



# **New trends in the social status of employees and their implementation in collective bargaining at company level**

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## Introduction

Globalization facilitates and speeds up the movement of goods, people and capital. Thanks to it, competition is constantly intensifying, not only from traditional countries but also from other countries such as the 'Asian Tigers'. It has an impact on rapidly growing consumer demand for customised production. It also creates dynamic market environment, with periods of economic growth alternating more and more frequently and rapidly with periods of recession. These are the most important features of today's business environment. If a company wants to succeed and prosper in such an environment in the long term, it must focus on digital transformation, automation, robotization and, in general, investment in modern technologies, among other things.

The introduction and use of modern technologies bring unquestionable benefits for companies and their employees. Overall, they enable companies to be more competitive and meet customer needs and wishes in the time necessary, without sacrificing goals in the area of cost, quality, reliability, etc. They bring higher productivity, better working conditions, new ways of organising work or better quality of services and products, etc.

When considering and implementing any changes, they must not forget their greatest asset – human power. Employees are affected by every potential change in the company, not just the ones that have already been implemented, and therefore their attitude to change should be considered and the measures taken should be properly communicated, as changes often affect employees not only in their working environment and their economic situation, but also in their social status.

A large number of companies would therefore like to exploit the potential of these technologies in order to be more competitive. However, what brings advantages usually also has its limitations and disadvantages. Moreover, gains are never automatic. Inadequate preparation for the introduction and use of modern technologies can have a significant impact on the workforce, one of the most important corporate resources. Inadequate preparation can result in compromised working conditions, health and safety at work, a deterioration in the quality of working and thus private life or, in the worst cases, even in jeopardising employment.

In this regard, a joint commitment is needed from employers, employees, and their representatives to make the best use of the opportunities and to meet the challenges that modern technology brings to the world of work. One way to do this is to adapt collective agreements and other possible follow-up documents.

The study presented here responds to this need by identifying key areas that should be addressed in collective agreements and related documents from the perspective of employees and in which employees should be given the opportunity to participate actively. On one hand, the aim is to present possible measures to address potential problems and risks in collective agreements and follow-up documents and to present good practice examples.

The first chapter introduces collective bargaining as it currently stands in the Czech Republic. It describes the status of employee union membership and its coverage under collective

agreements. The chapter also outlines the collective bargaining process and its legislative framework.

The second chapter covers internationally recognised provisions on the protection of employees' social rights, such as the European Social Charter of 1961 with subsequent amendments, in force in the Czech Republic since 1999, and the European Social Pillars. The signatories of the individual documents undertake to implement them in the member states' legislation and to comply with the given principles, therefore they play an important role in determining the position of employees on the labour market.

The third chapter of the study focuses on a brief summary of the main anticipated impacts of digitization, automation, robotization (generally the introduction of modern technologies) and other factors acting simultaneously on work, working conditions, work organisation, etc. The purpose is to recognise the significance of the changes that are and will be taking place and thus to understand the importance of this study and the need to protect workers.

The fourth chapter already deals with the impact on jobs in the Czech Republic resulting from the expected changes outlined above.

The fifth chapter already deals with measures, principles and rules concerning the protection of specific working conditions. These include training, working conditions (OSH, ergonomics, etc.), work organisation, remuneration, cyber security, employee monitoring and data collection, threats to social contact and disadvantaged groups of workers. Some areas are again supplemented with best practice examples.

The last chapter discusses the necessary measures, policies, and rules to protect workers using new forms of employment such as digital platforms. Good examples show how this relatively new phenomenon has been dealt with in other countries.

## **1 Collective bargaining**

Social dialogue, whether at the state or company level, is one of the tools that helps to counterbalance labour market imbalances and prevent labour market polarisation. At company level, the results of collective bargaining between the employees' representative (trade union) and the employer are valid even for employees who are not members of the trade union in question. Similarly, higher-level collective agreements extend the results of collective bargaining to the whole sector.

Thus, although a large proportion of employees are affected by the results of collective bargaining, only a small proportion of them actively participate in the collective bargaining itself in the form of representatives. It is not only the overall size of the group represented but also its overall stability that serves to ensure an equal partnership in social dialogue. This chapter will therefore focus on the trade union involvement of Czech employees and developments in this area, as well as the expansion of collective agreements and their importance. An equally important part of the chapter is the legislative picture of collective bargaining itself.

### **1.1 Trade union membership**

Czech society, like the Czech economy as a whole, underwent significant changes in the early 1990s. This transformation of both society and the economy was of course also reflected in the field of collective bargaining and in the attitudes of the Czech population, and consequently of Czech employees, towards social dialogue. With the transformation came a change in the attitude of Czech employees towards trade union involvement or active participation in collective bargaining. Fig. 1 clearly shows a decline in trade union membership of more than 2.3 million over 25 years. After a steady decline, we can observe a stable value of 500 thousand employees who have been members of trade unions in recent years.

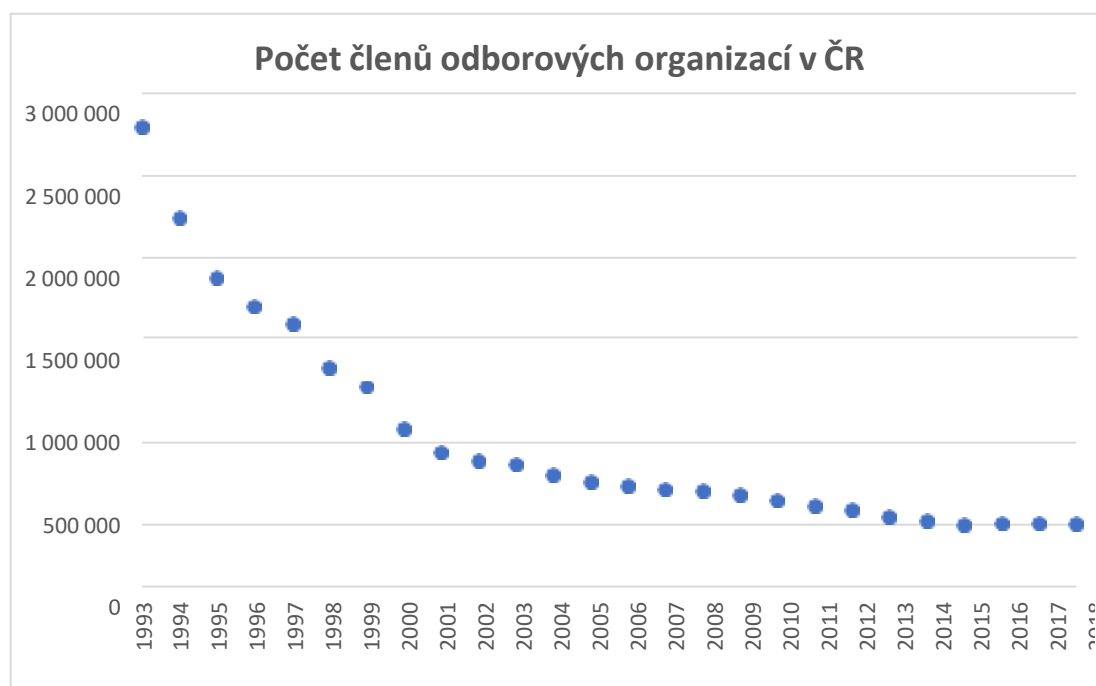
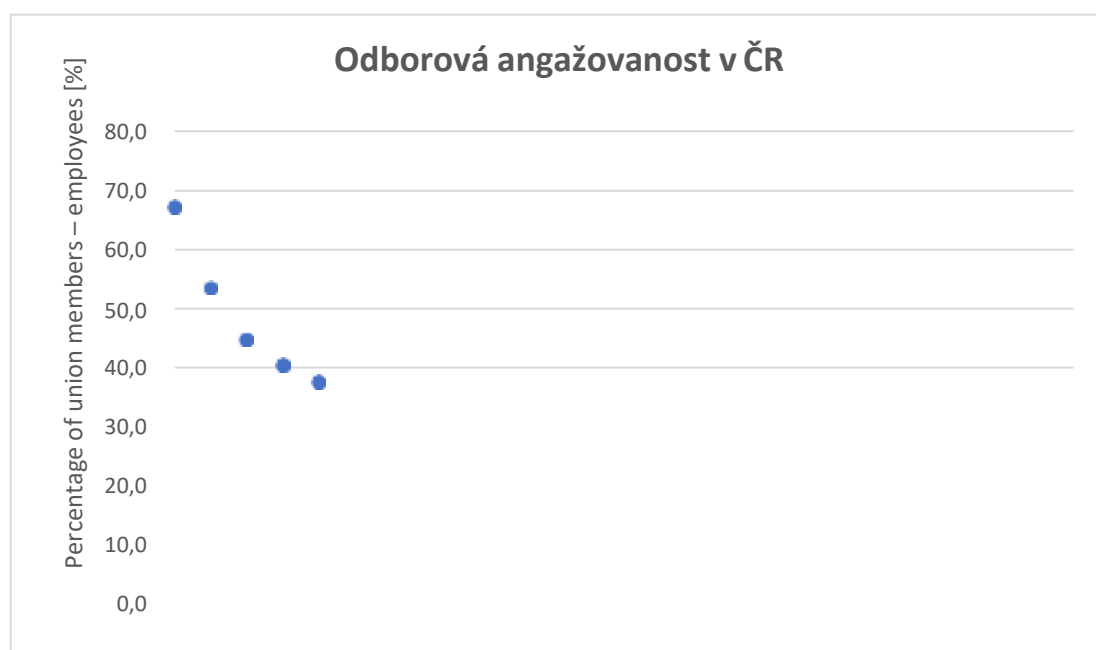


Fig. 1: Number of trade union members in the Czech Republic 1993-2018 (OECD, own adaptation)

Number of trade union members in the Czech Republic

Figure 2 then shows the related declining level of engagement of Czech employees, where at the beginning of the 1990s almost 7 out of 10 employees were members of a trade union, two years later only one out of two were members, in another 10 years in 2005 only 20% of employees were members and now we are approaching the 10% line.



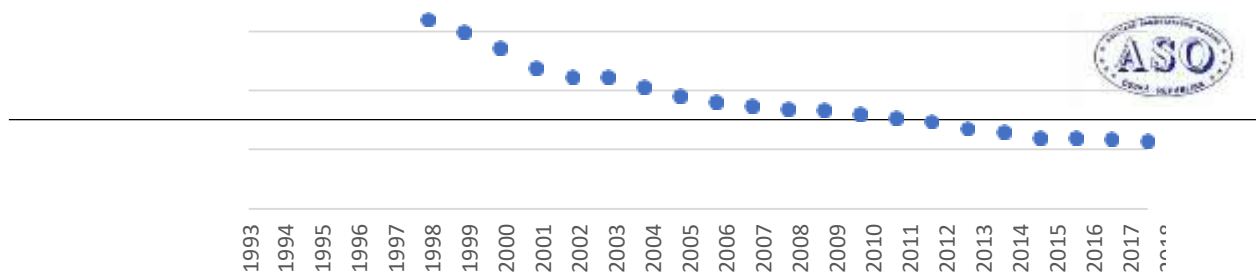


Fig. 2: Trade union involvement of employees in the Czech Republic 1993-2015 (OECD, own adaptation)

#### Trade union involvement of employees in the Czech Republic

There are several reasons for the rapid decline in union membership and union involvement. For example, the following factors influence trade union involvement in the Czech Republic:

- The level that is dominant in terms of collective bargaining. Bargaining at higher levels is associated with higher union commitment [2], while at the same time unions are not subject to pressure in the form of a rapidly reducing membership base [3].
- The evolution of the population from which the membership base can establish itself. In this respect, demographic development plays a key role, where trade unions have to deal with the conflict between the interests of the younger and older generations. These interests are often in conflict and demotivate the younger generation in terms of union involvement as they may feel that the organisation does not represent them sufficiently compared to older employees [4].
- Unemployment also plays a big role. High unemployment can lead to a reduction in the number of employees who can join trade unions, but more importantly it strengthens the position of employers during adverse unemployment trends [5].
- Adverse economic developments. Economic crisis may accelerate the decline in the number of trade union members in countries where collective bargaining does not have adequate legislative support and is not considered as one of the tools to solve labour market problems [2].
- Change in the structure of the economy, which has been particularly evident in the transformed economy:
  - change in the sectoral composition of the economy, namely a shift away from traditional industries and towards services,
  - increased emphasis on entrepreneurial activity and an increase in the number of entrepreneurs – employers,
  - higher number of economic entities with a low number of employees (especially micro-entities).

The changes in the structure of the economy described above have been further reinforced in recent years by new trends in the labour market, which are closely linked to the digitization and automation of the economy. Changes in the labour market are taking place very quickly and are often difficult to enshrine in legislation. The advantages and disadvantages associated with a higher degree of digitization – and therefore flexibility – are also reflected in employees' attitudes towards collective bargaining, which may not respond to new phenomena with the necessary speed. This issue is dealt with in more detail in the following chapters.

All of the above factors have contributed to the fact that trade union involvement of employees in the Czech Republic shows similar characteristics to other developed countries. Although there has been a huge decline in employee union involvement over the last 30 years, the percentage

of employee union members remains at a similar level as in the Visegrad Four countries (see Fig. 3). As a result, we can see that this is not a worrying development within the country, but that engagement is declining across the countries.

Figure 3 further suggests that there are large differences between countries in terms of employee union involvement. Workers are most likely to be union members in Iceland (90% of employees are also union members), Sweden (67%), Denmark (65%), Finland (65%), Belgium (54%) and Norway (52%). In all these countries, more than half of the employees have joined a trade union.

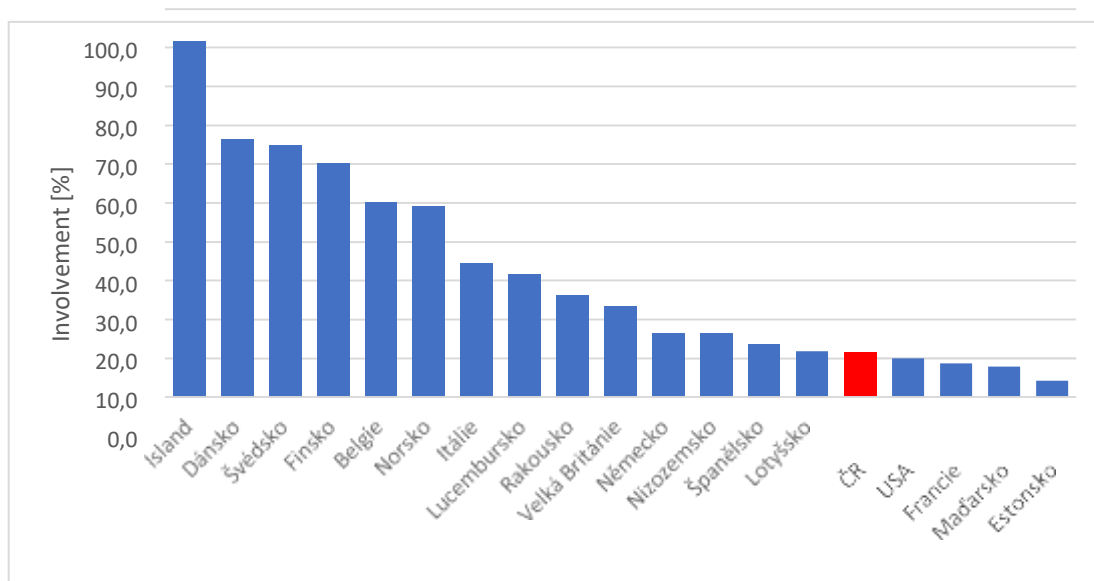


Fig. 3: Employee union involvement in international comparison in 2018 (OECD, own adaptation)

Iceland, Denmark, Sweden, Finland, Belgium, Norway, Italy, Luxembourg, Austria, Great Britain, Germany, Netherlands, Spain, Latvia, Czech Republic, USA, France, Hungary, Estonia

Most of these countries (Sweden, Finland, Denmark, and Belgium) belong to countries with the so-called Ghent system [6]. Under this arrangement, trade unions have instruments that implicitly promote high union commitment. Here, trade unions are responsible for part of the social system's obligations, mainly related to the payment of unemployment allowances.

Unemployment allowance is often conditional on membership of the system. Thus, the decision of a particular employee to join a trade union is not only based on his or her convictions but is also economically motivated.

## 1.2 Coverage by collective agreements

The number of trade union members may not be directly proportional to the extent of the impact of collective bargaining on a company, because, as mentioned above, the results of collective bargaining at the company level are applicable to all employees regardless of their trade union membership and, in the case of higher-level collective agreements, their impact falls on entire sectors. For this reason, the following section will focus on the coverage of collective agreements by economic operators and employees, with an emphasis on identifying employees outside the protection of collective agreements.

### 1.2.1 Coverage of economic operators

From the perspective of the employment protection of employees at a particular employer, the existence of a collective agreement is an important safeguard. The coverage of a collective agreement (whether company or higher-level collective agreements) is not a given for all economic operators. In 2018, 22% of economic operators with 10 or more employees were subject to a collective agreement. However, as Figure 4 indicates, there are large differences between operators.

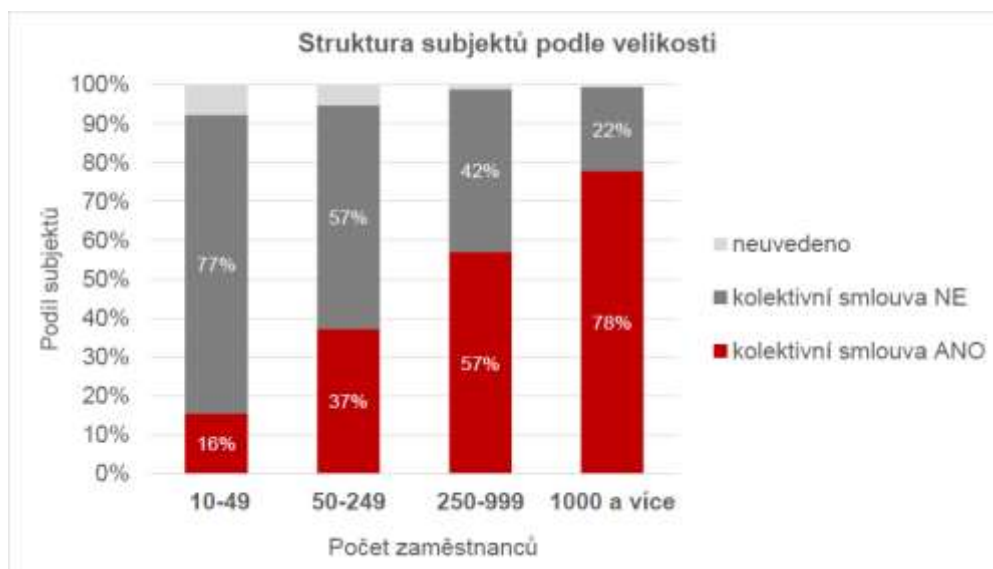


Fig. 4: Existence of a collective agreement in economic entities by size in 2018 (MoLSA, Trexima adjustment)

Structure of entities by size,

Percentage of entities,  Not stated,  Collective agreement NO,  Collective agreement YES

1000 and more

Number of employees

While in the group of the largest economic entities, the majority of enterprises must comply with a collective agreement, in the group of entities with 10-49 employees, only one-sixth of them are subject to this obligation. However, coverage by collective agreements is largely influenced not only by the size of the economic operator, but also by its correspondence to the wage or salary sphere (see Fig. 5).



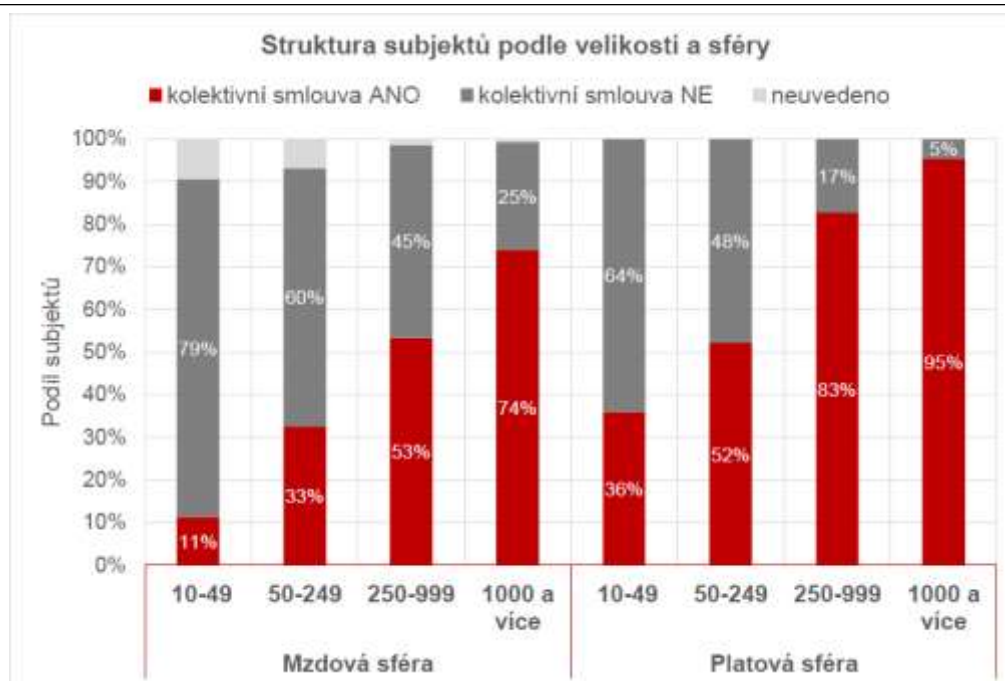


Fig. 5: Existence of collective agreements in economic operators by size and sphere in 2018 (MoLSA, Trexima adjustment)

Structure of entities by size and sphere

Percentage of entities,  Not stated,  Collective agreement NO,  Collective agreement YES

1000 and more

Wage sphere, Salary sphere

The figure above shows that the coverage of collective agreements is denser in the group of economic operators in the wage sphere, in all size categories. Economic operators that remunerate their employees with a salary in accordance with Act No. 262/2006 Coll., the Labour Code, are thus also much more often bound by the provisions of a company collective agreement or a higher-level collective agreement.

Moreover, economic operators show different variations in terms of structure size from one sector to another. The high proportion of the smallest economic operators in some sectors may worsen the overall situation of the sector with regard to collective agreement coverage, as it is the smallest operators that are least covered by collective agreements. As illustrated in Figure 6, collective agreements are most common in the sectors covered by collective agreements:

- Agriculture, forestry, and fishing (section A of the CZ-NACE classification),
- Mining and quarrying (section B) and
- Transporting and storage (section H),

i.e. in traditional, better organised sectors.

On the contrary, fragmented sectors with a high share of small economic operators are the least covered, such as:

- Wholesale and retail trade and repair and maintenance of motor vehicles and motorcycles (section G),
- Accommodation and food service activities (section I),

- Administrative and support service activities (Section N),
- Other service activities (Section S),

or new, fast-growing sectors such as:

- Information and communication activities (section J),
- Financial and insurance activities (section K) or
- Professional, scientific, and technical activities (Section M).

The lower coverage of progressive sectors is one of the consequences of the changes in the structure of the economy that are taking place as a result of the increasing digitization and automation of the economy. These sectors are characterised by a higher number of newly established, smaller economic operators in which the concentration of trade unions is lower. At the same time, there is no higher-level collective agreement in these sectors, which is, among other things, a consequence of the high degree of individualisation in progressive sectors in terms of the focus and workload of the individual entities. Individualism is thus manifested not only at the level of employees, but also at the level of economic operators.

