trade union presence and full coverage by collective agreements. This institution indicated a structured framework for worker representation and dialogue. All respondents confirmed that AI systems are already in use, covering a variety of functions. Applications were reported in:

» Data processing

» Automated systems

» Cloud services

» Predictive modelling

» Diagnostic analysis.

In addition, AI was applied to finance, accounting and HR-related functions, such as training and task management. The most widespread use of AI is the automation of repetitive tasks and back-office processes. However, the roll-out of AI was described as *in an early stage*, often tested in specific operations, with plans to scale up in the near future.

In general, respondents were positive with regard to the introduction of AI. It is noted that routine and repetitive tasks have been automated, enabling employees to focus on higher-value activities and reducing time spent on manual processes. The speed and service delivery times in data processing were emphasised, with some employees observing that productivity has doubled.

For client-facing services, AI has enabling quicker responses. However, some respondents emphasised that the AI systems are still in a testing phase and have not yet been fully integrated.

A majority of respondents indicated that employees had been consulted prior to the introduction of AI systems. In most cases, consultation took the form of information to the workforce, rather than through representative bodies, such as the trade unions. Given the presence of strong collective bargaining structures, this suggest that employees are informed when its relevant to their work tasks, but the extent to which AI is addressed through formal social dialogue remains unclear.

All respondents confirmed that training had been offered to employees using AI systems and this training was overwhelmingly considered adequate, suggesting a proactive approach by management in preparing staff for technological changes.

While the introduction of AI has resulted in the elimination of repetitive steps and simplification of processes. However, not all staff experienced these changes equally and several respondents reported no noticeable effect on their work. In terms of working time, almost all respondents indicated no change.

A minority of respondents confirmed that occupational health and safety provisions covered AI systems, while most answered *don't know*, possibly reflects that implementation is still at an early stage. Regarding the *Human-in-Control* principle, most respondents confirmed that final decisions remain with staff members. Transparency in communicating information on AI was rated as *relatively high*, with respondents described as either "very transparent" or "somewhat transparent". Regarding the oversight and complaint mechanisms some respondents noted that decisions made by AI could be reviewed by colleagues or relevant departments. A third of respondents were aware of the Platform Work Directive (Directive (EU) 2024/2831).

> *... the collective agreement in the banking sector included agreements on teleworking and the right to disconnect.* [135]

Industrial production

The industry sector respondents represented large enterprises, ranging from several hundred to over ten thousand employees. In all cases, workers were unionised and covered by collective agreements, which provides an important institutional framework for consultation and social dialogue. Against this background, companies reported a significant use of automation, robotics and AI, particularly in production processes, as well as in administrative and data management functions.

The majority of respondents report that AI and automated systems are already in use within their organisations. AI and automation were most commonly applied where companies automated previously manual operations. Some respondents reported implementing collaborative robots (cobots) to work alongside human operators, as well as integrating IoT devices for real-time monitoring of production.

Applications were also noted in predictive maintenance and process optimisation. With regard to administrative tasks, AI systems are used for general data management, accounting and finance and supply chain management. Respondents did not report any significant use of AI in HR management, including recruitment.

The introduction of AI and automation was seen as improving productivity, product quality, and ergonomics at the workplace. Outcomes included reduced downtime, fewer quality defects and faster execution times. The technology also freed up time for employees to focus on more value-added activities, suggesting a shift in the nature of work rather than outright substitution. These perceived benefits reflect a largely positive assessment of AI's contribution to competitiveness and efficiency in industrial settings.

Some respondents noted a transition from manual tasks to monitoring and control roles, along with the emergence of new skills and even new occupations. Similarly, in general, respondents did not observe any significant impact on working time.

In large industrial enterprises, the introduction of new technologies often follows

135 See https://www.romania-insider.com/15-romanian-companies-used-ai-2023-oc-2024

complex decision-making and communication with impacted workers may occur at a later stage. This may reflect the fact that implementation is still limited to specific departments or pilot projects, meaning that information has not yet reached the broader workforce or been formally addressed through company-wide consultation mechanisms. Moreover, where AI is used mainly by management for process optimisation, employees may not perceive themselves as directly consulted because the technology will not affect their tasks.

The strong presence of unions and collective bargaining structures suggests that social dialogue arrangements are in place, but the responses show that these are not always used in relation to AI specific initiatives.

