

CHILE AND INDUSTRY 4.0

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SUMMARY: I. *Current situation: our working premise.* II. *Industry 4.0 in the Chilean legislation.* III. *Closing remarks.* IV. *Research sources.*

I. CURRENT SITUATION: OUR WORKING PREMISE

A major factor for the creation of labor law and social security as branches of law was the Industrial Revolution. It generated a complete transformation of production and fundamentally changed the relationship between employers and workers, creating the need for its regulation.

An important feature of this first industrial revolution was the impact of technology on the whole labor market through the steam engine, standing for progress and change at the same time. In the early 1900s, new technological inventions and the appearance of new ways of communication and transportation gave rise to what could be called a second industrial revolution. The development of computers and the Internet at the end of the 20th Century and their impact on the way we work and produce, initiated what we can call the Third Industrial Revolution.

The Fourth Industrial Revolution, or Industry 4.0 as we call it in this project, consists of a period marked by the changes in the labor market due to digitalization and the cooperative coordination of the most diverse areas of the economy.

This new revolution, as all the preceding ones at their time, has fundamentally questioned the validity of the concepts of regulating the phe-

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nomenon of labor.¹ In this case, we have to ask ourselves if the traditional scheme of rendering services still makes sense. Here, we refer to the notion of the full-time working schedule and the fact of rendering services during this established working schedule in the workplace under the employer's supervision. Today, when the employee's presence at the place of work is no longer necessary and working hours do not seem to exist, these concepts appear outdated.²

When thinking about collective bargaining, the new technologies emerging in the wake of digitalization make the simple fact of meeting in a room for a trade union assembly look archaic. Hence, the question is, has the collective principle been overruled by individualism? It seems to be true that the new technologies give rise to the assumption that the Industry 4.0 worker is rather an individualist. This constitutes a challenge for the trade union movement, which sees its membership rate falling continuously.³ Certain voices have uttered doubts whether the unions will be able to survive in this digital platform economy.⁴ Thus, we can define the position of collective labor law, with the idea of getting together with co-workers in a union meeting, as directly opposed to the individualism of smartphone apps. Seeing things like this turns out to be extremely simplified when analysing the challenges and achievements that unions face in our present digital days. If you look properly, you may observe that union worker platforms have had the same effects as traditional unions, and there are plenty of examples of using different apps for union purposes.⁵ So, the good news is that not all is lost.

¹ For example, see: Todolí-signes, Adrián "The End of the subordinate Worker? The On-Demand Economy, the Gig Economy, and the Need for Protection for Crowdworkers" in *International Journal of Comparative Labor and Industrial Relations*, Vol. 33, Issue 2, 2017, pp. 241-268.

² An example of this is the zero-hour contract in the United Kingdom, to know more about see: Adams, Abi; Freedland, Mark R. y Prassl, Jeremias, "The 'Zero-Hours Contract': Regulating Casual Work, or Legitimizing Precarity?" 1 February 2015. *Oxford Legal Studies Research Paper No. 11/2015*. Disponible en SSRN: <https://ssrn.com/abstract=2507693>

³ Consult for example what is indicated in ILO & OECD, *Building Trust in a Changing World of Work, The Global Deal for Decent Work and Inclusive Growth Flagship Report 2018*, 2018; ILO, *Inception Report for the Global Commission on the Future of Work* Geneva: International Labour Office – Geneva: ILO, 2017.

⁴ Cfr. Vandaele, Kurt, "Will trade unions survive in the platform economy? Emerging pattern of platform workers' collective voice and representation in Europe" Working paper 2018.05, European trade union institute, etui, 2018.