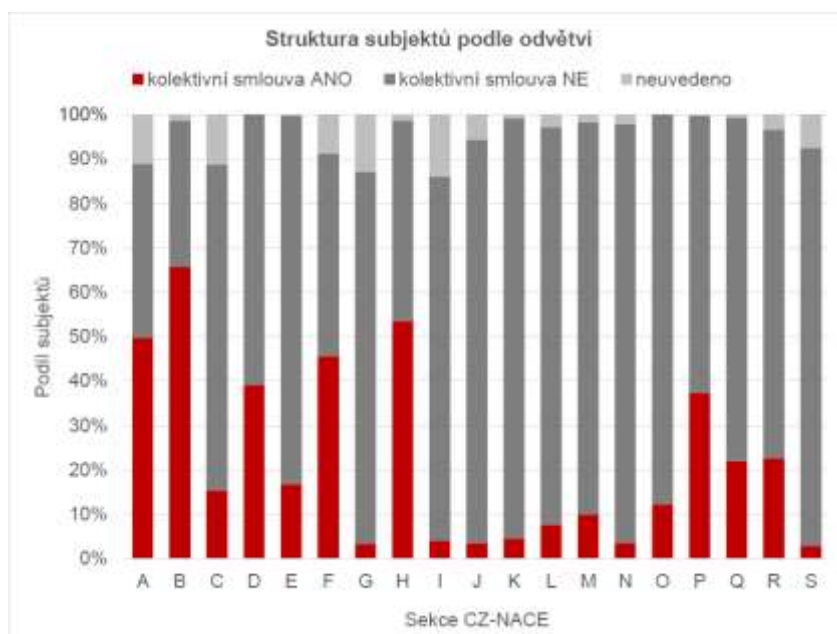


Fig. 6: Existence of collective agreements in economic operators by sector (MoLSA, Trexima adaptation)  
 Structure of entities by sector  
 Percentage of entities,  Not stated,  Collective agreement NO,  Collective agreement YES  
 1000 and more  
 CZ-NACE section

### 1.2.2 Coverage of employees

In addition to monitoring the proportion of economic operators who are bound by a collective agreement in pursuit of their economic goals, it is also important to monitor the proportion of employees whose employer must comply with the provisions of the company collective agreement or a higher-level collective agreement. Given the heterogeneous size structure of economic operators (see Fig. 4), it is logical that employees will be covered by collective agreements to a much greater extent. In 2018, 44% of employees in the Czech Republic were covered by collective agreements (see Fig. 7).

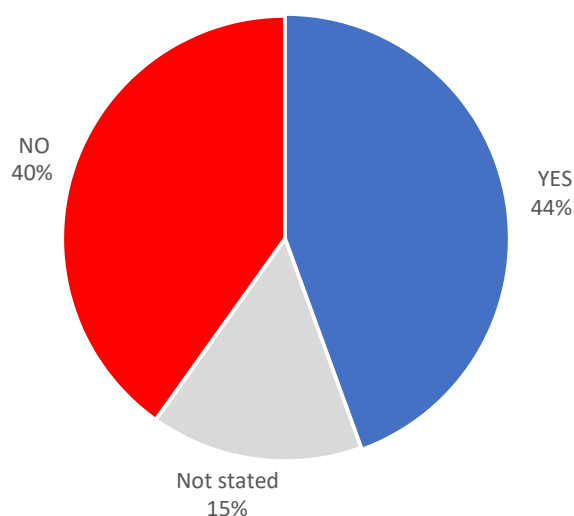


Fig. 7: Coverage of employees by collective agreements (structure of employees according to the existence of a collective agreement in the enterprise) (CSO, own adaptation)

Since the early 1990s, coverage by collective agreements has shown similar trends to trade union involvement (see Fig. 2). In the early 1990s, almost three quarters of employees were covered by collective agreements, but the coverage of the employee population by collective agreements gradually declined until it reached its lowest level in 2001. In that year, only 38 % of employees in the Czech labour market were covered by collective agreements. Thus, during the 1990s, the structural changes associated with the transformation of the Czech economy became fully apparent. In the new millennium, the level of worker coverage by collective agreements has gradually stabilised, with the percentage of employees protected by collective bargaining oscillating between 40 and 50% (see Fig. 8).

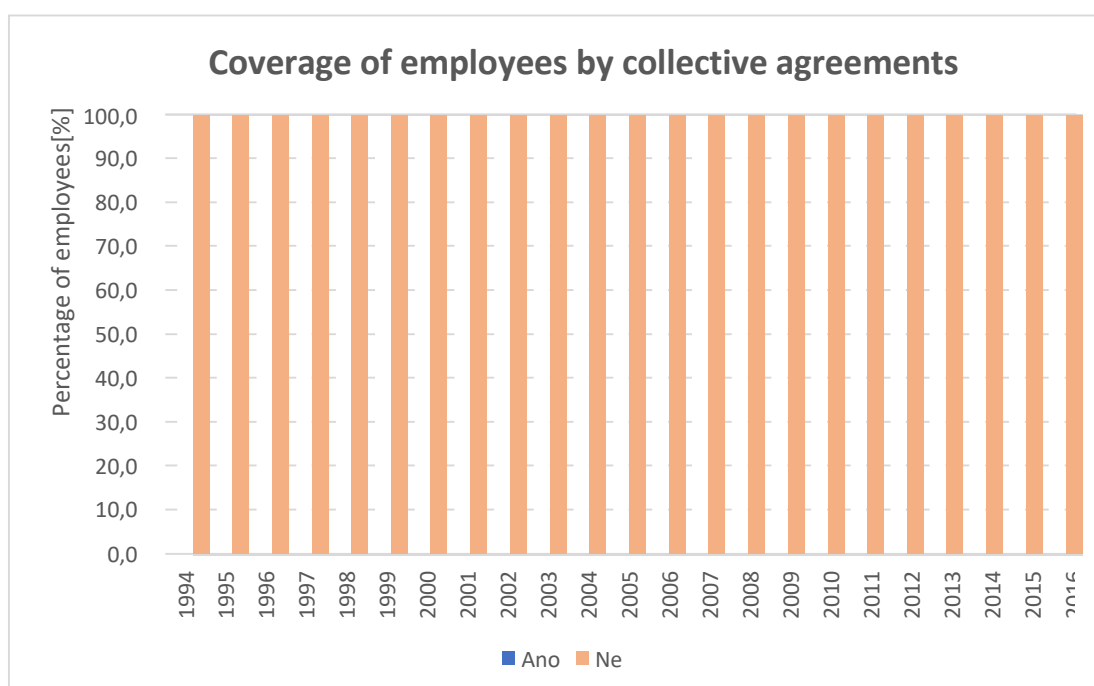


Fig. 8: Collective bargaining coverage between 1993 and 2015 (OECD, own adaptation)

■ yes, ■ no

If the involvement does not differ much within the Visegrad Four, the coverage rates are lower in the other countries - Slovakia and Hungary are characterised by coverage rates between 20 and 30% and Poland even between 10 and 20%.

The issue of gender equality is often mentioned in the context of collective bargaining. Although social dialogue is one of the important tools used to achieve equal conditions on the labour market, union membership and coverage of collective agreements remain gender unequal [7]. Figure 9 indicates that even in the Czech Republic, men (46%) are more likely to be covered by collective agreements than women (43%). This figure thus suggests that collective bargaining is targeted at enterprises and sectors that are more masculine (i.e. characterised by a higher proportion of male employees).

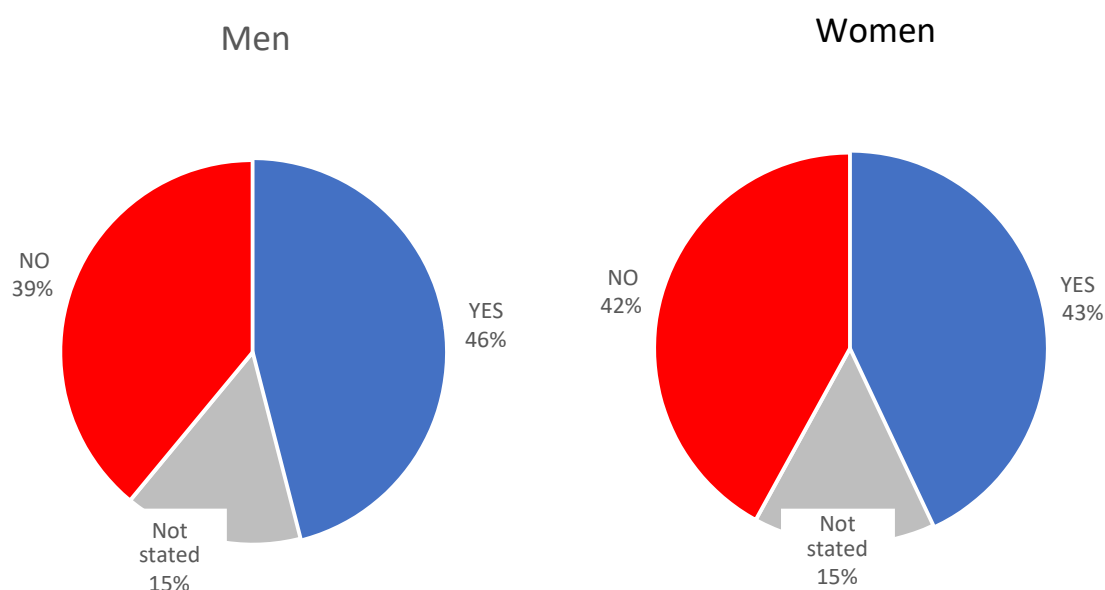


Fig. 9: Coverage of employees by gender in collective agreements in 2018 (CSO, own adjustment)

Large differences in terms of employee coverage by collective agreements also exist by occupation in the Czech Republic. Employees in the armed forces are fully covered, which is related to the concentration of these workers in a single entity (the Ministry of Defence of the Czech Republic and the Army of the Czech Republic). Employees working as skilled workers in agriculture, forestry, and fishing (major occupational group 6 according to the CZ-ISCO classification) and machine and plant operators and assemblers (major group 8) are highly protected by collective agreements, as more than half of employees in both main occupational classes are covered by collective agreements. This is also in line with the data on the coverage of economic operators in the previous chapter. In contrast, the lowest collective agreement coverage is currently found in service and sales workers (major group 5) and in auxiliary and unskilled workers (major group 9). In these major groups, only one third of employees are protected by collective agreements (see Fig. 10).

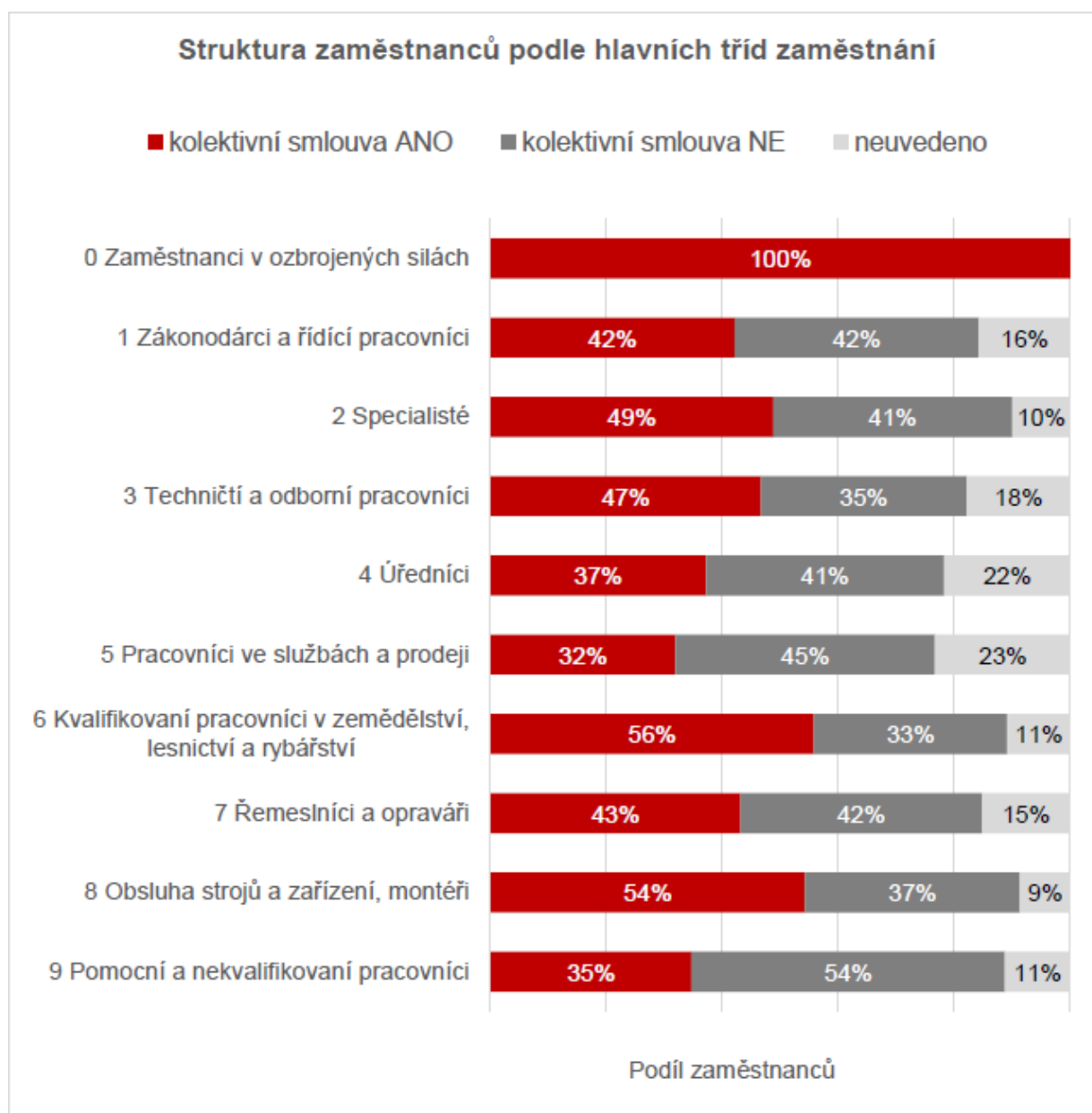


Fig. 10: Coverage of employees by occupation by collective agreements in 2018 (MoLSA, Trexima adjustment)

Structure of employees by major occupation groups

■ Not stated, ■ Collective agreement NO, ■ Collective agreement YES

0 Armed forces, 1 Legislators, senior officials and managers, 2 Professionals, 3 Technicians and associate professionals, 4 Clerks, 5 Service workers and shop and market sales workers, 6 Skilled agricultural and fishery workers, 7 Craft and related trades workers, 8 Plant and machine operators, and assemblers, 9 Elementary occupations,

Percentage of employees

The highest coverage of employees is typical for sectors with a long tradition of collective bargaining (e.g. agriculture, forestry and fishing – section A of the CZ-NACE classification, mining and quarrying – section B, electricity, gas and heat production and distribution – section D, or transporting and storage – section H) and for public administration, defence and social security (section O).

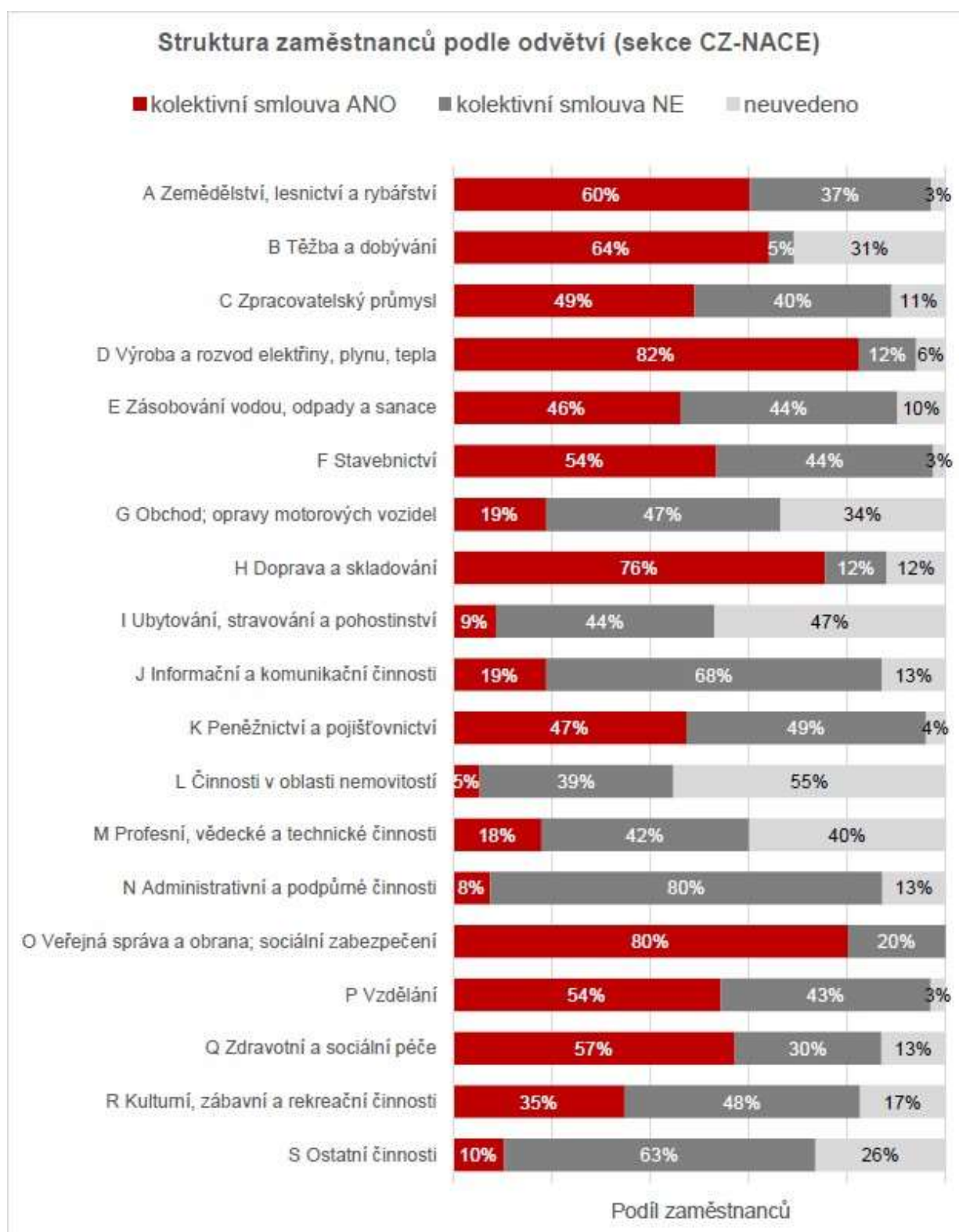


Fig. 11: Coverage of employees by sector by collective agreements in 2018 (MoLSA, Trexima adjustment)

Structure of employees by sectors (CZ-NACE sections)

■ Not stated, ■ Collective agreement NO, ■ Collective agreement YES

A Agriculture, forestry, and fishing, B Mining and quarrying, C Manufacturing, D Electricity, gas, steam, and air conditioning supply, E Water supply, sewerage, waste management and remediation recovery, F Construction, G Wholesale and retail trade, repair of motor vehicles and motorcycles, H Transporting and storage, I Accommodation

and food service activities, J Information and communication, K Financial and insurance activities, L Real estate activities,

M Professional, scientific, and technical activities, N Administrative and support service activities

O Public administration and defence, compulsory social security, P Education, Q Human health and social work activities, R Arts, entertainment, and recreation, S Other service activities, Percentage of employees

In contrast, employees working in non-homogeneous sectors or sectors characterised by a large number of small economic operators have the lowest union protection. Examples of such sectors are real estate activities (section L), administrative and support service activities (section N) or accommodation and food service activities (section I). In these sectors, less than 10 % of employees are covered by collective agreements.

Although the coverage of some groups of Czech employees is low compared to the Czech Republic as a whole, the protection of Czech employees by collective agreements remains relatively high compared to other Visegrad Four countries (see above) and some developed countries (see Figure 12).

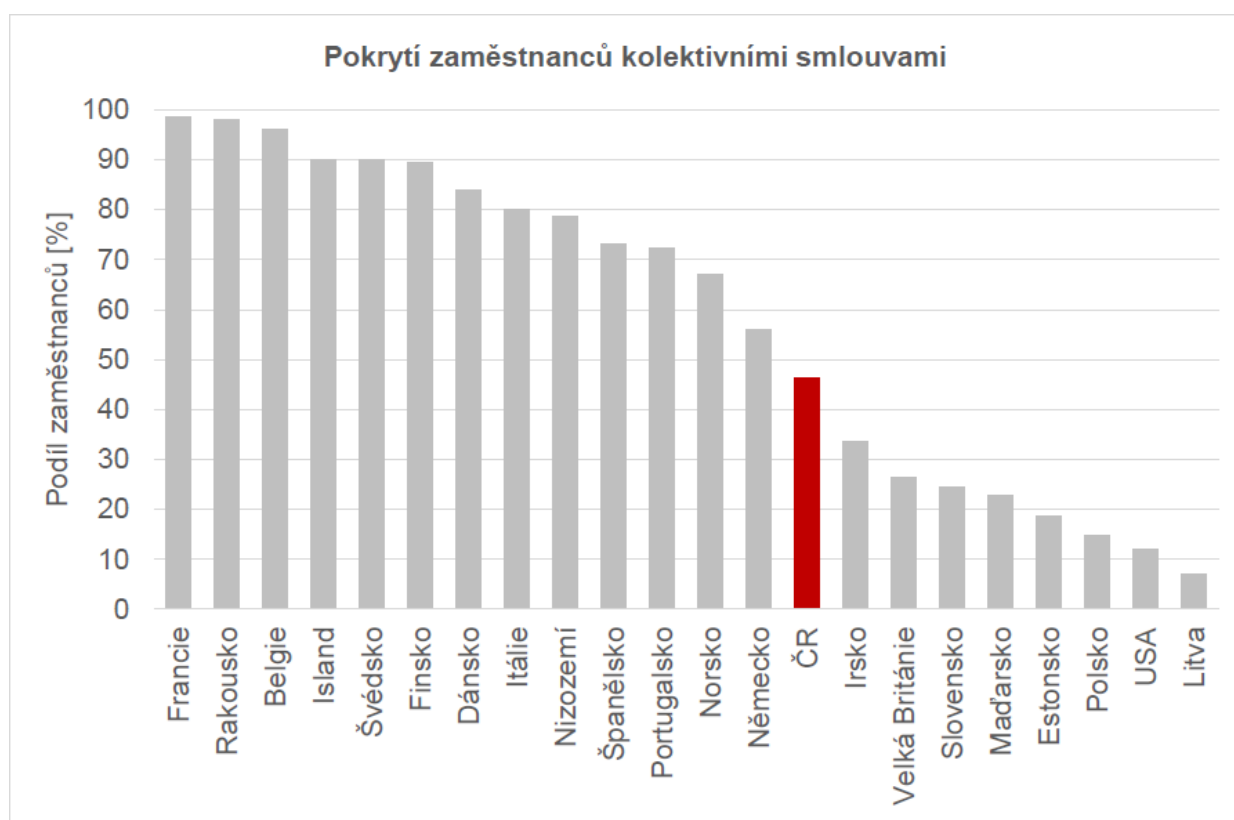


Fig. 12: Coverage of employees by collective agreements in international comparison (OECD, Trexima adjustment)

Coverage of employees by collective agreements

Percentage of employees

France, Austria, Belgium, Iceland, Sweden, Finland, Denmark, Italy, Netherlands, Spain, Portugal

Norway, Germany, **Czech Republic**, Ireland, Great Britain, Slovakia, Hungary, Estonia, Poland, USA

Latvia

On the other hand, however, in many developed countries almost all employees are covered by collective agreements. Examples of these countries are France, Austria, Belgium, Iceland,

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Sweden, Finland, Denmark, and Italy, where more than 80% of employees are covered by collective agreements.

Information on the coverage of employees by collective agreements as well as on the level of trade union involvement (i.e. the proportion of employees who are also members of trade unions) provides important information on the development and state of collective bargaining in a given country. The difference between the two figures then provides important information on the strength of unions in a given country. The higher the difference between the two figures, the more non-member employees are represented by trade union members. As Figure 13 shows, trade unions in France have the highest strength in this respect. The union membership base stands at 8% of employees, but the results of collective bargaining are valid for 98% of employees. As a result of the proliferation of collective agreements, 91 percentage points more employees benefit from the activities of trade unions than participated in the negotiations.



