WP1: Literature review and expert interviews

COUNTRY REPORT ITALY

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Highlighted in yellow all the parts added to the previous draft of July

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Executive summary and recommendations

- Even with respect to the theme of technological innovation and digitalization, Italy is characterized by its strong dualisms and lack of homogeneity, both territorial and socio-economical. To some branches and firms excellences – export-oriented and particularly voted on the ground of socio-technical innovation, widely able to compete with the best international experiences – corresponds a reality of small and very small enterprises, largely based on traditional organizational models and a prominent attention to the containment of labor costs. On a national average, Italy is placed in the lower part of the international rankings by the rate of innovation of its production fabric.

- On the other side, the system of social dialogue and industrial relations presents a series of quantitative indicators that place Italy among the European countries with a higher degree of recognition and functioning. The collective bargaining coverage is very high, without extension mechanisms, as well as the union density rate. The two-tier contractual system maintains substantial traits of centralized coordination, attested by an intense practice of inter-sectoral and national industry-wide agreements. Firm-level bargaining is limited to a number of large and medium companies, complemented in some sectors by territorial agreements. The practice of tripartite social pacts, widespread between 1992 and 2007, has been declining in the last decade.

- Nevertheless, the social partners, and especially the trade unions, suffer a number of qualitative challenges, with a difficulty in representing and organizing a large part of the new world of work, characterized by unprecedented fragmentation, in terms of casualization, individualization and disintermediation. While there remains a substantial resilience in traditional occupations and industries, among stable workers with low-to-medium levels of qualification, their presence and appeal among the new workers, younger and highly skilled but poorly covered by traditional labour protections, is very limited and hard to be achieved. This is particularly true with the growing number of the platform digital workers and with the economically dependent self-employed. Ambits where the historical unions begin to face the challenges of emerging alternative actors, or the spontaneous self-organization.

- For what concerns restructuring and digitalization, the main issues debated in the public discourse are the following: the concern for occupational impact in terms of jobs destruction and shift; the investments in industry 4.0; the legal status of the platform digital workers; the individual and collective rights and protections; the effects of the new ICTs on the workers' privacy.

- In spite of a still limited development, the theme of the restructurings induced by the digitalization has strongly entered into the agenda of the social partners, influencing their organizational strategies and the negotiating agendas. Recent surveys, conducted by the ETUC, place the Italian trade unions at the top of the list for their awareness and attention in collective bargaining, involvement and participation

- The four sectorial studies, in Italy, demonstrates how a well-functioning system of industrial relations, based on a strong representativeness of the social partners and an intense social dialogue are key tools to cope with the digital-related restructuring. Through a well-established and well-functioning system of bilateral social shock absorbers, mainly self-financed by companies with some support from the public budget, banks and post offices have managed a massive internal restructuring in recent years, with a strong reduction in the number of employees, without going through any social conflict.

- This evaluation is particularly clear in sectors such as banking and postal services, traditional bastions for their unionization and participatory industrial relations, whereas it is much weaker in the tourism sector, much more affected by the casualization of labor relations and a more difficult and limited unionization of the workforce. The metalworking sector is a sort of middle way between these two extremes, but also the one in which the theme of the 4.0 industry has received a strong emphasis on the strategies of the actors and in the socio-technical innovations at the level of individual companies.

- In order to prevent from the negative impacts of digitalization on employment levels and working conditions, legal and collectively agreed tools of active and passive labor market policy, are of paramount importance. As underlined by all the actors we heard in the survey, the commitment of all parties must be directed to: a) a soft and consensual management in crisis and restructuring, with their often inevitable redundancies, through adequate social shock absorbers and a gradual generational turn over; b) a life long learning and constant requalification of the workforce.

- Collective bargaining and workers participation, together, are the main and better tools for a consensual and socially sustainable management of technological change. Matching the firms' needs with the employees' rights. Workers and their representative must be informed and consulted in useful time about technological changes when susceptible of impacting on the jobs and working conditions.

- The economic and industrial democracy, the social citizenship and participation, represent the pathway to a sustainable development, involving all the societal actors in a logic of anticipation of the change. The territories, at such a regard, can be the best scope where to experiment and practice new forms of multi-stakeholders governance

Summary

1. Introduction,

This country report aims to provide an overview of the role and the weight that technological changes and digitalisation are determining, in Italy, on the transformation of the production fabric, employment relationships and industrial relations system. In particular, we would like to focus on how the Italian social partners are facing the digital innovation and restructuring, with adapting their organizational and strategic repertoire in order to catch and anticipate the change, making it socially sustainable. To this end, we will combine the description of some of the ongoing processes impacting on the production system with the review of the main topics which animate the public discourse on the digitalization related developments leading to restructuring. In doing so, we assign a particular regard to the social partners, in terms of approaches, policy, outcomes.

Today, there's a huge and growing international literature about issues like Industry 4.0, restructuring, automation, platform economy and digital work. Also for what concerns their social consequences – either currently observed and expected or foreseen – in the terms of job change (shift, destruction, creation), employment relationship and labour rights, employees' representation and industrial relations (Degryse, 2016; Valenduc and Vandermin, 2016; Huws et al, 2017; ILO-Eurofound, 2017; Eurofound, 2018).

We will keep such a literature as a constant reference, with enlarging it to the specific Italian contributions to the theoretical analysis of the ongoing challenges, in the field of the economic, sociological and juridical disciplines. Our approach will be inter-disciplinary, with the sources based on some available data, references to the academic and literature review (see the bibliography at the end), relevant legislation and institutional documents, the social dialogue acts and the collective bargaining at all levels (cross-sector, sector and companies best practices), the social partners' views and strategies about our topics.

The following report is articulated in two main sections; the first (Chapter 1) consists is offering an overview of how restructuring digitalisation and social dialogue are inter-related in the current national context and debates . The second (Chapter 3) will be focusing on an empirical survey, conducted in four important production sectors: banks, postal services, tourism and - for the industrial manufacturing - the metal sector.

The desk research about the key topics and debates going on in the Country, is constantly integrated with the words and analysis of some meaningful testimonials with a series of interviews, vis-a-vis or via e-mail (Chapter 2). A dozen of high national officials of the employers and trade unions associations, but also individual experts and academics, with specific skills on the topics of our research[1].

1.1 – The digitalization related developments leading to restructuring

– ***Restructuring.*** The crisis of these years has hit the Italian production system hard. From 2008-15, the country has been suffering what the Governor of the Bank of Italy have described as *the worst years in its peacetime history*. GDP contracted by almost 10%, while the government debt-to-GDP ratio – the fourth highest in the world – rose from 103 to 132% (2015). Industrial production dropped by 25% and investment by 30%, while productivity and real wages have stagnated. Export performance has remained below that of competing countries, with Italy losing its share of international markets. Territorial divides and social inequalities have grown: the ratio between the richest 10% of the population and the poorest 10%, at 13,5%, is almost the double than in France and

[1] The experts interviewed were, namely: Bruno Cattero (Work sociologist at the University of Piemonte Orientale), Cosmo Colonna (Nat. Resp. Dept. Ind., CISL), Michele Faioli (Labour lawyer at the University Rome), Alessio Gremolati (Nat. Resp. Digital work and Industry 4.0, CGIL), Piera Loi (Labour lawyer at the University of Cagliari), Angelo Salento (Economic sociologists at the University of Salerno).

overstepped even Greece. From 2007 to 2014 unemployment doubled, from 6 to 13%, although mitigated by widespread use of short-time working schemes and redundancy funds. Still today, after the most timid recovery of the Eurozone countries, unemployment is at 10,9% (32% among the young people), employment and inactivity rates are some of the worst in the EU, at 58,7% (only 49.3% for women) and 34.5%, respectively (ISTAT, Jun. 2018). Compared to 2007, 1,4 mln. Jobs – in terms of worked hours – are still missing; 540.000 in the construction sector only, 350.000 in manufacturing, between restructuring and closures of factories; 170.000 by the stop to the turn over in the public sector; 540.000 among small employers and self-employed (ISTAT, 2018). In 1990, the manufacturing sector employed more than 6 mln. workers; today there are a bit more than 4 mln. In the same period, the largest corporations have seen a drastic reduction of their blue-collar work force: Eni (-81%), Ilva (-72%), Fiat (-64%), Fincantieri (-62%), Finmeccanica (-49%)[2]. A similar phenomenon also involved the main groups in the tertiary sectors: Ferrovie dello Stato (-65%), Alitalia (-60%), Telecom (-58%), and Poste (-40%)[3]. Some of the historical champions of the national industry were acquired by (or merged with) foreigner competitors: Fiat, Pirelli, Zanussi, Indesit, Ilva, Italcementi. Some others are disappeared: Olivetti, Montedison.

The development gap – both economic and social – between the North and South has widened during the year, aggravating the traditional and quite peculiar dualism affecting the Country. As the quality of infrastructures, public bureaucracy and social capital. The average size of companies in terms of employees (4) remains very low, with serious repercussions in terms of capacity for investments in innovation and research. During the last 30 years, employment has grown in activities characterized by low levels of skills and specialization and in those that require high professionalism, with a very strong polarization of the labor market. These are all factors of non-price competitiveness, on which Italy remains undoubtedly weak.

Despite these striking numbers and features, the manufacturing sector has maintained a fundamental role for the Italian economic system: in terms of GDP (15%) and export. For number of enterprises (400.000), employment (23%) and turnover (900bln), Italy is the second manufacturing country in Europe. In the top ten corporation, for number of employees, we notice the presence of four big groups with a state participation (*Poste Italiane* is the first; see below) and a couple of new entries in large commercial distribution.

Digitalisation.

Nowadays, the restructuring process are more and more driven by the digital innovation which many companies are carrying on. As we have been said by an expert, in one of our interviews:

> *"Digitalization is mostly related to restructuring strategies aimed at maximizing returns on invested capital and - with regard to the c.d. Industry 4.0 - the strengthening of large European companies producing capital goods"* (int. Salento, Univ. Salerno).

What is the state of art of digitalization in a country like Italy. It's difficult to dispose of precise and reliable data and figures at regard. According to the latest results of the EC's *Digital Economy and Society Index* (DESI), Italy ranks 25th out of the EU 28 member states. Only Bulgaria, Greece and Romania do worst (EC, 2016). But things are evolving rapidly. As everywhere, also in Italy it is difficult to quantify the employment in digital economy, because labour statistics do not account for it yet. Some available data are often acquired via informal web surveys. Platform digital work – in the form of micro and macro crowd work, online and offline – is the most visible and debated: data entry, content tagging, just-in-time food and packet delivery, web and software development, editing. Still rare taxi services. However, various estimates indicate that a small fraction of the workforce

[2] Area Studi Mediobanca, 2016

[3] Some sectors in particular, such as banks or call centers, are going through a heavy crisis generated by digitization, with an unstoppable loss of jobs.

regularly performs platform work. It's different if we extend the scope to the hi-tech or the automation, somehow related to the ongoing transformation of the work, also with digitalized methods of management. The hi-tech *Made in Italy* is esteemed to regard 1.6 mln. workers. Highly innovative sectors, "4.0", are considered the automotive, pharma and bio-medical building, robotics[4]. According to the International Federation of Robotics, Italy is the 10th country of the world and 4th of Europe for number of robots every 10.000 blue-collars.

> As we've been said: *"If one flips through the economic press, it seems that there is no company that does not point to digitalization. The problem is that in the newspapers there are only virtuous or at least interesting cases. So called "best practices". That doesn't mean they're also representative of what is really going on"* (int. Cattero, Univ. Peimonte Orientale).

In a report elaborated in 2017 by the *Digital360*, we can read in fact that 54% of medium and large companies have not started any project of digital transformation. Nevertheless, according to the third report of the *Osservatorio delle Competenze Digitali* (2017), the demand for ICT professions is constantly increasing: this is the result that emerging from the 175,000 job listings on the web analyzed in the last three years. Every year, the demand for ICT professions grows on average by 26%, with peaks of 90% for new professions related to digital transformation such as business analyst and Big Data specialists, to underline the evolution towards the "data driven" company[5]. The spread of smart working, with ICTs and from remote, is growing; some observatories esteem that 17% of companies have already started an experimentation.

Industrial manufacturing has been traditionally more exposed to the technological change and innovation, both of process and product. In Italy, industry was immediately seen as the archetypical sector of the new transformations provoked by technological innovation and digitalisation, especially in terms of automation, robotics, internet of things, 3D printer, etc.. This is also at the origin of that widespread identification, in the public discourse but also in the academic community, between the c.d. "fourth industrial revolution" and the industry, commonly labelled as "Industry 4.0"[6].

The semantic and analytical overlap between technological change and manufacturing sector – epitomized in the same concept of "Industry 4.0" – encounters the criticism of those who, in Italy but not only, underline the inadequacy of what is considered a simplification, as the magnitude of the ongoing change is now overcoming traditional perimeters among sectors, branches, companies and typology of employment relationships. Here the concept is that the industrial production of goods and the provision of services – because of the new ICTs – are interacting like never before (Gilson et al., 2009; Holtgrewe, 2014; De Backer et al., 2015; Schwab, 2016; Meil and Kirov, 2017). That's why, for instance, some experts and unions in Italy, prefer to talk about "Work 4.0", assuming a transversal and cross-sector view point. At the same time a strong relationship has been established between the development of technologies and social systems, considering the importance of the industrial policies, educational systems and active policies. A systemic assumption of the "eco-industrial environments" (Garibaldo, 2016), ranging from the design of products to the after-sales services.

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[4] Commissione Lavoro Senato, *L'impatto sul mercato del lavoro della quarta rivoluzione industriale*, 2017

[5] The demand for new digital professions is growing by 56%: specialists in Cloud, Cyber Security, IoT, Service Development, Service Strategy, Robotics, Cognitive & Artificial Intelligence. There is definitely more demand in the North West, where 48% of the demand is concentrated. Compared to the "classical" professions of the ICT, it keeps the demand for Programmers Analysts, constantly growing (+ 24% last year): we are talking about 80,000 job advertisements in the three-year period 2013-2016. There are 27,000 announcements related to System Analyst positions (+ 30% in the last year) and 13,000 those for the Digital Media Specialist, with a peak of + 60% for the Web Developer. Digital skills. There is work but many positions remain uncovered. The estimate is that in the three-year period 2016-2018, 85,000 new jobs could be created that require specialization in ICT, in the face of total employment that could rise from 2018 to 3.5% per year and reach 624,000 units.