⁵ Cfr. Jonhston, Hannah y Land-kazlauskas, Chris, "Organizing On-Demand: Representation, voice and collective bargaining in the gig economy", *Condition of Work and Employment Series No. 94*, Inclusive labor Market, labor Relations and Working Conditions Branch, Interna-

In Chile, the situation does not differ much from the reality elsewhere in the world. The diverse new ways of producing have arrived here too and have affected the local labor market. Atypical forms of employment or other non-standard ways of employment⁶ have a strong⁷ presence on the Chilean labor market, rendering it even more precarious. More so, as it has been pointed out, the Chilean model is one of flexi-precariousness.⁸ Facing a new transformation process of the market structure turns out to be highly complex. Especially when issues related to labor law and labor rights have recently been reformed yet still unsolved.⁹

In general, in the regional context, Chile is considered a relevant player. Its economy and political system are considered stable. Moreover, as OECD¹⁰ member, Chile forms part of the group of the richer countries in the world. This status implies that Chile has a high degree of connection to the Internet, social networks are widely used, and so are different applications for offering or making use of different services or trading different products. However, these indicators of wealth are in conflict with the reality of a highly precarious labor market, in which the protection of non-traditional employment is practically non-existent, neither when it comes to labor law's regulations nor in the case of social security.

The so-called Industrial Revolution 4.0 implies a modification of typical employment, where the traditional feature of subordination in the labor relation no longer prevails, and where the employee's physical presence in the employer's establishment for supervision purposes is no longer considered essential. Working over IT platforms or digital applications can be con-

tional Labour Office, Geneva, 2018; Vandaele, Kurt, "Will trade unions survive in the platform economy? Emerging pattern of platform workers' collective voice and representation in Europe" Working paper 2018.05, European trade union institute, etui, 2018.

⁶ Cfr. ILO, Non-standard employment around the world: Understanding challenges, shaping prospects, International Labour Office – Geneva: ILO. 2016.

⁷ Cfr. Dirección del Trabajo, *Encla 2014, Informe de Resultado Octava Encuesta Laboral*, Departamento de Estudios de la Dirección del Trabajo, Santiago, Chile, December 2015.

⁸ About this see: Arellano Ortiz, Pablo y Gamonal Contreras, Sergio, "Flexibilidad y desigualdad en Chile: el Derecho Social en un contexto neoliberal", *Boletín Mexicano de Derecho Comparado*, Mexico, nueva serie, año XLX, núm. 149, May–August 2017, pp. 555-579.

⁹ For an explanation of Law No. 20.940 see: Arellano Ortiz, Pablo; Liendo Roa, Ricardo, y Walker Errazuriz, Francisco, *Reforma Laboral Ley N°20.940, Moderniza las relaciones laborales*, Librotecnia, Santiago, September 2016; and also: Arellano ortiz, pablo; Feres Nazarala, Maria Ester y Severin Concha, Juan Pablo (eds), *Reforma al Derecho Colectivo del Trabajo. Examen crítico de la ley núm. 20.940*, Thomson Reuters, Santiago de Chile 2016.

¹⁰ See <http://www.oecd.org>

sidered a challenge for employees' protection in a fragmented labor market as is Chile's case. Hence, is there any effective legislation in place to protect workers in this new labor market?

There are different areas of the economy in Chile, where these new ways of working have appeared strongly. Without any doubt the most prominent example is passenger transport via smartphone apps, such as Uber and Cabify. These applications have created a major impact, as they have generated a considerable number of jobs. But also due to the regulatory voids of their use and their impact on the established passenger transport services, such as taxis, which are obliged to hire insurances for their clients. In contrast, neither Uber nor Cabify drivers have to hire these insurances, openly infringing the rules regulating this type of activities.

Under the recent government of President Bachelet, efforts were made to find a regulatory solution for this new category of drivers working in passenger transport. However, these efforts were not successful. On the other hand, the new government still has not clearly indicated its commitment to finding regulatory solutions for drivers or other categories of workers affected by this issue.

The present paper will study the current status of worker protection under the new 4.0 labor market in Chile. It will critically analyse some relevant aspects of the existing regulatory framework and have a look at the challenge of protecting the working population in view of social security as well as in labor aspects.

II. INDUSTRY 4.0 IN THE CHILEAN LEGISLATION

The first paragraph of this section explains the context of what we call Industry 4.0, providing some numbers to illustrate Chile's position. After that, some pre-existing difficulties related to the implementation of the digital industry will be presented, focusing mainly on the fragmentation of the labor market. In the following, certain regulations, which we consider relevant in the context of Industry 4.0 and workers' protection will be explained, starting with regulations defining the labor relation, followed by aspects of telecommuting, the right to union membership and some administrative aspects of social security access. The last section before the conclusions will describe the main reforms, which are currently being discussed in Chile.