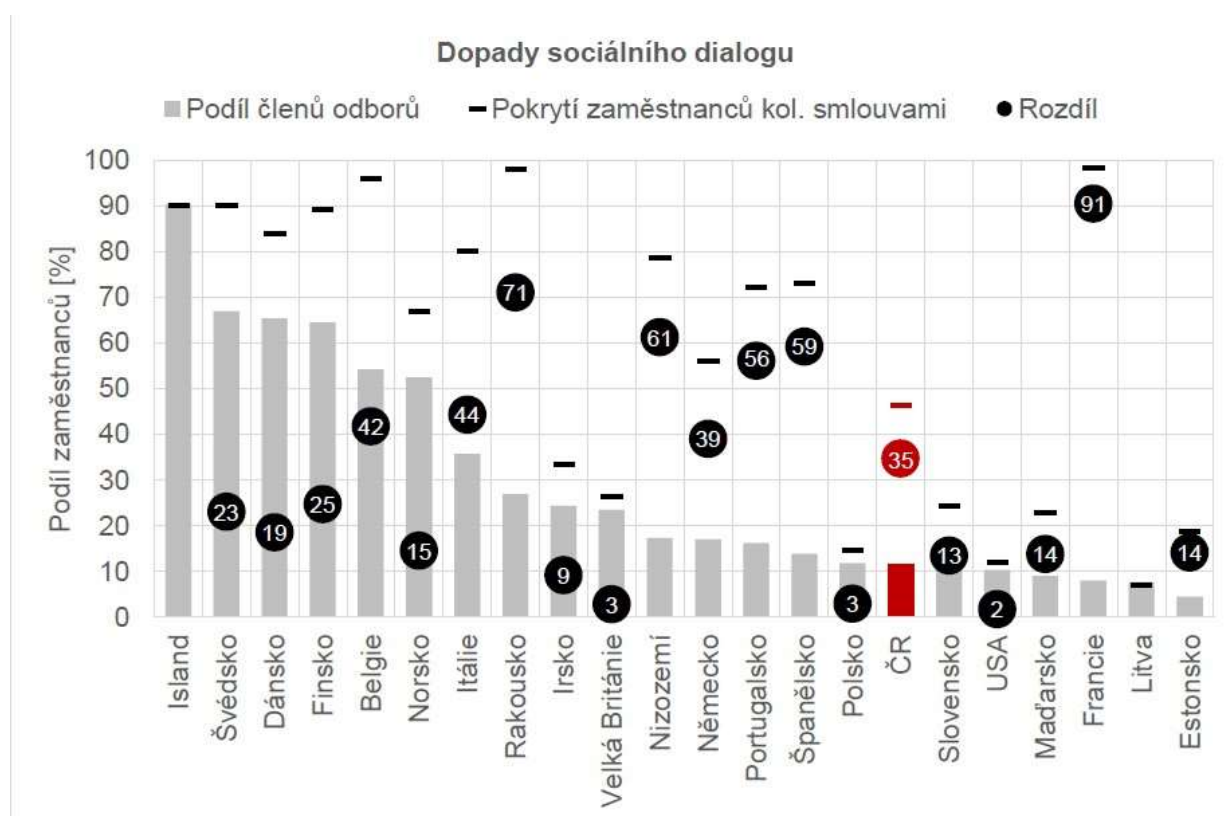


Fig. 13: Difference between employee coverage by collective agreements and employee union involvement in selected countries (OECD, Trexima adjustment)

#### Impacts of social dialogue

■ Percentage of union members, ■ Coverage of employees by collective agreements, ● Difference

#### Percentage of employees

Iceland, Sweden, Denmark, Finland, Belgium, Norway, Italy, Austria, Ireland, Great Britain, Netherlands, Germany, Portugal, Spain, Poland, Czech Republic, Slovakia, USA  
Hungary, France, Latvia, Estonia

In contrast, trade unions in the US, Lithuania or Poland have the lowest strength in this respect. In these countries, both union involvement and coverage by collective agreements are low. The minimal difference between the two indicators suggests that trade unions primarily benefit their members and there is no major coverage to other employees.

In terms of the difference between the proportion of employees covered by collective agreements and the proportion of employees who are members of trade unions, the Czech Republic is at the average level of the OECD countries. Four times more employees benefit from trade union activity as compared to the number of those who participate in trade union activities. Thus, trade unions have a medium strength in the Czech Republic when we assess their performance in an international context.

### 1.3 The legislative framework for collective bargaining

Collective bargaining and collective agreements are currently regulated in the Czech Republic mainly by two legal norms, Act No. 262/2006 Coll., the Labour Code, as amended, and Act No. 2/1991 Coll., on Collective Bargaining, as amended. With the adoption of the new Labour Code,

the legal regulation of collective bargaining and collective agreements has been changed and the scope of the above-mentioned laws has been redefined. Sections 2 to 6 of Act No. 2/1991 Coll. on Collective Bargaining, which regulate collective agreements, were removed. The contractual type in the form of a collective agreement is newly regulated in Sections 22 to 29 of Act No. 262/2006 Coll., the Labour Code. Act No. 2/1991 Coll., on Collective Bargaining currently regulates only the procedure for concluding and amending collective agreements or the procedure for resolving disputes.

### **1.3.1 Collective bargaining**

Collective bargaining refers to the negotiation of wages and other working conditions of employees between the employer and the trade union. It is therefore impossible to conduct collective bargaining without a trade union. The result of successful negotiations is a collective agreement that also applies to non-unionised employees.

Czech legislation regulates the term “collective bargaining” in a narrower sense. The whole process of collective bargaining is regulated by Act No. 2/1991 Coll., on Collective Bargaining, as amended, according to which “the Act regulates collective bargaining between trade union bodies of trade union organizations and employers, with a possible participation of the state, in an effort to conclude collective agreements”. Collective bargaining in the Czech Republic is also related to amendments to collective agreements (Section 8(5) of the Collective Bargaining Act) or to disputes over the conclusion of collective agreements and disputes over the fulfilment of collective agreement obligations (Section 10 et seq. of the Collective Bargaining Act).

The fact that the national regulation of collective bargaining is narrower than the international regulation does not adversely affect the negotiations between employees and employers. Although the Collective Bargaining Act only regulates the part of negotiations relating to collective agreements, the other areas mentioned in ILO Convention No. 154 are not omitted. However, the regulation of these areas is part of Act No. 262/2006 Coll., the Labour Code, as amended, which lays down specific rules of conduct in the relevant labour and other legal relations. The Labour Code regulates the status of trade unions in the Czech Republic, and the relevant provisions mainly concern the regulation of:

- the right to co-decision of both social partners (e.g. Section 61 of the Labour Code),
- the right to a hearing (e.g. Section 46),
- the right to information (e.g. Section 38(3)),
- the right to control (e.g. § 322 of the Labour Code),
- the right to the proper exercise of trade union activities (e.g. Section 277),
- the rights of employees (e.g. Section 62).

Both parties are obliged to start negotiations on a new collective agreement at least 60 days before the expiry of the old collective agreement. If no agreement is reached, the parties must choose a mediator. If the employee and employer negotiators do not agree on a mediator, the Ministry of Labour and Social Affairs will assign one from the current list of mediators it keeps. The mediator shall submit a conciliation proposal to both parties within 15 days. If both parties do not accept the conciliation proposal within a further 15 days, the mediation procedure shall also be deemed to have failed. Currently, a collective agreement is being settled through a mediator at Škoda Mladá Boleslav.

It is only at this point that further negotiations can go in two directions. The first option is to

submit the dispute to an arbitrator, registered with the Ministry of Labour and Social Affairs. Its decision is already binding. Although it can be appealed in court, it can only be done if it violates generally applicable law or higher collective agreements. This procedure is the only option in workplaces where strikes are not possible (e.g. police, air traffic security, nuclear power plant operators, etc.).

The second option is the use of so-called last resorts. For the employees, this means a strike, for the employer, it means imposing a lockout of selected employees. Strike is a well-known institution. A strike is called by the trade union, which also provides the employer with a list of employees, who are at strike. During the strike, strikers are not entitled to wages, wage replacement or sickness benefits. During the strike, the employer may not accept any compensation for the strikers.

A less known institution is the lockout. This is essentially a similar instrument, yet this time, on the part of the employer. The employer may impose on selected employees the so-called lockout. During the lockout, the employee does not perform his or her work and receives only 50% of his or her average wage. For the purposes of sickness insurance, only 50% of average earnings is also taken into account. The employer must notify the trade union three days in advance, providing a list of employees to whom the employer wishes to apply the lock-out.

When concluding an enterprise collective agreement, the higher collective agreement must be respected, which are collective agreements concluded at sector-wide level. The enterprise collective agreement can only provide for wages and other conditions beyond the scope of the higher collective agreement, otherwise the relevant parts of the collective agreement are invalid. The higher collective agreement may also provide for a maximum wage level. These values are binding on the enterprise collective agreement. Any parts of the collective agreement that exceed the stipulated range are invalid.

Finally, a few figures characterising the importance of collective agreements in the Czech Republic. According to the Czech-Moravian Chamber of Trade Unions ([www.cmkos.cz](http://www.cmkos.cz)), a total of 4,314 enterprise collective agreements were concluded by its members in 2002, covering 1,075,987 employees, which represents about 27% of all employees in the Czech Republic.

### **1.3.2 Initiation of collective bargaining**

The procedure for concluding collective agreements is governed by Section 8 of the Collective Bargaining Act. According to Section 8(1), collective bargaining is initiated by the submission of a written proposal for the conclusion of a collective agreement by one of the parties to the agreement to the other party. According to Section 8(2), the other party is obliged to respond to the proposal in writing without undue delay and comment on those proposals which it has not accepted. Amendment to the Collective Bargaining Act, implemented by Act No. 264/2006 Coll, amending certain acts in connection with the adoption of the Labour Code, tightened the rules concerning the obligation of the recipient of a proposal to respond to it.

According to Section 8(3) of the Collective Bargaining Act, the parties are obliged to negotiate with each other and provide other requested cooperation, unless it conflicts with their legitimate interests.

### **1.3.3 Collective agreement**

The issue of collective agreements is primarily regulated by Act No. 262/2006 Coll., the Labour Code in Sections 22 to 29.

The issue of collective agreements is primarily regulated by Act No. 262/2006 Coll., the Labour Code in Sections 22 to 29.

According to Section 22 of the Labour Code, only a trade union may conclude a collective agreement on behalf of employees. However, pursuant to Section 24(1) of the Labour Code, this organisation automatically concludes a collective agreement also on behalf of non-unionised employees. If there is more than one trade union in the employer's organisation, the employer must negotiate a collective agreement with all the trade unions pursuant to Section 24(2) of the Labour Code. According to this provision, the trade unions act and negotiate with legal consequences for all employees jointly and in concert, unless they and the employer agree otherwise.

The current legislation on collective bargaining does not contain **a definition of a collective agreement**. However, a collective agreement can be defined as "a bilateral written labour law act, having at the same time the character of a normative act, which is the result of collective bargaining between the parties, and which regulates the individual and collective relations between employers and employees and the rights and obligations of the parties (parties to the collective agreement)". **The Labour Code currently defines only the content** of collective agreements. According to Article 23(1) of the Labour Code, a collective agreement may regulate the rights of employees in labour relations, as well as the rights or obligations of the parties to the agreement. [9]

The Labour Code further distinguishes between two types of collective agreements, namely enterprise agreements and higher-level agreements.

According to Section 23(3)(a), **an enterprise collective agreement** is concluded between an employer or several employers and a trade union or several trade union organisations operating at the employer.

**A higher-level collective agreement** is, pursuant to Article 23(3)(b), concluded between an employers' organisation or organisations and a trade union or trade unions. Currently, according to Section 25(2)(a) of the Labour Code, a higher-level collective agreement is also binding for employers who are members of an employers' organisation that has concluded a higher-level collective agreement. According to Section 25(2)(a), the higher-level collective agreement is also binding for employers who have withdrawn from the employers' organisation at the time the collective agreement takes effect and thus cannot opt out of the effect of the higher-level collective agreement by withdrawing from the union.

Under the current legislation, the collective agreement also **applies to employees working under agreements for work performed outside the employment relationship** (i.e. agreements for the performance of work and employment agreements concluded under Part III of the Labour Code). Pursuant to Article 77(2) of the Labour Code, work carried out on the basis of agreements is subject to the regulations for the performance of work in an employment relationship, unless otherwise specified in the law. In the context of collective agreements, the following rights may be granted to persons working under agreements for work outside the employment relationship:

- The right to equal remuneration for equal work and work of equal value. The employee's right to remuneration under the agreement for work cannot be regulated by a collective agreement, as it follows from Section 138 of the Labour Code that the amount of

remuneration and the conditions for its provision are agreed directly in the agreement on the performance of work or in the agreement on the work activity. However, it follows from the principle of equal pay, salary or remuneration for equal work and work of equal value under section 110 of the Labour Code that an employee employed under an agreement for work must earn the same as an employee in an employment relationship under the same conditions, even though that remuneration need not be provided in the same structure as the wage or salary. It need not therefore include individual components such as tariff remuneration, extra pay, bonuses, benefits, or rewards, but in terms of the total amount it must be identical under the same conditions. The collective agreement will therefore affect the amount of remuneration indirectly if it sets the amount of the individual components of wage;

- The right to discounted corporate catering as employees in employment (otherwise the principle of equality in working conditions of employees is violated);
- The right of the employee to other important personal obstacles to work and to leave. The right of an employee to other important personal obstacles to work and to leave may be agreed directly in the employment contract or, where appropriate, established by internal regulations, under the same conditions as for employees in an employment relationship. Thus, a collective agreement cannot directly establish the entitlement of an employee working under an agreement for time off due to work-related obstacles on the part of the employee and to leave entitlement, but it may act indirectly (if the relevant rights of the employee are agreed in the agreement for work, they shall accrue in the amount and to the extent determined by the collective agreement);
- Adjustment of working time. On the basis of a collective agreement, the regulation of working time, or certain segments thereof (e.g. meal and rest breaks, limitations on the length of a shift or continuous rest periods) may be applied to agreements for work).

## **1.4 Involving employees in the process of collective bargaining**

### **1.4.1 Workers' participation in bodies**

Specifically, collective agreements should address the participation of employee representatives in the introduction of modern technologies. Existing bodies, such as works councils in Germany, can serve this purpose. However, this should be clearly defined in collective agreements. The indirect advantage of involving these existing bodies in the introduction of modern technologies may be better integration into the operation of the company. However, various types of new bodies, such as evaluation committees, can be set up directly to help evaluate the possibilities for introducing modern technologies in individual company areas. These committees are then often involved in e.g. training or presentations of new technologies.

Employee representatives should, of course, meet certain criteria. They should be both experts and negotiators. It is also important, for example, to assess correctly which company departments are represented in the bodies. The selected representatives should then be able to prepare themselves sufficiently for their participation and work, if necessary, and should have the opportunity to attend potentially necessary training courses on digitalization, automation, robotization, etc., or to benefit from the expertise of other employees, employee surveys, departmental meetings, etc. [18]

### **1.4.2 Setting up a partnership process**

Next, a key parameter of the “partnership” process in the field of digitalization, automation and

robotization – in general the process of introducing modern technologies – should then be defined. The main goal of the whole process is to achieve a consensual and successful integration of modern technologies in the workplace, which will include the exploitation of opportunities, but also the prevention and minimization of risks for both workers and employers, ensuring the best possible outcome for both employers and workers. The interdisciplinary nature of the process is essential, capturing all elements of the workplace and linking them together so that they are not addressed separately. Some features of the process are universal, others are not. It is then necessary to deal with different situations or circumstances and to modify the process depending on the needs of a particular country, sector, enterprise or, for example, the situation in which the enterprise finds itself. The whole process can be divided into 5 phases:

- 1) Joint exploration/preparation/underpinning means exploring, raising awareness, and building trust and the right supporting knowledge base to openly discuss the opportunities and challenges or risks of digitalization, their impact on the workplace and possible approaches and solutions.
- 2) Joint mapping, regular assessment, analysis – focuses on mapping specific areas in terms of challenges, risks, benefits, and opportunities in terms of how the integration of digital technology can benefit or constrain the workforce and the enterprise. Possible actions are also identified at this stage. SMEs may need external advice/support.
- 3) Joint overview of situation and adoption of strategies for digital transformation - building on the above steps and actually represent their result. It is a basic understanding of the opportunities, challenges, risks, different elements, and their interrelationships, as well as a consensus on digital strategies that set future business objectives.
- 4) Adoption of appropriate measures/actions – this phase is based on a common overview of the situation. It includes: the possibility of testing the envisaged solutions, setting priorities, timing, implementation in progressive time-bound phases, clarification and definition of roles and responsibilities of management and employees and their representatives, identification of resources and accompanying measures such as (expert) support, monitoring, etc.
- 5) Regular joint monitoring/follow-up, learning, evaluation – represents the last phase to conclude the process. It includes a joint evaluation of the effectiveness of the measures and a discussion on whether further analysis, awareness raising, support or any further actions are needed.

Where concerns about impacts on working conditions, health and safety require immediate attention, action should be taken. It is in the interest of employers and workers to adapt the organisation of work to the ongoing transformation, if necessary. This adjustment should take place in a way that respects the interests of employees, and the privileges of employers as regards the organisation of work at enterprise level.

The presence or introduction of digital technologies or tools has an impact on the organisation of work, where we can include several key topics, such as working conditions, work organisation, training, etc. All these topics must be discussed and considered at different steps of the process. The different areas are addressed in more detail in the next chapter. [1,18]

The joint commitment of employers, employees and their representatives to an agreed and jointly managed process is essential for overall success and sustainable development. Equally important is respect for the roles and representatives of all stakeholders (see also above – worker participation in committees) and a helpfulness and willingness to communicate. Communication and feedback



from the enterprise and employee representatives to the employees is also important. Employee representatives must of course be provided with the information, tools, or equipment necessary for effective involvement in the various stages of the process. [1,18]

### **1.4.3 Setting the timeframe**

Last but not least, the timeframe of the process also needs to be set, which is also very important. For this reason, we mention it again directly here, although this fact has already been mentioned above. Employees or their representatives should always have the opportunity to assess the impact of new technologies on employment, quality and working conditions, etc., well in advance. Without sufficient time, the evaluation would either not be possible at all or might not be sufficient and could lead to some problems being overlooked or underestimated.

## **2 Legislation on employees' social rights**

Several international conventions or charters regulate the social rights of employees. Among the most important ones that govern the social rights of employees in the CZECH REPUBLIC ARE the European Social Charter or the promulgated European Social Pillars. The conventions then cover mostly sub-sections and regulate, for example, health care and sickness benefits (Convention No. 130) or maternity protection (Convention No. 103).

### **2.1 The European Social Charter**

The European Social Charter is an international treaty on social and economic rights ratified by the Member States of the Council of Europe (established in 1949).

Together with the European Convention for the Protection of Human Rights and Fundamental Freedoms, it is one of the two fundamental pillars of the human rights treaty system in the member countries of the Council of Europe and has been of great importance for the development of social policy at European level. The provisions of the Charter, which have been adopted by the Contracting Parties, constitute unquestionable international legal obligations for the protection of human rights. Moreover, the Convention has made a significant contribution to the development of the first version of the Charter was adopted in Turin on 18 October 1961 and entered into force for its original signatories on 26 February 1965. On behalf of the Czech and Slovak Federal Republic, the European Social Charter was signed in Strasbourg on 27 May 1992. It entered into force for the Czech Republic on 3 December 1999, following the consent of the Parliament of the Czech Republic and the conclusion of the ratification process.

#### **Content and structure of the Charter**

In contrast to the European Convention for the Protection of Human Rights and Fundamental Freedoms, the European Social Charter takes into account the differences between social rights and civil or political rights, as well as possible economic differences between countries.

Part I of the European Social Charter sets out 19 principles which the Contracting Parties recognise as the objective they will pursue in implementing this international treaty.

Part II lists Articles 1-19, containing individual social and economic rights:

- the right to work (Article 1)
- the right to just conditions of work (Article 2)
- the right to safe and healthy working conditions (Article 3)
- the right to fair remuneration for work (Art. 4)
- the right to organise (Art. 5)

- the right to bargain collectively (Art. 6)
- the right of children and young persons to protection (Art. 7)
- the right of women workers to protection (Art. 8)
- the right to vocational guidance (Art. 9)
- the right to vocational training (Art. 10)
- the right to protection of health (Art. 11)
- the right to social security (Art. 12)
- the right to social and medical assistance (Art. 13)
- the right to benefit from social welfare services (Art. 14)
- the right of physically or mentally disabled persons to vocational training, rehabilitation, and vocational and social resettlement (Art. 15)
- the right of the family to social, legal, and economic protection (Art. 16)
- the right of mothers and children to social, legal, and economic protection (Art. 17)
- the right to gainful employment in the territory of other Contracting Parties (Art. 18)
- the right of migrant workers and their families to protection and assistance (Art. 19)

Part III - Article 20 (obligations), Part IV - Articles 21-29 (monitoring mechanism) and Part V - Articles 30-38 with Annex

### **Amendments to the European Social Charter**

The European Social Charter has undergone a number of changes since its adoption and subsequent entry into force. Currently, there is a move to a revised version of the 1996 Charter, which places greater emphasis on the rights of employees after the end of the employment relationship.

- Additional Protocol (1988)

In addition to the rights protected by the Charter, an Additional Protocol was adopted in Strasbourg in 1988, extending the Charter to include a further 12 social and economic rights (e.g. the right to equal opportunities and equal treatment in employment without discrimination on grounds of sex, the right to information and consultation, the right to participate in determining and improving working conditions and the working environment, the right of older persons to social protection).

- Amending Protocol (1991)

In 1991, the Protocol amending the European Social Charter was signed in Turin, improving the effectiveness of the Charter, including the functioning of its monitoring mechanism.

- Additional Protocol (1995)

A more recent Additional Protocol to the European Social Charter establishing a system of collective complaints was adopted in Strasbourg in 1995.

- Revised European Social Charter (1996)

The Revised European Social Charter was drawn up in Strasbourg in 1996 and is now being progressively adopted. In addition to the fundamental rights already enshrined in the European Social Charter, this document represents progress, particularly as regards the right to protection of workers in the event of termination of their employment (revised Art. 24).

### **Monitoring mechanisms**

The monitoring mechanism in the case of the European Social Charter is not judicial review (as in the case of the European Convention on Human Rights), but regular reporting on the fulfilment of the obligations laid down to the Secretary General of the Council of Europe (Art. 21). The reports



are subsequently examined by the Committee of Independent Experts and the Committee of Ministers submits to the States its critical comments and recommendations, if any (Art.29).

The Protocol amending the European Social Charter of 1991 has contributed to improving the effectiveness of the Charter and in particular its monitoring mechanism. The new provision of Art. 23 has strengthened the role of the social partners – national organisations which are members of international employers’ organisations and trade unions – and allowed them to send comments on the reports of the Contracting Parties directly to the Secretary General of the Council of Europe. It also extends the competence of the Committee of Independent Experts, which, under Art. 24, may request additional information directly from the Contracting Parties concerned. The number of members in the Committee itself is to be increased, while the requirement for their independence and impartiality is highlighted (Art. 27).

The 1995 Additional Protocol, which introduces a system of collective complaints, has gone furthest in strengthening and improving the Charter’s monitoring mechanism. This Protocol allows the social partners and non-governmental organisations to submit a written complaint to the Committee of Independent Experts concerning a provision of the Charter that the State concerned has accepted as binding. The complaint should point out where the State party has failed to ensure satisfactory implementation of a particular provision (Art. 4). If the Committee of Independent Experts finds the complaint admissible, it shall invite the State Party concerned and the organization that has lodged the complaint to provide the necessary information, explanations, and observations, and may hold a hearing with representatives of the parties (Art. 7). On the basis of the investigation, the Committee shall draw up a report on whether the State party concerned has complied with its obligations under the Charter. Should it find non-compliance with the obligations, the Committee may make recommendations (Art. 9). The State party concerned will then be required to provide information in its next periodic report on the measures it has taken to implement the recommendation (Art. 10).

## **2.2 The European Pillar of Social Rights**

The European Pillar, jointly proclaimed by the European Parliament, the Council, and the Commission on 17 November 2017, promotes a high level of protection for workers against occupational and health risks (OSH risks), regardless of their age.