[6] On this issue, see Tiraboschi and Seghezzi, 2016

Nonetheless, sectors and branches still matter, in terms of different pathways and impacts, especially for their implications on the work change and labour rights. As we've been interestingly said by another expert we've heard:

> *"Gig economy and Industry 4.0 are two faces of the ongoing digitalization of the world of labour. They share the fact of having an employer in the form of artificial intelligence, able to organize the work of human persons. But they differ in terms of sector and level of social protection. Tertiary and distribution tend to refer to the gig economy, with external flexibility and weak or no protections; manufacturing industry is more connected to the model of Industry 4.0, more centered on internal flexibility, lean production, and where employees still enjoy higher levels of protection* (int. Faioli, Univ. Rome).

Such a divide between manufacture and tertiary sectors is somehow taken in consideration by another testimonial, with a concern about the possible trajectories in the future:

> *"As for the Italian manufacturing industry, I do not expect big changes, but a process of incremental and jeopardized innovation. On the one hand, the medium-sized internationalized companies, the "pocket multinationals", will be very active with regard to the process, the product and the after-sales services. On the other side, the service sector is going to be massively impacted, In sectors like the large-scale retail trade, credit and insurance, heavy restructuring driven by digitalization have already been undertaken, and so it will be also in future. The "connection" has generated, and will continue to generate, dis-intermediation, redesigning supply chains and entire sectors. The consequences for trade unions and industrial relations will be harder for the services unions than for the manufacturing ones, where the biggest problem could be to automation and robotics, but still within a framework of recognized actors' and procedures"* (int. Cattero, Univ. Peimonte Orientale).

The social dialogue

The state of the art. In the European context, the Italian system of industrial relations stands out in a number of respects. The factors in question are attributable to a virtually unique level of voluntarism and abstention of law. Social partners' representation, collective agreements' effects, right to strike, employee participation – though foreseen in the 1948 Constitution – have never been ruled by law (except for the public sectors) but only by inter-confederate and sectoral agreements. Beside the voluntarism, the Italian system can be shortly described for the following features: trade union pluralism; medium-high level of unionization; two-tier collective bargaining system, with a primacy of the sectoral level; high-level of multi-employer bargaining coverage; a single channel workplace representation; no participation at the board level.

The Trade Unions. Since the late 1940s, there have been three central union organisations: the General Italian Confederation of Labour (CGIL), the Italian Confederation of Workers' Unions (*CISL*) and the Italian Union of Labour (UIL)[7]. Union density is variously estimated, between 33 and 37% (Carrieri and Feltrin 2016; OCSE, 2017). The total number of persons affiliated to the three largest confederations, in 2017, was 11.708 million, which – in absolute numbers – pushes Italy into first place in Europe (Leonardi, 2017)[8]. The figure doesn't include the members of the hundreds unions, out of the three main confederal ones.

The employers' associations are organised according to the size, sectoral type, legal status and political orientation of the affiliated companies. The associative density is commonly estimated at

[7] Minor unions include UGL, originally close to the post-Fascists; a plethora of professional 'autonomous' or 'extra-confederal' unions, fairly strong in banking, public services, education and transport; and radical left-wing unions (USB), relatively significant only in individual branches or plants, as – importantly – in the food delivery and in logistic.

[8] Such a figure is due to the peculiar proportion of retirees out of the total number of union members: around 40%.

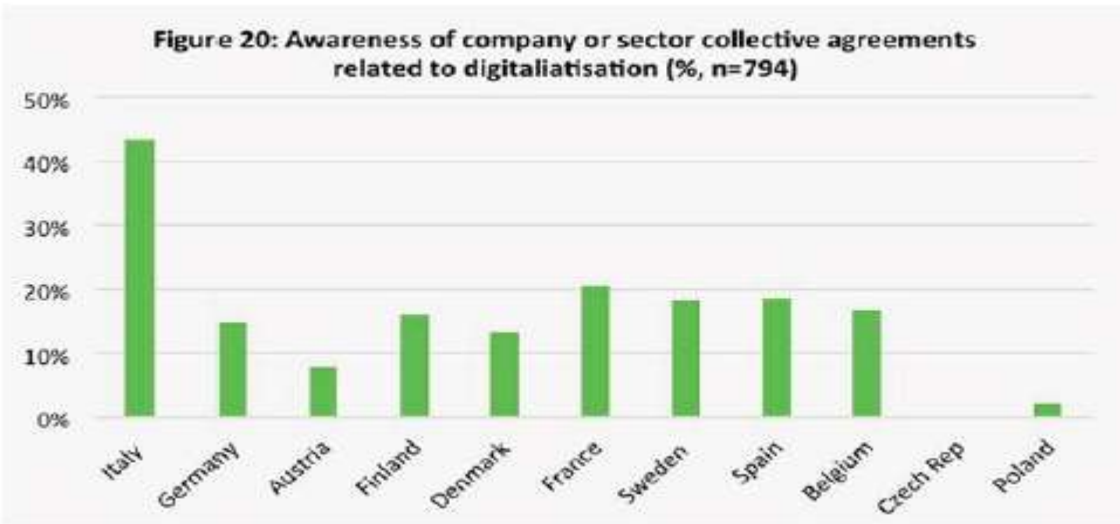
around 50%. The historical and most influential umbrella confederations are *Confindustria*, which affiliates 150.000 medium-large enterprises, *Confapi* (SMEs), *Confartigianato* and *CNA* (craft sector), *Confcooperative* and *Lagacoop* (cooperatives), *Confcommercio, Confesercenti* (trade) *ABI* (banks), *ANIA* (insurance), *Confagricoltura* (agriculture).

Social dialogue in Italy has a strong tradition which goes back to the early 1990s and at the bilateral and inter-confederate peak level is still pretty lively, with important framework agreements signed during these difficult years. At the same time, the tripartite neo-corporatist practices, which dominated industrial relations between 1992 and 2007, have declined with an unprecedented unilateralism of governments, unbalanced on the demands of companies. During 2017 there were meetings between the social partners and the Government on – among others - Industry and Work 4.0, respectively.

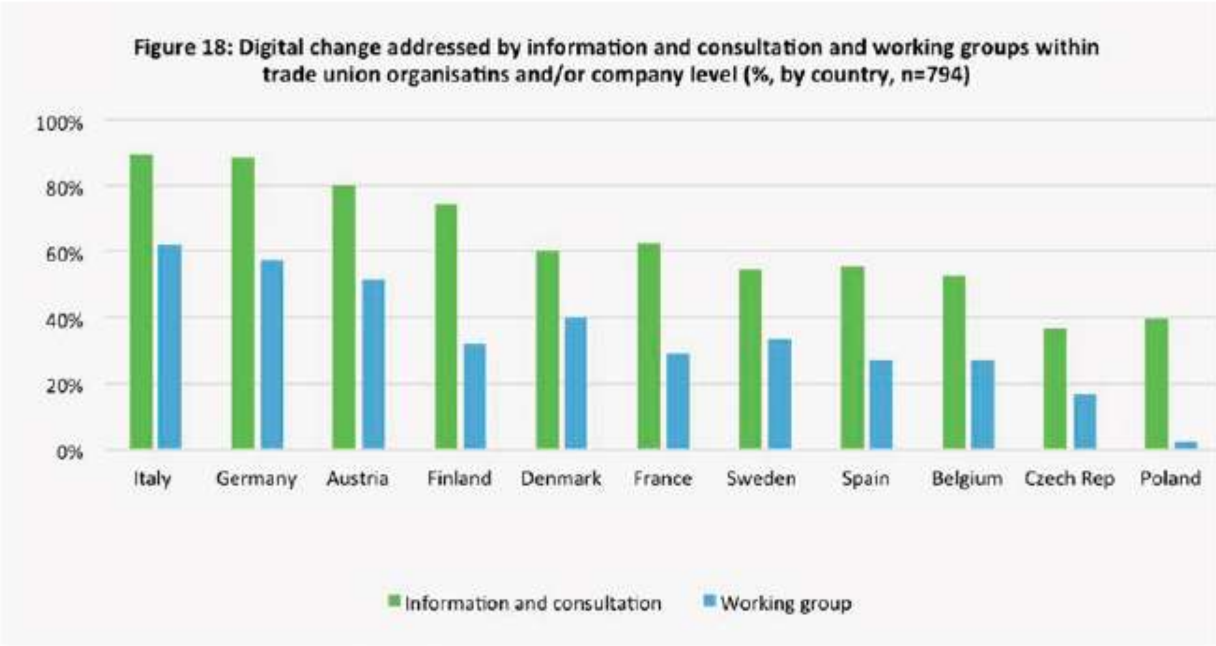
The collective bargaining. The coverage of the national industry-wide agreements is over 80 and even 90% (ISTAT, 2017). Decentralized bargaining cover approx.. 20% of employers with over 10 employees; 30-35% of the wage earners. The vast majority of company-level agreements has been signed in medium-larger companies, in the more advanced regions of the Centre-North of the country.

The two-tier system is still quite centrally organized, but weakened and with unsatisfactory outcomes, like the wages and productivity dynamics. State-sponsored pushes for a radical decentralization have not produced up to now any real increase in the number of firm-level agreements/workers covered (Leonardi et. al., 2018).

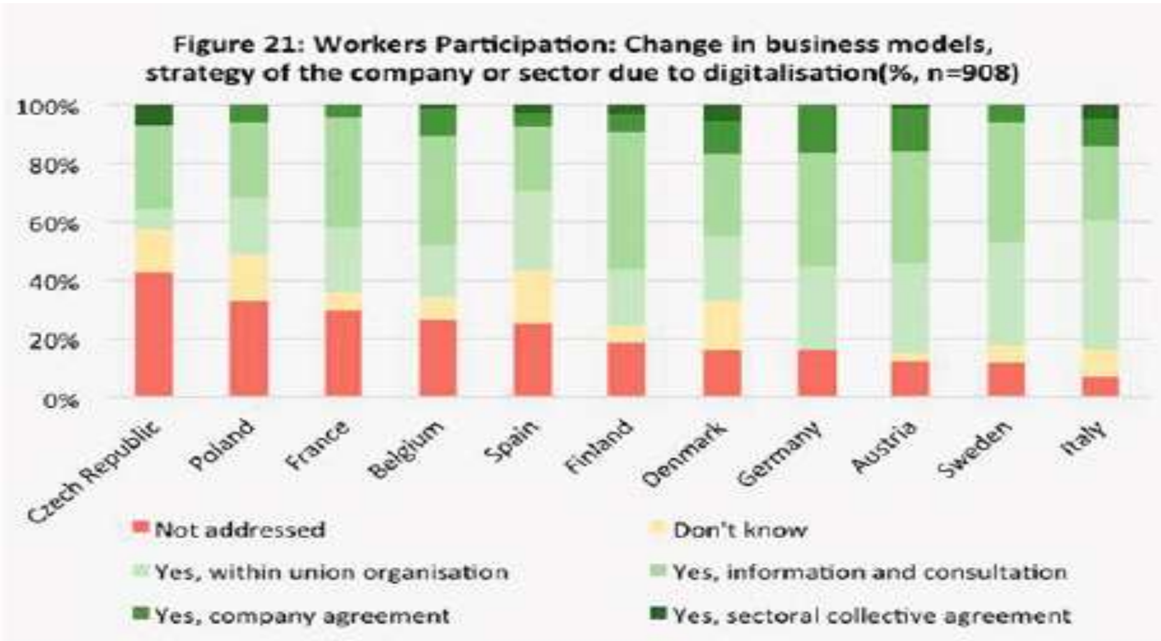
The issue of the new digital technologies is getting a growing and significant space in the agenda of the industrial relations, both in the strategies of the social partners and in their collective agreements at the sector and company level. According to a recent survey conducted by the ETUC (2018), based on questionnaires with a number of trade unionists from different EU member states, Italy stands by far in first place in the ranking, as for the awareness of collective agreements related to digitalization.



Even on the digital change addressed by information and consultation rights, Italian trade union organizations and/or workplace representatives, are the first of the list



A primacy confirmed, quite surprisingly, also for what concerns the workers participation, ahead of countries with more robust forms of codetermination, like Germany, Austria or the Nordic countries.



The collective representation of the new digital workers

Can we see an evolution of roles of the traditional players? The traditional players are fundamental for managing restructuring and digitalization (Kilhoffer et al., 2017). But they need an update to remain relevant and representative (Di Stefano, 2018), with better tuning their capacity of regulatory intervention on the links between innovation, society and working conditions (Garibaldo, 2016; Cipriani, Gramolati, Marri, 2018).

Most of our testimonials, in the interviews conducted, emphasized the crucial role of a cultural change in approaching the ongoing technological change, through a substantial reform of the industrial relations. The essential rationale was the following:

"*Without a new culture of industrial relations and without a new quality of bargaining, it is certain that our role will be subordinate and that workers will live changes in and on the job passively*" (int. Nat. CGIL).

A very similar concept can be read in the documents of all the associations; both as confederations and sectorial federation, as in the cases of the metal industry social partners, where the employers' of Federmeccanica and a trade union like FIM-CISL (Bentivogli, 2015) are very much insisting on this priority of the "cultural revolution".

Such a new culture in industrial relations, presupposes the collective actors' capacity of representing and organizing a world of labour in rapid change. This is especially true in the tertiary economy, where the challenges and risks correlated to the massive casualization and individualization of labour relations, with a growing number of more or less bogus self-employed, are higher than in the industrial manufacturing, where the fears are more concerning the job shift and destruction driven by the automation and delocation.

In Italy, roughly 400 companies specialized in ICT are associated in *Assinform*, which is affiliated to the umbrella confederation of *Confindustria*. Every year, it publishes a report on ICT and the labour market, with predictive studies on the evolution of professions related to the digital economy. It's important to stress that none of the of the biggest corporation of the Gig economy, up to now, is affiliated to any employers' associations (int. Faioli).

On the side of labour, digital workers can be distinguished in three different types: 1) micro and self-entrepreneurs; 2) offline high-skilled freelances, 3) online low-skilled platform workers (Forlivesi, 2018; Vandaele, 2018).

Trade unions focus their organizational strategies on the second and third type, as for the first – even according to the EU legislation – it's hard to see recognized the right to a union-type of organization. As it has been written: "The role of the trade unions is to ensure that the technology is the tool of the worker and not the other way around" (Degryse, 2016; p. 41). Their strategic approaches are essentially three; a) organizing the un-organized, b) servicing, in terms of expert consultancy and occupational welfare, c) advocacy and campaigning for widening their full inclusion in fundamental collective and social rights.