Training and transparency are mixed, while some respondents confirm that training programmes and internal safety norms exist. However, many responses indicate that training was not provided or not considered adequate. Transparency regarding AI monitoring and data collection is described as 'somewhat transparent' or 'very transparent' by most respondents.

The majority of companies reported having internal health and safety (OSH) rules for the use of AI and robotics, although these are not universal. Similarly, some (not all) respondents confirmed that they apply the *Human-in-Control* principle is respected. This reflects a partial, but not comprehensive, governance framework for AI in the examined responses.

Most respondents stated that their organisations don't monitor employees using AI-based systems. Where such systems do exist, safeguards, such as limited access, data encryption, deletion protocols, GDPR compliance and third-party audits, were reported.

Awareness of EU-level regulatory initiatives, such as the Platform Work Directive was limited, with just one management respondent reported knowledge of the Directive. This indicates a gap between operational adoption of AI technologies and engagement with the ongoing policy debates at European level.

Media

In the media sector, the use and perception of AI show both opportunities and challenges. Respondents indicated that AI tools are already been explored, particularly for social media content and investigative tasks, with plans to further expand their use in the future.

Consultation with employees prior to adoption was inconsistent. However, many of these workplaces are very small, so formal procedures are often substituted by informal communication and written policies are less common. In addition, in some cases AI is only used by managers.

The adoption of AI is already influencing job content, especially for social media managers. Experiences with AI-generated content has also highlighted possible reputational risks, such as inaccuracies in posts, resulting in strained relations with external sources, as it was not easy to distinguish between human and AI authorship. Also, respondents reported that there are innovative and beneficial applica-

tions, such as the use of AI software to investigate disinformation trends on social media, which was perceived as a valuable tool for strengthening investigative journalism capacities. This illustrates the potential of AI to enhance the reach and depth of media monitoring and analysis when applied appropriately.

AI systems are also used regularly in some roles, on a daily or weekly basis, while others have not integrated such tools into their work tasks. Where AI was used, it did not determine task prioritisation. Transparency also varied significantly, ranging from very high openness about AI use to a complete absence of communication. Importantly, AI based monitoring of employees was not reported by any respondent

Perceptions of the impact of the use of AI on working time varied, with some respondents noting that processes were simplified and workloads reduced, while others indicated there was no significant effect. Access to training was similarly uneven. In some cases, management offered guidance, while in other employees had to 'self-learn'. Rules on occupational health and safety (OSH) and the *Human-in-Control* principle were reported to be in place by some respondents, but again, this reflects the informality typical of small media organisations.

5. KEY FINDINGS

The TransFormWork 2 project, covering seven EU Member States (Bulgaria, Cyprus, Ireland, Italy, Malta, Poland, Romania), provides a unique comparative snapshot of the penetration of AI and algorithmic management in five key sectors (education, financial services, health services, industrial production and news media) at the end of 2025. Despite the rapid evolution of the EU regulatory framework (AI Act, Platform Work Directive, GDPR, Data Act, etc.), implementation at national and workplace level remains very uneven.

The project team don't consider the findings presented in this Comparative Report as representative of the employment sectors covered, but that they reflect emerging issues identified where responses to the project research were available. The research approach was qualitive, rather than quantitative, and the depth of the survey responses varied across both the participating EU Member States and the target sectors. In some cases, data were detailed and comprehensive, while in others the number and responses were limited. However, the project provides preliminary indications of early trends relating to AI in the employment sectors and EU Member States covered by the project.

5.1 Penetration of AI and algorithmic management – a clear North-South/East-West divide:

» Highest adoption levels: Ireland and Malta (driven by strong national AI strategies, foreign direct investment in tech/health/finance and a proactive application of digitalisation in the public-sector)

» Medium adoption: Italy (sector-specific collective agreements, especially in finance and manufacturing) and Cyprus (growing, but still limited beyond public administration)

» Lowest adoption: Bulgaria, Poland, and Romania (late or incomplete national AI strategies, concentration of AI use in multinational subsidiaries, very limited application in SMEs and public services).