In the context of the European Pillar, this is particularly important as it aims to ensure fundamental social rights, including fair working conditions, equal opportunities, and access to the labour market. As one of its 20 key principles states: “Workers have the right to a working environment adapted to their professional needs and which enables them to prolong their active participation in the labour market”.

Longer and healthier working lives can reduce insecurity while increasing productivity. Indeed, a good level of occupational health and safety has a number of benefits, such as reduced sickness absence, reduced healthcare costs, retention of older workers, promotion of more efficient working methods and technologies, and a better work-life balance. EU-OSHA fully supports, as part of its efforts, to ensure a healthy, safe, and well-adapted working environment in Europe. The European Pillar of Social Rights articulates the following 20 principles of the Pillar in three blocks.

### Fair working conditions

- Education, training, and lifelong learning: Everyone has the right to quality and inclusive education, training and lifelong learning in order to maintain and acquire skills that enable

them to participate fully in society and manage successfully transitions in the labour market.

- Gender equality: Equality of treatment and opportunities between women and men must be ensured and promoted in all areas, including regarding participation in the labour market, terms and conditions of employment and career progression. Women and men have the right to equal pay for work of equal value.
- Equal opportunities: Regardless of sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation, everyone has the right to equal treatment and opportunities regarding employment, social protection, education and access to goods and services available to the public. Equal opportunities for under-represented groups shall be fostered.
- Active support to employment: Everyone has the right to timely and tailor-made assistance to improve employment or self-employment prospects. This includes the right to receive support for job search and training and requalification. Everyone has the right to transfer social protection and training entitlements during professional transitions. Young people have the right to continued education, apprenticeships, traineeships, or a job offer of good standing within four months of becoming unemployed or leaving education. People unemployed have the right to personalised, continuous and consistent support. The long-term unemployed have the right to an in-depth individual assessment at the latest at 18 months of unemployment.

#### Equal opportunities and access to the labour market

- Wages: Workers have the right to a fair wage that provide for a decent standard of living. Adequate minimum wages shall be ensured, in a way that provide for the satisfaction of the needs of the worker and his/her family in the light of national economic and social conditions, whilst safeguarding access to employment and incentives to seek work. In-work poverty shall be prevented. All wages shall be set in a transparent and predictable way according to national practices and respecting the autonomy of the social partners.
- Information about working conditions and protection in case of dismissals: Workers have the right to be informed in writing at the start of employment about their rights and obligations resulting from the employment relationship, including on probation period.
- Prior to any dismissal, workers have the right to be informed of the reasons and be granted a reasonable period of notice. They have the right to access to effective and impartial dispute resolution and, in case of unjustified dismissal, a right to redress, including adequate compensation.
- Social dialogue and involvement of workers: The social partners shall be consulted on the design and implementation of economic, employment and social policies according to national practices. They shall be encouraged to negotiate and conclude collective agreements in matters relevant to them, while respecting their autonomy and the right to collective action. Where appropriate, agreements concluded between the social partners shall be implemented at the level of the Union and its Member States. Workers or their representatives have the right to be informed and consulted in good time on matters relevant to them, in particular on the transfer, restructuring and merger of undertakings and on collective redundancies. Support for increased capacity of social partners to promote social dialogue shall be encouraged.
- Work-life balance: Parents and people with caring responsibilities have the right to suitable leave, flexible working arrangements, and access to care services. Women and men shall

have equal access to special leaves of absence in order to fulfil their caring responsibilities and be encouraged to use them in a balanced way.

- Healthy, safe, and well-adapted working environment and data protection: Workers have the right to a high level of protection of their health and safety at work. Workers have the right to a working environment adapted to their professional needs and which enables them to prolong their participation in the labour market. Workers have the right to have their personal data protected in the employment context.

### Social protection and inclusion

- Childcare and support to children: Children have the right to affordable early childhood education and care of good quality. Children have the right to protection from poverty. Children from disadvantaged backgrounds have the right to specific measures to enhance equal opportunities.
- Social protection: Regardless of the type and duration of their employment relationship, workers, and, under comparable conditions, the self-employed, have the right to adequate social protection.
- Unemployment benefits: The unemployed have the right to adequate activation support from public employment services to (re)integrate in the labour market and adequate unemployment benefits of reasonable duration, in line with their contributions and national eligibility rules. Such benefits shall not constitute a disincentive for a quick return to employment.
- Minimum income: Everyone lacking sufficient resources has the right to adequate minimum income benefits ensuring a life in dignity at all stages of life, and effective access to enabling goods and services. For those who can work, minimum income benefits should be combined with incentives to (re)integrate into the labour market: Retired workers and self-employed persons have the right to a pension that corresponds to their contributions and ensures an adequate income.
- Old age income and pension: Workers and the self-employed in retirement have the right to a pension commensurate to their contributions and ensuring an adequate income. Women and men shall have equal opportunities to acquire pension rights. Everyone in old age has the right to resources that ensure living in dignity.
- Health care: Everyone has the right to timely access to affordable, preventive, and curative health care of good quality.
- Inclusion of people with disabilities: People with disabilities have the right to income support that ensures living in dignity, services that enable them to participate in the labour market and in society, and a work environment adapted to their needs.
- Long-term care: Everyone has the right to affordable long-term care services of good quality, in particular homecare, and community-based services.
- Housing and assistance for the homeless: Access to social housing or housing assistance of good quality shall be provided for those in need. Vulnerable people have the right to appropriate assistance and protection against forced eviction. Adequate shelter and services shall be provided to the homeless in order to promote their social inclusion.
- Access to essential services: Everyone has the right to access essential services of good quality, including water, sanitation, energy, transport, financial services, and digital communications. Support for access to such services shall be available for those in need.

### **2.1.1 Action Plan for the implementation of the European Pillar of Social Rights**

On 4 March 2021, the European Commission published an Action Plan for the implementation of the European Pillar of Social Rights (EPSR) as a guide for Member States to implement its twenty principles and ensure a smooth transition to a digital and green economy. The EPSP was proclamatively adopted as a non-legally binding document at the Gothenburg Social Summit in November 2017. The Commission plans to present the Action Plan as a political commitment at the Porto Social Summit in May. The Action Plan accompanies the EC Communication on effective and active employment support in the aftermath of the COVID-19 pandemic.

It is positive that the Commission recognises that Europe is the continent with the lowest social inequalities, the highest standards of working conditions and broad social protection. Competitive sustainability is at the heart of Europe's social market economy. Europe has already set its own set of rules, and which will only be as good as its implementation. The implementation of the Action Plan is primarily in the hands of the Member States; initiatives at EU level will be complementary. The Action Plan will be part of the already well-established reform and investment coordination mechanism of the European Semester. The EC emphasises the role of the social partners and their joint work programme as part of the implementation process of the Action Plan.

In general, the three main goals of the Action Plan – employment, skills, modernisation of national social protection systems – can also be supported. The Commission rightly notes that all measures aimed at employment and workers will not be successful without the support of businesses and entrepreneurs. A vibrant industry remains a central force for Europe's future prosperity and a major source of new jobs. With its new Industrial Strategy published in 2020, the EC has laid the foundations for an innovative and competitive industrial ecosystem. The Commission also highlights the role of SMEs in economic recovery and job creation. The emphasis on the creation of a European Education Area and the call on higher education, vocational and apprenticeship institutions to equip the future workforce with the relevant skills to contribute to the economic recovery is also positive. The EC calls on Member States to use unprecedented financial resources to renew and implement reforms.

Although the public consultation has shown that the implementation, application and enforcement of existing EU labour and social legislation is important to the majority of European citizens, the EPSR Action Plan contains a number of legislative initiatives that have already been published and are in the transposition or are being discussed in the Council. The Action Plan foresees almost three dozen of proposals for legislative and non-legislative initiatives, which will need to be analysed in detail.

For example, the directives on reconciliation of private and working life or on predictable and transparent working conditions are in the transposition process. The recently published proposal for a directive on adequate minimum wages in the EU is on the Council's negotiating table. The publication of the Action Plan is accompanied by a proposal on transparency in gender pay.

However, the Action Plan also contains a number of announced or new proposals in all three priority areas, many of which will have regulatory and administrative implications for business and entrepreneurs and will need to be analysed in depth. These include, for example, the forthcoming legislative initiative on the working conditions of platform workers, the regulatory framework for AI (artificial intelligence), the report on the implementation of the

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EU Working Time Directive, the follow-up steps to the EP report on the right to disconnect from digital devices outside working hours, the new EU strategic framework for OSH 2021-2027, Proposal for the introduction of personal learning accounts, European approach to micro-credit, Skills and Talent Package, Report on the application of the Directives on non-discrimination at work and racial non-discrimination (2000/78 and 2000/43), Recommendation on minimum income, Long-term care initiatives, ESSPASS (European Social Security Card).

### **3 Impacts of digitization, automation, and other factors**

We are in the fourth industrial revolution, which is bringing changes to our personal and working lives. The entire customer environment is changing significantly. For the customer, a conventional product (product or service) delivered within a few days is often no longer enough. They want a “tailor-made product”, “now”, “at a reasonable price”. In an effort to focus on the customer and to meet their needs, wishes and requirements, changes are then made in the internal management of companies, which focus, for example, on process management and greater interconnection of the individual parts of the company in an effort to create a more efficient and effective organisation. In this context, there is also greater integration of supplier-customer relationships. However, in order to be successful, the implementation of all the changes in corporate management cannot be achieved without the use of modern technology. In virtually all sectors of the economy, digitization, automation and robotization are becoming more and more widespread. There has been a growing use of modern technologies such as advanced software tools, the Internet of Things, cloud computing, BigData and its analysis, artificial intelligence or, for example, additive manufacturing. The changes brought about by the fourth industrial revolution are therefore fundamental. It is very difficult to predict them, but it is essential to prepare for them. We can say with certainty that they will have a significant impact on our working and personal lives. [11]

#### **3.1 Impact on the nature of work and working conditions**

The introduction and use of modern technologies are changing working conditions in a significant way. Digitalization, automation and robotization are changing the individual workplace and the nature of work significantly. Companies are increasingly using robots and, more recently, cobots, i.e. robots with which humans interact directly.

Analysis commissioned by the World Economic Forum suggests that in the short to medium term, some human jobs will be augmented by machines and computers rather than replaced entirely. Indeed, replacing routine and repetitive tasks will lead to better use of human potential and talent, thereby increasing productivity and competitiveness. Much of automation occurs at the level of tasks, not at the level of entire jobs or professions. It is estimated that about 2/3 of jobs contain at least 30% of automated tasks and ¼ of jobs contain more than 70% of automated tasks. Even so, it is clear that the proportion of tasks processed by machines and computers will increase in the long term. [12]

The most loaded positions are those dealing with information and data processing, performing complex and technical activities, performing physical and manual work activities, or administering. For these positions, a possible increase in machine/computer work of up to 17% points is expected (Figure 15). [12]

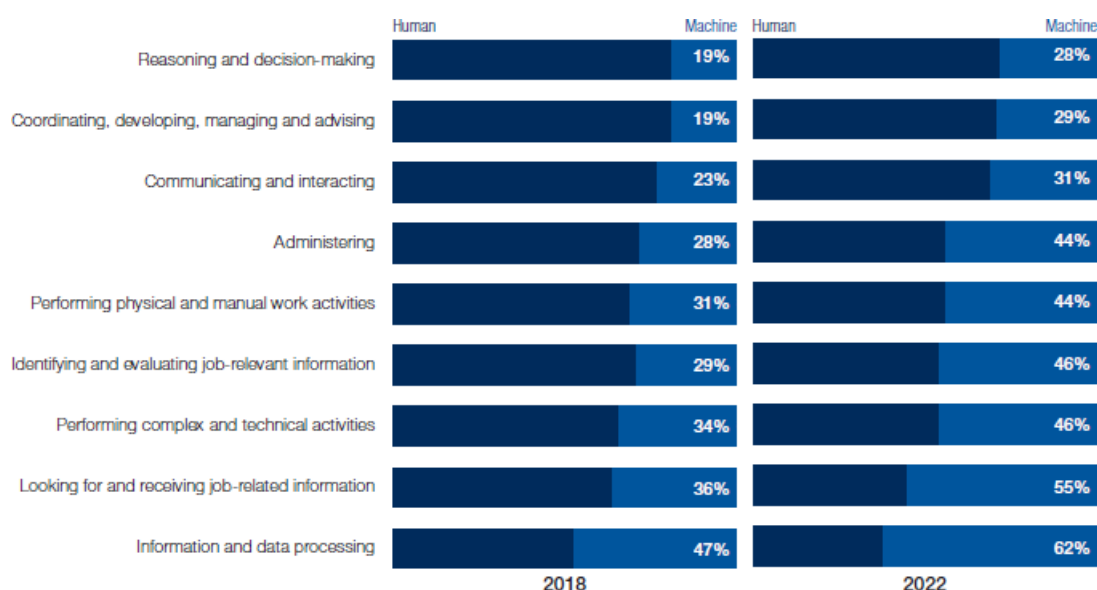


Fig. 15: Proportion of work performed by humans and machines, 2018-2020 [12]

The use of software tools is growing in offices, not only ERP systems or office applications, but more and more simulation tools are being used. Thanks to technical progress, we are no longer tied to our workplace in the company, but thanks to mobile devices, cloud computing and the Internet we can work from home or on the move. Communication and collaboration within and outside the enterprise is moving into virtual space.

Of course, these changes bring many benefits. We have already mentioned that in some respects there is a facilitation of work and better use of human potential, but there are other benefits such as better work-life balance, etc. However, there are of course also risks. They affect the safety of workplaces, workers have to work with equipment and IT systems that are not always ergonomic enough, work is intensified, the boundaries between private and working life are blurred and there is the problem of unrestricted accessibility, social contact is reduced, etc. Since all these risks affect the potential well-being of the employee, who is a key resource for the company, appropriate measures must be set up and prepared to minimise the risks.

### The proportion of human work and machine work

Analysis commissioned by the World Economic Forum suggests that in the short to medium term, some human jobs will be augmented by machines and computers rather than replaced entirely. Indeed, replacing routine and repetitive tasks will lead to better use of human potential and talent, thereby increasing productivity and competitiveness. Much of automation occurs at the level of tasks, not at the level of entire jobs or professions. It is estimated that about 2/3 of jobs contain at least 30% of automated tasks and 1/4 of jobs contain more than 70% of automated tasks. Even so, it is clear that the proportion of tasks processed by machines and computers will increase in the long term. The most loaded positions are those dealing with information and data processing, performing complex and technical activities, performing physical and manual work activities, or administering. For these positions, a possible increase of up to 17% points in machine/computer work is expected by 2022 (Fig. 41). [Chyba! Nenalezen zdroj odkazů.]

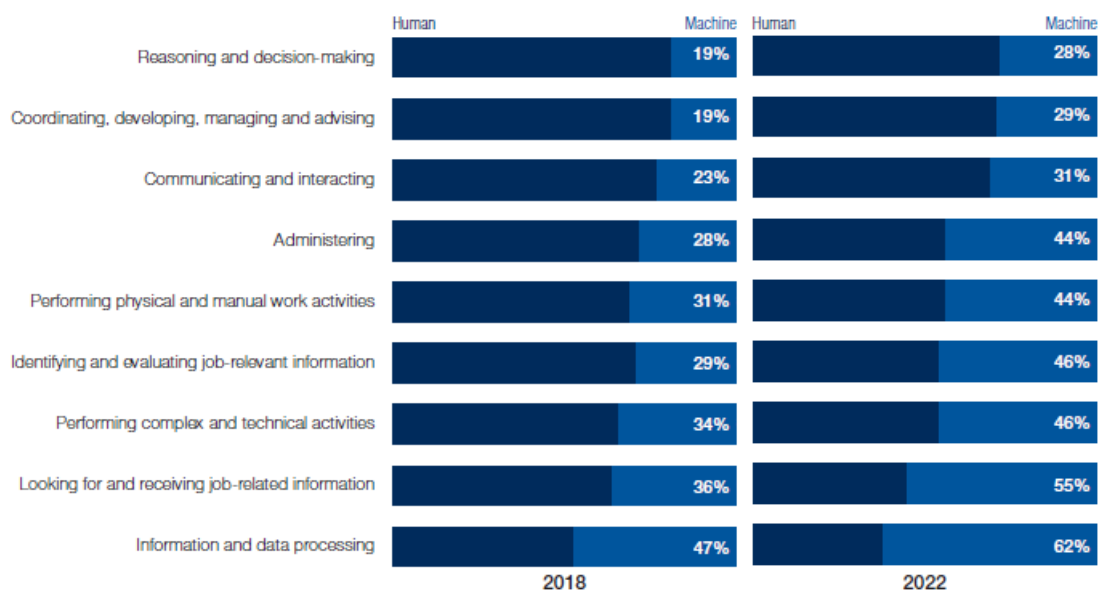


Fig. 41: Proportion of work performed by humans and machines, 2018-2020 [Chyba! Nenalezen zdroj odkazů.]

A more detailed overview of the situation around 2023 can then be seen in the graph from the summary report of the project Research on the potential for the development of artificial intelligence in the Czech Republic. Here, a relatively large number of professions, job positions are compared. For some of them, the share of skills that can be replaced by AI is expected to be as high as 53% (Fig. 42).



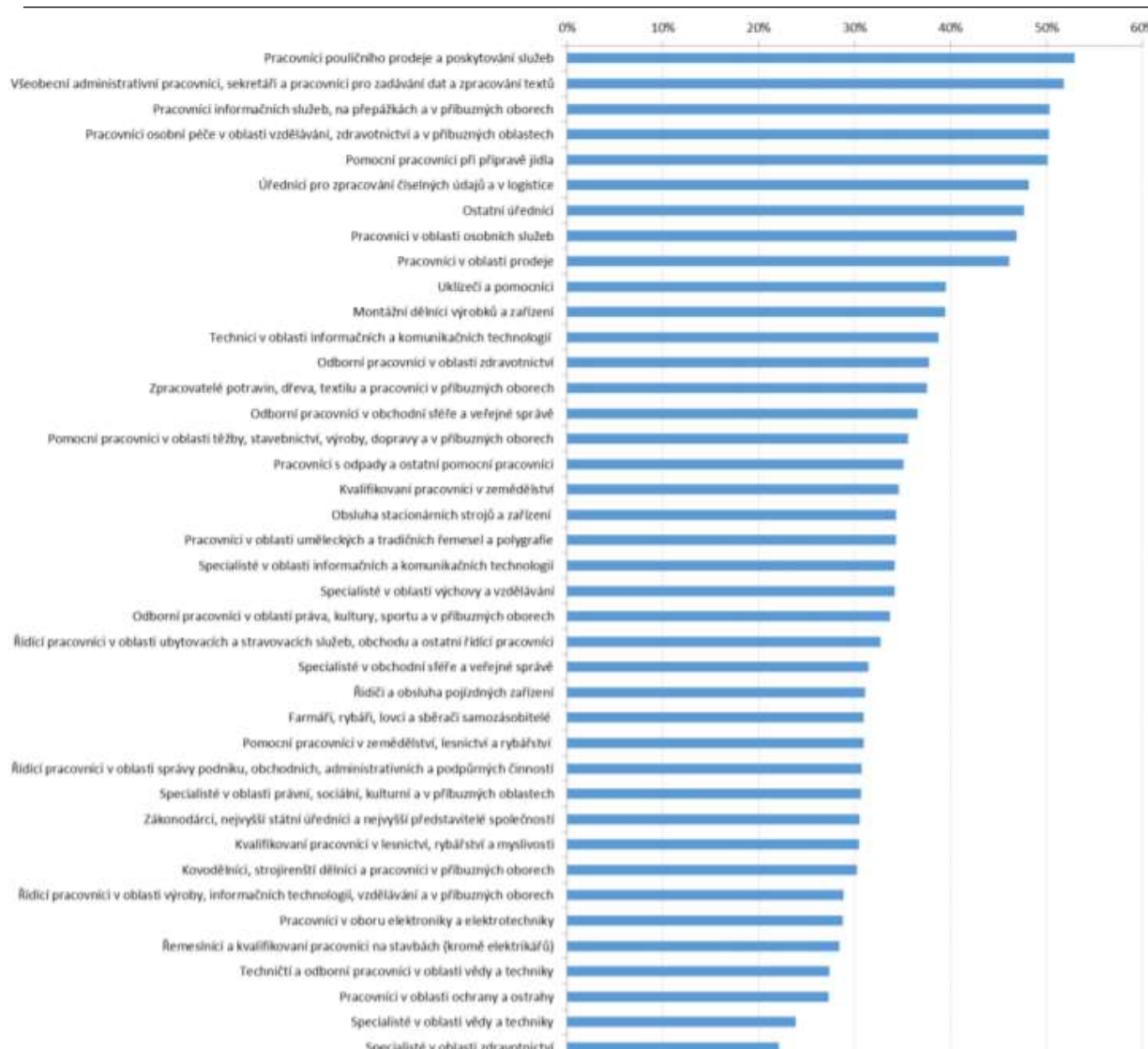


Fig. 42: Proportion of substitutable skills in 5 years [Chyba! Nenalezen zdroj odkazů.]

Street sales and service workers, General clerical, secretarial, data entry and word processing workers, Information, counter, and related workers, Personal care workers in education, health, and related fields, Food preparation assistants, Data processing and logistics clerks, Other clerks, Personal service workers, Sales clerks, Cleaners and helpers, Product and equipment assemblers, Information and communication technology technicians, Healthcare professionals, Food, wood, textile, and related workers, Business and public administration professionals, Support workers in mining, construction, manufacturing, transport, and related trades, Waste handlers and other auxiliary workers, Skilled agricultural workers, Stationary plant and machine operators, Workers in the arts, crafts, traditional crafts, and printing, Information and communication technology specialists, Education and training specialists, Professionals in law, culture, sport, and related fields, Managers in accommodation, food services, trade, and other management personnel, Business and public administration professionals, Drivers and operators of mobile equipment, Farmers, fishermen, hunters, and subsistence gatherers, Agricultural, forestry and fishing support workers, Managers in business administration, commercial, administrative and support activities, Specialists in legal, social, cultural, and related fields, Legislators, top civil servants, and top company officials. Skilled workers in forestry, fishing, and hunting, Metalworkers, engineering, and related workers, Management personnel in manufacturing, information technology, education, and related fields, Electronic and electrical workers, Craftsmen and skilled construction workers (except electricians), Technical and professional workers in science and technology, Security and safety workers, Scientific and technical specialists, Healthcare professionals

The estimation is divided into 4 time periods: up to 5 years, 6-15 years, 16-30 years and over 30 years. For example, mobility or natural language production is not expected until 2034 at the earliest. Logic,

problem-solving ability, creativity, natural language understanding or emotional intelligence are expected in 2048 at the earliest.

Do 5 let	6 – 15 let	16 – 30 let	Nad 30 let
<ul style="list-style-type: none"> <li>• Optimalizace a plánování</li> <li>• Rozpoznání známých kategorií</li> <li>• Získávání informací</li> <li>• Navigace</li> <li>• Hrubá motorika</li> </ul>	<ul style="list-style-type: none"> <li>• Jemná motorika</li> <li>• Vytváření nových kategorií</li> <li>• Prezentace výsledků</li> <li>• Sensorika</li> </ul>	<ul style="list-style-type: none"> <li>• Mobilita</li> <li>• Interakce a koordinace ve skupině</li> <li>• Tvorba přirozeného jazyka</li> </ul>	<ul style="list-style-type: none"> <li>• Logika a schopnost řešení problémů</li> <li>• Kreativita</li> <li>• Porozumění přirozenému jazyku</li> <li>• Sociální a emoční dovednosti</li> </ul>

Fig. 43: Estimated time horizon for technological substitutability of key skills [Chyba! Nenalezen zdroj odkazů.]

up to 5 years: Optimization and planning, Recognition of known categories, Obtaining information, Navigation, Gross motor skills

6-15 years: Soft motor skills, creating new categories, presentation of results, sensorics

16-30 years: Mobility, Interaction and coordination in a group, creating natural language

over 30 years: Logics and problem solution, Creativity, Understanding of natural language, Social and emotional skills

## 3.2 Prerequisites for affected jobs by country

In a still relatively recent large-scale OECD analysis from 2018 [13], which took into account various factors (including, but not limited to, the level of skills and activities required to perform each occupation), it is projected that on average about 14% of jobs will be at risk of automation in the next 10-20 years, and another about 32% of occupations will be burdened by significant changes (Fig. 16). These estimates are considerably more positive than in the past. The Nordic countries, the USA or the Great Britain, where the service segment is strongly developed, are the best in terms of preparation, Slovakia and also e.g. Germany and Japan are the worst.