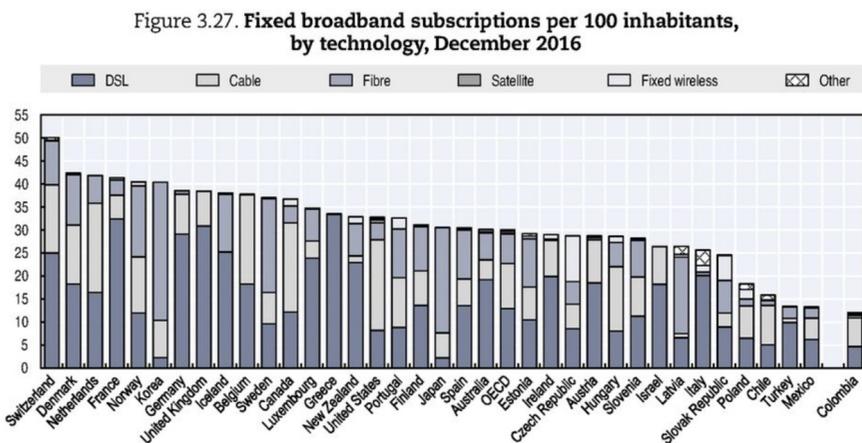
1. *Referential framework for the implementation of Industry 4.0 in the country*

According to OECD statistics, Chile’s IT and communications research and technology development expenses rank last.¹¹ This is an important indicator of the unbalanced development and political interest in this type of regulations.

The same OECD report shows that Chile’s position related to broadband Internet connectivity per 100 inhabitants, according to the speed of the connections, is rather poor compared to other OECD countries.

GRAPH 1.

FIXED BROADBAND SUBSCRIPTIONS PER 100 INHABITANTS, ACCORDING TO TECHNOLOGY, DECEMBER 2016

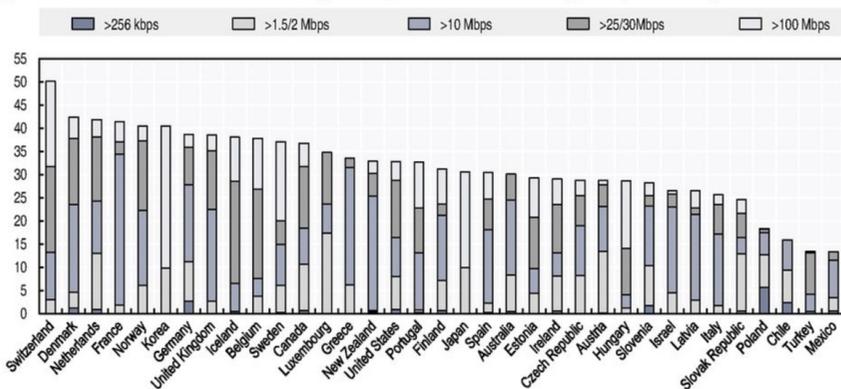


Source OECD 2017, p 134.

¹¹ OCDE, OECD Digital Economy Outlook 2017, OECD Publishing, 2017, Paris, France. p. 129.

GRAPH 2.
 FIXED BROADBAND SUBSCRIPTIONS PER 100 INHABITANTS, ACCORDING
 TO SPEED, DECEMBER 2016

Figure 3.30. Fixed broadband subscriptions per 100 inhabitants, per speed tiers, December 2016



Source OECD 2017, p 138

These numbers certainly have an impact on the implementation of Industry 4.0. Although the OECD report indicates that both connectivity and speed have generally increased within the group, Chile’s distance from the OECD average is considerable. This goes to show that the development of the digital economy in Chile is one step behind the major economic players.

2. National problems before the transition towards a 4.0 society

We have already stated in other occasions that one of the most characteristic features of the Chilean labor market is its fragmentation.¹² That makes it practically impossible for labor rights and social security to be effectively provided to the beneficiaries.