5.2 Table 4: Sectoral overview:

Sector	Main applications observed	Main concerns
Education	» Administrative automation » Plagiarism detection » Personalised learning tools.	Rare monitoring of teachers
Financial services	» Detection of fraud and money laundering. » Customer service chatbots » Back-office automation	Employee performance scoring (emerging)
Health services	» Diagnostic imaging support » Predictive analytics » Robotic process automation (RPA)	Limited employee surveillance
Industrial production	» Robotics; predictive maintenance » Quality control (vision systems) » 'Cobots'	Job displacement
News media	» Content generation assistance » Fact-checking » Social-media analytics	» Fear of job substitution and copyright » Infringement » Low quality of information

5.3. Social dialogue and collective bargaining – stark differences

» Strongest involvement of social partners: Italy (sectoral and company agreements explicitly covering AI), Ireland (public-sector agreements and trade-union campaigns), Malta (joint GWU–The Malta Chamber statements)

» Moderate involvement: Cyprus and Poland (emerging tripartite discussions, draft legislative initiatives on algorithmic transparency)

» Weakest involvement: Bulgaria and Romania (almost no collective agreements mentioning AI; consultation is rare and mostly informal)

5.4. Human-in-Control principle and worker consultation

» Known and partially applied in Ireland, Italy, and Malta

» Known but rarely applied in Cyprus and Poland

» Largely unknown in Bulgaria and Romania.

Across all seven countries, prior consultation with workers or their representatives before introducing AI systems remains the exception rather than the rule, especially in private-sector SMEs and in multinational subsidiaries (i.e. Polish industrial sector).

5.5. Training and reskilling

» Adequate and systematic training most frequently reported in Ireland (public sector and large financial institutions) and Malta

» Patchy or insufficient in Italy and Poland

» Limited in Bulgaria and Romania (except in isolated multinational plants).

5.6. Employee monitoring and surveillance

» Explicit rejection or strict safeguards: Ireland, Italy, Malta

» Emerging concern but few safeguards: Cyprus, Poland

» Risk of uncontrolled use: Bulgaria, Romania (lack of awareness of obligations under the AI Act Regulation (2024/1689).

5.7. Awareness of new EU legislation

» There is a very low awareness in all seven countries of the Platform Work Directive (2024/2831)

» Platform workers were only identified in some sectors

» AI Act (known at social-partner headquarters level (especially in Italy and Ireland), but almost unknown at company level outside large multinationals.

5.8. Generational and enterprise-size divide

Younger workers (under 35) adapt faster and see AI primarily as an opportunity. Older workers and employees in SMEs are at highest risk of been ‘left behind’ in all seven countries.

6.RECOMMENDATIONS FOR EU SOCIAL PARTNERS

On the basis of the comparative evidence gathered in the seven participating countries, the TransFormWork 2 partners jointly recommend the following actions at European, national, and company level:

At European level:

» Launch a dedicated European Social Partners' Action Programme (2026–2030) on AI and Algorithmic Management, with annual joint monitoring reports on the implementation of Pillars 3 & 4 of the European Social Partners Framework Agreement on Digitalisation, 2020

» Negotiate, as a priority, an autonomous EU social-partner framework agreement (or request a Directive) on algorithmic management in traditional workplaces (extending the principles of the Platform Work Directive to all workers)

» Strongly advocate for the creation of an EU-funded Just Transition AI Facility under ESF+ and Recovery and Resilience Facility to support reskilling and upskilling in all EU Member States, but in particular in low-adoption Member States and sectors (targeting in particular older workers and SMEs)

» Request the Commission to finance large-scale awareness and mutual-learning programmes for national social partners on the AI Act, the Platform Work Directive, and the Human-in-Control principle.

At national level

» Every national social-partner organisation (both employer and trade-union side) should adopt, by end of 2027, a joint or bipartite AI Charter calling for the involvement of employees, before any significant introduction of AI systems affecting work organisation, working conditions, or performance management, ensuring compliance with relevant EU legislation, such as the GDPR, while, at the same time, supports EU competitiveness

» Include clauses on AI and algorithmic management in all sectoral and company collective agreements by 2030 in areas of high risk as defined by the AI Act and case law, covering at least:

- Prior joint impact assessment
- Human oversight
- Transparency of algorithms
- The right to explanation and contestation
- Training guarantees
- Biometric and emotional monitoring
- The assessment of psychosocial risks.

» Establish or reinforce national tripartite AI Observatories (involving government, employers, and trade unions) to monitor adoption, skills-needs and risks in real time

» Prioritising funding by national governments to support the upskilling and reskilling of employees and to improve current education systems to align with new technologies, ensuring an appropriate workforce for the future economy.