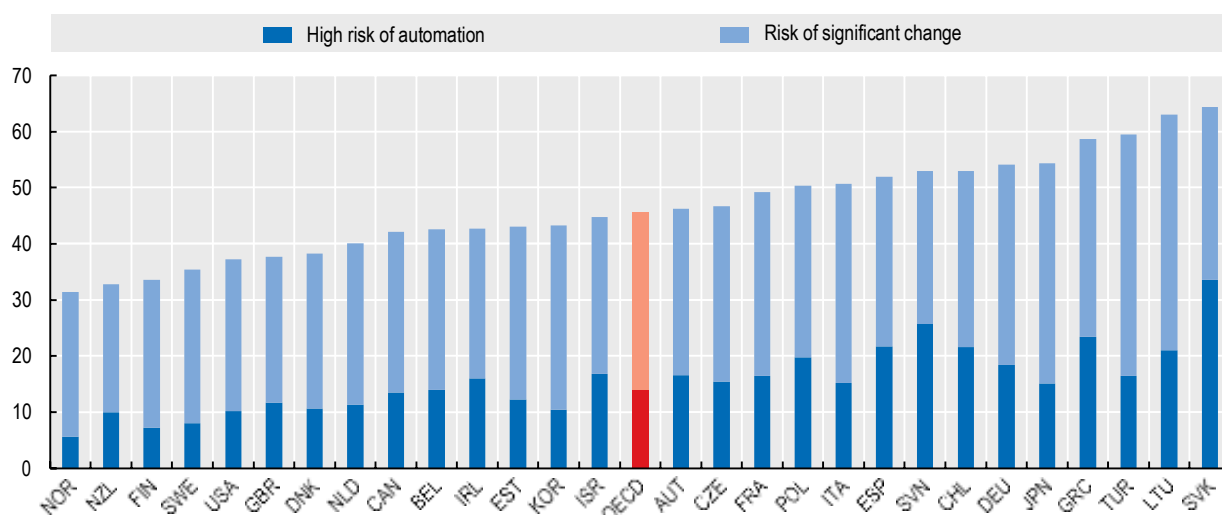


Fig. 16: Percentage of jobs at high risk of automation and jobs at risk of major change (%) [13]

An analysis of the impact of automation and robotics on the labour market was also carried out in 2018 by the consulting company PwC [14], whose analysis is based on similar foundations as the OECD analysis but considers other factors such as the level of maturity of the technology in relation to its implementation in practice, different sectors of the economy, and different composition of the workforce (gender, age, education). The analysis distinguishes between 3

waves of automation and robotization, which will take place gradually in the periods up to 2025/2030/2039. Jobs in Slovakia, the Czech Republic and Slovenia will be most affected by automation, especially in the second and third waves. This is mainly because these are countries with strong manufacturing industries. However, these waves will also strongly affect, for example, the USA, where there is a problem of lower educational attainment, or Italy, where the population is of relatively high age. Countries such as Finland or Korea, on the other hand, will be the least affected.

### 3.3 Prerequisites for affected jobs by sector

As noted above, the introduction of modern technologies will take place at different intensity and times in different sectors of the economy, given their different levels of maturity. According to the aforementioned PwC survey [14], the first wave is logically expected to hit the services sector, namely the finance and insurance sector, the ICT services sector and the professional, scientific and technical activities sector. In these sectors, automation is expected to affect around 8% of jobs (Fig. 17).

The second wave, which already includes the automation of more complex tasks, will again most significantly affect the finance and insurance, public administration, transporting and storage and manufacturing sectors, where around 25% of jobs will be at risk.

The third wave, in which the automation of physical and manual work is already foreseen, logically concerns mainly transporting and storage, manufacturing and construction, and again around 25% of jobs will be at risk.

Overall, the sectors least affected by automation are accommodation and food services and health care, where up to 23% of jobs are at risk across all waves, and education, where less than 10% for all 3 waves. Overall, the transporting and storage sector will be most affected (53% of jobs at risk) and manufacturing (about 45 % of jobs at risk).

Thus, manufacturing, which is a major sector in the Czech Republic, is expected to be the sector where jobs are most at risk in the second and third waves (Fig. 17). In the second wave, which will take place during the 2020s, about 23% of jobs will be affected. In the third wave in the 1930s, 20% of jobs.

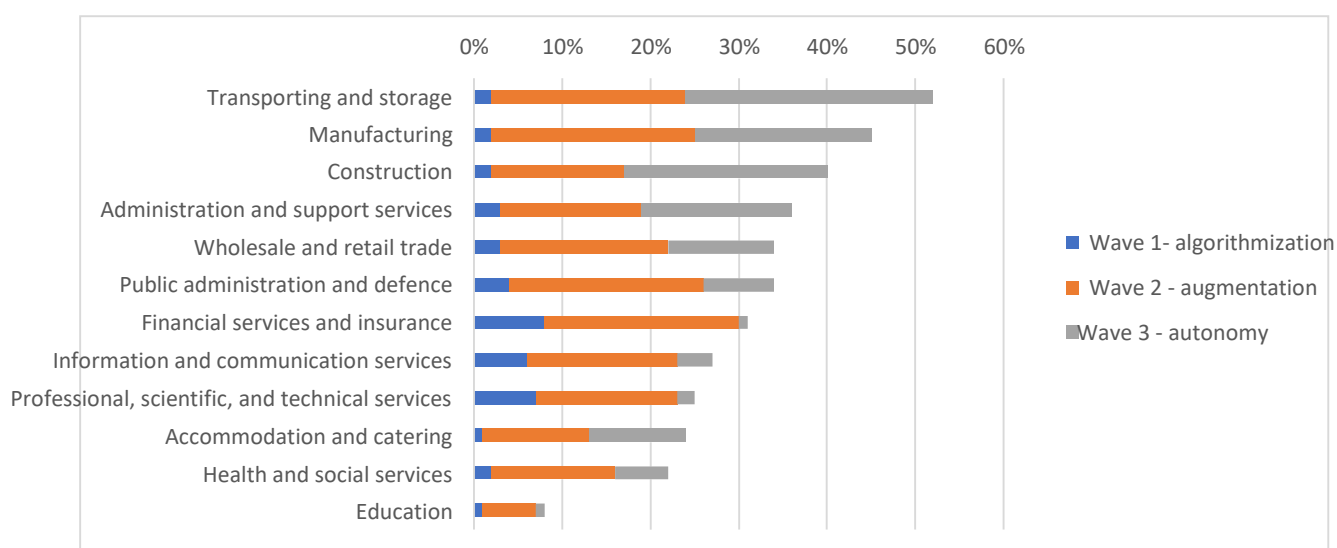


Fig. 17: Potential for automation of professions in different sectors of the economy. Source: adapted from

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[14]

### **3.4 Projected impacts by company**

It is one thing to see what changes are expected or predicted by analyses of international organisations, consultancies and experts, and another to see how the situation is perceived by the companies themselves. According to a recent 2019 survey [15] conducted by the Boston Consulting Group among 1,314 companies worldwide, it appears that a large proportion of companies expect to make redundancies due to robotics. Redundancies of at least 5% of employees are expected by 56% of Asian, 50% of North American and 44% of European companies (Fig. 18).

Overall, companies from China, Poland and Japan expect the most redundancies (57-67% of companies), while companies from Italy expect the least (34%), which may be to some extent related to the age of the population there. At the same time, 62% of companies add that they expect to hire new white-collar employees in connection with the introduction of advanced robotics, for example to adapt new solutions to the company's needs.

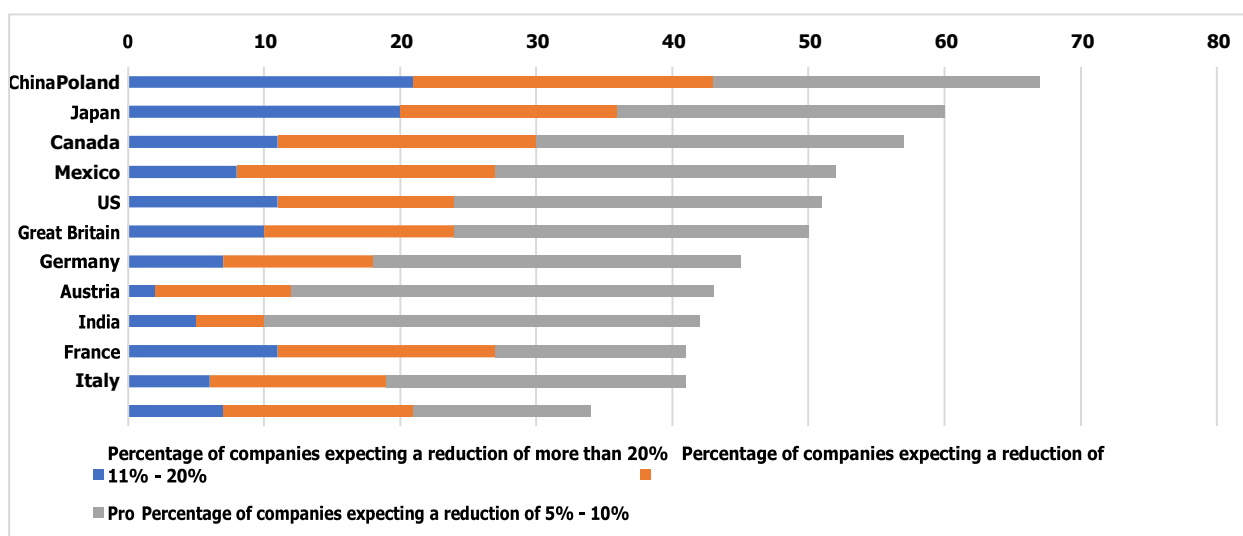


Fig. 18: Impact of advanced robotics implementation on the number of jobs. Source: adapted from [15]

In a World Economic Forum survey conducted in 2018, it was found that companies do indeed expect to make redundancies as a result of automation (Fig. 19), with up to 50% of companies. However, at the same time, 38% of companies expect to hire new employees in general and 28% of companies expect to hire new employees as a result of automation.

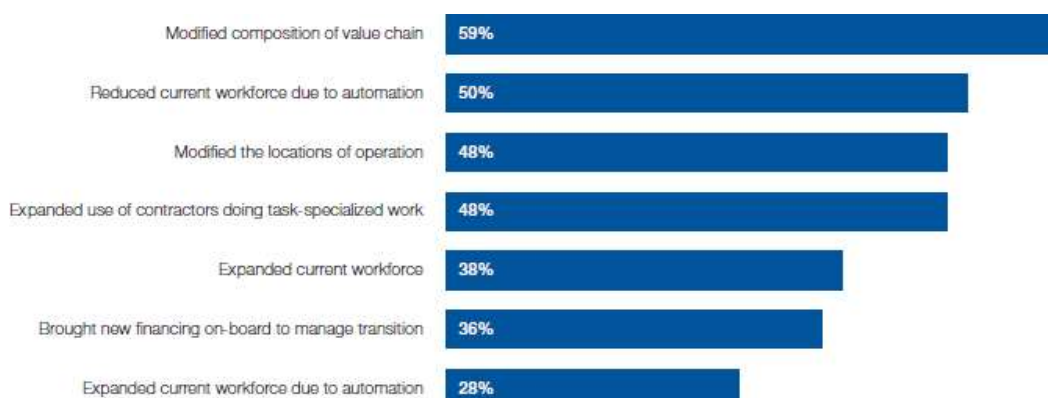


Fig. 19: Impact of current changes on the workforce by company [12]

### 3.5 New professions and skills

As modern technologies are introduced, new professions will emerge and expand, and others will disappear. Given that modern technologies are strongly linked to ICT, the development of professions in this area in particular is expected. These include, for example, software or application developers, specialists in cloud computing, artificial intelligence, and machine learning, blockchain or experts in digital transformation. Along with the development of ICT and the connection to the internet, there will also be a need for cyber security specialists, workers focused on data protection, know-how, security of critical infrastructures, risk assessment and management, the ability to deal with crisis situations or attacks on computer systems. In view of the development of e-commerce, specialists will also be needed in this area. For example, specialists in digital marketing and strategy, social media, remote support for their products.

Companies are also experiencing a significant increase in enterprise data from a variety of sources, not only from traditional accounting and economic systems, but also data supplied by various sensors from manufacturing and other equipment, as well as from the products themselves in real time. Companies therefore foresee a greater need for BigData specialists, data analytics specialists, database specialists or data creation, processing, and visualisation specialists.

As new manufacturing technologies develop, there will also be a growing need for workers focused on innovation, new technologies in general (e.g. IoT), process automation or robotics, additive technologies, industrial protocols, and there will also be a need for designers of new manufacturing plants.

Conversely, clerks entering data entry, clerical workers, accountants, selected warehouse workers, bank clerks, salesclerks, manual production workers, machine repairers, bookkeepers, telemarketers, etc.

The 2018 World Economic Forum's 2018 analysis summarises the occupational trends for 2018-2022 in detail (Fig. 20).

Stable Roles	New Roles	Redundant Roles
Managing Directors and Chief Executives General and Operations Managers* Software and Applications Developers and Analysts* Data Analysts and Scientists* Sales and Marketing Professionals* Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products Human Resources Specialists Financial and Investment Advisers Database and Network Professionals Supply Chain and Logistics Specialists Risk Management Specialists Information Security Analysts* Management and Organization Analysts Electrotechnology Engineers Organizational Development Specialists* Chemical Processing Plant Operators University and Higher Education Teachers Compliance Officers Energy and Petroleum Engineers Robotics Specialists and Engineers Petroleum and Natural Gas Refining Plant Operators	Data Analysts and Scientists* AI and Machine Learning Specialists General and Operations Managers* Big Data Specialists Digital Transformation Specialists Sales and Marketing Professionals* New Technology Specialists Organizational Development Specialists* Software and Applications Developers and Analysts* Information Technology Services Process Automation Specialists Innovation Professionals Information Security Analysts* Ecommerce and Social Media Specialists User Experience and Human-Machine Interaction Designers Training and Development Specialists Robotics Specialists and Engineers People and Culture Specialists Client Information and Customer Service Workers* Service and Solutions Designers Digital Marketing and Strategy Specialists	Data Entry Clerks Accounting, Bookkeeping and Payroll Clerks Administrative and Executive Secretaries Assembly and Factory Workers Client Information and Customer Service Workers* Business Services and Administration Managers Accountants and Auditors Material-Recording and Stock-Keeping Clerks General and Operations Managers* Postal Service Clerks Financial Analysts Cashiers and Ticket Clerks Mechanics and Machinery Repairers Telemarketers Electronics and Telecommunications Installers and Repairers Bank Tellers and Related Clerks Car, Van and Motorcycle Drivers Sales and Purchasing Agents and Brokers Door-To-Door Sales Workers, News and Street Vendors, and Related Workers Statistical, Finance and Insurance Clerks Lawyers

Fig. 20: Examples of stable, new, and redundant roles, all industrial areas [12]

Skills that will increase significantly in overall importance include: [2,86]

ICT skills:

- Knowledge of information technology and its use adequately at the skill level of the occupation, programming mindset;
- Ability to use and interact with computers and smart devices such as robots, terminal devices, tablets, etc.



- Understanding of how machines and systems communicate with each other, how ICT security and data protection is ensured

Ability to work with data:

- Ability to process and analyse data and information received from machines, ability to analyse and use data provided by modern monitoring and information systems;
- Understanding and making decisions based on visualised data output
- Basic knowledge of statistics

Technical knowledge:

- General knowledge of technology with interdisciplinary overlap
- Specialized knowledge of manufacturing activities and processes in operation
- Technical competence and technical abstract thinking
- Analytical thinking and innovative approaches,
- Technical know-how about machines to take care of their maintenance and other related activities

Personal skills:

- Adaptability, adaptation to changing conditions
- Ability to make decisions
- Ability to work in a team
- Willingness to learn, goal-oriented, service-oriented
- Typical “human” skills such as creativity, originality, initiative, critical thinking, persuasion and negotiation, flexibility, complex problem solving, communication (including professional communication in a foreign language), teamwork skills
- Compared to the present, moral attitudes, emotional and social intelligence, self-organisation will increase in importance.

### **3.6 Need for qualified workers**

However, new, or modified professions and jobs will often require a different set of knowledge, skills, and abilities. An analysis by Statista portal [16] expects the percentage of workers with a high level of education (managers and specialists) to increase globally from 14% in 2019 to 17% in 2030, and of workers with intermediate education and training (technicians, tradesmen, craftsmen, etc.) from 41% in 2019 to 43% in 2030. Conversely, people with the lowest education (production operators, farmers, etc.) are expected to decline more significantly from 45% in 2019 to 39% in 2030.

One way to attract such workers is, of course, to recruit them. However, there may not be enough workers with the right qualification, given the growing need from all businesses, demographic changes, or the capacity of education systems in each country.

This fact is to some extent confirmed by the analysis of Statista portal [16], which states, for example, that Germany will face a major shortage of qualified workers. By 2030, an absolute shortage of 1.95 million graduates is projected, an average annual shortage of around 1.6% (Fig. 21). Given that the Czech labour force is still among the cheaper ones and our country is neighbouring Germany, this fact gives a hint of potential problems for the Czech Republic related to the departure of our educated workers, who are already in short supply in some areas. By contrast, Italy and France are expected to have an oversupply of educated labour force. Outside Europe, Japan and the USA will face significant shortages. The following graph shows the real-world situation (Fig. 21).



Fig. 21: Annual and cumulative evolution of the number of graduates in relation to the need for graduates up to 2030 [16]

However, even if there is a sufficient number of qualified workers as a result, what would happen to the existing workers in case of recruitment. It will therefore be important to address the shortage of skilled workers through a system of reskilling, education, and training of existing ones. The World Economic Forum survey predicts that only 46% of workers will not need retraining or training. The remaining 54% will then need retraining and training to varying degrees, up to 3 months about 25%, 3-6 months about 10%, 6-12 months 9% and more than 1 year 10% (Fig. 22).



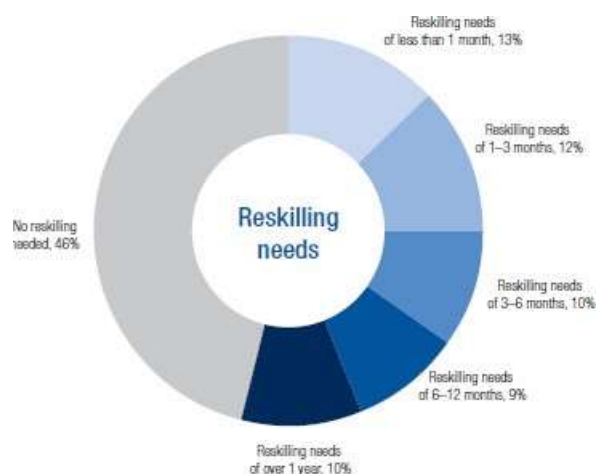


Fig. 22: Expected average reskilling time by 2022 [12]

The majority of companies in the survey then expect to use mainly their internal departments (85%) and external companies (75%) in connection with the reskilling and training of their employees. Companies then expect to use their employee unions the least (23%). [12]

However, significant care must be taken in training and reskilling to ensure that workers are not either underqualified or overqualified as a result. However, the situation in the Czech Republic is very good, with only 14% of unsuitable candidates being hired, compared to 37% in Germany, for example. The result is, of course, inappropriate costs incurred. [17]

## 4 Assumption of job impact in the Czech Republic

New technologies and the changes they will directly or indirectly cause will therefore have various effects on working conditions and the roles themselves. The ability of the Czech Republic to capitalize on the digitalization process must be actively and strategically created. A passive approach may lead to negative relative aggregated impacts on the Czech economy. Digitalization tends to have self-reinforcing effects, i.e. greater potential for more developed regions and less potential for underdeveloped regions, both within the EU and within the Czech Republic. This implies risks of regressive regional development, which can be addressed e.g. by projects for the development of advanced ICT in regions with little natural potential in this area, e.g. by prioritising the building of ICT infrastructure, university and research centres, financial instruments and consulting hubs in regions with a higher risk of job extinction in the digitalization process. [63]

The potentially increased social expenditure is also crucial. Even within the positive trend of substitution of lower-paid jobs for better-paid jobs, there will be an increased need for continuous reskilling, which, given the demanding nature of future jobs, will rather lead to a high risk of low employability of those currently in the professions most affected by digitalization. These will lead to higher costs for the state budget to ensure reintegration into the labour market, active employment policy and social protection. To minimise the negative consequences, it is therefore possible to consider special instruments or funds for continuous reskilling and lifelong learning. **[Chyba! Nenalezen zdroj odkazů.]**

Among the occupational groups most at risk are those that are susceptible to substitution by increasingly available digital technologies or simple automation. Some are already substitutable today, but with marginal wage costs still lower than automation expenditures, they persist in the labour market (Fig. 49).

ISCO-3 Kód	Název profese	Index ohrožení digitalizací
431	Úředníci pro zpracování číselných údajů	0,98
411	Všeobecní administrativní pracovníci	0,98
832	Řidiči motocyklů a automobilů (kromě nákladních)	0,98
523	Pokladníci a prodavači vstupenek a jízdenek	0,97
621	Kvalifikovaní pracovníci v lesnictví a příbuzných oblastech	0,97
722	Kováři, nástrojaři a příbuzní pracovníci	0,97
441	Ostatní úředníci	0,96
412	Sekretáři (všeobecní)	0,96
834	Obsluha pojízdných zařízení	0,96
612	Chovatelé zvířat pro trh	0,95
921	Pomocní pracovníci v zemědělství, lesnictví a rybářství	0,95
811	Obsluha zařízení na těžbu a zpracování nerostných surovin	0,94
814	Obsluha strojů na výrobu a zpracování výrobků z pryže, plastu a papíru	0,94
432	Úředníci v logistice	0,94
821	Montážní dělníci výrobků a zařízení	0,93
816	Obsluha strojů na výrobu potravin a příbuzných výrobků	0,93
961	Pracovníci s odpady	0,93
421	Pokladníci ve finančních institucích, bookmakeři, půjčovatelé peněz, inkasisté pohledávek a pracovníci v příbuzných oborech	0,93
831	Strojvedoucí a pracovníci zabezpečující sestavování a jízdu vlaků	0,92
818	Ostatní obsluha stacionárních strojů a zařízení	0,92

Fig. 48: Twenty occupations with the highest digitalization threat index [Chyba! Nenalezen zdroj odkazů.]