Hence, in our opinion the structure of the labor market is a factor of utmost importance in this transition towards a digital economy. Without a solid labor market, where workers are able to obtain a certain minimum lev-

¹² Cfr. Arellano Ortiz, Pablo, *Reto actual de las pensiones de vejez ¿Fin de las AFP? ¿Regreso a reparto?*, Librotecnia, Santiago, 2015.

el of protection, any change will produce negative effects. In this context it is important to remember that atypical employment forms have increased all over the world, affecting social rights everywhere.¹³ Also, when talking about this labor market fragmentation, it is important to not forget human rights aspects.¹⁴ Labor is always the same, no matter whether the person is employed full-time, works only part-time or forms part of the digital economy.

The fragile state of the Chilean labor market can be illustrated by having a look at the latest report of *Fundación Sol* upon labor quality. This report indicates that in the last 97 months, employment has increased, covering 1.456.787 persons, out of which 36 per cent are employed wage earners, 33 per cent to self-employed workers, and 27.5 per cent to external wage earners (subcontracted workers, temporary agency workers, and outsourced workers).¹⁵ This same study also shows that, between February and April 2019, 49.8 percent of the working population lacked solid employment, meaning a type of employment where one or more of the principles of the traditional labor relationship are becoming vulnerable. One of these cases would be the group of independent subordinate employees, whose labor contract condition is being violated by not recognizing their dependent state while maintaining subordination; 12.7 percent of the active population belongs to this category. Another relevant category is the group of independent non-professional workers, mainly subsistence jobs without any qualification, amounting to 14.3 percent of the working population.¹⁶

Periodically the Department of Studies of the Chilean Labor Office carries out a survey called *Encuesta Laboral* (ENCLA), where the Chilean labor market is analysed thoroughly, considering all different forms of labor contracts and working conditions, including statistics on union membership and collective bargaining. In the following we have selected some aspects

¹³ Cfr. ILO, *Non-standard employment around the world: Understanding challenges, shaping prospects*, International Labour Office – Geneva: ILO, 2016.

¹⁴ Cfr. De Stefano, Valerio, “Non-Standard Work and Limits on Freedom of Association: A Human Rights-Based Approach”, *Industrial Law Journal*, Vol. 46, No. 2, July 2017, pp. 185-207.

¹⁵ Fundación Sol, *Informe Mensual de Calidad del Empleo (IMCE) Análisis de los micro datos liberados el 31 de Mayo de 2018 correspondientes al trimestre móvil Febrero- Abril 2018 (FMA 2018)*, Unidad de Estadísticas del Trabajo (UET), Fundación Sol, Santiago, May 2018, p. 6.

¹⁶ Fundación Sol, *Informe Mensual de Calidad del Empleo (IMCE) Análisis de los micro datos liberados el 31 de Mayo de 2018 correspondientes al trimestre móvil Febrero-Abril 2018 (FMA 2018)*, Unidad de Estadísticas del Trabajo (UET), Fundación Sol, Santiago, May 2018, p. 7.

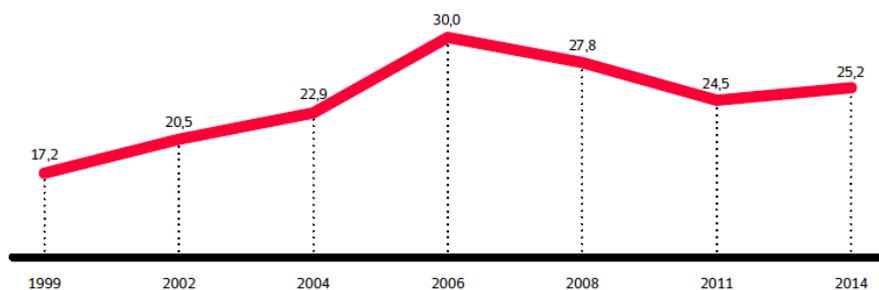
confirming this fragmentation from the ENCLA survey 2014,¹⁷ published in 2015, which is the most recent one.

GRAPH 3.
DISTRIBUTION OF WORKERS ACCORDING TO CONTRACT TYPE



Source ENCLA 2014, p. 50.