From the late 1990s onwards, Italian unions were some of the first to create dedicated organisations for dependent 'self-employed' and agency workers. The aim was to improve protection for the under-protected, providing more inclusive welfare and labour rights, also through collective bargaining. Agency workers, since the category was recognised in the late 1990s, are covered by specific industry-wide agreements grounded on the principle of equal pay for equal work, enforcing trade union rights and granting continuing education financed by the bilateral funds jointly set up by employers and trade unions. Currently, atypical unions (Nidil-CGIL FELSA-CISL and UILTEMP) have reached a total of 205.000 members (they were 80,000 in 1998), which is a good trend but still far from being fully satisfying.

For freelance workers, CGIL set up a national *Committee for professional self-employed*, bridging the unions to the weakest segments of professions like architects, young lawyers, translators, physiotherapists, cultural or digital freelances, campaigning for more inclusive labour rights and collective bargaining. With similar objectives, in 2016, CISL has created a community of freelances, called *vIVAce*.

Also the employers' associations try to organize the professionals, with creating specific branches, as in the case of *Confassociazioni, Confcommercio Professioni, Can Professioni, Colap,*

Given their weak power resources, organizing the non-standard workers, especially the digital platform ones, is not an easy task (Lassandari, 2017). Many of the new realities of the digital economy can be hardly traced back to the traditional perimeters of the trade union federations (int. Faioli). In a reality like that of Amazon, for example, operate trade unions that refer to the commerce, logistics and telecommunications sectors. Many of the employees are recruited through temporary agency work. This requires creating new alliances and synergies, in terms of cross-sector representation and collective bargaining (int. Cattero). But the old sectoral federations can be suspicious or reluctant in giving more space to these new forms of organization, bringers of other identities, cultures and aims. Sometimes it's difficult to make synthesis with the rest of the traditional unions' constituency of the confederations.

Also considering the high-skilled jobs in the digital work, where there are highest membership rates (as the computer programmers in the ICT sectors), there are new challenges related, on one hand, to the high autonomy, informality and individualization of these occupations in flexible workflow, and, on the other hand, to the high fragmentation of representation and the lack of trust towards the opportunities of trade unions interventions (Di Nunzio, 2018).

In order to cope with the challenges of digitalization, one of the pathway is investing in training for officials and delegates, to spread awareness, new competences and good practices. The Italian trade unions have initiated national interventions, constituted dedicated working groups, observatories on innovative enterprises created online tools dedicated to digitization and to industry 4.0, handbooks for negotiating the technological innovation. The CGIL has created an online collaborative platform, called *"Idea-diffusa"*, mainly aimed at trade unionists but open to experts and academic community, with the aim of providing tools to understand change and to negotiate a model of innovation considered to be right and sustainable. In the next months will be published a "*Manuale per la contrattazione 4.0*" (Handbook for the negotiation 4.0). The CISL promoted the "*Laboratorio Industria 4.0*" with the aim of facilitating the analysis of the transformations and collaboration between company representatives and management (Bartezzaghi, Campagna, Pero, 2017). The *UilTUCS*, the tertiary workers federation of UIL, has constituted *"Net-workers"*, an online trade union platform aimed at web professionals and ICT workers.

In the meanwhile, the new workforce, atypical, freelances and digital workers are also attempting to create their own forms of representation, out of the traditional labor organizations (Bologna, 2015; Ciccarelli, 2017; Capponi, 2017; Donini et al., 2017; Tassinari and Maccarrone, 2017). These organizations are quasi-unions and are characterized as associations based on a strong professional homogeneity, on the voluntary work of the activists and on a "liquid" membership (Forliversi, 2018). Often in open dispute with the big confederal unions, accused of not having done enough to protect their condition so far. Or to misunderstand it. ACTA, for example, proudly claims the status of self-employed for its affiliates and constituency, against the traditional trade unions approach, essentially based on the homologating extension of the subordinate status. Forms of *digital cooperativism* (Scholz, 2016) are spreading, in which platform workers use the same tools as the owners of the servers. They aim to make customers aware and stimulate critical consumption. They aim at the reputational data of digital companies, denouncing abuses with negative feedback and social media campaigns. With the same tools they work with, they organize twitterstorms or flashmobs. Food couriers have also created unconventional forms of union-type associations, like the "Riders Union Bologna". "We are trade unionists of ourselves", is their motto. This is a type of grass-root and social capital unionism (Gumbrell McCormick, Hyman, 2013), enhancing self-organization, direct action and neo-mutualism from below. Their action is essentially advocacy and lobbying, with a network structure, combined with a massive use of internet potential. The purpose is not really different from what traditional unions fight for: to gain from employers and lawmakers the recognition of the fundamental social protection also for freelances and self-employees (fair remuneration and time of its payment, paid sickness and maternity, health insurance, holidays; benefits for training). They are also supporter of the adoption of an unconditioned basic income (Allegri and Bronzini, 2015; Ciccarelli, 2017), which is instead rejected by the traditional unions, supporters of new-keynesian policies of full employment.

For certain, in the face of the recent efforts of traditional trade unions, a great deal of work still needs to be done, renewing organizational models and contractual policies, in order to cope with the new tremendous challenges of the transformation of the world(s) of work.

1.3 – New initiatives and policies discussed and implemented: a literature and practices review

The main ones are the following: the investments in industry 4.0, the impact of digitization on employment, the legal status of the platform digital workers, the effects of the new ICT on the workers' privacy, the individual and collective rights and protections.

a) *The investments in industry 4.0*

Italy is considered by the commentators in serious delay. Public investments in infrastructures are urgently needed, with a Digital Agenda that includes industrial and employment policy objectives to strengthen the industrial skills of the country. The *Industry 4.0 National Plan*[9], of the former center-left governments (2013-18), aims to represent a major opportunity for all companies that are ready to take advantage of the unprecedented incentives offered by the Fourth Industrial Revolution (Seghezzi and Tiraboschi, 2016). The Plan provides for a wide array of consistent and complementary measures promoting investment in innovation and competitiveness all measures that have proved their effectiveness in the past have been strengthened under a "4.0" logic, and new measures have been introduced to meet new needs. The government's objective is supporting and offering incentives to companies that invest in new capital goods, tangible assets and intangible assets (software and IT systems) for the technological and digital transformation of their production processes[10]. A key word is "eco-system", based on a logic of collaboration among large enterprises and SMEs, startups, institutions, social partners.

The social partners have appreciated the *Industry 4.0 National Plan*. The influential association of large enterprises, Confindustria, consider it as the trampoline from which Italian companies can stand out in the future. The modernization of the industrial fabric passes through the integration of innovative technologies and the digitalization of the manufacturing world. Confindustria gave an important contribution to the strategy of the Plan, elaborating an articulated package of proposals that the Government has largely implemented in the Plan with automatic fiscal and financial instruments to support the digital transformation of the production system. Industry 4.0 is not just tax incentives: it is a new way of thinking about the company. In an interview released to the press, its President, Boccia said: *"We need only the courage of the great opportunity of the industrial revolution to relaunch the competitiveness of Italian manufacturing in the world"*.

Also the three major trade unions confederations welcomed the Government plan, although they believe that fiscal incentives are not enough, and that effective governance is needed for the implementation of initiatives, monitoring of investment performance, analysis and evaluation of results.

In 2017, CGIL, CISL, UIL drew up a joint document, entitled, "*An Italian way to Industry 4.0 that looks at the most virtuous European models*". where they underline a number of key points for intervention:

- the need for a shared governance of development processes with the social partners, through national control and territorial observatories, also with looking at the practices developed in a country like Germany;
- the importance of considering the specificities of the productive fabric in the manufacturing sector, characterised by the presence of medium-sized companies and structural difficulties in the regions of Southern Italy;
- the impact on employment, considering both training and relocation needs to avoid the risk of job losses;
- the importance of negotiating working hours, their reorganisation and redistribution;

[9] http://www.sviluppoeconomico.gov.it/index.php/it/industria40

[10] It consists in a super and hyper depreciation of 130% and 250% of investments that invest in new tangible assets, devices and technologies enabling companies' transformation to "Impresa 4.0" standards. In this case, they will be be valued at 250% of the investment value. Investments in intangible assets, such as software and IT systems, are valued at 140%, in case the company will benefit of the hyper-depreciation on tangible assets. Super-depreciation for investments will be valued at 130% for outright purchases and lease purchase agreements.

- the importance of increasing the productivity of companies along with wages and encouraging workers to participate in innovative processes.

For the CGIL, the Country needs a national strategy for smart specialization. Two objectives are considered essential for the development of innovation and industry 4.0:

a) to accelerate the realization of the necessary physical infrastructures on broadband and ultra-broadband;

b) to relaunching an investment plan on skills and training of workers. The challenge is twofold: the environmental sustainability of new productions and technologies; the digitization towards industry 4.0.

> *"We do not want to undergo ongoing processes, but to govern them. To know, to share the knowledge, to train the unions' delegates, are the pillars of the confederations' strategy"*: *"We must go and look for workers where they are. And many of them, today, are hidden by the apps intermediation; the algorithm management. As always, we the unions need to start from the workplaces. Since many workplaces are today digital platforms, we've also to go there. To be more and more digital unions. But it's not enough. Found the platform workers, the problem can be to find his/her employer (..). Who is the employer in the times of algorithms? Well, we must go and look for them too. Then, we must become able to bargain with the algorithm*" (Nat. CGIL, "*IdeaDiffus*a")

Also for CISL, *Industry 4.0* represents an opportunity, which can stop the decline of Italian economy. A great opportunity to foster smart factories, job enrichment and workers' empowerment and involvement (Bentivogli, 2015; CISL, 2017)[11].

> "*Bargaining must be able to enhance participation, through concrete experience, because it is a central factor in delivering technological innovations in real working situations, and not in companies conceived of as empty boxes*" (Nat. CISL).

b) The impact of digitization on employment

It is a controversial issue, very much focusing about the risks for a jobless society, disruptive innovation, technological unemployment (Frey & Osborne, 2013; Goos et al., 2014; Bryniolfsson & McAfee, 2014; Arntz et al., 2016; Valenduc & Vandermin, 2017; Schwab, 2017; Ford, 2017). Also in Italy, experts and social partners are deepening the links between digital innovation and quality of work (Dagnino et al., 2017; Guarascio & Secchi, 2017; Cipriani et al., 2018). In terms of evaluation and perspectives, opinions diverge quite radically. At one extreme, the optimists – even with very different ideological background – emphasize strengths and opportunities for job enrichment and workers' empowerment (Berta, 2014); centrality of the person in new productive processes; an emancipation from the old constrains of subordination (Allegri and Bronzini, 2015; Ichino, 2017); potential (but denied) individual liberation (Ciccarelli, 2018); new competences and skills; smart working and a better work-life balance (Seghezzi, 2016), workers' cooperation and participation (Pero, 2015; Butera, 2018); decentralized and collaborative industrial relations (Bentivigli, 2015); back-shoring.

The pessimists, at the other extreme, underline the massive destruction of medium-skilled jobs (Staglianò, 2016); the growing share of workers forced to alternate unemployment and precariousness (Armano, Murgia, Teli, 2017); the new inequalities based on human and social capital; an innovation

[11] For the general secretary of the CISL, Anna Maria Furlan*: "It is not the technology that we have to obstruct, but it is its use that needs to be controlled, in order to guarantee the dignity and rights of the people. For the CISL it is necessary to govern the trend of technological processes with agreements that point training and retraining of workers, using tax relief also for training 4.0"* (su "la Repubblica", 5/2/2018).

without job enrichment (Magone and Mazali, 2017; Coin and Marrone, 2018); more hetero-direction, instead than less (Bavaro, 2018); increased intensification, working hours, competition self-exploitation; stress levels; surveillance and discipline (Tullini, 2018); a “digital Taylorism” of deskilled and repetitive micro-tasks (Vecchi, 2017; Perulli, 2017); individualization and disintermediation; weakening of collective action and industrial relations (Sai, 2017; Leonardi, 2018).

Italian social partners share the idea that staying out of digital innovation would be absolutely negative. It's big the concern over the impact that there may be on employment and working conditions[12]. But, overall, a certain optimism seems to prevail, for which "the shared management of innovation will be an opportunity that will increase the wealth produced by the companies, the work and the wages of the workers".

In their joint document signed March 2017, the three major Italian trade union confederations – CGIL, CISL, UIL – express the conviction that innovation in progress is a challenge without alternative, and the new frontiers of global manufacturing competition. An indispensable condition for increasing the quality and competitiveness of Italian productions.

As an acute Italian scholar of these issues has observed: "We do not yet have empirical analysis on the work in industry 4.0 and the little diffusion of the phenomenon, its sporadic experimentalism, do not allow yet to observe its developments in a scientifically satisfactory way" (Seghezzi, 2016; p. 208).

c) The employment status of digital workers

its classification, is one of the primary questions (Di Stefano, 2016; Loi and Speziale, 2017; Perulli, 2017, Voza, 2017; Bavaro, 2018; Signorini, 2018; Weiss, 2018). The only concept of “workers”, available at EU level, can be neglected by current narrative (Donini et al., 2017), at the marginal role of almost recreational activities, where students get informal arrangements and small income for their still limited needs. The reality of these jobs is often seen as a hybrid, a “grey zone”, with vague boundaries between self-employment and subordination (int. Loi)[13]. The Italian legislation, by virtue of Article 409(3) of the Civil Procedure Code, foresees the intermediate category of the self-coordinated continuous collaborations. According to a part of the labour law doctrine, this form of self-employment – with its minimum protections – is quite fit to include a large part of the platform digital work. Any attempt pretending to homologate it to the status of the subordination would be considered a mistake for at least two reasons: a) because they self-organize significant aspects of their work, and b) some of them would refuse to be assimilated to subordinate workers, with all the constrains which it implies. Considered the heterogeneity of platform work, situations should be evaluated empirically, case-by-case; online micro crowd workers, performing low-skilled micro-tasks like data entry or food delivery, are not the same of the graphic design work, editing or translation. What instead is considered necessary and urgent is to increase and enlarge the social protections, in the perspective of a new *Flexicurity* (Perulli, 2017; Caruso, 2018).

[12] According to the General Secretary of the CGIL, Susanna Camusso: *"So far, technology has been designed as a tool to build a low-cost world. The result is that work, which decreases, is paid less and less. New labour markets are more and more polarized at the extremes, between very high professionals and low-skilled jobs. Two segments traditionally hard to be organized and represented by the unions. That’s very challenging. We cannot be overwhelmed: we must be capable to govern the processes we are facing. We want to influence the change. It is therefore necessary to reflect on how industry 4.0 can lead to improved conditions and people's rights. The theme of investments in quality must become the first issue in collective bargaining. We must bargain with the algorithm. We must be equipped with the right skills, as unionists, to do that"* (speech at the CGIL Conference of Program, Milan, 30/1/2018).