ISCO-03 code      Occupation name      Digitalization thread index

Numerical clerks, General office clerks, Car, van, and motorcycle drivers, Cashiers and ticket clerks, Forestry and related workers, Blacksmiths, toolmakers, and related trades workers, Other clerical support workers, Secretaries (general), Mobile plant operators, Animal producers, Agricultural, forestry and fishery labourers, Mining and mineral processing plant operators, Rubber, plastic, and paper products machine operators, Material-recording and transport clerks, Assemblers, Food and related products machine operators, Refuse workers, Tellers, money collectors and related clerks, Locomotive engine drivers and related workers, Other stationary plant and machine operators

The occupations that have the least potential for digitalization and thus have less risk of being threatened by this phenomenon and will be preserved or even strengthened are those with high social, organizational, physical, creative, or intellectual demands (Fig. 50)

ISCO-3 Kód	Název profese	Index ohrožení digitalizací
142	Řídicí pracovníci v maloobchodě a velkoobchodě	0,000
221	Lékaři (kromě zubních lékařů)	0,001
222	Všeobecné sestry a porodní asistentky se specializací	0,002
134	Řídicí pracovníci v oblasti vzdělávání, zdravotnictví, v sociálních a jiných oblastech	0,002
122	Řídicí pracovníci v oblasti obchodu, marketingu, výzkumu, vývoje, reklamy a styku s veřejností	0,005
231	Učitelé na vysokých a vyšších odborných školách	0,008
133	Řídicí pracovníci v oblasti informačních a komunikačních technologií	0,008
141	Řídicí pracovníci v oblasti ubytovacích a stravovacích služeb	0,010
131	Řídicí pracovníci v zemědělství, lesnictví, rybářství a v oblasti životního prostředí	0,011
226	Ostatní specialisté v oblasti zdravotnictví	0,011
215	Specialisté v oblasti elektrotechniky, elektroniky a elektronických komunikací	0,015
252	Specialisté v oblasti databází a počítačových sítí	0,021
143	Ostatní řídicí pracovníci	0,021
312	Mistři a příbuzní pracovníci v oblasti těžby, výroby a stavebnictví	0,022
214	Specialisté ve výrobě, stavebnictví a příbuzných oborech	0,044
111	Zákonodárci a nejvyšší úředníci veřejné správy, politických a zájmových organizací	0,048
213	Specialisté v biologických a příbuzných oborech	0,050
263	Specialisté v oblasti sociální, církevní a v příbuzných oblastech	0,054
132	Řídicí pracovníci v průmyslové výrobě, těžbě, stavebnictví, dopravě a v příbuzných oborech	0,054
242	Specialisté v oblasti strategie a personálního řízení	0,056
264	Spisovatelé, novináři a jazykovědci	0,058

Fig. 49: Twenty professions with the lowest digitalization threat index **[Chyba! Nenalezen zdroj odkazů.]**

ISCO-03 code      Occupation name      Digitalization thread index

Retail and wholesale trade managers, Medical doctors (except dentists), Nursing and midwifery professionals

Professional service managers, Sales, marketing, and development managers, University and higher education teachers, Information and communication technology service managers, Hotel and restaurant managers, Production managers in agriculture, forestry, and fisheries, Other health professionals, Electrotechnology engineers, Database and network professionals, Other service managers, Mining, manufacturing, and construction supervisors, Engineering professionals (excluding electrotechnology), Legislators and senior officials, Life science professionals, Social and religious workers, Manufacturing, mining, construction, and distribution managers, Administration professionals, Authors, journalists, and linguists

Regarding the impact of digitalization within individual sectors of the Czech economy, the index expresses the extent to which individual sectors will have to transform internally, depending on the number of employees with a high digitalization threat index. At the same time, sectors with a higher level of digitization are likely to experience more intense effects of changes in the global economic structure. Greater connection to the global economy means not only greater opportunities but also a more competitive environment. It can therefore be assumed that the substitution of capital for labour will take place more rapidly and bring greater efficiency. Ultimately, this process is likely to have a positive impact on the global competitiveness of these sectors. In limited cases, some sectors may be relatively vulnerable to substitution by activities in other sectors. However, this risk is relatively small, as substitution occurs mainly at a lower level (for nearby industries) rather than at the sector level (Fig. 51). **[Chyba! Nenalezen zdroj odkazů.]**

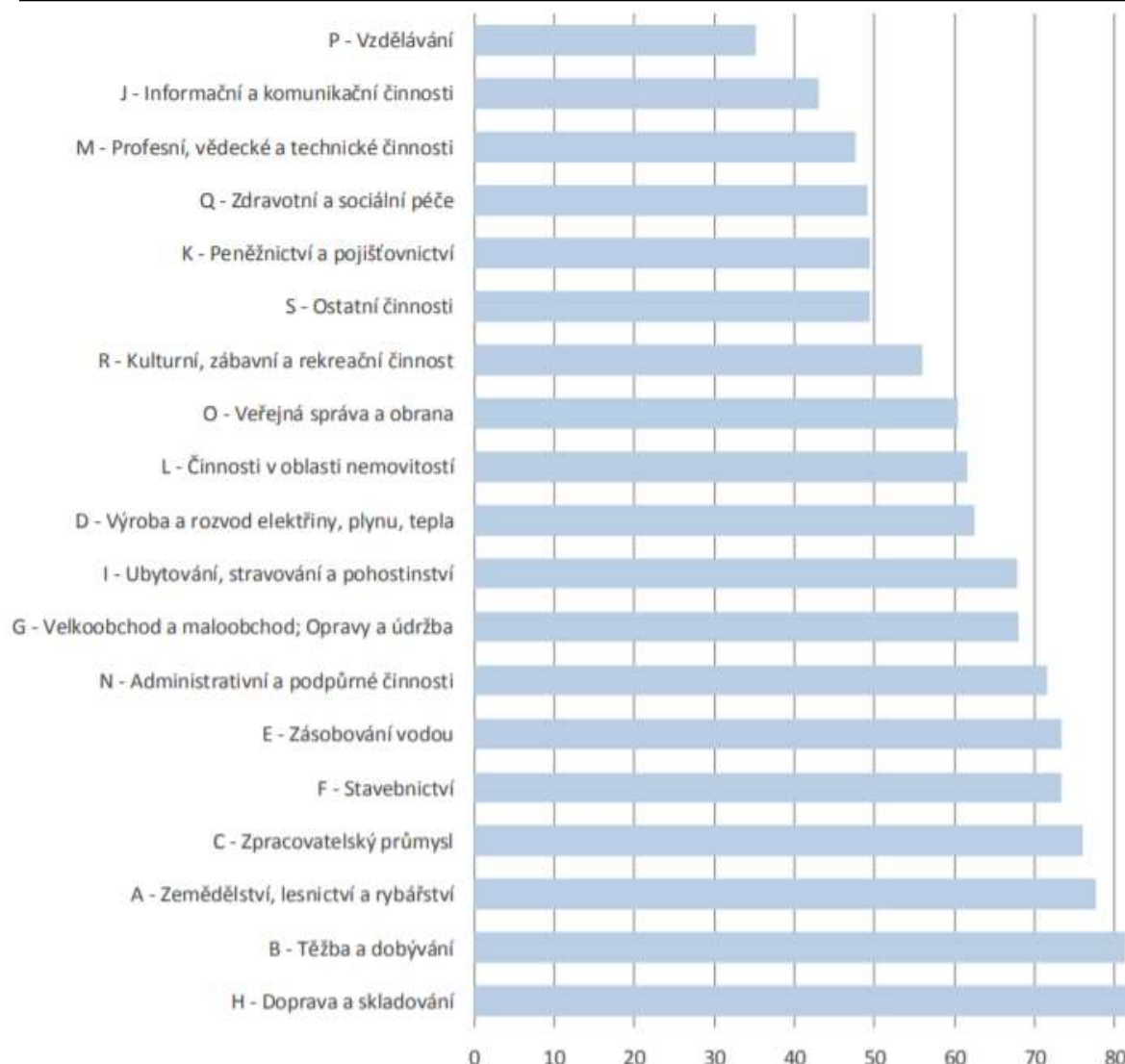


Fig. 50: Digitalization risk index for occupations (distribution by economic sectors) [Chyba! Nenalezen zdroj odkazů.]

P Education, J Information and communication, M Professional, scientific, and technical activities, Q Human health and social work activities, K Financial and insurance activities, S Other service activities, R Arts, entertainment, and recreation, O Public administration and defence, compulsory social security, L Real estate activities, D Electricity, gas, steam, and air conditioning supply, I Accommodation and food service activities, G Wholesale and retail trade, repair of motor vehicles and motorcycles, N Administrative and support service activities, E Water supply, sewerage, waste management and remediation recovery, F Construction, C Manufacturing, A Agriculture, forestry, and fishing B Mining and quarrying, H Transporting and storage

According to a study conducted by Chmelař et al., there will be a decrease of about 420,000 jobs in the labour market by 2029 (compared to 2015). However, this large drop in labour demand should not be viewed with any pessimism, as it will be accompanied by a simultaneous drop in labour supply. The CSO's demographic projections foresee a significant decline in the working age population by about 400 thousand people (compared to 2015). It can also be assumed that the labour market situation will continue to be affected by structural unemployment, a demand-supply mismatch in terms of the required knowledge and skills, as well as the lengthening of vocational training periods and other factors. [Chyba! Nenalezen zdroj odkazů.]

For the Czech Republic, the introduction of new technologies and the advancement of digitalization and automation offer enormous potential for further economic growth and the



creation of new jobs with better remuneration and consequent improvement in living standards and quality of life. However, for this to happen, it is necessary to create an adequate occupational structure (with sufficient working knowledge and competences), as well as a digital infrastructure.

## **Changes in forms of employment**

The expansion of the use of modern technologies creates a much wider space for the agreement of flexible forms of employment, which are not yet among the most used in the Czech Republic but offer great potential for the future. Given the ongoing situation with COVID-19, it can be expected that more and more employers will be interested in these forms and offer them in their companies. Many of the emerging new forms are not yet even defined in labour law, but "traditional" flexible forms of employment include in particular fixed-term or part-time contracts (these indicators can also be used to assess the overall flexibility of labour markets in individual countries); newer ones include, for example, employment through employment agencies, job rotation or job sharing. Of course, these new forms also include home-based work, which is currently widely promoted in combination with job-sharing, for example. This allows companies to achieve the same performance and reduce the number of workers in the office and the risk of spreading sickness across the whole group instead of just one team, for example.

It goes without saying that different forms of more flexible employment bring benefits to varying degrees for both employees and employers. As well as some disadvantages. The main problem, however, is that employers often isolate employees with more flexible working hours, who often do not have the opportunity to access further training and knowledge exchange within the company, in addition to the benefits of their work. If the goal for the future is to create a knowledge-based society and to increase people's competences in the labour market, it is necessary to ensure that everyone has access to ongoing learning without any distinction.

The following is a brief overview of the most common flexible forms of employment, highlighting their benefits, shortcomings, and potential sources of risk for workers.

### **Fixed-term employment contracts**

Fixed-term contracts are an important instrument of so-called contractual flexibility. They are typically concluded in particular with workers who perform seasonal work, workers who have obtained employment through an agency or employment agency and perform a specific work task for a third party, or workers with contracts linked to education and training programmes. There is a long tradition of regulation of this form of work in the EU-15 (e.g. in Austria since 1811). The EC Directive on fixed-term contracts has contributed to some harmonization, but the differences in the regulation of this form of employment vary from one Member State to another. In the Czech Republic, the issue is regulated by the Labour Code.

This contractual flexibility is an important tool for adapting the number of workers (both within the company and from the external labour market) to the needs arising. Enterprises can thus better respond to the emerging market situation; they can more easily lay off workers, but also recruit new ones. Contractual flexibility also allows employers to verify employees' qualifications,

skills and abilities that sometimes cannot be assessed during the three-month probationary period.

However, fixed-term workers often have worse working conditions and legal protection than workers with ongoing contracts (e.g. less access to training, less job autonomy, no benefits).

In the future, it would be desirable to ensure, above all, better access to corporate training for workers. Fixed-term contracts should not “isolate” workers from access to new knowledge, otherwise this could lead to a further deterioration of their position in the labour market.

### Part-time work

Part-time work is an important instrument of so-called flexible working time (also known as time flexibility). It allows companies to ensure a greater degree of flexibility through adjustments and better distribution of working time and more flexible pay conditions. These include part-time work, overtime, weekend work, variable, or irregular working hours. Some forms of working time arrangements will be more favoured by enterprises, others by workers. For example, flexible working, part-time work, early or deferred retirement can be beneficial for both parties.

The advantages of part-time working are flexibility, which is particularly beneficial for women returning from maternity or parental leave, for students or for a gradual retirement. It is therefore a good tool for work-life balance. It usually brings greater productivity and efficiency for the employer.

Disadvantages include, for example, that, although part-time workers have formally the same legal status as full-time workers, they are not provided with the same benefits as full-time employees or access to development and training. At the same time, it can be problematic to allocate a volume of part-time work to avoid placing a greater burden on the employee.

Part-time work plays an important role in the reintegration of mothers into the labour market and therefore deserves more support or a more level playing field. Especially in the area of employee education, as improving the competences of employees is the main point of this study, so that in the future there is no overall rejection of the worker on the labour market.

### Temporary employment through an employment agency

Agency employment is one of the so-called triangular employment relationships, i.e. one worker between two employers. It is a relatively new, but fast-growing flexible form of employment within the EU, although the share of agency workers is still relatively low (estimated at around 2%). The harmonisation framework is provided by the EC Directive on agency work. The biggest challenge for agency employment across the EU is meeting the requirement that agency workers have the same working conditions as full-time employees. The Directive is limited to OSH only, and the principle of equal treatment, including pay, is therefore regulated differently from country to country, either by law or by collective agreement, or not at all. There is a need to define precisely the ‘comparable working conditions’ for agency and full-time workers, particularly in blue-collar occupations, where the situation is most serious. The creation of appropriate conditions for effective labour inspection controls may also be an apparent



instrument of cultivation. Last but not least, the conditions for the establishment and operation of employment agencies should probably be tightened.

In the Czech Republic, agency employment is regulated by the Employment Act. In recent years, there has been a large increase in agency employment; according to data from the Association of Employment Agencies, in mid-2016 there were approximately 1,830 employment agencies operating in the Czech Republic, which annually provide employment to approximately 200,000 people. In previous years, this flexible form of employment was mainly used by large global companies, but today it is increasingly used by medium and small enterprises.

Traditionally, temporary employment through an employment agency has been used mainly to cover seasonal work, temporary jobs, temporary projects, to supplement the number of permanent employees in the case of larger contracts, etc., as this form of employment meets the employers' demand for flexibility and reduced administrative costs (especially in the area of HR and payroll accounting). It allows them to flexibly hire workers according to the current need with a quick commencement.

A significant disadvantage for employees is that they generally have worse conditions than permanent employees, usually in all areas – job protection, wage levels, access to corporate training, minimum job security, etc. In most cases, the nature of agency workers' work can be described as precarious. Another significant disadvantage is the low enforceability of ensuring equal conditions for agency workers. However, agency workers can also become a problem for the company due to the fact that they may have less motivation, consequently lower productivity and affect the overall working environment in the company.

### Home working

Home working has a long tradition within the EU. However, the development of modern technology has significantly expanded the use of this form of employment to include teleworking. The legal regulation of home working varies from one EU country to another. In some countries, this form of employment is regulated under labour law (e.g. Greece, Poland, Portugal), but in Scandinavian countries, for example, it is regulated in collective agreements at national level. The legal status of home-working employees also varies. As a rule, homeworking is carried out on the basis of a standard employment contract, but some countries (e.g. Germany or the Great Britain) also allow homeworking as a self-employed activity.

In the Czech Republic, homeworking is regulated by the Labour Code and is performed under a standard employment relationship.

In home working, the employee performs up to 90% of the work from home. Until a few years ago, this form of employment was mainly used by women on maternity leave or in pre-retirement age, or by people with disabilities. Today, home working is widely used in many professions, such as graphic designers, programmers, translators, sales representatives, insurance agents, accountants, etc.

For the employer, this form of employment brings lower costs for the worker (e.g. in the form of

savings on office operation), but also usually a more satisfied worker and therefore an increase in labour productivity. For the employee, this approach also brings a number of benefits, notably the possibility of flexible time planning, savings in travel costs including time savings, and the possibility of better work-life balance.

On the employer's side, the main disadvantage of home working is the loss of full control over the employee's work performance, as well as it is more challenging to motivate them, or the possible increase in the cost of IT and telecommunication tools and services. For the employee, home working is mainly associated with the cost of their own work equipment (which can be provided by the employer as a work bonus, but the question is whether it is still a bonus) and the disadvantage is also the limitation of social contacts, especially with colleagues at the workplace. However, the previous point about work-life balance can also become a problem, where these levels can intermingle and interact – impairing productivity, impairing relationships.

Many companies have tried working from home as part of their solution to the Covid-19 situation. It is a question for the next few years as to how far management will allow this as a benefit, a full-time position, or whether they will move away from this approach.

#### Spread of new flexible forms of employment

In addition to the above-mentioned flexible forms of employment, which are currently already well established and mostly covered by law, a number of new approaches to employment are emerging on the labour markets, the implementation of which so far depends mostly on the agreement between the employer and the employee.

The Eurofound study identified ten forms of employment that have emerged or gained importance in EU countries since 2010:

- Employee sharing – a group of employers jointly hire one worker to cover the staffing needs of different companies; this creates a full-time job for the worker.
- Job sharing – an employer hires two or more employees to share a specific job; two or more part-time jobs are joined into one.
- Interim management – highly qualified professionals are hired for a fixed period of time to manage a specific project or solve a specific problem; this integrates external management capacity within the work organisation.
- Casual work – the employer is not obliged to provide work to the employee on a regular basis but has the option to call on the employee as needed.
- ICT-based mobile work – employees can do their work from any location and at any time with the support of modern technology.
- Voucher-based work – the employment relationship is based on payment for services using a voucher that is purchased from an authorised organisation and includes both wages and social security contributions. This type of employment is mainly used in the

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fast-growing domestic service sector in Western European countries.

- Portfolio work – work where a self-employed person carries out small-scale work for a large number of clients.
- Crowd employment – employers looking for employees and workers looking for jobs using an online platform, often dividing large tasks between a “virtual group” of workers.
- Collaborative employment – this mainly involves independent workers, self-employed or micro-enterprises working together to overcome the constraints of their size and professional isolation.

New forms of employment are also associated with new impacts on labour markets that have not yet been explored in detail. However, certain characteristics can already be identified:

- Job-sharing, employee sharing, and interim management provide workers with a good level of job security and at the same time greater flexibility.
- ICT-based work carried out independently of the location and performance of the work provides a high degree of flexibility, greater autonomy, but with the risk of higher work intensity, greater stress and blurring of the boundaries between work and private life.
- Portfolio work, crowd employment and collaborative work allow a high degree of diversification and thus enrichment of work, making it more interesting and motivating.
- Voucher-based work is associated with greater job insecurity, limited access to career development, and some professional and social isolation, but it allows people to work legally (not in the informal zone).

It is important to note that the current trend of moving away from permanent employment towards more flexible employment options carries with it, on the other hand, a risk that balances the flexibility just gained. This risk is then mostly borne by the employee, who bears the risk of greater insecurity.

## 5 Agreement on the protection of working conditions

Digitization, automation, robotization and modern technology in general are of course bringing significant changes to our working lives. It is important to realise that the quality of working life is not only crucial for the worker, but also for the employer, as it is mainly determined by the productivity and quality of the work done. It is well known that workers who are more satisfied with their jobs are less likely to leave. They are also less likely to reduce the company's productivity through absenteeism or presenteeism (being present at work with a lack of productivity due to poor working conditions, illness, injury, etc.). In the context of the significant changes already mentioned, the quality of working life and working conditions must be rigorously protected, not only to ensure sufficient productivity or quality of work, but also, of course, for example, the health of employees. [25,26,27,28]

In the context of the protection of working conditions, the following areas, inter alia, are mentioned as important in relation to modern technology and will be discussed below:

- Education
- Quality of working conditions
- Work organisation
- Remuneration of workers
- Cybersecurity and excessive control of employees
- Disadvantaged groups of workers
- Threats to social contact

### 5.1 Quality of working conditions

The use of modern technology has a significant impact on the quality of work and occupational safety and health (OSH), both in a positive and unfortunately also in a negative sense. The European Agency for Safety and Health at Work has identified the challenges that digitalization poses to the physical and mental health of workers. Some positive aspects of the use of ICT tools are cited, such as:

- Teleworking can contribute to work well-being and work-life balance and can also help reduce the risk of road accidents.
- Using ICT could also help reduce people working in hazardous environments or better protect them by automating dangerous or monotonous repetitive tasks.
- We can also see indirect benefits in the form of more effective sharing of good OSH practice, the provision of quality training, and the maintenance and sharing of records of safety violations.

However, there are also a significant number of negative impacts and risk areas associated with the introduction of modern technologies that the European Agency for Safety and Health at Work has identified. The use of ICT resources is often associated with physical inactivity, which brings several risks:

- The use of computers and automated systems at work leads to rigid posture and physical inactivity. This can lead to increased health risks such as coronary heart disease,

overweight or obesity, certain cancers, and psychological disorders such as depression and anxiety.

- Another important risk to physical health is the combined exposure to a mixture of environmental stressors, which together increase the risks of musculoskeletal disorders, a major cause of illness and disability.
- Equipment can potentially pose health and safety risks associated with exposure to electromagnetic fields.
- Although the central management of e.g. mobile devices is often addressed at a high level in companies, ergonomic aspects are often not regulated. In particular, devices with small displays can cause e.g. eye strain, muscle tension or postural problems. In general, the risks of musculoskeletal disorders are increasing.
- In view of the increasing complexity of new equipment or the move towards remote control stations and workstations (e.g. the number of monitors – parameters, panels to be controlled, etc. – is increasing), there is also a risk of insufficient ergonomics in these cases. In addition to musculoskeletal disorders, however, there may also be a risk of slower or poorly reacting workers, for example.

A similar situation applies to IT systems as a whole, including software. For example, in the past, ergonomics was not a major concern with software, as other factors such as compatibility, functionality, price, etc. were mainly prioritised. However, for example, according to a 2013 Swedish survey, 78% of Swedes work with a computer, of which 45% work with a computer for more than half a day and 20% use it all day. That is a large percentage of people. In the same study, even when carrying out controls on IT systems from an occupational safety point of view, it was found that in 77% of cases some form of improvement or action plan was required for the next update or the process of purchasing a new system. [19,23,34,35,36,37]

Significant emerging psychosocial risks are also identified. Flexible employment patterns and a 24/7 economy may lead to workers facing increasing workloads and task complexity. Working conditions are also significantly affected by the drive for high levels of use of expensive equipment and technology, which can often lead to excessive working hours. Employees also come under pressure to deal with software problems or to manage large numbers of poorly integrated systems. Feelings of isolation can arise as a result of replacing face-to-face communication with virtual communication (see next section of the study for more details). Finally, it may become increasingly difficult to achieve a good work-life balance, partly due to work pressure but also due to the “fear of loss” syndrome. As a result, there is a danger that workers may suffer from stress and “burnout” and also face increased emotional demands, including violence, harassment and bullying. Indeed, one Great Britain study in recent years has even suggested that over 50% of absenteeism in the Great Britain is due to stress at work. [19,36]

The introduction of modern technology can also lead to a change in working style and a different organisation of work. It is necessary to prepare for this and provide workers with adequate training (see training issues), giving workers enough time to receive this training and to adapt to the new working conditions. [19,23]

In the context of the increasing use of modern technologies, especially IT systems, it is necessary to address their functionality and availability, which also significantly affects the quality of working conditions. In a recent Great Britain survey, it was reported that more than 25% of

workers experienced problems with their computer at least once a week. The availability of work data is also important. [36]

The use of artificial intelligence, machine learning and process automation will also have a significant impact on work. While these systems have valuable potential to improve business productivity and workforce well-being and better distribute tasks between people, between different parts of the business and between machines and people, it is also important to ensure that systems and solutions do not compromise safety, improve working conditions, human engagement, and work capacity. Human control over machines and AI in the workplace should be guaranteed and the use of robotics and AI applications should be encouraged, while respecting and complying with safety regulations and safety controls. [1]

### **Goals and challenges**

Insufficient measures in this area may again lead to psychosocial or in some cases physical problems in workers. Poor adaptation may also result in the risk of poor work decisions. However, poorly designed measures may also lead to low productivity or poor-quality work. Alternatively, other risks may arise.

The aim in this context is therefore to set rules and measures to ensure, in particular, health and safety at work and, in particular, that workers have good working conditions in the form of functional equipment and the availability of work data.