At company / workplace level

» Before any deployment of AI systems classified as high-risk under the AI Act or affecting working conditions, undertake a mandatory joint AI impact assessment with worker representatives

» Guarantee the *Human-in-Control* principle in practice - ensuring that all workers using AI and automation for hiring, task allocation, performance evaluation, or dismissal are aware of how the systems function, for example, the risks, bias and the possibility of incorrect results, to ensure meaningful human intervention and continue respect for current EU regulations, providing the possibility of seeking further justification for a decision or for an appeal

» Encourage and ensure appropriate upskilling / reskilling pathways for all workers affected by AI-driven changes within their place of employment and, when available, seek national and EU funds for such investment, with special programmes for workers over 45 years of age

» Prohibit the processing of sensitive personal data (emotions, biometric categories, trade-union membership, political opinions) for worker management purposes, in line with GDPR Article 9 and the Platform Work Directive

» Develop clear internal policies on generative AI use (including copyright and liability rules) through works councils or health & safety committees.

The TransFormWork 2 partners believe that only proactive, bipartite governance at all levels can ensure that artificial intelligence in European workplaces truly “works for all”, improve competitiveness and innovation while preserving quality jobs, fundamental rights, and human dignity.

Annex 1
Project Policy Brief 1

Artificial Intelligence (AI) in the World of Work

Context: Discussions on the *future of work* have been ongoing for many decades, but this debate is now dominated by the recent introduction of Artificial Intelligence (AI) technologies into workplaces across the EU. AI is not just another technological revolution – it is a force that will transform the world of work like no other before it. AI will change our very idea of time and space.

The consequences of its development still seem unclear, not just on labour markets, but life in general. We do not know when, or if, it will stop. We do not know the intensity it will reach. We do not know the parameters of AI. We do not know most things about the future with AI, but we know that many changes are on the way!

Key questions for societies are:

» What does this mean for workers?

» How will professions, skills and other qualifications change?

» How will we protect workers' rights in the rapidly changing world of AI?

» Will the burden for employers grow?

Analysis: These questions underscore the need for a careful and responsible approach to AI as these new technologies have the potential to transform our societies, but without appropriate regulations and ethical standards, they can lead to unpredictable and even dangerous consequences. To address these issues, a number of recent key European and international events have been held in recent months, for example:

» Conference on AI hosted by the French President Macron (10-11 February, 2025) [136]

» Council of Europe *Framework Convention on AI and Human Rights, Democracy and The Rule of Law* signed in Vilnius, September 2024 [137]

» OECD *Global Partnership on Artificial Intelligence* [138]

All these events highlighted the importance of international cooperation and coordination in the development of standards and regulations for the use of AI. Only through joint efforts can the EU ensure that it serves the good of all, without creating new divisions or risks. This means investing in AI, but also, in parallel, introducing

136 At this conference French President Emmanuel Macron said that Europe needs to make a *"European leap"* in AI, while developing a strategy for action See: https://www.elysee.fr/en/emmanuel-macron/2025/02/11/statement-on-inclusive-and-sustainable-artificial-intelligence-for-people-and-the-planet

137 See: https://www.coe.int/en/web/artificial-intelligence/the-framework-convention-on-artificial-intelligence

138 See: https://www.oecd.org/en/about/programmes/global-partnership-on-artificial-intelligence.html

regulations that ensure that algorithmic systems for managing workplace tasks are used ethically and transparently, with the participation of the social partners.

An important challenge for the EU is that the US has a different perspective on the way forward, with minimal regulation and technologies free from 'ideological bias'. These different, and challenging, perspectives remind us that the EU must be strong and cohesive, promoting collective bargaining as a tool to achieve a balance between economic performance and social imbalances. Collective Labour Agreements can serve as a flexible mechanism to adapt working conditions in line with technological change, protecting workers' rights while supporting innovation.

From a business perspective, the rise of AI is not only a workforce challenge but also a growth opportunity. Such growth underscores the increasing importance of AI technologies in modernising business operations. This transformation demands thoughtful strategies around re-skilling, ethical deployment, and infrastructure investment.

AI is already transforming how companies operate - reshaping supply chains, HR management, R&D, and customer service. These developments highlight the significant opportunities for business growth. Artificial Intelligence (AI) presents a transformative opportunity for businesses, enabling substantial advancements in process automation, predictive analytics, personalised customer experiences, and accelerated innovation.