[13] We can have: a) *workers for digital labour platforms*, where customers can outsource in a virtual space tasks and performances to a crowd of data workers, potentially from all over the world; b) *on demand workers*, connected via online technologies, where tasks and performances are carried out in the "material" world; from car rental with driver to the home delivery of food or parcels. The work is performed as needed and on-demand basis, by contingent workers, legally freelancer but economically dependent, with no formal duties in terms of the working time, and remunerated on forms of piece-work pay (Vandale, 2018).

In Italy, the Legislative Decree no. 81/2017 aims to better identifying the contents of a genuine autonomy of a self-employment, providing protections to collaborations in the case they're bogus, as the worker has no control over the organization of the work. The Law no. 81/2018 (Article 2) discipline the unprecedented profile of the "agile work", still subordinated but performed from remote, and aiming at matching firms' competiveness with a better work-life conciliation (Franza, 2018).

Other scholars question the independent status of the platform workers, arguing for bringing these workers into the frame of subordinate work, and its robust support of rights and prerogatives (Voza, 2017; Bavaro, 2018; Lassandari, 2018). The status of independent sub-contractor worker is only a manner to circumvent existing rules on employment, social protection, corporate taxation, increasing workers' exploitation. Monotonous, low-skilled work (data entry, content tagging, delivery), under a pervasive control of companies' algorithms, performed in a condition of economic and social subjection. According to such a viewpoint, the new digitalized management methods allow the economic agents to increase – though dissimulated – the organizational, hierarchical and disciplinary control of the employer over the workers. Nothing but the same inclusive concept of subordination of the civil code (Article 2094), still ready to respond to the challenge of the new forms of employment. Some suggest to apply the legal scheme of the agency work, where the triangular intermediation now takes place via online technologies based on algorithmic management (Faioli, 2018).

Up to now, the thesis favorable to consider some the new digital platform jobs juridical independent seems prevalent in the jurisprudence (Auriemma, 2017). The last sensational case occurred in May 2018. With a controversial ruling (Sent. N. 788 , 11 April 2018), the Court of Turin has denied the status of subordination to workers of Foodora, who claimed for that. The key motivation was that riders are free to disconnect, considered a prerogative of autonomous employees. They're coordinated but not subordinated. Scholars and commenters have contested such an interpretation, underlying as such a freedom to accept calls or not is – de facto – purely formal, as the riders' following rating, after one or several refusals, would be seriously compromised. And so making that free choice merely theoretical.

Undoubtedly though, customers and economic agents – through the new forms of algorithmic management – are allowed to lowering transaction costs, with serious possibilities for exploitation (Fana, 2017).

d) Individual and collective rights and protections

The imbalance of forces, between some of the most powerful corporations ever, and individual platform workers badly organized, couldn't be more sidereal. Here it's very much a problem of bargaining power and disruptive capacity, which differs according to the nature of work and skills (Vandaele, 2018). For scholars, the freedom of association and the right to strike should be considered as human rights, while legal restrictions to unionization and collective bargaining of non-standard workers should be removed (Di Stefano, 2016). The collective labour rights, established by the Italian law (Workers' Statute of 1970), should be updated to the new realities of platform work: collective bargaining, either at sectorial and firm-level, promoting solidarity, secondary action, digital assemblies, judicial enforceability (Faioli, 2017; Engblom, 2017).

Platform workers in the delivery and transport sectors, the "riders", have become in Italy the symbol of digital platform work and the pivotal object of a multiplicity of actions and proposals (Tassinari and Maccarrone, 2017; Donini et al., 2017; Recchia, 2018; Martelloni, 2018). It's usually a hard work, risky for the health and safety, with low payment (3,9 or 4,9 euro for each delivery), income insecurity, no social insurance and union rights, no transparency about surveillance practices, online reputational ranking on workers' quality and reliability. Food couriers claim to return from the risky payment-by-delivery system and piecework, to a guaranteed number of hours and a minimum hourly pay, an insurance for damages and injuries, safety at work, the abrogation of the ranking system, free choice schedules.

Some protests and work stoppages have already been taken at localized level. Under the workers' pressure, organized in the *Riders Union* but virtually represented by the CGIL, CISL and UIL Bologna, the Municipality of Bologna has subscribed last May a *Charter of the fundamental rights of the digital work in a urban context*. It's a kind of tripartite and concertation agreement at local level (Lassandari, 2018; Martelloni, 2018). It includes, among other, "a fair and equal pay, never below the wage floor fixed by the national collective agreements signed by the comparatively most representative associations" (Article 4).

In last July, the sectoral federations of CGIL, CISL and UIL, signed a first national agreement through which the riders are fully recognised in the logistics and transport collective agreement, including guaranteed hourly pay rate, social security and insurance. Working time can be full or part time: max. 39 hours - 6 days/week. The problem is that the largest majority of the food delivery workers are considered self-employed, while the big corporations (Deliveroo, Foodora, Just Eat) are not affiliated to the employers' associations which signed the agreement, mostly covering the packets delivery. Also in the case of Bologna, the signatories on the employers' side are minor companies (Sgnam and Mai Menù), with the big ones absent.

The new government Laga-5 Stars (2018) intends: a) to set up a minimum hourly wage, particularly tailored at these types of workers, currently not covered by sectoral collective agreements; b) to promote a negotiation table between the main food delivery employers, unions and workers' representatives, in order to stipulate a national industry-wide agreement. A moral suasion then, without excluding, in case of failure, to intervene directly to give a regulatory framework to these jobs[14].

Amazon represents another interesting case for our topics (Cattero and D'Onofrio, 2018). In fact – after a mobilization culminated in strike called just on one of those "black Fridays", in November 2017 – in May 2018, after a negotiation, the national unions of the trade sector have gained the first-ever collective agreement for all the workers employed in the 11 Amazon sites present in Italy. The deal, which is supplementary to the national agreement of the commerce sector, ensures fairness in scheduling through reductions in mandatory night shifts and distributing weekend work in a more consensual and less stressing way[15]. Now the request is to push the corporate to open negotiation for establishing a European Works Council, with the Italian unions very active in organizing an international alliance at such a purpose.

What here is important to underline is that also in Italy, in spite of their very limited number, "the discursive power of (platform) workers is gaining importance" (Vandaele, 2018; p. 16). At the same time, collective autonomy still confirms its historic and pivotal attitude to responding new challenges, when the juridical system is not prompt, or delay, to do that.

e) *Workers' privacy*

and the transparency of the digitalized management methods are emerging like a very serious topic. The wearable electronic technologies allow the algorithmic management to constantly monitor and track the workers in all his moves, circumventing or in open violation of the distance control and health and safety legal regulations (Art. 4, Act No. 300/1970 – the Workers' Statute). A clamorous case was regarding the case of workers at Amazon, which is not a platform of Gig economy but the world-wide giant in the e-commerce and logistic, notorious for long hours, punishing quotas, and little break time during shifts. The corporate request to impose the use of a body-worn GPS, allowing the management to constantly track every single movement of the workers, has provoked a revolt on the media and was at the last abandoned.

[14] In some interviews, the new Minister of labor said that the algorithm and the rating system must be agreed and approved by the unions, even if they are the intellectual property of the company. A monthly availability allowance will also be introduced to cover periods when the worker does not make deliveries. Last but not least, it is foreseen the rider's right to disconnect.

[15] The agreement provides that night work is initially carried out only by voluntary employees, providing, among other things, an increase of 25% of the compensation under the employment contract

Are the traditional restructuring policies and measures still relevant? Italian social partners believe that the traditional structure of industrial relations retains a good part of their value in managing restructuring. However, although from different points of view and objectives, all experts and practioners share the need to modernize the system: a new and more inclusive social security, collective bargaining, individual and collective rights, indirect and direct employee participation. On the one hand, we can see a limiting of the classic scope and coverage of collective bargaining and, on the other, the emergence of new areas of action, decentralised and territorial, of a participatory nature (Carrieri, Pirro, 2016).

The whole system of the social protections was designed to include the subordinate workers only, in medium-large (and unionized) companies, while most of the new jobs are created out of such a scope. Shock absorbers like the wage redundancy funds, quite crucial in cushioning the negative impacts of temporary restructuring, are not extended to the micro firms. Unemployment benefits and other fundamental social protections exclude the independent workers. Costs for training, for freelances and digital workers, are entirely on their charge. Sectoral bilateral funds, self-financed by companies and aiming at covering temporary redundancies, are very effective in branches like banks and craft SMEs, but are not sufficiently universal to supply a safety net for a growing number of new jobs and professionals. Most of the debates and projects of reforms, concerns a recasting of the welfare system, in order to better cope with these new challenges. Scholars claim for a new modern Workers' Statute; a common law of universal protections against the social risks (int. Loi), completed by specific rights according to the scheme of the concentric circles elaborated by Alain Supiot in *Au-delà de l'emploi*[16]. Some look with interest at recent French legislation, which introduced a discipline aimed at guaranteeing minimum protection, regardless of the nature of the legal employment relationship (Perulli, 2017; Signorini, 2018). With its ambitious *Universal Charter of Workers' Rights*[17] in 92 articles, launched with a national petition in 2016, the CGIL try to push the lawmakers to extend some fundamental social rights and protections should be guaranteed to all types of employment relationships, included economically dependent self-employed.

One of the issues is if the new digital work have to be framed within the existing collective bargaining scopes and agreements (for example the riders in the logistics one), or if new specific contractual areas must be created. A key issue is considered the occupational management of firms' restructuring. Unions want to be able to anticipate the change and propose to intervene on three levels:

1. *Training and skills*, which need policies to support the retraining of workers with national continuous training projects, and a new commitment to school education;
2. *Working time*, destined to become increasingly central, and with respect to which collective bargaining at all levels will have to identify proposals on the reduction and different distribution for a correct management of technological unemployment, and greater attention to the reconciliation of work and life;
3. *Productivity and participation*. All unions agree about fiscal incentives to support decentralized bargaining, productivity bonuses, occupational welfare and employee participation.

They all consider education and training a vital resource, either for workers and for trade unionists. Tasks, skills, training, working hours, wellbeing at work, have to be part of the collective bargaining agenda. In a unitary

Protocol signed in January 2016, CGIL, CISL and UIL ask for strengthening, also with a law, workers' participation in all possible forms: organizational, financial, strategical in the corporate

[16] For example: health and safety at work, health insurance when unable to work because sick, the right to a decent income, maternity and parental leave, respect for privacy, support in case of unemployment, tax benefits for self-training. For the others, in more standard kind of employment, all the traditional individual and collective labour rights should be confirmed and expanded (as for instance in the case of more enforceable rights in representation and participation at work).

[17] http://www.cgil.it/charter-of-universal-workers-rights-the-leaflet-is-now-available-english-french-arabic-and-spanish/

governance. In the last CGIL programmatic document, called *Progetto Lavoro 4.0* (2018), the slogan is "let’s negotiate with the algorithm"[18]. The corollary is to achieve new information and consultation rights, on one side, and to train new bargaining skills for trade unionists, on the other. For the CISL, direct participation, based on team work and suggestion schemes, will be a key factor for productivity and competitiveness. Traditional split between engineers and assembly-line workers is becoming ever less relevant (Bentivogli, 2015). The barycenter of collective bargaining will shift more and more towards the firm-level, where unions have to be capable to cope with the new challenges of a modern work organization and industrial relations. CGIL is instead more favourable to a centrally coordination of collectivebargaining.

Confindustria, on its side, is engaged in raising awareness of the productive fabric and building the Digital Innovation Hub network that will support companies in the transformation. On the association's website, we can read: "The industry of the future is innovative, sustainable and interconnected. It integrates the results of scientific advances in products and services, removes environmental constraints, enhances the potential for development of ICT technologies, improves efficiency and production capacity. Industry 4.0 is a challenge that can revive the Italian production system, enhancing its characteristics ".

In 2018, CGIL, CISL, UIL and Confindustria signed the “Factory Pact”, an agreement on collective bargaining for a new model of industrial relations to encourage the industrial transformation generated by Industry 4.0 which, in particular, aims at:

- increasing the competitiveness of companies in the context of sustainable growth;
- encouraging a more dynamic and balanced labour market;
- strengthening the link between labour productivity and wages, supporting forms of trade union democracy.

This agreement was followed by another specifically on training, to encourage updating and retraining along shared paths, also making use of the tax incentives provided by the Government in the context of the Industry 4.0 plan. The agreement establishes shared criteria to access the incentives provided by the Ministry of Economic Development for the training of employees aimed at acquiring or consolidating skills connected to the “*enabling technologies*” related to the National Business Plan 4.0. The agreement foresees training that “*responds to the need of companies and collaborators, thus representing an investment and shared value for the subjects involved*”, and an analysis of training needs “*to identify the skills to develop to increase companies’ competitiveness and people’s professionalism*”.

In the same year, CGIL CISL UIL signed with Confapi (Italian Confederation of Small and Medium Private Industries) and Confimi (Confederation of Italian Manufacturing Industry and Private Enterprise) specific agreements on “Training 4.0” aimed at encouraging the growth of digital skills for SMEs.

At national level, therefore, the issues related to Industry 4.0 have been developed with a strong confederal approach and a search for collaboration between the three trade unions. This is because digitisation and innovation define new relationships between sectors along the supply chains with an impact on industrial relations models that cannot be dealt with solely by the sectoral categories.

2. Methodological notes about the survey and interviews

The study is based on the information provided by desk-research and a dozen of in-depth interviews carried out with the following key informants.