### **Key principles and rules**

Measures to consider in the context of the quality of working conditions include:

- Before implementing new technologies, IT systems, workplaces, equipment, etc.
  - Conducting an assessment. In this context, it is possible to create maps similar to the digitization map mentioned in the previous section of the study.
  - Involve relevant staff such as users, IT developers, etc.
  - Focus on potential safety, health impacts, usability, functionality, impact on the way of working. Whether the new IT system will manage our work, what are the actual needs, how can we ensure the system is responsive to our needs.
- For existing technologies, IT systems, workplaces, facilities, etc.
  - Conducting an assessment. In this context, it is possible to create maps similar to the digitization map mentioned in the previous section of the study.
  - Involve relevant staff such as users, IT developers, system purchasers, etc.
  - Focus on mapping how many of them there are, what are their safety, health impacts, how they interact, what are the problems in use, whether the staff are sufficiently trained, what are the procedures and what happens in case of error or accident, whether there are systems for monitoring and management.
- In terms of deploying artificial intelligence systems, machine learning, process automation.
  - Partners should recognize the importance of using these technologies and should actively explore the potential to increase business productivity and workforce well-being, including better task allocation, expanded competence development and work capacity, and reduced exposure to harmful working conditions.
  - These technologies should be legal, fair, transparent, safe, and secure, and in compliance with all relevant laws and regulations, as well as fundamental rights

and non-discrimination rules.

- They should be robust and sustainable, both technically and socially. [1,18,36]

## 5.2 Work organisation

In recent years, digital technologies have increasingly enabled employees to work from almost anywhere. Thanks to smart mobile phones, tablets, lightweight and powerful laptops, fast strong and mobile internet, cloud applications and communication or other means, employees no longer need to be present at the workplace all the time but can do their work on the move or from home. Unfortunately, this has led to a widespread problem of “unlimited” availability of employees outside of working hours, on weekends and holidays. And since many of the corporate issues being addressed “cannot be delayed”, this fact is often exploited. While it is true that some employees have a strong blending of work and personal life, and so do not mind this situation, it is important to remember that each employee should have the right to self-determination of life and work within reasonable limits. Moreover, although people whose work and personal lives are intertwined often do not perceive it as such, insufficient rest at work has a negative impact on their work performance and can ultimately lead to health problems. Modern technology has also had a significant impact on speeding up work, which can and often does lead to greater work intensity. [19,35]

Another issue that is closely related to the problem of unlimited availability is the fact that employees are increasingly bound by target agreements. Thus, their work is not actually limited by time, but by the results of their work. This does automatically increase the ability to manage one’s own work and often increases the flexibility of the worker to transition between personal and professional life, but at what cost? Because stress often increases, the risk of overload with unlimited work without rest, and being on-call or unpaid overtime is also the price. These facts are often no longer addressed in employment or collective agreements. [19,35]

technologies in conjunction with work organisation, we must also highlight their positive benefits. Digital technologies allow and significantly facilitate working from home where, in the past, we often could not have imagined it there, which contributes significantly to a better work-life balance. However, this area also needs to be appropriately defined in agreements – collective agreements.

In the context of the organisation of work in the era of digital transformation, the co-determination of workers over their working lives needs to be extended and enshrined in collective agreements and company regulations. Workers should be given a reasonable degree of individual freedom in determining the time, place, and organisation of work, thus protecting workers from excessive blurring of the imaginary boundaries between flexibility and intensification of work. At the same time, it is appropriate, where this was not possible before, to give workers greater flexibility in choosing where they work from. It should be added, of course, that there are ways and tools to define everything properly. One example is simply to define working time more appropriately, for example, by using flexible working time and anchoring it firmly in the employment contract.

### Goals and challenges

The presence or introduction of modern technologies in the workplace can provide many new opportunities and possibilities to organise work flexibly for the benefit of employers and workers.



At the same time, it can create risks and challenges regarding the definition of work and personal time during and outside working hours. In this context, it is therefore in the interest of employers and workers to adapt work organisation where necessary to the ongoing transformation resulting from the use of modern technologies.

### Key principles and rules

Among the measures under consideration, we can include the following [1,18]:

- The employer's obligation to ensure the safety and health of employees in all work-related aspects in order to avoid possible negative impacts on the health and safety of workers and on the functioning of the company.
- The focus should be on providing a safe and healthy working environment through a system of defined rights and obligations.
- Respect for working time rules and teleworking and mobile working rules.
- Providing guidance and information to employers and workers on how to respect working time rules and teleworking and mobile working rules, including how to use digital tools such as emails, including the risks of overuse, particularly from a health and safety perspective.
- Be clear on the policy and agreed rules on the use of digital tools for private purposes during working hours.
- Commitment from management to creating a culture that avoids contact outside of working hours.
- Work organisation and workload, including staffing levels, are key aspects that need to be jointly identified and evaluated.
- Achieving organizational goals should not require connecting outside of work hours. With full compliance with the legal provisions and working time provisions in collective agreements and contractual arrangements, there is no obligation to contact the employee for any additional out-of-hours contact (e.g. when receiving an email outside working hours).
- In the event that a contact outside of working hours, it is necessary to compensate the employee accordingly for the extra time worked.
- Establishing warning and support procedures to find solutions and protect employees from harm for not being in contact.
- Regular exchanges of information about workload and work processes between managers, employees, and their representatives.
- Prevention of isolation at work.
- Other appropriate measures to ensure compliance with the principles set out here.

### Proven examples of solutions

Let us again give some proven examples of solutions to the problem of unlimited work or working hours:

*Tab. 3: Proven examples – Work organisation agreement<sup>1</sup>*

Subject/ Sector	Solution
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<p>France Télévision (France)</p>	<p>This example could be called “Negotiating the right to disconnect” and comes from France, where discussions on the right to disconnect started in early 2010. In 2013, the national interprofessional collective agreement indicated that the right to “disconnect” is one possible way to reconcile work and family life. This solution has even already been implemented in some companies. In 2016, a revision of the Labour Code was implemented, with the new the right to disconnect from all workers. This includes the obligation for every company with 50 or more employees to negotiate the “use of ICT” to ensure that workers’ rest and holiday time and their personal and family life are respected. Given the fact that there are a large number of labour regulations in France, the exact details of implementation are left to specific negotiations. The law stipulates that the circumstances in which employers may or may not require workers to be available to answer the telephone or to respond to emails or other electronic messages outside working hours or during rest periods between working days are to be a mandatory subject of collective bargaining at company level. If employers and trade unions cannot agree, the employer must draw up a charter, in consultation with the works council or employee representatives, setting out how the right to disconnect will be exercised.</p> <p>The widely praised 2017 collective agreement between public broadcaster France Télévision, the trade union confederation and the unions includes the right to immediate disconnection. In line with existing on-call rules, the collective agreement guarantees that no employee will be required to respond to emails or other messages outside of regular working hours, and explicitly provides that no disciplinary action can be taken against the employee. If it is necessary to contact an employee outside working hours, the contact must be justified by the demonstrable urgency or exceptional importance of the matter. Other related provisions advise employees to turn off their devices outside normal working hours and to ensure that any emails written on personal time are only sent during working hours. [21,38,39]</p>
<p>State (Italy)</p>	<p>A similar situation to that in France occurred in Italy, where the Parliament passed Act No. 81/2017 in May 2017 regulating the employment conditions applicable to “mobile technology-based work”. The Act introduces the concept of “smart working” as a working regime linked to targets or actions rather than predefined working hours and space, which is intended to increase competitiveness and promote work-life balance. The specific arrangements for “smart working” must be agreed through individual agreements that set out the following: the rules for working outside the office; the methods for ensuring control and disciplinary powers of the employer; the working tools used by the employee; rest arrangements and the right to disconnect.</p>
<p>BMW (Germany)</p>	<p>As regards company-level agreements on the “right to disconnect”, some examples have been implemented in a number of major automotive companies in Germany, where agreements have been concluded at union-employer level. In January 2014, the German car manufacturer BMW reached an agreement with its works council which provides that all employees can record time spent outside the employer’s premises as working time, opening up the possibility of compensating employees for overtime spent responding to emails after their normal working day. In addition, employees are</p>

	encouraged to agree with their supervisors on fixed “availability times”. [19,41].
Daimler (Germany)	Similarly, German car manufacturer Daimler has introduced a new policy that allows employees to set their email inbox to “vacation mode” during vacation; this software allows all incoming emails to be automatically deleted during the vacation period. The sender will receive an automatic reply indicating that the emails will be deleted during the period and will be asked to contact another employee during that period. [19,41]
Bosch (Germany)	Perhaps another proven example is the innovative collective agreement between Bosch and the IG Metall union. It is only somewhat related to this area, but in our opinion, it is inspiring in many ways. This is a 2018 example from Germany. Instead of outsourcing the new Connected Mobility Solutions department as an independent start-up to handle mobility services, Bosch negotiated an innovative collective agreement with IG Metall that should also serve as a possible future solution within other parts of Bosch. From 2019, the approximately 300 employees of the new Bosch department will be able to choose to work 35, 38 or 40 hours per week. Employees can decide for themselves when and how much they will work. Instead of fixed salary groups, there are salary bands. In addition, each employee will have a training budget. Employees will also be able to have a comprehensive health check every two years, a benefit usually reserved for managers. The negotiated collective agreement is based on IG Metall’s standard contracts, but offers greater flexibility, freedom, and self-determination for employees. This collective agreement creates the right framework. On the other hand, there is a clash of two worlds. In some areas, there are only a handful of specialists worldwide, and getting and keeping them is one big challenge. A company can lose competitiveness through a collective agreement and the associated restrictions. [42,43]
Orange (France)	The 2016 agreement of the telecommunications group Orange on measures to accompany its digital transformation contains 4 key areas. Here we will focus on two of them (for other information, see the previous sections of the study). The agreement shows that Orange’s management recognised the risk of permanently connected employees, leading to increased workload and reduced rest periods, which can be detrimental to health and safety in the workplace. The following policies and rules, among others, are included in the selected areas: Right to Disconnect – The Agreement states that “respect for privacy and the right to disconnect are considered fundamental rights of Orange”. This involves protecting employees from “disruption practices” (such as emails, SMS, or instant messaging services) “at any time of the day or night, on weekends, on days off or during training” coming from managers, but also from colleagues. The agreement provides for automatic mechanisms, such as the shutdown of servers, to protect the privacy of employees. In order not to expose employees to psychosocial risks or face a paradoxical situation, Orange advises employees not to use its email service or other

	<p>communication tools during rest periods or on days off. To avoid bombarding employees with emails, managers also organise periods when employees are encouraged to communicate with each other in person. Employees are also encouraged to set aside periods when they will not use the electronic messaging service during the working day, for example during meetings or to facilitate concentration.</p> <p>Excessive consumption – As a precautionary measure, the agreement provides employees with the voluntary opportunity to have their annual “quantitative personal report on the use of digital resources”. A collective report can also be submitted to the team to identify “daily overconsumption” or unusual use of digital tools in the evenings or on weekends. All employees responsible for health and safety in the workplace will be trained from the signing of the contract until 2018 to detect risks associated with inappropriate use of these tools (such as identifying problems or hyperconnectivity). Measures have been planned to promote the correct use of digital tools, such as a no-email day or pop-ups reminding basic rules, with questions such as:</p> <p>“You are about to send an email at 23:00, would it be possible to send it during normal working hours?”</p> <p>[22]</p>
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Pôle emploi (France)	<p>Pôle emploi is a French government agency that registers the unemployed, helps them find work and provides financial support. In 2017, this agency also decided to adapt the use of digital communication tools in the framework of collective agreements in cooperation with trade unions. The key principles are outlined below.</p> <p>Any employee absent for more than 5 days (vacation, training, etc.) is asked to activate an absence message notifying the sender that the message will not be processed. To facilitate this, Pôle Emploi undertakes to load a universal message into the system. In order to allow the employee to attend to the messages that have arrived on his/her return, he/she does not attend client meetings for the first half of the day, unless another task urgently requires it. A worker contacted outside working hours, working days or during holiday periods is not required to respond, except in cases of force majeure. If the terms of the agreement are followed, no penalty may be imposed for such conduct. Except in cases of force majeure, supervisors must refrain from contacting employees or sending personal messages outside working hours, during holidays, etc. In order to raise awareness of employee rest periods, the Agency will (where technically feasible) take measures regarding messages sent between 20:00 and 7:00 for both the sender and the recipient: a return e-mail will be sent to the sender reminding him/her that his/her message was sent outside normal working hours and that he/she cannot expect an immediate reply from his/her partner(s) and that only urgency can justify sending the e-mail outside normal working hours; for the recipient, the e-mail received will contain a note indicating that the message was sent outside normal business hours and that he or she is not obligated to reply to it or act accordingly before the start of his or her next working day.</p> <p>In order to ensure greater awareness of these practices, the parties agree that</p>
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	an evaluation of e-mails sent outside of working hours will be conducted after one year of this Agreement. [19]
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Finally, let us add some successful examples of how teleworking has been enabled and ground rules have been set for its use:

*Tab. 4: Successful examples – Work organisation agreement<sup>2</sup>*

<b>Subject/ Sector</b>	<b>Solution</b>
Pôle emploi (France)	<p>Pôle emploi has also defined teleworking rules in the collective agreement mentioned above, following an experiment carried out in 2015-2016 in 7 of its establishments. The aim was to make it easier for employees to combine work and personal life.</p> <p>This scheme is open to anyone who is interested, subject to the following eligibility criteria: the employee must have worked for at least 3 years on a permanent basis at Pôle Emploi, they must work at least 80% of full-time hours, the necessary practical conditions must be met (e.g. adequate home insurance, internet and telephone coverage, compliance with regulations (e.g. use of electrical appliances), etc.), and they must have the approval of their manager. Teleworking is only open to activities that are compatible with this form of organisation, that do not require close managerial support, that can be carried out remotely for at least one day. The Agency shall provide and maintain the equipment necessary for teleworking and shall bear the costs directly resulting from teleworking.</p> <p>The teleworking option is available a maximum of two fixed days per week for non-supervisory employees (including managers). For non-supervisory employees (including managers) whose working hours are equal to 80%, teleworking is available for one fixed day per week. For supervisors, teleworking is possible one day per week, divided into two half-days, which can be scheduled differently each week.</p> <p>[19]</p>
Generali Group (Spain)	<p>Both parties recognise that teleworking is one of the innovative forms of organisation and performance of work derived from advances in new technologies that enable work activities to be carried out away from the company's premises. As a result, after prior information and consultation with the trade unions, the group companies may introduce a teleworking system or scheme. In doing so, the following criteria must be respected: the provisions of Article 13 of the Workers Statute regarding teleworking and Article 20 of the General Convention on Teleworking: (i) The voluntary and reversible nature of teleworking, both for employees and for group companies. (ii) Equal rights, both legal and conventional, of teleworkers with respect to comparable personnel working in company facilities. (iii) Convenience of regulation of aspects such as privacy, confidentiality, risk prevention, facilities, training, etc. These effects are referred to in the content of the "Declaration on teleworking" signed by the European social partners in the insurance sector on 10 February 2015 and the declaration signed by Generali with the European Works Council on 16 May 2017 on the promotion of teleworking. [31]</p>

BMPS (Italy)	At Bank Monte dei Paschi di Siena, an experimental phase for the introduction of so-called “agile working” (teleworking from home) was launched in 2017 following an agreement between the company and the trade unions. “Agile working” is provided for a maximum of one day per week and workers have access to agile work on a voluntary basis with prior authorisation and using IT tools provided by the company. However, this opportunity is available to a limited number of workers: those working in the back office and in general management activities in central structures but is not provided to those working in territorial offices (they have “agile working” provided only a few days a year for online training from home). [44]
Insurance Reale Group (Spain)	The collective agreement (2017-2020) signed at the Spanish insurance company Reale also addresses teleworking. The agreement recognises teleworking as a way to prioritise work-life balance. Teleworking is allowed based on the following principles and criteria: <ul style="list-style-type: none"> <li>• A voluntary principle, both for workers and for society.</li> <li>• The principle of reversibility for both workers and society.</li> <li>• Principle of equality with regard to workers who carry out their duties in the company’s facilities.</li> <li>• Criteria of adaptation to the function, that is, that the work can be done through teleworking. [44]</li> </ul>

### 5.3 Remuneration of workers

Of course, the performance of work is closely related to the remuneration of workers, which has always been complicated. However, in our opinion, although many employees may not be so aware of it, it is becoming more and more problematic in view of the changes that are taking place. In addition to what has already been mentioned above regarding digital technology, the limitlessness of work is expanding significantly and there is a proliferation of target work agreements that are not actually limited by time but by the results of work, there are other factors that complicate remuneration.

These include telecommuting, where it is difficult to track how long it actually takes an employee to complete his or her tasks. And in particular, there is a change in the nature of work, which is increasingly carried out in complex work teams, in some cases heavily based on the know-how and knowledge of workers, using digital working tools and strong sharing of work outputs or work done. In addition, employees increasingly work in parallel on the same output (model, file, program, etc.). All these and other factors make it even more difficult than in the past to objectify and measure work performance, knowledge, or employee involvement in work, often with a view to the real time spent. [45]

In the case of knowledge input, we could perhaps state that there is an exchange of knowledge, although even this statement is not entirely fair. We could make use of various automated means to monitor employee work or changes made over outputs, on the other hand, this would no doubt be resisted by many workers and it is generally questionable whether this is desirable. Another problem is that these solutions would require additional human capital to carry out the evaluation of the records from these means. In our view, therefore, this is one of the areas that is very difficult to deal with under collective agreements. The question therefore arises as to whether it is not better to look for various flexible solutions that are more positive and motivating at their core.



### 5.1.1 Goals and challenges

The goal is to ensure that workers are remunerated fairly and objectively.

#### Key principles and rules

Key measures, principles and rules may include, for example:

- Establishment of salary bands.
- Remuneration reflecting the employee's self-assessment.
- Entitlement to training benefits.
- Choice of the number of working hours.
- ...

#### Proven examples

While we do not have any directly proven examples of solutions for this area, they may be based on some of those already mentioned. An example could be the collective agreement between Bosch and the IG Metall union. Here, we see as important, for example, the possibility to choose the number of hours worked per week and the use of salary bands. The training allowance, which actually gives every employee the opportunity to learn and grow and thus acquire new working knowledge, is also essential. The possibility of remuneration in regular time cycles based on the employee's self-assessment, which includes a summary of the work activities carried out over a given period and an evaluation of his or her contribution, seems interesting. [42,43]

## 5.4 Cybersecurity and excessive employee control

Along with the increasing use of digital technologies or the use of telecommuting, the risk of cyber-attacks with the aim of misusing corporate or private data (e.g. employee data, client data) or, in the extreme case, with the aim of controlling and managing the attacked entity (e.g. object or system) and, as a result, either damaging the system or, e.g., achieving the production of degraded products, is growing significantly.

One of the critical elements in a cyber-attack that stands on the front line is the employee and their behaviour, which can significantly contribute to the success of the attack. This puts the employee in a very uncomfortable position, where his or her mistake, even if unintentional, may result in a data leak, for example, and the employer or insurance company can then claim damages. Employees should therefore be entitled to adequate training so that they know how to behave in cyberspace and what the correct working procedures are (e.g. locking the PC when leaving the room, not transferring company data to private devices, not opening fraudulent emails, etc.). The attitude of the business itself and its security efforts also play a significant role. Employees should be required by their employer to use the minimum commonly available security options and means, such as password access to PCs, disk locking, use of anti-virus tools, firewalls, etc., to minimize potential risks. The administration of access to computers, the computer network, company, employee, and client data should also be consistently addressed. Not only with regard to the dangers from the outside, but also with regard to the dangers from the inside, as there is a growing risk of excessive control of employees by the employer using ICT technologies.



It is also necessary to clearly define rules and procedures determining which data, e.g. on employees, customers, etc., should be collected, protected and how.

As the use of social media becomes more widespread in companies, this is also an area to think about. Many companies have started to use social media quickly and very successfully, even though the rules for its use have not been clearly defined. [1,35]

#### **5.4.1. Goals and challenges**

It is obviously difficult to achieve a reasonable balance between data protection and a certain amount of employee freedom, or between security and too much employer control. That is why it is important that this area is also addressed comprehensively already in collective agreements and not only at the internal level of the company, so that specific individuals are not burdened. The goal is therefore to ensure adequate cybersecurity and to limit excessive control and data collection on employees.

#### **5.4.2. Key principles and rules**

Among the measures under consideration, we can include the following:

- Partners agree that digital technologies and AI surveillance systems, together with data processing, offer the opportunity to secure the working environment and ensure healthy and safe working conditions and improve business efficiency. At the same time, however, they increase the risk of compromising human dignity, especially in cases of personal surveillance. This could lead to a deterioration of working conditions and workers' well-being.
- Ensuring the safety of all facilities from potential hazards. Training employees in cyber security and in their rights and obligations.
- Ensuring that only specific and agreed locations are monitored and that the use of cameras in vehicles and data collected from workers' digital wristbands is regulated.
- Establishing more specific rules (enabled by Article 88 of the GDPR) to ensure the protection of rights and freedoms in relation to the processing of employees' personal data in the context of employment relationships.
- Always link data collection to a specific and transparent purpose. Data should not be collected or stored simply because it is possible or for a possible future undetermined purpose.
- Enable employee representatives to address issues related to data, consent, privacy, and tracking. [1,18]

### **5.5 Disadvantaged groups of workers**

Of course, digitalization, automation and robotization can also pose an equality threat to some groups of workers. This may be the case, for example, for women, as IT occupations are dominated by men. One way to address and regulate this problem is to set up various measures in collective agreements, e.g. to increase support for projects related to women's training in IT. Another option is to set certain quotas for the number of male and female workers. [46]

Research also points to negative impacts on workers of dark skin and ethnic minorities. An example is the Great Britain. Here, the government's programme of cuts has included and is including in public services (NHS, education, central and local government, police forces, etc.), in addition to improving the efficiency and quality of jobs using digitalization, also cutting frontline jobs. These are jobs that have traditionally been held by dark-skinned and ethnic minority workers alongside disabled and older workers and are often "held back" due to unequal working conditions. [46,47]

Over the past decade, workers from these groups have been excluded from employment to meet downsizing targets using draconian eligibility policies. Very often, these were workers who had been doing the same job in an administrative role for many years and, as a result of digitalization, were told that they did not have the necessary skills to move to other jobs following restructuring. At the same time, given the type of jobs, there was and is little opportunity to participate in skills development and reskilling. Moreover, when budgets have to be cut, training and education costs are among the first to be reduced. Another problem is that these workers and their professions are also less likely to be released for training. Even though employee unions fight back, lawsuits take too long, and workers are long dismissed. [46,47]

As a further example of the impact of digitalization on workers of dark skin and ethnic minorities is shown in the following study from 2017. A Great Britain government non-departmental public body has reportedly found that traditional methods of providing advice via a specialist helpline are not desirable for younger people and that more advice needs to be provided via digital methods, apps, online tools, the internet etc. In reality, however, this was an excuse to cut frontline jobs. However, the redundancies have overwhelmingly involved black and ethnic minority workers being made redundant or offered less qualified work, while the majority of white workers retained their jobs. Despite the legal battle, the employer refused to give any reasons, but eventually admitted that the decision was cost-driven. [46,47]

The negative effects of digitalization may then also affect, for example, older generation workers. They may find it challenging to adapt to the upcoming changes and learn how to work with ICT. In addition to training and education, it will also be important that they have sufficient time. The appropriate format can also play an important role in helping to make the process as efficient as possible.

Another disadvantaged group may be low-income families, where digital resources may be used to a much lesser extent. These people may then pay the price for their lack of ICT skills, abilities and knowledge. This can ultimately lead to unequal opportunities in businesses in terms of moving to other jobs or filling new ones as a result of digitalization, automation and robotization. Furthermore, their lack of domestic connectivity due to insufficient financial resources, for example, can be problematic, which may lead to the employer ultimately rejecting such workers due to their limited ability to work outside of their workplace.

However, we must also bear in mind that digital transformation, as much as it can in some cases threaten equal opportunity for all groups of workers, can also make a significant contribution to supporting disadvantaged groups and contributing to greater equality by, for example, allowing and facilitating home working. In this regard, we can speak in particular of women on maternity leave, disabled persons or in some cases medically indisposed employees who would not

normally be able to come to work (some cases of fractures, asymptomatic COVID, etc.). The rules and principles for home working must then, of course, be defined accordingly. For example, it is possible to use some of the rules and policies used for regular workers – see the chapter on work organisation – and supplement them with those that are specific to particular groups.

#### **5.5.1 Goals and challenges**

The goal in this area is to avoid negative impacts of digitalization on vulnerable groups of workers.