However, with these opportunities come significant responsibilities. Companies must now prepare to navigate evolving regulatory frameworks such as the OECD AI Principles, the EU AI Act, and other EU-level directives addressing data governance, algorithmic transparency, and ethical use. Key compliance areas include the deployment of explainable, fair and auditable AI systems, the implementation of robust AI governance models and ensuring alignment with standards for high-risk AI applications in recruitment, finance, healthcare and customer profiling.

Conclusions: The failure of enterprises to adapt could lead, not only to loss of market competitiveness, but also to regulatory penalties, reputational damage and reduced stakeholder trust. Proactive alignment with ethical and legal standards, paired with investment in AI talent and responsible innovation, is essential for businesses aiming to thrive in this rapidly evolving digital economy.

Failing to ensure a collaborative approach that supports trustworthy AI systems can lead to disagreements among social partners, which adversely impacts the EU's economic resilience and competitiveness. Any discussions around regulations concerning AI must involve all partners to ensure respect for workers' dignity while also maintaining economic competitiveness. Although well-considered regulations and legislation are essential, trust in AI can be fostered through discussions among relevant stakeholders.

As part of the TransFormWork 2 European Commission funded project, two consecutive Policy Briefs will review global and European measures to regulate AI, which will lay the foundations for modern company policies and transform working conditions.

Examples of international Initiatives:

» OECD first global framework for companies to report on their efforts to promote safe, secure, and trustworthy AI: https://www.oecd.org/en/about/news/press-releases/2025/02/oecd-launches-global-framework-to-monitor-application-of-g7-hiroshima-ai-code-of-conduct.html

» Council of Europe *Framework Convention on AI and Human Rights, Democracy and The Rule of Law:* https://www.coe.int/en/web/artificial-intelligence/the-framework-convention-on-artificial-intelligence

» UNESCO *Recommendation on Ethics of AI:* https://unesdoc.unesco.org/ark:/48223/pf0000381137

Annex 2
Project Policy Brief 2

EU Initiatives on AI Regulation in the World of Work

Context:

Building on the TransFormWork 2 First Policy Brief, which explored international initiatives to regulate Artificial Intelligence (AI) and its transformative impact on workplaces, this second brief shifts focus to European Union (EU) measures. As highlighted in the TransFormWork 2 project—funded by the European Commission under the Employment, Social Affairs and Inclusion DG (SOCPL-2023-SOC-DIALOG)—AI is reshaping employment relations, skills need and working conditions across the EU. The project's comparative analysis of seven EU Member States (Bulgaria, Cyprus, Ireland, Italy, Malta, Poland, and Romania) reveals that the adoption of AI systems is 'uneven', with higher penetration in Irish and Maltese workplaces due to strong national strategies. In contrast, the application of AI not extensive, for example in Bulgarian, Polish, and Romanian enterprises, because of the limited regulatory frameworks and a lack of investment in the necessary technology skills.

Key challenges identified by the project include opaque algorithmic management, risks to workers' dignity through surveillance, and insufficient social dialogue. These underscore the urgency for EU-level regulations to ensure a just transition, aligning with the *European Pillar of Social Rights* and the *European Social Partners Framework Agreement on Digitalisation* (2020). EU initiatives emphasise human-centred AI, prioritising the "Human-in-Control" principle, transparency, and ethical deployment to mitigate job displacement, psychosocial risks, and inequalities.

Key Questions for Societies and Policymakers:

» How can EU regulations extend protections beyond high-risk sectors to all workplaces, while supporting EU member States competitiveness?

» What role should social partners play in implementing AI governance at national and enterprise levels?

» How to bridge the digital divide between Member States for the equitable benefits of AI?

» Will EU frameworks foster innovation and productivity, while safeguarding workers' rights and skills?

Analysis:

The EU has pioneered comprehensive AI governance, positioning itself as a global leader in balancing innovation with ethical standards. The TransFormWork 2 *Comparative Report* highlights that the adoption of AI varies: it is strong in finance and industry but is limited in education and media. While EU-level measures provide a foundation for harmonised protections, implementation gaps persist, with low awareness of directives and the uneven involvement of the social partner.

The following are key EU initiatives, analysed through the lens of the project's findings:

1. AI Act Regulation (Regulation (EU) 2024/1689):

This world's first comprehensive AI law adopts a risk-based approach, effective from August, 2024, with a phased implementation through to 2027. It prohibits unacceptable risks (e.g., social scoring, real-time biometric identification in public spaces) and imposes strict obligations on high-risk AI systems, including those in employment (e.g., recruitment, performance evaluation). Transparency, human oversight and conformity assessments are mandatory for high-risk applications.