[18] As underlined by the General Secretary of the CGIL, Susanna Camusso (Camusso, 2018, p.6), it is necessary to avoid a corporate approach with the aim of “*focusing attention on the change, not so much of the business system as of the relationships in the supply chain*”, considering therefore the redefinition of the “*contractual perimeters*” and, as a result, of the sector contracts which are very disjointed, partly as a result of the fragmentation in the employers’ associations.. http://www.cgil.it/documenti-piano-del-lavoro-4-0/

For the Introduction chapter, we had five interviews with the following national experts:

1. Michele Faioli, Labour lawyer at the Univ. Rome,
2. Bruno Cattero, Work sociologist at the Univ. Alessandria
3. Alessio Gremolati, Nat. Resp. Digital work and Industry 4.0, CGIL
4. Cosmo Colonna, Nat. Resp. Dept. Ind. CISL
5. Piera Loi, Labour lawyer at the Univ. Cagliari,
6. Angelo Salento, Economic sociologists at the Univ. Salerno,

The next chapters are based on sectorial surveys, during which we had interviews with the following informants. **N.B. The following names can be ignored for the rest of the text, just keeping – in the quotations – their role or function.**

For the banking sector

1. Gianfranco Torriero, vide-General Director of the Italian Banks Associations (ABI);
2. Agostino Megale, Gen. Secr. FISAC-CGIL
3. Giuliano Calcagni, Nat. Off. FISAC-CGIL
4. Mauro Incletolli, Nat. Off. FIRST-CISL,
5. Patrizia Ordasso, HRM Banca Intesa Sanpaolo

For the post services

1. Barbaro Francesco Costa, Member od the Industrial Relations Dept. *Posteitaliane*;
2. Nicola Di Ceglie, Nat. Secr. SLC-CGIL;
3. Enrico Ceccotti, Expert and adviser in post restructuring.

For the tourism sector

1. Luca De Zolt, Nat. Off., Filcams-CGIL
2. Elena Maria Vanelli, Nat. Off. Fisascat-CISL

For the metal sector

1. Michele De Palma, Nat. Secr. FIOM-CGIL
2. Marco Bentivogli, Gen. Nat. Secr. FIM-CISL

Some of the interviews were conducted face-to-face; others via e-mail

3. Digitalisation related restructuring and Social Dialogue in selected sectors

3.1.1 - The banking sector[19]

The banking sector in Italy employees almost 300.000 employees and is characterized by substantially higher levels of remuneration, a traditional jobs stability and security, high qualification of staff by levels of education and female workforce.

As in other countries, also in Italy, the sector is very affected by ongoing processes of radical restructuring, very much driven by digitalization, in terms of the customer services and work organization. The causes of this change are several and concern the harsher competition among banks in an open European market, but also unprecedented competitors (post financial services on one side;

[19] For this section, we conducted 5 interviews, face-to-face or via e-mail, with Gianfranco Torriero, vide-General Director of the Italian Banks Associations; Patrizia Ordasso (HRM Intesa Sanpaolo), Mauro Incletolli, (Nat. Off. FIRST-CISL), Agostino Megale, Gen. Secr. FISAC-CGIL (Nat. Secr. FISAC-CGIL) and Giuliano Calcagni (Nat. Off. FISAC-CGIL).

Apple, Facebook, Amazon, Google on the other). At the same time, the risk of bankruptcy of various banks has triggered a series of mergers, involving overlaps of personnel and offices.

As highlighted by the Association of Italian Banks (ABI) in a recent report[20], the banking sector is among the most exposed to the challenge of digitization, with Big data, robo advisor, artificial intelligence, blockchain. The banks budgets for ICT are in constant growth. According to the Digital Banking Survey of GFT, 84% of European banks is coping with a strategy of digital transformation. Recent Business Plans, in Italian banks, are steering toward the adoption of the so-called 'multi-channel' services - i.e. from a modality of customer services delivered essentially through local branches to the adoption and promotion of new, mainly digital, channels enabling or self-service or remote support of customers. The main areas of innovation and ICT are mobile, digital payments, internet banking, while the research areas are block-chains, cloud computing, remote customer identification and artificial intelligence. The center of gravity of the distribution networks is moving sharply from the physical to the digital channels. Customers have learned to perform autonomously most of their operations remotely, through home banking and Apps on smartphones[21]. The percentage of the population using internet banking is in Italy, though lower than in the average of the EU, is growing constantly, from the 13% of 2008 to 29% of 2016 (EU-28 average is 49%; Eurostat).

Technological innovation and digitalization of processes have already produced the elimination of entire administrative work phases; reduction of back office activity; simplification and reduction of front office activities; change in the methods of interaction with customers; reduction in the number of banks and bank branches/offices[22]. The number of bank branches in the EU Member states, in ten years (2008-16), dropped by 45.000 units, about 4500 a year. In Italy of nearly 4.000 in ten years. The number of bank offices every 10.000 inhabitants is 4,8 (less then in Spain, France or Germany). Internal staff accounts for 13.4% of the costs. The number of bank employees every 10.000 inhabitants has decreased from 60 to 49.

The digital transformation of banks impacts unavoidably over the employment. The number of employees has dropped, in ten years, from 340.000 employees to 295.000.

> *"The occupational reduction of these years will carry on, though with a different intensity, taking care of the negative social impacts"[23]. About the future, estimates vary between a prudent 20.000 to a shocking 100.000 in 2022, that would be the 30% of the current number of jobs. "Five-ten years ago, we had restructuring and jobs cuts costs saving driven. Today, they are driven by the digitalization and its impact".* (int. Nat. Off., FISAC-CGIL).

Hiring commitments resulting from the collective agreements signed should produce around 7 / 8,000 new hires. At the same time, new competences and high skills are urgently needed and required by the banks, through generational turn-over, new hiring from universities, unprecedented investments in permanent training and re-qualification of the workforce, digital training, a greater and generalized expertise in information technologies.

> *"Customers are very much educated and informed at regard. Our staff, in front and back office, cannot be lesser, when requested to offer their information and advices"* (int. Manager, ABI).

Banks like CREDEM represents an interesting good practice, having been significantly increasing its staff over the last years, while investing both in digital technologies and skills. Intesa San Paolo, has recently disclosed its 2018-2021 Business Plan, with a strong focus on digitalisation and smart

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[20] ABI, *Rapporto 2016 sul mercato del lavoro nell'industria finanziaria*, Roma, 2017

[21] According to recent research by an important vendor, over the next five years 70% of a sample of users of financial services in Europe will use more online banking, and 60% more mobile services.

[22] G. Lami, *Le banche e le assicurazioni*, in "l'Annuario del lavoro 2017", Roma, 2018

[23] ABI, *Rapporto 2017 sul mercato del lavoro nell'industria finanziaria*, Roma, 2018; p. 160

working. Many jobs will be lost and 2.500 just as a consequence of a further digitalization, but at the same time 500 new employees of young highly skilled are scheduled to be hired.

For the social partners, all this requires the search for new channels through which to manage crises and restructuring in the most socially sustainable way. Through the use of the redundancy bilateral fund – mostly self-financed by the companies but with a robust support from the public finances (664bln in the last budget law) – elderly workers will leave the job, as it massively happened in the last ten years. For all the others, social partners agree on that, training and working hours will be the two key strategies for coping with the deep ongoing transformations.

3.1.2 – Industrial relations and participatory system

The sector boasts a solid tradition of collective bargaining, both at sectoral and company level, strongly inspired by participatory models, with the recognition of information and consultation rights. According to recent ABI data, unionized employees among bankers are 230.000: a record percentage of 76% which makes banking the most unionized category among Italian workers. There are seven unions[24], comparatively considered most representative, taking part in the negotiation of the national collective agreement, more than the average in the most important manufacturing sectors. But they usually operate with a high degree of convergence and unity. Companies are nationally represented by the influential Italian Banking Association (ABI), which negotiates the national contract of the credit sector with the most representative unions.

The last national sectorial agreement was signed on March 2015. It arrived after an unprecedented phase of conflict, with the employers attempting to radically weaken the role of the national sector agreement, and all the unions calling successfully to a strike, massively supported by the workers. At the end, the traditional primacy of the multi-employer agreement has been confirmed.

Large parts of it is dedicated to the workers and trade unions involvement, with the recognition of extensive information and consultation rights on many subjects. As we can read, the signatory parties agree to develop "*a conscious participation of all workers in the company life,* in order to foster a positive corporate climate of respect, trust and cohesion, with encouraging collaboration among colleagues, in the logic of nurturing the team spirit and possibly providing specific moments of internal communication to give appropriate evidence to the active listening channel". A National Bilateral Committee is in charge of acquiring information, disseminating good practices and implementing initiatives in the field of trade policies, information, training, and incentive systems. The committee will study, among other things, the sectorial climate, with the aim of improving the well-being of workers in the workplace. Bilateralism – the social partners' co-management of complementary welfare schemes – is one of the pillar of the sector's industrial relations and its participatory system[25]. Thanks to the bilateral solidarity fund, it was possible in recent times for 58,000 workers to access early retirement in more than decent conditions. Companies have been able to restructure with over 500 between mergers and reorganizations in a quite few years, with the creation of large banking groups, without tensions and social conflicts.

As anticipated above, as of now, social dialogue in the banking sector has mitigated social impact of job-cuts through negotiations leading to the adoption of early retirement schemes. Indeed, sectoral social partners also established a sectoral fund providing for social shock absorbers and setting out rules for the contribution to the fund by sectoral companies activating early retirements. Yet, albeit remarkable, this is still a reactive response to changes inducted by digitalisation, rather than a strategy to proactively manage it. The last National Collective Bargaining Agreement, instead, has introduced a training right for workers, which may set out a way to incentivise upskilling rather than replacing

[24] According to the latest findings, the extra-confederal Fabi, which after the merger between Dircredito and Fiba-Cisl, had lost the record, are back to be the first union, with 27.9% of members, followed by the First-CISL with 27.8 %, from Fisac-CGIL with 20.9%, from Uilca-UIL with 11.7% and from Unisin with 8.5%. Two other associations remain below 5% and are the Sinfub, which has 1.9% and the Ugl Credito, which has 1.3%.

[25] S. Girgenti, *Dalla bilateralità alla partecipazione. Le relazioni sindacali del settore credito e finanziario,* Edizioni Lavoro, 2017

of the workforce ahead of digitalisation challenges. Yet, this right is limited to 24 hours of training over a three-year period.

Collective bargaining at a decentralized level is a fundamental tool for finding shared solutions, able to combine the search for greater flexibility and profitability on the part of companies, with the workers and trade unions aims to safeguard jobs and a better quality of working life and conditions. In large banking groups, the frequency of meetings between the social partners is very high and there is discussion of all the issues and in particular those relating to personnel management. The role of union representatives in the company is very recognized and their relationship with colleagues is quite intense. In coping with the deep reorganization resulting from new business plans, company level agreements aim at increasing the efficiency of the bank offices, strengthening productivity-related bonuses, welfare benefits, wellbeing at work, work-life balance.

> Representatives of Intesa Sanpaolo (ISP) told us: *"We meet on average twice a week and discuss everything; from the application of the national collective agreement in all its parts, to the use of technological innovations, the organization of work, personnel management, resolution of restructuring which are socially the least painful possible. Personally, I hear the personnel manager on the phone almost every day. We do not limit ourselves to discussing but we want to establish real collective agreements, on individual themes"* (Calcagni, FISAC-CGIL). *"Almost 1,000 agreements have been signed since the Group was established in 2007, some of which decidedly innovative"* (int. Manager ISP).

The assessment of workers' skills and their professional training needs are subject to participatory procedures. The company, also at the request of the trade unions and staff representatives, communicates to them - during a specific meeting - the guidelines, principles and criteria that are intended to be adopted for the professional development of personnel and for the evaluation of the same. Continuous training, beside technological innovation and work organization, is considered the main way to encourage a greater workers' participation in the company. In the national sectorial agreement, the parties agree that the development of ICT allows greater flexibility at work and can promote efficiency and productivity in companies, with responding to social needs such as environmental protection, the improvement of the quality of living conditions, a better management of working time, more effective integration of the disabled workers.

3.1.3 – Digitalization, workers' perception and smart-working

Between 2016 and 2017, the FISAC-CGIL commissioned a survey on the transformation of labor in banking and insurance services, conducted in the "smart city" of Milan (Bonomi, 2018). Interesting results emerged, with particular attention to the effects of digitization and their perception among the employees. A large majority of the interviewees say they are now working with new software and management systems, help desks and digital tutors. A quarter of respondents, however, deem the technological level of the company in which they work. Over-55 workers feel more threatened and insecure, due to digital innovations. It is important to underline how the majority does not feel that it benefits from greater autonomy than in the past, both operational and the choice of methods for carrying out its tasks. There is also the perception of greater intensity (higher rates, shorter deadlines), with an increase in the difficulty of the objectives set by management. The perception of a worsening of the relationship between the required commitment and salaries is even clearer, indicated in over three quarters of respondents. It's also important here to underline the discomfort and the psychologic stress induced in the workers by the sale of suspected and too risky financial products.

The surveys speaks about "ethical disalignment", that is to say a moral conflict between values and professional identity of the employees on the one hand, and commercial pressures of the company, on the other. A moral hazard that generates a weakening of the bonds of involvement and identification of employees with their company. In 2017, after some banking scandals and the new requirements of European legislation, the social partners have entered into a national collective agreement, which strongly limits this kind of pressure.

But there're also some good news, as in the case of the so-called "smart", "agile working" (Law no. 81/2017). It's now is the most common way through which the banks and their employees, on volunteer basis, stipulate an individual agreement concerning a better work-life balance. The financial sector is in Italy one of those where smart working is getting more and more importance in changing of work organization. Individual agreements are framed within the rules and guidelines established by collective agreements, aiming at preventing any possible discretionary use by the companies.

Smart working normally consists in scheduling two or three fixed days per week, when employees can perform their duties from home or remote. Smart working give the employers the possibility to manage the reduction in number of the staff daily present in office, with reducing costs and presumably increasing productivity, with a better work-life conciliation for employees. Access will be on a voluntary basis, at the request of the employee concerned, in possession of the requirements defined by the collective agreement. The company must inform the worker of the specific working procedures related to this new form of working. Opting for working from remote or with a non standard working time, cannot be detrimental to the employee in the opportunities for professional development and to any other effect of the employment relationship. Their use must be in full compliance with certain guarantees. The teleworker has the right, at unchanged working time, to the contractual pay corresponding to that of the other employees with the same classification who lend their work by traditional methods.

> *"Smart-working, with organizational flexibility and work tasks performed from remote, will be more and more part of a strategy, aiming at the better possible conciliation between the companies needs and employees expectations"* (int. Manager, ABI).

More and more companies have been signing agreements with such a contents: Intesa San Paolo, Gruppo UniCredit, BNP Paribas, Banco Popolare di Milano, Monte Paschi di Siena, Banca Nazionale del Lavoro, Banca Reale, Gruppo Crédit Agricole Cariparma.