#### **5.5.2 Key principles and rules**

Among the measures under consideration, we can include the following (some measures are based on Article 13 of the 2000 European Employment Equality Framework Directive) [1,47]:

- Partners commit to adopting such equal opportunities policies, principles, rules, and measures to ensure that digital technology results in benefits for all workers. If digital technology contributes to inequality, this issue must be addressed by the social partners.
- Provide training for union negotiators on how to use acts on race equality and human rights.
- The need to develop and use a discrimination monitoring system to identify, assess and monitor any adverse disproportionate impact on racial, multiple, or other equality grounds.
- Where potential or actual disproportionate impacts of digitalization on disadvantaged groups of workers are identified, taking positive action measures to ensure full equality in practice is essential.
- Prior to any move towards digitalization, vulnerable groups of workers must be provided with training and development, including where appropriate positive actions, to enable them to compete for employment on an equal level with their white counterparts and employers must provide alternative safe work. Opportunities for membership and involvement in employee and employer organisations are also essential.
- Vulnerable groups should have representatives in important bodies.
- Allowing limited exceptions to the principle of equal treatment, for example where differential treatment on grounds of race or ethnicity is a genuine occupational requirement.

### **5.6 Threats to social contact**

Due to the digital transformation and possibly other factors at work such as the COVID pandemic, communication between workers, workers, and the company (in relation to management, HR department, etc.) and possibly also in relation to customers or other entities, is shifting significantly to the virtual space and, in a sense, social contact is being lost. As a result, new problems and challenges may arise that will need to be dealt with. These problems may include [19,23]:

- Inappropriate way of communication: people often communicate in a different way in virtual space than face-to-face, so there is a risk of e.g. vulgar communication.
- Demanding communication: Collaboration through virtual means, including communication, is significantly more demanding, which can lead to stress, increased emotional demands, including harassment and bullying.

- Risk of misunderstanding: Human communication tends to be accompanied by facial expressions and gestures (body language) and because these elements may be suppressed or absent in virtual communication, there is a risk of misunderstanding. Of course, there is also a problem with written communication, where some expressions may not be understood correctly, and their explanation may not be possible immediately and in person. As a result, it may lead to potential interpersonal problems.
- Difficult integration of employees into the work team: In face-to-face contact, informal relationships between workers are easier to establish and can significantly help with integration. Poorly integrated employees may not achieve adequate productivity and quality of work.
- Isolation: Due to digital communication and the aforementioned difficulties in forming informal relationships, there is a risk that feelings of isolation, or other negative feelings such as a lack of appreciation, may develop over time. This could ultimately lead again to stress, increased emotional demands, including harassment and bullying.
- Possible other problems.

Social contact also includes relationships with customers, clients, or other entities. Especially in the direction of customers and clients, RPA – process automation, artificial intelligence, and machine learning – has recently started to be used frequently. Here, then, we can perceive yet another dimension of the threat to social contact. As a result of the use of these technologies, there is a risk of limiting or avoiding human intervention and contact, which can lead to [46]:

- Bad decisions.
- Communication of information resulting from processes in an inappropriate way (e.g. in social services – childcare etc.).
- Denial of the meaning and essence of certain professions, types of employment or services (again, e.g. social services).
- Disadvantaging certain groups of customers who e.g. do not have access to the internet or knowledge of how to use it and how to use electronic services.
- The lack of social contact can also make vulnerable groups of citizens even more vulnerable (seniors, migrants, etc.) because they have relied on the advice of workers.

There is also evidence from research that, for example, social workers in Sweden have left their jobs because they felt that decisions about social care were completely automated without the role of professional judgement.

#### 5.6.1 Goals and challenges

The quality of social contact has an impact on the performance and well-being of workers. It is important to take into account the quality of relationships (cooperation, integration, contact moments and opportunities, communication, working atmosphere), management style, incidence of violence or harassment, conflict management, support procedures and mechanisms. In this regard, the goal is therefore to minimise the problems and risks associated with threats to social contact and to try to ensure sufficient social contact.

#### 5.6.2 Key principles and rules

In order to avoid or minimize the aforementioned problems, collective bargaining agreements should contain provisions regarding the need to [1,46]:

- Define the behaviour in the virtual space between employees, between employees and customers, etc. by means of appropriate rules and policies.
- Provide for appropriate measures if the above rules are not followed.
- Allow/ensure regular social contact to create informal relationships in the workplace to prevent interpersonal problems, isolation, lack of recognition, stress, psychological problems, etc. Just as rules are set for teleworking, rules can be set to encourage social contact.

Measures, principles, and rules that should be considered with regard to the introduction and use of RPA – process automation, artificial intelligence and machine learning into the world of work – include [1,46]:

- Partners should recognize the importance of using these technologies. At the same time, however, they should acknowledge and address the potential tensions between respecting human autonomy, avoiding harm, fairness, and explicability of decision-making.
- Use must be transparent and explicable with effective monitoring. Control by the worker should be guaranteed.
- The use should respect the principles of fairness, i.e. ensuring that there is no unfair bias and discrimination.
- Controls will need to be made to prevent erroneous outputs.
- Agreed ethical standards should be observed and compliance with EU fundamental human rights, equality and other ethical principles should be ensured.
- The system should be robust and sustainable, both technically and socially – even with good intentions, AI systems can cause unintended harm.
- In situations where systems are used to make decisions about people, transparency in the provision of information needs to be ensured. In addition, the person concerned can request human intervention and challenge the decision, along with testing the results of the AI. Similarly, this can apply to human resource decisions in companies – recruitment, promotion, dismissal, performance analysis.

## **6 Agreement on the protection of workers in new forms of employment**

Permanent employees are quite logically, for historical reasons, afforded a higher level of protection in comparison with other forms of employment. This is because until recently, other forms of employment were not as widespread and, moreover, there were not as many different forms as there are today. However, with the development of modern technology, the situation is changing significantly and will continue to change, and the protection of these other forms of employment must also adapt to these changes.

### **6.1 Employment through digital platforms**

A key example is employment through online digital platforms. This includes work provided locally using applications, particularly mobile applications. In this case, it may be transport or driver services provided through applications or services such as the perhaps well-known Uber or its Chinese equivalent DiDi and Singaporean equivalent Grab. It also includes “crowd” work usually provided on a global, but in some cases regional, scale through an online website platform. This includes services such as Amazon Mechanical Turk – in this case, a website bringing together companies and freelancers that companies can hire remotely for tasks through this service.

Much of the work done specifically using digital platforms is part-time, temporary, casual, or self-employed, or takes the form of various work agreements. Moreover, these platforms are often used by people on the margins of the labour market, such as refugees and other low-income people trying to make it in the labour market. Digital platforms are attractive to them because they do not need specific skills.

[48,49,50]

## **6.2 Further expansion of new forms through digitalization**

Other forms of employment are also supported by the very development and spread of digital technologies (smartphones, tablets, laptops, cloud computing, etc.) and communication means and tools (MS Teams, Zoom, Google Meet, etc.). They make the worker more independent. Compared to the past, the worker no longer needs to be physically present at the workplace, but can work from home and, for example, more easily perform work for several entities at the same time. This situation may also be supported in the future by the development of automation and robotization of work tasks. Not all work tasks can be automated, at least for the time being, which could lead not only to shorter working hours, but also to reduced full-time contracts or to the hiring of independent workers for specific tasks only. Recently, this has also led to the expansion of another form of employment, namely employee sharing. This is a form of employment where a group of companies employ one worker to provide their staffing needs, creating a full-time job for the worker. [51]

Of course, other forms such as employment through employment agencies, voucher-based work, and other new forms are also likely to expand.[51]

It is in view of these developments that we can expect an increase in the number of workers using other forms of employment and that we should also focus on better protection of workers through collective agreements. After all, a gradual increase has already been seen in previous years (Fig. 25). The proliferation of new forms may also be due to the fact that, at least for now, automation will only be possible for certain tasks, which may lead to part-time work, which people will most likely want to compensate for in other ways, such as using digital platforms and working for them.



	2006	2010	2014
AT	34.6	37.4	39.1
BE	34.5	35.7	36.5
BG	11.6	12.3	13.3
CY	26.4	27.0	34.5
CZ	21.1	23.3	24.4
DE	39.9	40.9	40.3
DK	32.1	35.4	34.3
EE	13.2	15.7	14.7
ES	44.9	39.3	41.5
EU-28	35.1	35.7	36.4
FI	32.1	30.5	31.1
FR	31.8	32.6	33.4
GR	30.8	33.1	37.9
HR	25.7	25.7	25.0
HU	15.7	19.2	19.8
IE	28.2	34.3	35.5
IT	35.4	36.3	38.8
LT	21.6	15.3	17.7
LU	25.5	25.5	28.3
LV	16.1	19.8	14.8
MT	22.8	22.7	27.0
NL	54.3	59.0	62.0
PL	40.4	39.1	39.3
PT	32.6	34.1	32.5
RO	22.4	24.2	22.6
SE	39.0	37.9	36.9
SI	26.0	28.0	28.5
SK	16.3	19.0	21.7
UK	33.7	35.0	35.6

Fig. 25: Percentage of non-standard forms of work in total employment

The results are based on an aggregate indicator that excludes multiple counts of people. Non-standard forms of work are defined as: agency workers; workers on fixed-term contracts (excluding agency workers); one-person full-time companies; part-time workers in permanent employment (excluding agency workers) and one-person part-time companies; “marginal” part-time workers in permanent employment (excluding agency workers) or “marginal” one-person part-time companies. [52]

### 6.3 Goals, challenges, and key principles

People using non-standard forms of employment may then have little or no security and basic rights. For example, they do not receive a minimum income or social and health insurance. They can lose their jobs very easily and without reason, be subject to pressure from the entities they work with (e.g. online platforms) or be restricted in other rights.

The goal is therefore to provide greater and better protection for workers using other forms of employment through collective agreements. The key principles depend significantly on the specific work and the possible form of employment, but we can include, for example, [53]:

- The right to a minimum wage, social and health insurance contributions.
- The right to compensation in the event of cancellation of a contract.
- The right to paid leave.
- The right to a minimum number of allocated working hours or contracts.
- To set fair conditions that allow for a “transfer” between working for the platform and regular employment.
- Provision of a benefit for running costs – e.g. bike maintenance, motorbike, food delivery car.



- Not being removed from the platform without cause and having to hand in notice.
- Qualification and training requirements, etc.

## 6.4 Proven examples of solutions

In relation to the issue of protecting non-standard forms of employment in collective agreements, let us cite one of the most well-known examples, which is the collective agreement between the Danish company Hilfr and the Danish trade union 3F. Hilfr is an online platform providing cleaning services in private homes. In 2018, it had around 1,700 customers across Denmark and approximately 450 workers working for it. The 3F union is the largest trade union in Denmark, with approximately 278,000 Danish members and more than 48,000 members from other countries. The collective agreement between the two entities represents one of the first collective agreements in the gig economy, which came into force during 2018. (Note: The gig economy is term work of various kinds and consists of companies hiring independent contractors and freelancers instead of full-time workers.) [21,49,54,55,56]

The collective bargaining agreement provides significant guarantees to employees. Self-employed workers (freelancers) are automatically classified as employees after working 100 hours. (Of course, unless they choose to remain self-employed, then they are not covered by this agreement.) These employees are then entitled to higher wages of around €19 compared to €15.5 (2018 values). In addition, they are guaranteed some financial compensation for jobs cancelled at short notice and the collective agreement also includes provisions on, for example, healthcare and pension contributions. Furthermore, if Hilfr wants to remove workers from its platform, it must give notice and a justifiable reason. [21,49,54,55,56]

Initially, there was some initial concern that the costs associated with securing the agreement would lead to uncompetitiveness in a market that is, after all, relatively limited. However, following the announcement of the agreement, Hilfr experienced a 50% increase in demand for cleaning services, a fact attributed to the company's willingness to engage in collective bargaining. Indeed, Hilfr's cooperation with its social partners is becoming a competitive advantage and differentiates it from its competitors. An important advantage is that the collective agreement makes the on-demand service more reliable for both workers and application users. For example, the provision compensating workers for jobs that are cancelled at short notice means that workers can rely more on the jobs they get through the application. Stable work, reliable income, and the protection provided by work status reduce worker turnover, which is likely to lead to better service quality. [21,49,54,55,56]

However, the collective agreement between Hilfr and the 3F union is not the only one. There are, of course, other well-established examples of the protection of non-standard forms of employment, or the workers who use them, within collective agreements. The following table sets out some of these examples relating to digital online platforms.

*Tab. 5: Proven examples - agreement on worker protection in new forms of employment*

Company/ Platform/ Sector	Solutions within digital online platforms
---------------------------------	-------------------------------------------

Logistic sector (Italy)	In December 2017, a collective agreement was concluded in the Italian logistics sector, which now includes for the first time contract workers for meal/food delivery in their contractual qualifications. The agreement was signed by selected trade unions and employers' organisations. The agreement covers working hours, notice requirements and compensation for changes to work schedules and compensation in the event of sickness. As a follow-up to this collective agreement, the Cgil union proposed to start negotiations on the algorithms of the meal delivery platforms that manage task assignments and schedules. [60]
Bzzt platform (Sweden)	An agreement between Bzzt, which offers services similar to Uber but with electric mopeds, and the Swedish Transport Workers' Union allows Bzzt drivers to be covered by a taxi agreement that provides workers with access to the same standards as traditional taxi drivers. [60]
Sgnam, MyMenu (Italy)	During 2018, a "Charter of Fundamental Rights for Digital Workers in Urban Environments" was signed in Bologna, Italy, between the city's mayor, selected unions and two meal delivery platforms, Sgnam and MyMenu, which together employ about a third of Bologna's meal delivery riders. The charter provides for a fixed hourly rate that equals or exceeds the minimum wage in the relevant sector, compensation for overtime, public holidays, compensation for bad weather and insurance against accidents and illnesses at work. It also covers accidents that may occur on the way to and from work, compensation for bicycle maintenance and a guarantee of freedom of association and the right to strike. [60]
Hermes (Great Britain)	In February 2019, Great Britain courier company Hermes negotiated a new agreement with the GMB union that guarantees drivers minimum wage and holiday pay under a union recognition agreement. [60]
Temper (Netherlands)	The Dutch trade union and Temper, a platform focused on the demand and supply of work in hotels, restaurants, and cafés, signed a "cooperation pact" in 2018 as a pilot programme that will last for one year and provide (legally self-employed) Temper workers with training, pensions, and insurance. The collaboration between Temper and the union was later expanded after positive experiences in the early months, adding additional elements such as the removal of the software fee that Temper employees had to pay, and improved training offers. [60]
Uber (Great Britain)	Professionals and the Self-Employed) to provide discounted sickness and accident insurance for Uber drivers. Drivers can take advantage of this for GBP 2 (approximately EUR 2.20) per week, instead of the "market rate" of approximately GBP 8 (EUR 8.80) per week and are covered for sickness and accident up to GBP 2,200 (EUR 2,200) if they cannot drive for two or more weeks. [60]

Voocali (Denmark)	Voocali is a freelance technology start-up that has built an interpreting platform that handles both remote video interpreting and on-site interpreting. The start-up has signed an agreement for employed workers and a separate agreement covering work carried out through the platform by non-employees. The parties have agreed that freelancers are not paid below the bottom quartile for wages including all employee costs in the payroll statistics. The parties also discussed how to allocate resources for continuing education for independent workers through the Independent Worker Skills Fund. They also worked to reach agreement on pension savings. [60]
Airstrike (Australia)	The agreement between the union and Airtasker specifies several basic procedures and protections for workers, including provisions for recommended wage rates, accident insurance, safety, and dispute resolution. NSW and Airtasker unions and the Fair Work Commission have agreed, inter alia, to develop an appropriate dispute resolution system overseen by the Commission, which would also act as the final arbitrator. This is an important step towards recognising the dependent nature of platform workers and the importance of an independent and of a transparent arbitration system for disputes. [60]
Chabber, Instajobs, Gigstr (Nordic countries)	Some platforms in the Nordic countries have registered as temporary employment agencies and their workers are therefore covered by collective regulations on temporary agency work. This may therefore be another way to improve working conditions for platform workers and their opportunities for bargaining opportunities. [60]

The following matrix (Fig. 27) then shows how traditional unions approach the engagement of workers using non-standard forms of work, based on existing examples. What strategies, approaches and tools do they use.

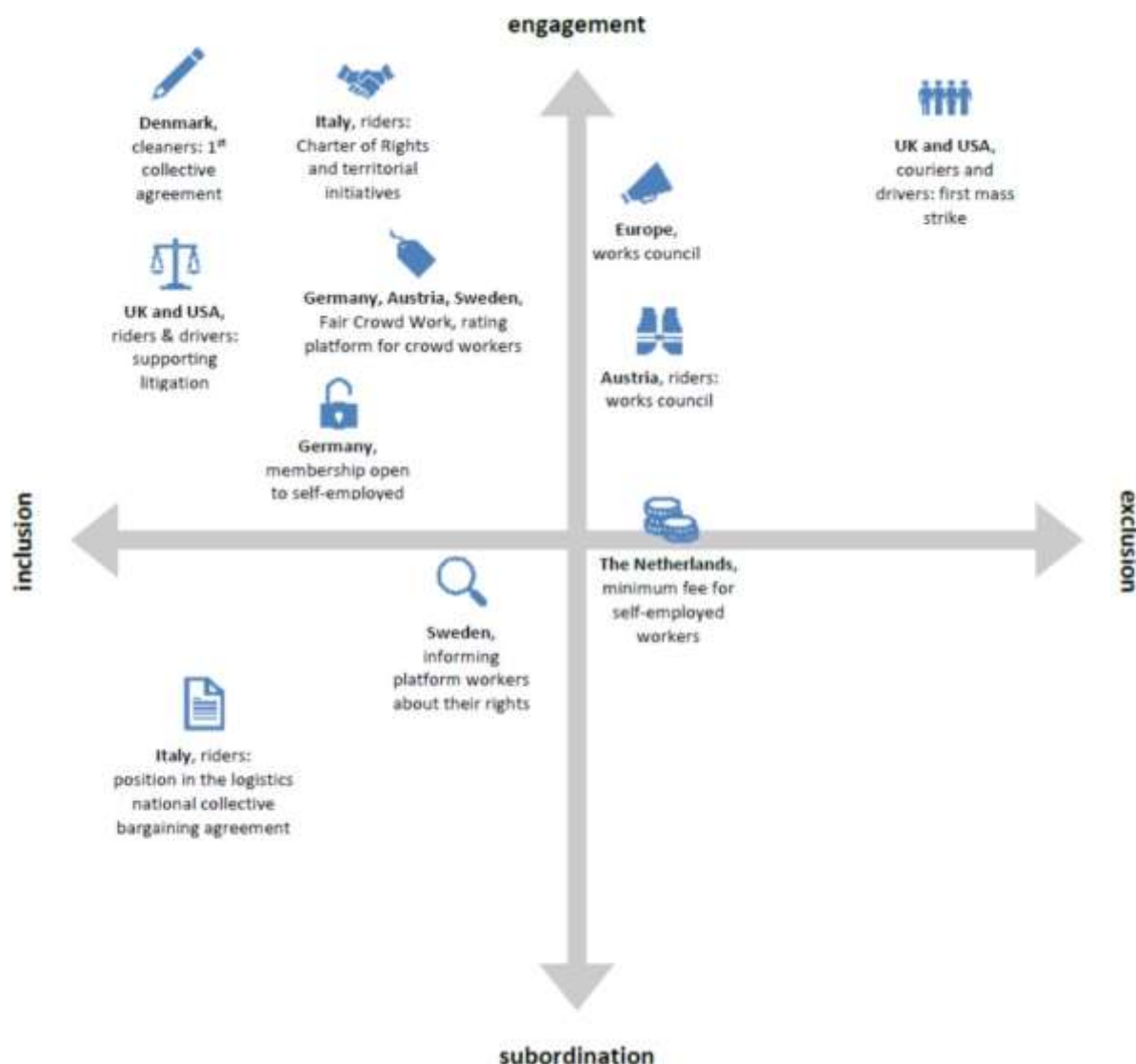


Fig. 27: How traditional trade unions approach the involvement of workers using non-standard forms of work. How they use strategies, approaches, and tools. [61]

## Conclusion

We are in the fourth industrial revolution, which is bringing changes to our personal and working lives. The whole customer environment is changing significantly. For the customer, a conventional product delivered in a few days is often no longer enough. They want a “tailor-made product”, “now”, “at a reasonable price”. In an effort to focus on the customer and meet their needs, wishes and requirements, changes are then being made in internal company management, which, for example, focuses on process management and greater interconnection between the various parts of the company in an effort to create a more efficient and effective organisation. Often forgotten, however, are the potential challenges, risks and problems that can have a significant negative impact directly on workers, one of the most important company resources. For example, working conditions, health and safety at work, the quality of the working environment and thus private life may be compromised, or in the worst cases, employment may be jeopardised.

In the current situation with COVID, the effect on working lives may come later – this is mainly a matter of future developments and evaluations that companies will come to, but in our personal lives many of us have already had to start adapting now.

In this regard, a joint commitment is needed from employers, employees, and their representatives to make the most of both the opportunities and the challenges that modern technology brings to the world of work. [1] One way to do this is to adapt the content of collective agreements and other related documents accordingly, so as to preserve the social status of employees.

All agreements at company level must respect the higher-level collective agreements and regulations adopted on the basis of European agreements on the protection of employees' social rights, such as the European Social Charter described above.

It is the appropriate content setting that is addressed in the study presented here, which aimed to identify key areas that are important to address in more detail and to recommend possible measures, principles, and rules to help deal with potential problems and risks for employees. In particular, it is essential to focus on setting up the following 3 areas and parts thereof:

1. Preparing for the actual implementation of modern technologies - setting up employee participation in the bodies, setting up the process of technology implementation (analysis of advantages and limitations, impact on employees, etc.) and its timeframe.
2. Protection of working conditions
  - a. Education (and employment) – setting the system of education, training and retraining and its functioning (time, compensation, etc.), the system of creation of new jobs and re-design of existing jobs and the transition of employees across jobs, etc.
  - b. Quality of working conditions – ensuring the safety and health of employees and in this respect evaluating existing and new technologies, setting rules for the use of artificial intelligence, etc.
  - c. Work organisation – setting rules for contact outside working hours, ensuring the right to disconnect, setting rules for working from home, etc.
  - d. Remuneration of employees – setting flexible remuneration systems, e.g. with pay bands, use of employee self-assessment, etc.
  - e. Cybersecurity and employee over-control – making employees aware of their rights and responsibilities, defining the data collected on employees, etc.
  - f. Disadvantaged groups of workers – setting policies leading to equal opportunities, e.g. with regard to training, enabling participation in corporate bodies, etc.
  - g. Threats to social contact - defining behaviour in virtual space, ensuring regular social contact as protection against isolation, setting rules for the use of artificial intelligence and other systems in relation to customers, etc.
3. Protecting workers in new forms of employment - ensuring the right to a minimum wage, social and health insurance contributions, contributions to operating costs, ensuring the impossibility of unjustified removal from the platform, etc.

Another objective of the study was to present best practice examples of solutions. At first glance, setting the content of collective agreements and related documents might seem like a difficult path, but the proven examples presented in the study show that it is possible to benefit from new

technologies without undermining labour rights or working conditions. Hence, there are undoubtedly ways to address such complex issues.

The foreseeable coming changes in the labour market should be viewed with respect, not with too much fear or too much optimism. Above all, however, it is essential to prepare for these changes as far in advance as possible and to the extent possible.

However, collective agreements should not focus only on the social side. The content of collective agreements should always be sustainable development, balancing the three pillars of economic, environmental, and social sustainability. Not only in relation to the company itself, but also in the long term in relation to the economy and the labour market as a whole. This is because it is necessary to protect both workers and, at the same time, for example, to fully exploit the potential of modern technologies, positively promote mobility on the labour market and consider the structural transformations of the labour market and the economy [50]. Of course, in order to achieve such balanced collective agreements, discussion, an open and welcoming approach on the part of all parties involved, as well as an attempt to find a reasonable compromise are essential.

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