GRAPH 4.
EVOLUTION PERCENTAGE OF NOT INDEFINITE CONTRACTS. 1999, 2002, 2004, 2006, 2008, 2011 & 2014



Source ENCLA 2014, p. 51

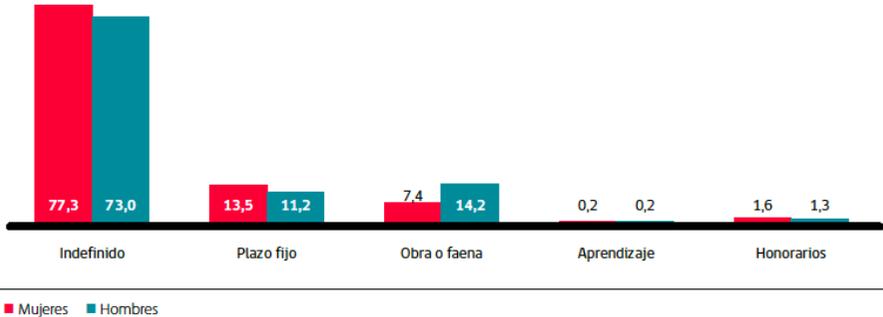
¹⁷ Dirección del Trabajo, Encla 2014, Informe de Resultado Octava Encuesta Laboral, Departamento de Estudios de la Dirección del Trabajo, Santiago, Chile, December 2015.

TABLE 1.
ABSOLUTE AND RELATIVE DISTRIBUTION OF WORKERS ACCORDING TO CONTRACT AND GENDER

Tipo de contrato	Hombres	Porcentaje	Mujeres	Porcentaje	Total	Porcentaje
Indefinido	1.861.783	73,0%	1.224.167	77,3%	3.085.950	74,7%
Plazo fijo	284.961	11,2%	213.092	13,5%	498.053	12,1%
Obra o faena	362.685	14,2%	116.369	7,4%	479.055	11,6%
Aprendizaje	3.895	0,2%	2.524	0,2%	6.419	0,2%
Honorarios	32.279	1,3%	25.242	1,6%	57.520	1,4%
Otros	1.236	0,0%	538	0,0%	1.775	0,0%
Total	2.549.372	100%	1.582.688	100%	4.132.060	100%

Source ENCLA 2014, p. 51.

GRAPH 5.
RELATIVE DISTRIBUTION OF WORKERS ACCORDING TO CONTRACT AND GENDER



Source ENCLA 2014, p. 52.

TABLE 2.
RELATIVE DISTRIBUTION OF WORKERS ACCORDING TO CONTRACT AND COMPANY SIZE

Tamaño de empresa	Indefinido	Plazo fijo	Obra o faena	Aprend.	Honorarios	Otros	Total
Microempresa	89,7%	6,1%	2,0%	0,0%	2,2%	0,0%	100%
Pequeña empresa	81,0%	11,0%	6,8%	0,0%	1,1%	0,1%	100%
Mediana empresa	73,2%	14,7%	11,3%	0,0%	0,7%	0,1%	100%
Gran empresa	71,4%	12,0%	14,4%	0,3%	1,7%	0,0%	100%
Total	74,7%	12,1%	11,6%	0,2%	1,4%	0,0%	100%

Source ENCLA 2014, p. 53.

TABLE 3.
 RELATIVE DISTRIBUTION OF WORKERS ACCORDING
 TO CONTRACT AND ECONOMIC ACTIVITY

Rama de actividad económica	Indefinido	Plazo fijo	Obra o faena	Aprendizaje	Honorarios	Otros	Total
Agricultura, ganadería, caza y silvicultura	56,3%	3,4%	40,0%	0,0%	0,2%	0,0%	100%
Pesca	75,1%	15,4%	9,4%	0,0%	0,2%	0,0%	100%
Explotación de minas y canteras	93,1%	4,4%	0,3%	2,0%	0,2%	0,0%	100%
Industria manufacturera	84,4%	10,3%	4,7%	0,0%	0,5%	0,0%	100%
Suministro de electricidad, gas y agua	93,2%	4,1%	2,0%	0,4%	0,2%	0,1%	100%
Construcción	39,7%	10,6%	49,5%	0,0%	0,2%	0,0%	100%
Comercio al por mayor y al por menor; Reparación de vehículos automotores, motocicletas, efectos personales y enseres domésticos	83,9%	10,5%	5,2%	0,0%	0,3%	0,0%	100%
Hoteles y restaurantes	83,3%	14,4%	1,1%	0,3%	0,8%	0,1%	100%
Transporte, almacenamiento y comunicaciones	88,3%	9,4%	1,7%	0,0%	0,4%	0,1%	100%
Intermediación financiera	93,8%	5,4%	0,1%	0,0%	0,8%	0,0%	100%
Actividades inmobiliarias, empresariales y de alquiler	75,2%	15,4%	7,3%	0,5%	1,2%	0,0%	100%
Enseñanza	70,2%	22,5%	0,0%	0,0%	7,2%	0,1%	100%
Servicios sociales y de salud	86,3%	10,6%	0,0%	0,0%	3,0%	0,0%	100%
Otras actividades de servicios comunitarios, sociales y personales	73,5%	15,2%	6,8%	0,0%	4,4%	0,0%	100%
Total	74,7%	12,1%	11,6%	0,2%	1,4%	0,0%	100%