3.4 – The social partners viewpoints

For the employers, banks are coping with a strong competition pressure, also with actors once unthinkable (Google, Amazon, Apple, Facebook, etc.), aggravated by the reduced margins of revenues and increase of the capitals requirements. The reduction of the cost of labor is considered crucial. On line and mobile banking will gradually replace the physical networks of offices, whereas the staff volume and composition, in terms of skills and tasks, will be deeply re-organized. New ICTs are assumed as an opportunity to intervene over the branches organization, in order to make it more rational and efficient. A generational renewal, with higher professional profiles either financial and technological, is taken as strategical in all companies' restructuring plans. Redundancies have to be managed, as usual, through the shock absorbers allowed by the sectorial occupational funds.

> In our interviews with the trade unions we were said that*: "The management of the crisis and restructuring, with their consequences in terms of redundancies among workers, is hard. But as trade unions we have managed it so far, limiting the most negative social consequences. To govern change beyond the crisis, to measure oneself with the digital revolution, with robotics and its effects, requires a capacity but also a trade union responsibility that can be affirmed only with a culture of change based on knowledge, competence, training of union cadres that of change must be protagonists".*

In the unions' view, the way out of the negative impact of restructuring driven by digitalization lies in the provision of new counselling services, especially to SMEs, for instance to manage credit or to access European funds, to be achieved also by retraining the workforce.

For a Nat. Off. of the union FIRST-CISL, the best way is "*to recognize and expand financial participation With the possibility for the employees to designate their representative into the general assembly of the shareholders. With the following right to influence the companies' deliberations impacting over the working conditions*".

All the unions efforts should be concentrated in obtaining the right to be represented into share ownership plans, with the consequent right to have an institutional voice within the shareholders assembly. At least, whenever worker's issues are discussed and decided.

Agostino Megale (Gen. Secr. of the FISAC-CGIL), told us: *"We need an expansion of the scope and coverage of the national sectorial agreement, with including those employees now framed into the cheaper collective agreement for the trade sector. We must, as a trade union, firmly seek for the representation of the bogus self-employees, in thousands used by the companies. We must strengthen the tools that stimulate new employment and strengthen the social safety nets of our sector. We must focus our attentions on the smart-working, on the life long learning. We must reduce working time and (less than proportionally) some remuneration, in order to hire new workers[26]. "The human factor is not always replaceable by the algorithms. The trust of the customers is a crucial element in a sector like the credit. "We have customers who changed branch and bank, when his/her banker moved somewhere else".*

3.2. Post services: the case of *Posteitaliane*[27]

3.2.1 – The Company and its digitalization

Poste Italiane is the largest provider of post and logistics services and among the main players in the financial services and insurance market in Italy. With a capillary network of nearly 13,000 post offices and 138.000 employees (whose 30,000 delivery personnel), it is the first employer of the country and unparalleled in Italy in terms of its size and reach. It provides 30 million customers (individuals, companies and the government), with a wide range of services designed to improve the lives of citizens and make companies more competitive. A key component of Italian society.

Posteitaliane is a private company – partially state-owned – traded in the stock market, attentive to the profitability of its activities and investments. However, it fulfills an indispensable social function and a universal service, which as such must include by law the performance of activities, which are not always completely profitable. The elderly population, the most isolated and disadvantaged territories, not able to operate through the opportunities of new digital services, need these offices. Just think of paying pensions to older people.

In 1996 *Posteitaliane* employed 210.000 workers. Today, they're 138.000. In 2022 they're expected to be 123.000. The causes of this strong and gradual contraction in employment are due to the radical changes that have taken place in terms of the new lifestyles induced by digitalisation, with the collapse of paper correspondence, which has severely penalized the branch of mail delivery workers. This was partly offset by a huge increase in assets related to the collection and management of savings, in competition with traditional banking services. Added to this was the packets delivery, followed by the growing diffusion of e-commerce. In both cases, the digital dimension of services and work has become central.

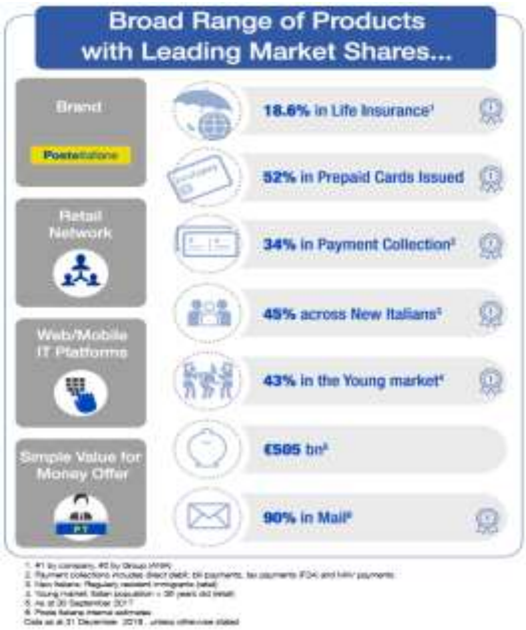
[26] According to the Article 51 of the Legislative Decree, no. 81/2015, such an exchange – collectively agreed – is possible and named "contratti di solidarietà espansiva".

[27] For this section we've conducted interviews with the manager for the Industrial Relations Dept. Posteitaliane (19/6); with the Nat. Secr. Of SLC-CGIL responsible for the post sector (6/6/2018); an expert and adviser in post restructuring (12/6).

By combining strong local relationships**,** a people-centric approach and an aptitude for innovation, over the last 20 years the group has succeeded in transforming itself, while keeping abreast of – and sometimes even anticipating – the changes taking place in Italy. On its webpage, one can read the Corporate's mission, which is: *"to drive inclusive growth in Italy, leading individuals, businesses and the government to the new digital economy by offering high-quality, simple, transparent and reliable services".*

Today, *Posteitaliane* is considered a "digital sample" for the country. The "engine" of its digital transformation. This is due to the extremely widespread presence in the country, the high use of online touchpoints, web & apps, E-wallets, ATMs, Social and call centers, and the innovation of products and services. Great opportunities come:

a) from the substitution of cash money - which in Italy maintain one of the highest percentages in Europe (68%) – with digital payments; b) the strong growth of e-commerce; c) the greater focus on Big Data & analytics, innovation in Machine-to-machine solutions and the Internet of Things.



The company is engaged in the development of the digital pole, to promote innovation, enhancing the IT infrastructure for banking and Native cloud, with the recruitment of 400 digital specialists, with high computer and engineering qualifications.

In 2018, *Posteitaliane* boasts 15.6 million downloaded apps; 11.2 million registered online users; covers 25% of online payments for e-commerce; holds 30% of the market share of packages delivered for e-commerce[28].

3.2.2 – Industrial relations around restructuring driven by digitalization

PosteItaliane boasts, on the ground of industrial relations, a very consolidated and articulated structure, with practices inspired by the continuous dialogue between the parties, through the combination of a multi-level bargaining and several consultative bilateral bodies. This historically reflects the extraordinarily high levels of unionization in the Group, which among the 137,000 employees of the Group, reaches almost 80%; well over twice the national average, making this sector one of the most unionized in the country. The diffusion of the works councils and shop stewards is particularly widespread; over 2000, for the roughly 13,000 offices spread all over the Country. One single organization, the CISL sectoral union, is a true power into the group, with over 50% of union members. Thanks to its direct links with the ruling party (Christian Democrats), it was able for

[28] Poste Italiane, *Capital Marks Day Deliver 2022*, Milan, 27/2/2018

decades to negotiate with the Governments good acquisitions for the postal staff and especially for the members.

Industrial relations are traditionally very much inspired by a spirit of collaboration and rooted in participatory practices. The first and the last strike was declared in 2016, after 20 years of full social peace.

The collective bargaining system of *Posteitaliane* deviates from that derived from the national and inter-sectoral agreement of 1993, which in Italy has regulated the multi-level system of bargaining. The major anomaly resides in the fact that the national collective agreement corresponds with the legal scope of the *Posteitaliane* group only, thus not configuring those sectoral characteristics which otherwise connote the first contractual level of our system.

The collective bargaining levels established by the National Agreement are formally two: the national one, for the Group (with a three-year duration), and the second level, which for Poste Italiane Spa takes place in the regional area, with some subjects referred to the interlocution level in the production units. Some companies belonging to the Group, such as Mistral or SDA, are not covered by Poste Italiane's national agreement, which instead applies to the various companies in the sector or branch[29], which make up the conglomerate of the main Italian infrastructure group. The other companies that perform delivery activities (ex: Nexive) apply the national sectoral agreement of the delivery agencies.

The last national agreement was signed in November 2017. It aims, among other things, at "joint management between the social partners of the social consequences of the implementation of the reorganization and / or restructuring and / or transformation processes that have effects on working conditions, including collective mobility".

The whole system of industrial relations is strongly intersected by clauses and consultative forums of dialogue and also joint management, as in the case of the various bilateral bodies: the national joint observatory, first of all, with wide-ranging expertise on the analysis of strategic perspectives and production of the postal services market, employment situation in the sector, technological developments and professional figures. The company informs and consults the unions signing the national agreement, on the review of the processes and organizational models. Before the executive phase, if they are likely to involve significant changes in the organization of work. For example, those resulting from the introduction of new technologies (Article 4).

A National *Poste Group* Committee, made up of representatives of the company and the trade unions, will analyze, among other things, the processes of technological innovation, capable of producing significant effects on the group's business and competitiveness (Article 5). Great attention to professional training. It will be jointly planned by the social partners, in order to increase human resources, "also in relation to technological and organizational innovations" (Article 59).

As in other Italian public utilities, also in Poste there is a bilateral fund – self-financed by the company – for the joint management of restructurings, able to amortize the costs of personnel exits., without this ever taking particularly traumatic traits on staff management and union relations. In no case, for example, the law on collective redundancies was needed; the workers were individually incentivized to abandon their employment, with economic proposals from the company. The unions played an important role in the consensual management of redundancies, even recently, when the original project to close around 500 post offices has been reduced to no more than 200, with local mobility plans that will limit the impact on occupation.

The 2018-22 Business Plan provides for a reduction in staff to an annual average of 3,000 workers, so as to go from the current 138,000 to 123,000, in 2022. This will be achieved through early retirement incentives and reduced term contracts. Thanks to this it will be possible to lower the average age of the staff, today of 50 years, with 53% of over 50 years and 11,000 workers over 60 years old. More than half of the workforce will retire in the next 10 years.

[29] Postel, Postel Print, Docutel, Poste Vita, Postecom, BancoPosta, PosteShop, Poste Assicura, Poste Tributi, Poste Energia

The professional figure most affected by this turn-over will be that of the postmen, because of the digitization of much of the old paper correspondence. Only partly offset by the strong growth of e-commerce and the home delivery of parcels. The same business plan provides for investments of 2.8 billion euros, by 2022. Of these, 500 million will be allocated to automation and re-engineering of correspondence and parcels; 300 million for digitization.

As to logistics, digitalisation, especially through e-commerce, is bringing about a boost in employment, especially in newly opened logistic centres. This affects mainly Northern Italy, which benefits of a geographical position allowing to reach Italy and close Central European countries.

3.2.3 – The social partners view

The social partners of *Posteitaliane* fully agree to recognize this company a serious involvement in the modernization of its services and organization, both branches and logistics. *"Diversification and digitization are the two key elements of this strategy"* (int. Ceccotti, expert).

In coping with the deep crisis in old paper correspondence, postal services had to undertake a process of profound transformation, diversifying their product offer.

> From this point of view, *"Posteitaliane already enjoyed a high degree of specialization in financial services, which were further strengthened, in the insurance sector and in electronic money transfers"* (int. Manager, Posteitaliane).

Starting from 2013, the company has decided to reorganize its extraordinary territorial and logistic roots in relation to the expansion of e-commerce. Postal services also play a primary role in e-government, playing for the State the role of informative link with citizens. This led to a reconversion of the staff traditionally assigned to correspondence, back office and mail delivery.

Today, postmen are equipped with I-pads, and in some experimental situations they use their direct knowledge of families to propose personalized financial services. A large investment was made in the training of workers, for which the company has allocated substantial resources.

> *"Digital tools are used in innovative forms of assistance to workers in their usual tasks. An app called "Chat-Bot", instructs workers in a user-friendly way, responding to their most frequent questions related to their work at the office"* (int. Nat. Secr., SLC-CGIL).

An ICT application, the result of a pilot project presented this year at a sector conference in Athens, and which in the company they consider a real best practice. Very appreciated by workers who are starting to use it. Robotics is instead concerned with the mechanization of mail and parcel sorting, and logistics. The employment impacts that this is causing are being negotiated between the social partners, which in 2017 signed a national collective agreement, entitled "Delivery 2020".

Industrial relations in Posteitaliane are judged positively by both the company and the trade unions. With a unionization rate among the highest ever for Italy, and a very intense negotiation practice, the social partners have managed rather consensually - and still manage - the deep restructuring of these years. *"We never fired anyone"* the interviewed company representative told us proudly. And the unions confirm: the restructuring has considerably reduced the number of employees, but this has always happened through the collective instruments of negotiation, and individual, as regards the monetary incentives for early exit.

> *"Unlike other European companies in the sector, Posteitaliane has never used extreme forms of numerical flexibility, with on-call work or zero-hour contracts. Rather, it often provided for the stabilization of temporary staff, agreed with the trade unions in this sense"* (int. Manager, Posteitaliane).

The last national collective agreement of the sector, already mentioned and signed in 2017, provides for information and consultation rights on a wide range of subjects. Included those related to the employment effects of technological innovations. But it also has important innovations in the field of occupational welfare, with the extension of integrative healthcare, and a significant improvement in the work-life balance.

Another aspect that the company is particularly proud of is the introduction of an article which establishes a link between national developments and the European social sectoral dialogue. This aspect was particularly emphasized in the interview with the company representative. For over 10 years, the Italian Group has been particularly committed to promoting European projects - funded by the European Commission - for monitoring and anticipation of the change within the European Social Dialogue Committee for the Post Sector (int. Costa).

The unions appreciated the business plan presented by the company in February 2018. In particular, for the investments envisaged in the further modernization of ICT, training, and for the employment mix that should guarantee a reasonable turn-over, generational and for specialized skills. For every 10 workers who leave, they take 4, young and with solid university education. Many fixed-term workers are stabilized, while involuntary part-time jobs are turned into full-time (int. Di Ceglie, SLC-CGIL).

Digitalisation does not seem to have produced direct employment consequences. For example, in terms of significant job losses. It has rather required a substantial updating of the professional skills of a good part of the workers, both among the 40,000 employees at the branches and among the 60,000 of the logistics, with 38,000 postmen.

On the subject of collective bargaining, the trade unions are calling for a single national industry-wide agreement, able to include those branches and groups that are today uncovered by it, fragmented under other umbrellas.