Project insights: In surveyed sectors, high-risk AI (e.g., algorithmic task allocation in Irish finance or Polish manufacturing) is emerging, but compliance is patchy. Only 20-30% of respondents in low-adoption States reported awareness. Social partners in Italy have integrated the principles of the AI Act Regulation into collective agreements, reducing risks, such as biased algorithms. Recommendations emphasis mandatory joint impact assessments to uphold the *Human-in-Control* principle, preventing dehumanisation, noted in 40% of Polish and Bulgarian cases examined during the project.

2. Platform Work Directive (Directive (EU) 2024/2831):

Targeting gig economy vulnerabilities, this directive (transposition deadline: November 2026) presumes the employment status for platform workers; mandates algorithmic transparency; bans sensitive data processing (e.g., emotions, biometrics); and requires a *human* review of automated decisions. It enhances rights to information, consultation and contestation and extends these to trade unions.

Awareness is low (under 20% across the countries analysed), yet platform elements appear in media (e.g., freelance journalists in Cyprus) and delivery services. In Malta and Ireland, where AI-driven platforms are more prevalent, respondents reported improved oversight but identified surveillance risks. This Directive's principles related to AI could extend to non-platform work, as advocated by the European Parliament, to address algorithmic management in 35% of industrial cases where workers lack appeal mechanisms.

3. General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679):

A cornerstone for AI ethics, GDPR governs personal data processing, requiring consent, minimisation and rights, such as access and erasure. Article 88 allows collective agreements to tailor rules for employment contexts, prohibiting intrusive monitoring without justification. *Project insights:* GDPR compliance varies, for example, the Irish health services report robust safeguards, but in some countries, SMEs often lack appropriate awareness in conjunction with the adoption of AI tools, leading to unchecked employee monitoring (reported in 25% of responses). Trade unions in Poland highlight GDPR's role in countering psychosocial risks from AI surveillance, yet only 15% of enterprises provide training on data rights. Strengthening GDPR via social dialogue could prevent dignity violations, as seen in Italian media where agreements limit AI data use.

4. Data Act Regulation (Regulation (EU) 2023/2854):

Effective from September 2025, this Directive promotes fair data access and portability, enabling users (including workers) to switch providers and access to *IoT-generated data*. [139] It bans unfair contracts and supports interoperability, crucial for AI systems relying on vast datasets.

Project insights: In finance and industry, where AI optimises supply chains (e.g., predictive maintenance in Romanian manufacturing), data silos hinder transparency. Respondents in Cyprus noted improved analytics but raised bias concerns. This Regulation could empower workers to challenge opaque algorithms, aligning with the project's call for bipartite AI observatories.

5. Digital Services Act (DSA) (Regulation (EU) 2022/2065) and Digital Markets Act (DMA) (Regulation (EU) 2022/1925):

DSA tackles illegal content and algorithmic accountability on platforms, requiring risk assessments and audits, while the DMA curbs gatekeeper dominance, promoting fair competition in digital markets. Both apply to AI-driven services, ensuring transparency in recommender systems. *Project insights*: Media sectors across countries face disinformation risks; DSA audits could mitigate this. In Malta, where tech investment is high, DMA supports SMEs against big tech, but project data shows only 10% awareness among respondents. Integrating these with the AI Act Regulation could foster innovation without exacerbating inequalities.

6. Data Governance Act (DGA) (Regulation (EU) 2022/868):

Facilitates data sharing across sectors via intermediaries, emphasising altruism and reuse for the public good, while upholding the standards set by the GDPR.

Project insights: Education and health responses highlight data-sharing needs for AI training (e.g., personalised learning in Italy). However, east European countries lag due to infrastructure gaps, risking a digital divide. DGA could accelerate skills programs, as recommended in the report.

7. Network and Information Systems 2 (NIS2) Directive (Directive (EU) 2022/2555):

The deadline for the transposing of this Directive was October, 2024. It strengthens cybersecurity for critical sectors, mandating risk management and reporting for AI-integrated systems.

Policy insights: Industrial production (e.g., Irish robotics) is vulnerable; NIS2 could prevent disruptions, but only 25% of respondents reported cybersecurity training. The social partners urge integration with OSH rules for holistic AI governance.

These initiatives collectively form a robust ecosystem, yet the Comparative Report reveals:

» Implementation challenges

» Generational divides (older workers at risk)

» SME exclusion

139 Internet of Things: See: https://www.iotforall.com/iot-meets-big-data-ai

» Weak enforcement in eastern member States.