Source ENCLA 2014, p. 54.

As already mentioned, the ENCLA 2014 survey, as well as preceding versions, shows the prevalence of indefinite contracts, although, at the same time, a certain shift towards limited-duration contracts can be observed. Even though this tendency seems to be slowing down, a considerable number of workers are subject to employment contracts of maximum 3 years. On the other hand, it becomes clear that indefinite contracts are being used more frequently by smaller companies.¹⁸

¹⁸ Walker Errazuriz, Francisco y Arellano Ortiz, Pablo, Derecho de las relaciones laborales, Tomo 1 Derecho Individual del Trabajo, Librotecnia, Santiago, 2014, p. 212.

In our understanding, the great challenge presented by the digital economy of Industry 4.0 in Chile, is being able to offer an alternative which provides better benefits and greater job stability in an excessively precarious and fragmented labor market. This is not an easy task, as Industry 4.0 is partly sustained by the current context of labor markets, adapting atypical employment situations to digitalization.

3. Existing legal regulations of labor legislation and social security for the protection of employees in view of Industry 4.0

The basic protective rule for workers in Industry 4.0, and in general, for all employees in Chile, are the rules and regulations related to the determination of the existence of a labor relationship. The first rule to be mentioned in this context is contained in Article 7 of the Labor Code and defines the employment contract. It says:

The individual employment contract is an agreement by which the employer and employee are mutually obliged, the latter to render personal services as a dependent and subordinate, and the former to pay a salary for such services.

A second regulation can be found in Article 8, stipulating that the rendering of services under subordination and dependency creates an employment contract, beyond the presence of a written agreement. Services provided by people performing professions or executing works directly to the public, or sporadically and discontinuously at home, do not originate an employment contract, neither do services provided by a student or graduate of an institution of higher education or technical-professional secondary education during a determined time in order to comply with the requirement of professional internship. Nevertheless, the company where such internship is performed shall provide transportation and meals or a previously and expressly convened compensation assignment of such benefits, which does not constitute the payment of a salary for any legal purpose. These standards of the Labor Code only apply to self-employed workers when expressly referred to as such.

A third regulation on this point is contained in Article 9 of the Labor Code, relating to the existence of an employment contract. For the Chilean legislation, the employment contract is a consensual agreement, which has

to exist in written form. In case there is no written contract, the assumption of its content is what the worker indicates.

The provisions contained in Article 9 indicate that the contract is consensual and must be laid down in written form within the indicated period in two copies, each signed by both parties of the contract. The employer must produce the written contract within a period of fifteen days after recruiting the employee, or within five days in the case of contracts regulating determined services for less than thirty days. Non-compliance on behalf of the employer will make him/her subject to a fine from the Labor Inspection Office.

In case the employee is unwilling to sign the written contract, the employer must send the contract to the pertinent Labor Inspection Office in order to request the employee's signature. If the employee insists on his/her unwillingness, he/she can be dismissed without any right to compensation, unless he/she can prove that he/she had been recruited under circumstances which differ from the ones established by the written document.

In case the employer does not make use of the rights inferred to him/her in the above paragraph, within the period of time indicated in the second paragraph, the absence of a written contract leads to the legal presumption of the provisions contained in the contract as declared by the employee.

These rules are of utmost importance as atypical employment situations are very common in Industry 4.0, and in the first place it would be important to determine if protection under the Labor Code applies. This protection system includes rules of individual rights, collective rights and social security obligations. So, basically there is not one single specific regulation for people working in Industry 4.0.