The change under way is taking place gradually, with no unilateral choices and frontal attacks from the company. The very high levels of unionization on the one hand, and a certain collaborative and even corporatist tradition of industrial relations, favoured negotiated solutions between the social partners

3.3.1 – Tourism sector

Tourism is a very heterogeneous sector, involving different types of services for travel and events for recreational, work and educational purposes. In a narrower sense, tourism covers accommodation facilities and these are very diversified: hotels, camping grounds, bed & breakfasts, holiday villages, holiday homes, bathing establishments and spas all the way to guesthouses. To these types of activities, we can add travel agencies, tourist guides and the other professions that contribute to the provision and management of services directly associated with tourism. The sector also has a considerable impact on other areas, such as catering, transport, entertainment and cultural activities.

The importance of the tourism sector for territorial socio-economic systems also has to be considered, in terms of the supply of consumer goods and services and the protection and promotion of infrastructures as well as local environmental and cultural resources.

According to ISTAT, the Italian national statistics agency, the overall flow of guests recorded in Italy in 2016 in hospitality facilities was roughly 117 million arrivals and 403 million presences, with an average stay of about 3.5 nights, an increase compared to previous years (turnover in the hospitality sector saw an increase of 0.7% in 2016). Accommodation capacity in Italy is characterised by a number of non-hotel businesses that is greater than that of hotels: for the year 2016, ISTAT recorded 178,443 non-hotel businesses and 33,163 hotel businesses.

According to the annual report of the National Bilateral Tourist Board (EBNT, 2017), in 2015 the tourism sector (hotels, camping grounds, bars and restaurants attached to hospitality facilities, bathing establishments and spas, discos, travel agencies and amusement parks) had approximately 964,000 employees and 171,000 companies with at least one employee. To this number of workers we have to add the significant amount of work done by the owners themselves in small businesses and family work performed by relatives who work without contracts.

The tourism sector has a natural international bent and responds to local demands as well as global markets, to the extent that international demand for accommodation facilities, according to ISTAT data (2017), represents about half of the business volume in the sector.

Tourism has a production structure characterised by small companies with, on average, 5.6 employees. The larger companies have been able to offer greater organisational efficiency and implement an economy of scale capable of lowering the costs of services; this has happened both with the rise of multinationals and with the emergence of small chains in local contexts.

In Italy, in 2015 the large hotel chains represented only 4.1% of accommodation facilities and, although increasing, their incidence is lower than that recorded in the advanced European economies, considering that the hotel chains have a significant presence in the United Kingdom (40%), Spain (28%), France (23%) and Germany (11%) (Horwath Htl, 2016).

Seasonality is a structural feature of the sector which is therefore characterised by great variability and turnover: in the course of a year the number of companies varies considerably: considering the companies in 2016, the variation recorded was from 153,466 to 189,131 units over the arc of the year, while that of employees went from 801,159 to 1,135,512, with employment peaks concentrated in the summer season.

The workforce is substantially young (almost 70% of employees are under 40 and almost half, 44%, under 30) and with a strong female presence (56%).

The majority of employees could be qualified as "front-line" workers (81.3%); the remainder is made up of office staff (11.4%) and apprentices (6.7%). Management, as a whole, represents less than 1% of the workforce. Part-time work is widespread, involving just over half the workforce (51.5%) and is carried out by a large majority in a "horizontal part-time" form. Most contracts are permanent, but the proportion of temporary work is still significant and affects about one in three workers (33%). Seasonal work is a structural component of the sector and involves 13.5% of employees.

3.3.2 – The industrial relations

As other sectors, tourism labour relations are mostly ruled by the national collective agreements (CCNL). The most important are two, according to the size and scope of the companies and their different employers' associations: *Federturismo-Confindustria* and *AICA* on one side, and *Federalberghi*, *Faita* and *Federcamping*, on the other. On the workers' side, the signatory trade unions are the national sectorial federations *Filcams-Cgil*, *Fisascat-Cisl* and *Uiltucs-Uil. T*he former responds to the needs of the large chains, while the latter has a more diversified target audience. The CCNL of Federturismo was last signed in 2010 and it's then in a very serious delay to be renewed. The Federalberghi CCNL was instead subscribed in 2006 and is still fully in force.

The national agreements cover the hotels, tour operators and bathing establishments. Their key topics concerns – as usual – the industrial relations, wage floors and increases, performance bonuses, sickness, health and safety at work, welfare schemed. Some other themes, though ruled also in other industry-wide collective agreements, are very much crucial for a the tourism sector, such as:

a) seasonal work (with the right of precedence in being re-employed for the following working season for a year from the termination of the employment relationship);
b) part-time (which is limited to a maximum of 15 hours per week, 64 hours per month, 600 hours per year);
c) apprenticeships (with clauses related to child labour and night shifts);
d) flexibility in work shifts, with an increase in remuneration both in the case of overtime and timetabling changes.

The extension of the business chains on the one hand, and the companies' request to have a flexible regulations on the other, has recently pushed companies to pursue a more decentralized collective bargaining, both at company and territorial level, mostly regarding pay, how to deal with company crises, timetabling flexibility and seasonality, and welfare (Olini, 2016, ADAPT, 2017).

Because of the multinationals' policies and the increasing competition at global level, companies are constantly coping with restructuring, and so the unions called to manage it, with not infrequent problems and disputes. This is for instance in the case of the Valtour operator; an historical Italian company since 1964, which is now at risk of closure, with six resorts that are not going to open in the 2018 season and others that are starting the season with reduced staffing as a result of layoffs and, above all, a lack of seasonal employment.

3.3.3. – The impact of digitisation and the social partners' evaluation

In tourism, the changes introduced by restructuring and technological innovation have been taking place for a long time, radically changing the organisation of work, in particular since the late-1990s with the spread of the use of the internet, e-business and technology devices by both customers and businesses. Moreover, in the last ten years, the transition to web 2.0 and the diffusion of ICT technologies have increased the opportunities for interaction between customers and companies, further reshaping the boundaries of the sector and the way they work (Cioppi, 2017).

Technology has not only introduced significant innovations in the management of the production process, but above all they have had a powerful impact on the demand side, giving greater autonomy to the consumer in planning their free time and introducing important changes in tourism marketing. This has been accompanied by an expansion of the tourism sector which, although it has seen an increase in large companies and multinational chains, is still dominated by small- and medium-sized businesses of a local nature (Di Nunzio, Giaccone, Delaria, 2014).

The changes introduced by digital technologies have had a major impact on the transformation of the labour market and the types of professions, with the closure and/or restructuring of intermediary firms (such as travel agencies), on the one hand, and a redefinition of the skills necessary to operate in the sector, on the other.

Filcams-Cgil, one of the most representative union in this sector, focused the attention on these changes organizing some workshops with the unionists during the recent years and with an information campaign on the web for unionists and members based on a periodical newsletter by which many aspects of the relationship between digitization and tourism are dealt with ("Newsletter Turismo 4.0")[30].

According to ISTAT, with regard to 2016, it is estimated that customers directly book around 76% of stays in Italian establishments offering hospitality, a sharp increase compared to 2015 (+33% for holiday travel and +12.8% for business travel) to the detriment of non-booked trips that fell by 26% compared to the previous year and represent about 15% of departures. Over half of the trips are booked via internet (54.5%), with a greater incidence in the case of holiday travel (57.0%) than business (35.0%) (ISTAT, 2016).

Travellers are increasingly able to organise themselves independently and avoid the intermediation of travel agencies and reservation operators, planning their trips and buying tickets on the internet. This disintermediation has had a significant impact on employment with the effects of job-substitution by digital technologies, so that the qualification of employees in these professions and their capacity to build a relationship of trust with clients as well as offering services becomes fundamental, as does offering more and more targeted advice to meet the specific needs of travellers. On the other hand, websites have been developed that offer online guides to local services and tourist activities. Among these, for example, is the site www.paesinonline.it (set up in 2001) which collects tourist information, guides and multimedia travel diaries, events and tips for travel (destinations, hotels, flights). The site receives about 2 million hits a month and is available in a variety of languages (Italian, English, French, Spanish and German).

If, on the one hand, information and booking sites have replaced the work of numerous travel agencies, particularly those aimed at a "low budget" demand that were unable to update themselves with a personalised proposal for the customer, on the other, they have generated new professionals

[30] http://www.filcams.cgil.it/newsletter-turismo-4-0/

who deal with the editing of information and operate in the online market by introducing a method of tourism management offers more directly related to demand, also analysed using algorithms and statistical models.

One factor associated with disintermediation is the development of IT systems for evaluating services and businesses by customers (such as TripAdvisor) that allow them to provide votes, opinions, photographs and information that come directly from consumers, also allowing suppliers to interact in a more direct way with their audience. In general, as reported by a unionist of:

> "*At the beginning, the processes introduced by the digitalization had an impact especially on the smaller companies (as the travel agencies) with an impact on the bargaining process at national level, with a difficulty for it renewal, even if recently there is an impact also on the big companies due to the us of app and IT technologies to reduce the workforce in the hotel*" (int. Nat. Off., Fisascat-Cisl).

> "*This can have a positive impact on working conditions when businesses have to pay more attention to the quality of the service and the conditions in which staff work, just as it can have negative consequences when an individual worker can be harmed by a negative judgment*", as underlined by a Filcams-Cgil unionist.

With regard to job replacement, these platforms favour independent customer planning by reducing the importance of consulting with travel agents. On the other hand, new professional skills have been created concerning the management of the reputations of businesses on the web.

Since the capacity for autonomous travel planning has increased and there is a disintermediation of the relationship between customer and supplier, companies in the tourism sector have focused heavily on developing a online presence, both as regards simple websites as well as more advanced systems of applications and online advertising. This has led to considerable development in communication and promotion services for tourist activities produced by specialist companies which also employ paid-for promotions using the social networks.

Furthermore, a change in the professionalism involved in the sector has been brought about by the diffusion of advice and online support through chatrooms, bots, applications and robots. Many companies are developing the potential of the web and IT applications to offer constant support to their customers regarding their needs related to accommodation as well as assistance and advice regarding wider issues related to stays. This is accompanied by the development of "bots" or computer programs that automatically respond to customer questions with a FAQ system. Through these IT applications, a client who has made a reservation can check in, request information on activities and events, receive automatic support from bots or contact staff for specific requests. For example, the Best Western chain of hotels has developed "Best Friend", a chatbot that was trialled in 2017 and rolled out during the year to all its 160 hotels in Italy. Another example is that of the MSC Cruises application which allows customers to directly book services, receive information and news about the excursions and activities on offer. Among the most advanced systems, which interact with robotics, in 2018, the Expo Riva Hotel in Riva del Garda presented "Pepper", the first concierge robot programmed with 36 languages and connected to the internet which offers information on current events, and updates customers on weather forecasts, places to visit and activities to take part in.

These systems obviously involve the substitution of some professions as well as, on the other hand, the development of new IT roles and services (such as information about available activities in the neighbourhood) developed to respond to the targeted needs of customers and their increasingly specialised and continuous requests.

> *"The process of disintermediation involves a reduction of intermediate professional figures, with a polarisation of the workforce between management figures, on the one hand, and front-line workers, on the other. The trend is towards a decrease in workers*

directly employed by the company, who were already not numerous in tourism, in favour of organisational models, in hotels, based above all on figures running the physical structure, building and customer flows, and manual tasks such as cleaning" (int. Filcams-Cgil).

A further technological change that could trigger many problems is determined by the extension of the platforms for personnel management in the tourism sector, through which the owners of hotel facilities organise themselves with cleaning companies to reduce costs. *"For example, there are websites and applications in the Romagna Riviera that allow the hiring of entire staffs for diversified tasks, effectively facilitating the intermediation of the workforce"*, as the same trade unionist put it.

Finally, it should be considered that a sector which has been revolutionised in a particular way by digital technologies is that of deliveries which affects all economic sectors and also, in a significant way, that of tourism. The management of deliveries through IT platforms that mostly use self-employed workers has led to a development of home catering but, on the other hand, a worsening of working conditions for those operating in logistics caused by strong competition in the sector and the need to keep prices down for the products ordered.

3.4.1 - Metal industry

A total of 1.6 million people work in the metal industry in Italy, one of the highest figures in Europe. Its added value in 2014 amounted to 113 million euros, corresponding to 55.3 per cent of the Italian manufacturing sector's gross value added (GVA). The bulk of this is concentrated in two sub-sectors: the manufacture of machinery and equipment (n.e.c.) and the manufacture of fabricated metal products, excluding machinery and equipment. The number of active enterprises registered in 2014 was 196,507, representing 5.2 per cent of the total economy (excluding finance and insurance). As in many other European countries, the manufacturing sector in Italy has witnessed a constant decline in recent decades, in terms of both companies and employment (see Figure 5). The economic crisis that started in 2008 aggravated this trend. Between 2008 and 2014 the workforce in the metal sector shrank by more than 324,000 (–12.5 per cent). Unlike the manufacturing sector, the metal industry is characterised by bigger than average enterprises. However, value added decreased steadily in the years of the crisis. This trend had serious repercussions for both employment levels and labour productivity, which fell steadily compared with the European average.

3.4.2 – The industrial relations

Union density in the Italian metal sector is 32.8, slightly higher than that of the manufacturing sector (31.4 per cent) and a bit below the – estimated – national average of 33.4 per cent (Carrieri and Feltrin 2016). The most representative sectoral unions are FIOM-CGIL, FIM-CISL and UILM-UIL. Employer density is estimated at around 50 per cent, with a number of employers' associations. The largest and most influential of the latter is Federmeccanica (affiliated to Confindustria), with more than 16,000 enterprises, employing 800,000 workers. The second is Unionmeccanica (affiliated to Confapi), representing 80,000 small and medium-sized enterprises, employing 800,000 workers, with 400,000 in the metal sector proper). Cooperatives and craft industry have their own confederations and sectoral federations, also in metalworking. In 2013, a new breakaway employers' confederation – Confimi Industria – was founded by local and sectoral employers' associations from Confapi and Confindustria.

The whole metal industry is covered by five main national collective agreements, all signed by the same unions with the various employers' associations, depending on firm size and economic subsector: large industry, small and medium, cooperatives, craft and goldsmiths' wares. To date, all the main national collective agreements have been renewed. Only the craft sector has not yet renewed its collective agreement.