» EU agencies, such as Eurofound and EU-OSHA, provide the tools (e.g., ESENER surveys), but national tripartite bodies are also needed.

Conclusions:

EU regulations offer a blueprint for trustworthy AI, emphasising ethics, transparency, and inclusion. However, to close this gap, the TransFormWork 2 findings stress the need for accelerated transposition f EU Directives, awareness campaigns and social partner engagement. Without this, AI risks widening inequalities, eroding trust, and undermining competitiveness.

In contrast, proactive alignment, through skills investments, collective bargaining and human oversight, will ensure AI drives a just transition, benefiting workers, businesses, and society.

Failing to act could lead to regulatory fragmentation and lost opportunities.

Recommendations from TransFormWork 2:

» EU Level: Launch a 2026-2030 Social Partners Action Programme on AI, including funding for reskilling/upskilling (ESF+) and a Directive extending Platform Work principles related to AI to all business sectors

» National Levels: Adopt bipartite *AI Charters* by 2027 that encourage responsible AI practice while supporting EU competitiveness in areas of *High Risk*, as categorised in the AI Act; mandate AI clauses in collective agreements covering impact assessments and workforce training; establish tripartite *AI Observatorie*s, where these are not yet established; increase available resources to support training for upskilling/reskilling, so the workforce is equipped with the skills needed for the future economy and quality employment

» Company Level: Improve awareness of the AI Act to ensure AI assessment before deployment, when necessary; ensure full compliance with the GDPR Regulation and other relevant case law; support upskilling/reskilling for affected workers through in-house training or through available EU and national training grants.

As the final output of the TransFormWork 2 project, this Brief calls for collaborative governance to realise the potential of AI, while upholding human dignity. For more details, see the project's *Comparative Report* and *Guidelines for Monitoring and Managing AI at Company Level.*

As part of the TransFormWork 2, these Policy Briefs review global and European measures to regulate AI, laying foundations for modern company policies and transforming working conditions.

Examples of EU-Level Initiatives:

» AI Act Regulation: https://eur-lex.europa.eu/eli/reg/2024/1689/oj

» Platform Work Directive: https://eur-lex.europa.eu/eli/dir/2024/2831/oj

» GDPR: https://eur-lex.europa.eu/eli/reg/2016/679/oj

» Data Act: https://eur-lex.europa.eu/eli/reg/2023/2854/oj

» DSA: https://eur-lex.europa.eu/eli/reg/2022/2065/oj

» DMA: https://eur-lex.europa.eu/eli/reg/2022/1925/oj

» DGA: https://eur-lex.europa.eu/eli/reg/2022/868/oj

» NIS2 Directive: https://eur-lex.europa.eu/eli/dir/2022/2555/oj

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The rapid rise of artificial intelligence (AI) and algorithmic management is transforming workplaces across Europe, offering opportunities for efficiency and innovation while posing risks to workers' rights, job security, privacy, and dignity. This Comparative Report from the EU-funded TransFormWork 2 project - coordinated by the Confederation of Independent Trade Unions in Bulgaria and involving social partners from seven EU Member States (Bulgaria, Cyprus, Ireland, Italy, Malta, Poland, Romania) - examines AI's penetration in five key employment sectors: education, financial services, health, industrial production and news media.

Drawing on national reports, surveys, and cross-country exchanges, the report reveals an uneven adoption of AI - it is higher in Ireland and Malta, but Eastern and Southern countries are lagging behind. Common challenges faced by all the countries include limited transparency, insufficient consultation and skills gaps, exacerbated by a North-South/East-West divide. Yet, promising practices are also found, such as collective agreements in Italy and tripartite dialogues in Poland.

Anchored in EU frameworks, such as the AI Act Regulation and the Platform Work Directive, the report advocates a human-centred approach through strengthened social dialogue. Recommendations from the project call for EU-level actions, national AI Charters, and company-level impact assessments to ensure the Human-in-Control Principle, ethical deployment, and upskilling/reskilling for a just transition.

Ultimately, TransFormWork 2 demonstrates that collaborative governance can harness AI for quality jobs, inclusive growth and social justice, aligning AI innovation with the European Pillar of Social Rights.

The project is implemented with the Financial Support of the European Commission – Employment, Social Affairs and Inclusion DG, SOCPL-2023-SOC-DIALOG