Since 1993 collective bargaining has taken place at two levels in Italy. The two-tier bargaining system is based on industry-wide agreements. In recent years trade unions have reinforced the role of second-level bargaining with the aim of increasing flexibility and productivity. In general terms the Italian two-tier bargaining system is made up of high minimum wages negotiated in collective agreements and a relatively compressed wage scale (Garnero 2017). The estimated sectoral Kaitz index[31]in the metal industry (78.3 per cent) is slightly lower than in the manufacturing sector as a whole (79.88 per cent). A high sectoral Kaitz index corresponds to a substantial number of workers being paid at the minimum wage level, with a very narrow distribution. Alternatively, it may indicate a large number of low paid workers below the minimum wage.

As far as second-level bargaining is concerned, the metal sector shows similarities and differences to the national trend. As already noticed in previous sections there is a close relationship between firm size and decentralised agreements in Italy. Approximately 35 per cent of employees in the private sector are covered by a second level agreement represent, equivalent to 3.7 million workers (Fondazione Di Vittorio 2016). In smaller enterprises, most employees are not covered by any workplace representation with the consequence that company level bargaining is limited. Due to the higher number of companies in the metal sector with more than 250 employees, second-level bargaining has a higher incidence there than in the rest of the economy. In order to improve flexibility and productivity decentralised and territorial-level bargaining have been strengthened in the past two years, by focusing on company welfare agreements. The new national industry-wide agreement is fairly representative of this new trend.

Negotiations on the new national industry-wide agreement were difficult and protracted, taking more than one year. The last two renewals had been signed without FIOM-CGIL and there was a risk, at the beginning, of a similar outcome. *Confindustria* and its affiliate (Federmeccanica) demanded more collective bargaining decentralisation towards the firm level in wage setting. In the metal sector, the biggest company, FIAT, left Federmeccanica and Confindustria in 2009, so as to overcome what it regards as the 'rigidities' of the collective bargaining system and to implement its own establishment-level contract.

In 2015, metalworker federations presented two platforms to the employers' federation: one FIM-UILM and another FIOM. In the end, they were brought together. Federmeccanica presented its own platform, called the '*renovation of the metalworkers' national collective agreement'*, calling for just one level of negotiation and a national guaranteed wage only for those uncovered by any collective or individual enterprise CLA (covering just 5 per cent of metalworkers), its amount to be defined every year. Nothing happened in 2016 because wage rises already exceeded real expected inflation. In July 2017 wages are set to be increased based on the previous year's inflation; 260 euros per year as a production bonus or welfare vouchers; an increase in health coverage insurance; permanent training lasting 24 hours every three years; and an increase in supplementary pension.

At the end of difficult negotiations, an agreement was reached in November 2016 with all the most representative trade unions, and signed after the workers approved the draft in a ballot.

Compared with the past, the new agreement provides considerable novelty.

- *Duration*: unlike what had been foreseen in the collective bargaining reform of 2009, the parties agreed to extend the contract from three to four years.
- *Wages*: there was no planned wage increase for 2016, but there was a one-off sum of 80 euros (gross) in 2017 wages. As of 2017, a new inflation adjustment mechanism has been introduced, which is no longer based on expected inflation (on the basis of the foreseen or expected inflation rate) but defined every year ex post, and not ex ante, as in other sectoral agreements.
- *Occupational welfare*, both at sectoral and company level, plays a key role in the new collective agreement. It consists of health insurance, training (24 hours every three years), complementary pensions and a wide range of benefits provided at company level through vouchers. As a consequence of the robust fiscal incentives instituted by the government these changes are expected to introduce substantial innovations with regard to relations between the social partners.

[31] The level of the minimum wage compared with the median wage.

- *Training*: the contract focuses heavily on training and the individual right of all workers to choose training related to innovation (linguistic, technological and organisational, transversal or relational skills). This right is currently limited to 24 hours (or 16) over three years, after which there is a 150-hour reinforcement and university training (security training and RLS are also strengthened).
- *Participation*: support for the direct participation, in different ways, of workers (observers and committees in second-tier negotiations and security), the establishment of a new *participation advisory committee* in larger companies (1,500 employees or so) and a national committee on active labour policies.

Compared with the past, occupational welfare and benefits constitute a major novelty, seen as a way to stimulate labour productivity with no direct monetary increases. The flexible benefits included are additional, provided by second-tier negotiations, for all workers.

The national collective agreement works on the basis of a different logic; it is not based on the exchange of services and variable parts of remuneration within the company, but on the coexistence of a national level entrusted with maintaining purchasing power and a second tier that is required to add additional welfare benefits.

3.4.3 – Company-level bargaining and best practices

The unions face problems of innovation both at the level of national strategies and, in particular, at the level of company bargaining, which becomes a field of experimentation. There are numerous experiences of bargaining which, in the manufacturing sector, run up against issues related to digitalisation in a variety of contractual areas. In particular, bargaining focuses on working hours, training, supervision and control devices, health and safety, participation models and corporate democracy.

Working hours. With regard to working hours, there has been an increase in recent years of agreements on smart working and, in general, agreements to guarantee greater flexibility and participation in the management of shifts. These have led, in some cases, to a redistribution of productivity through the exchange between an increase in salary or a reduction in working hours (e.g. Marposs, Samp, Ducati, Lamborghini or Bonfiglioli, where agreements with the unions provide mechanisms to recover hours worked that give employees the possibility of choosing whether increase their salary or reduce their working hours).

Training. Digitisation and innovation lead to ever-more frequent changes in working methods, with an acceleration of turnover understood as a process of replacement that takes place on three levels: skills, tasks and even trades. As regards training issues, this is the subject of negotiation both in terms of the increase in training hours paid for by the company, and in terms of greater worker participation in the definition of training programmes, as analysed by Mancini (2017) in some companies agreements in Emilia Romagna. For example, in the supplementary contract of G.D. S.p.A. (a packaging company that is part of the Coesia Group), the STURs are involved in defining the contents and methodologies of the annual training plans, and can make proposals for modification and improvement based on needs expressed by the workers. For the technical professions in this company, training is characterised by a mix of specific training and courses related to issues such as security, languages, information technology and the internet: a tendency, this, of combining soft skills and specialised knowledge, which characterises the training courses of companies oriented towards fostering digital innovation. Furthermore, in the G.D. S.p.A. agreement, as in most of the agreements related to Industry 4.0, an attempt is made to regulate classroom-work alternation to encourage the involvement of the students. Instead, the challenge remains of negotiating training for more qualified professionals, whether management or technical staff, who often follow individual and highly specialised training courses. These themes are closely tied to the need to promote the right to ongoing education. For example, in the case of Bonfiglioli (a company designing and implementing solutions for the control and transmission of power in industry and self-propelled machinery and for renewable energy), an agreement was signed that provides for scholarships aimed at rewarding all those intending to invest in their training by obtaining a diploma, degree or research doctorate (this sum varies from a minimum amount of €600 to a maximum of €1,800 in relation to the qualification achieved and the field of study).

Supervision and control. Digital technologies employ mechanisms of measurement and supervision (monitoring, control and evaluation) of increasingly continuous and capillary performance, also through the massive acquisition of data to assess the performance of individuals, teams and companies. These issues are a difficult subject for negotiation and the tendency in bargaining is, on the one hand, to limit supervision mechanisms (for example, by regulating the use of cameras) and, on the other, to reinforce the "right to information", that is, sharing the information gathered by the company with workers and representatives.

Health and safety. The introduction of technologies and machinery can lead to risks related both to the new instruments and to changes in work organisation, with an increase in pace. Italian legislation on the subject is extensive (starting from Legislative Decree 81/08) and regulates the management and evaluation models of widespread risks which, in the agreements signed in the more innovative companies, foresee greater opportunities for the WSR (Workers' Safety Representatives) to access company information and meet with management and supervisors regularly.

Participation and democracy. Another important theme is that of democracy. According to the national head of the industry department of the CISL, as reported in the interview, "*The national plan lacks a participatory process which, instead, is better implemented in other European states, such as Germany, France and Austria*"; and, on the other hand, at company level, "*It is often not clear to management that the introduction of technological innovations also requires organisational innovations, to try to foster a more horizontal organisation of work [..] with an approach that, by its very nature, is experimental, in the same way that the gradual introduction of technologies is experimental*". In some rare cases, company bargaining to encourage worker participation has led to the establishment of working groups for "*preventive consultation*" on the impact on health and wellbeing (for example, in the Manfrotto company in Vicenza). At the same time, the trade union seeks a greater recognition for its role in the definition of company strategies, for example, with participation on company boards (as in the case again of Manfrotto, where the agreement envisaged the inclusion of a trade union representative on the board of directors). A further example comes with the supplementary contract of G.D. S.p.A. (a packaging company that is part of the Coesia Group) which allows for periodic trade union meetings, which will result in preventive discussions when there could be fallout from technological transformations on different aspects of working conditions (work organisation, timetables, professionalism, employment, training and privacy).

At company level, , in the workers' management is crucial to try to understand the relationship between technology and work organizations and, especially, between autonomy, knowledge and direct coordination with other roles and functions (Campagna, Pero, Ponzellini; 2017).

3.4.4 – The social partners' viewpoints

The trade unions try to operate at confederal level to cope with the issues of Industry 4.0 with a strong involvement of the metal industry federations. The most relevant agreements are signed at confederal level and the spaces for elaboration are characterized by an open and wide dialogue, among the unions as well as with experts with an inter-sectorial and inter-disciplinary approach. However, trade unions federations of the metal industry, as well as employers' associations, try to propose a specific point of view about these topics with several interventions.

As previously analysed, the 2016 national branch agreement between Federmeccanica, FIOM, FIM, UILM proposed a certain attention to some relevant topics of Industry 4.0, in particular to strengthen the opportunities for training and participation. In 2018, the same organizations, with Assistal (the federation of companies of production and maintenance of technological plants), signed an agreement to support the continuous training, within the national commission for training and apprenticeship, for the development of transversal, linguistic, digital, technical and management skills.

However, most part of the autonomous sectoral interventions are due to the needs for a deep analysis of the sector.

The employers' associations have implemented structured strategies on the themes of Industry 4.0. Federmeccanica set up a task force ("*Liberare l'ingegno*") with the aim of supporting Italian manufacturing companies on a path towards the full digitalisation of manufacturing, increasing awareness of the opportunities offered by Industry 4.0. The task force is composed of representatives of national and territorial, entrepreneurial, academic and research associations. The year 2016 saw the promotion of the "*Costruiamo insieme il futuro*" research, conducted among member companies and aimed at detecting the degree of knowledge about and adoption of enabling technologies, which shows a business world divided in two, with delays in the processes of innovation, where 50% of companies do not intend to make short-term technology investments during the next year (Beltrametti & Persico, 2016). The employers' associations (Federmeccanica and Federmanager) have also promoted an IT project ("*Ricomincio da...4*") aimed at conveying specific knowledge about Industry 4.0 to entrepreneurs and managers of the associated engineering companies, and an information campaign ("*Webcast Industria 4.0*") with short videos offering testimony from entrepreneurs, managers and teachers.

The emphasis on the need to introduce qualified forms of participation is highlighted across the board among Italian trade unions. "For us, the key word is the instrument of participation, sharing and objectives in the company, to counteract the social costs of globalization and the digital revolution" (int. Nat. Off. CISL).

An active role for the union therefore implies a new culture of industrial relations capable of encouraging processes of worker participation and co-determination between the social partners, with particular emphasis on the so-called "advance bargaining" which, having been developed in Italy in the context of the construction sector to deal with the risks inherent to complex building sites, should be renewed with a view to becoming a pillar of the contractual strategies aimed at the governance of the ongoing transformations in production processes.

The CISL metal industry federation (FIM-CISL) defines itself an organization used to going "with open arms" towards innovation. Otherwise the risk for the union is the immobility. But a stronger political direction is needed to make the necessary investments. And an enlightened political class. We need a shared design among all the major stakeholders. The idea is that if for once the union anticipates the changes, it will have the chance to say its own and to play its role better, not on the defensive, as we have done too often. FIM-CISL and ADAPT (a non-profit organisation founded with the aim of promoting studies and research in the field of labour law and industrial relations) cooperated since 2016, with the aim of launching a public and multi-stakeholder comparison on one of the most important nodes of the "National Industry 4.0 Plan": functions and organizational model of the competence centers that are research and training centre based on a public-private partnership (ADAPT-FIM, 2016). This first research has been followed by a document with concrete proposals starting from a rethinking of the Competence Centres as sectoral hubs, passing from the enhancement and simplification of the apprenticeship (above all the first and the third level), from the de-taxation of new models of work organization, up to intergenerational pacts for the management of the transition, focusing on authentic retraining programs (reskill) of workers. According to the general secretary of FIM-CISL:

> *"In the new system of Industry 4.0, it will be the worker to control the factory, and not the factory to control the worker. We are convinced that to make the new factories work well, more organizational participation of trade union representatives, in the workplace, is necessary. Participation is an irreplaceable ingredient of Industry 4.0 (..). For its part, the union of the future must be increasingly prepared and prepared for change ".*

FIOM-CGIL dedicated several moments of discussion and collective elaboration to the topics of Industria 4.0, in collaboration with the Fondazione Sabattini (in particular with the European project "Transform") and experts, focusing the attention on the role of the workers in the processes of innovation and especially on the role of "cyber-physical" systems that are conditioned by multiple factors that pertain to the political and social sphere and which determine the degree of development and the consequences of technological changes, with respect to which it is necessary to strengthen the trade union intervention (Garibaldo, 2016). According to the FIOM national secretary for the automotive sector,

> "*It is essential to negotiate the model of development because innovation is in the hands of companies and we have to better develop the relation between participation, responsibility and workers' recognition. Participation must be based on the autonomy of the social partners' voice with shared procedures, because participation without democracy means forms of participation oriented only to the achievement of objectives that are unilaterally defined by the company.*"

International collaborations are also very important, such as the one developed in 2013 by FIOM-CGIL in Emilia-Romagna with IG Metall in Wolfsburg which had as its aim the defence of the interests of workers in the companies that are part of cross-border value chains, and which in 2017 led to the elaboration of a "joint document" to strengthen international exchanges and the sharing of experiences.

All the sectoral federations give a great attention to the company agreements and especially to the issues of flexible time arrangements and smart working, with the collection, analysis and discussions of the several practices developed. The objective is to offer the opportunities of a time management also in the lean production context, in order to guarantee at one side the standardization and planning of the working processes and, on the other, some flexible control for the workers. What emerges is the importance of consultation and participation processes (individual and through representation) in the paths of innovation and change at company and territorial level, which seem to offer new possibilities for "*socio-technical planning*" which the union necessarily will have to deal with.

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