The possibility to apply the regulations related to the determination of a labor relationship to atypical contracts will depend on legal action before a Labor Court. For example, a person working with the Uber application will have to issue a declaratory action pressing for the recognition of the employment relationship between the person and the application. This court procedure thus will aim at proving the existence of the principle of subordination and dependence and the resulting labor contract obligations, such as complying with a work schedule and the periodical payment of a salary, but also the fulfilment of other obligations, such as those forming part of the disciplinary authority of the employer.

In the following we have selected three topics which are related to the implementation of regulations in connection with the digitalization of the

economy. Firstly, we will have a look at telecommuting, then at the challenges the unions are facing in this new setting, and thirdly, some aspects related to the access to social security.

A. Protection of Teleworking

Law N° 19.759 from 2001 adds a paragraph to Article 22 of the Labor Code, indirectly incorporating the concept of telecommuting by excluding the limitation of working hours to a certain type of employees. The current regulation on working hours is the following:

Article 22 defines that the duration of the ordinary work day must not exceed 45 hours per week. Excluded from this limitation of working hours are employees rendering services to different employers; the leading management, administrators, attorneys with administrative faculties and all those working without direct supervision; professionals hired under the present Code rendering services in their home or in a place freely chosen by them; commission and insurance agents, travelling salespeople, debt collectors and similar activities which do not take place in the establishment of the company.

Also excluded from the limitation of working hours are workers on board of fishing vessels. Likewise excluded are employees hired to render their services preferably outside the company establishments by using information technology or telecommunications.¹⁹

Sports professionals and workers' working hours, performing related activities are to be organized by the coaching staff and the corresponding professional sports entity, according to the nature of the sport and within the limits which are compatible with the athletes' health; paragraph 1 of this article is not applicable to these employees.

This is to say that, according to the incorporated text, with the existence of the relationship of subordination and dependence, all activities carried out beyond the physical site of the company using information technology or telecommunications media are considered individual employment contracts.

We have pointed out that,²⁰ as in the case of working at home, the administrative and judicial jurisprudence on this topic will have to define when

¹⁹ The underlining is ours.

²⁰ Walker Errazuriz, Francisco y Arellano Ortiz, Pablo, *Derecho de las relaciones laborales*, Tomo 1 *Derecho Individual del Trabajo*, Librotecnia, Santiago, 2014, p. 202.

these cases present the principle of subordination and dependence. Unfortunately, this type of situation has not been brought to court yet, so we were not able to find any jurisprudence thereon. This may be because the kind of workers we are talking about will consider going to court as lowly effective due to the precarious state of their employment, and it will appear easier to look for a new project to work on.

When trying to define the concept of telecommuting, the following elements should be present:²¹

- Work is conducted outside the company establishments;
- The use of new technologies, such as information technology in general, Internet or Intranet in particular, and all possible audio-visual media;

The actual impact of telecommuting on the Chilean market, however, has been rather limited. We have not been able to find recent studies on the topic. One document published²² by the Chilean Labor Office indicates that teleworking “is only slowly emerging as an employment option, and although its legislation and implementation as a work strategy have been discussed, its definition, limits and ways of putting it into practice are still unclear”.²³ It has also been concluded that, although it may have several favourable aspects, it also may be difficult to apply.²⁴ We agree to the statement that

in the case of teleworking, the faint borderline between considering it dependent employment for some cases and independent for other, easily relativizes the element which protect fundamental rights; such as health and safety at work, the differentiation between productive time and private time, and may turn it into another precarious form of employment rather than a real job opportunity.²⁵

²¹ *Idem.*

²² *Cfr.* Morales Varas, Gabriela y Romanik Foncea, Katy, Una mirada a la figura del teletrabajo, Informe de Actualidad Laboral N° 1, Dirección del Trabajo, Santiago, Chile, November 2011.

²³ *Ibidem*, p. 57.

²⁴ *Idem.*

²⁵ *Ibidem*, p. 58.

Teleworking as an employment option also “requires the socio-cultural adaptation within the collective conscience of our countries’ working population on what remote working actually means and which practical and legal implications it has”. This again requires time and an adequate legal framework regulating it”.²⁶ The development of Industry 4.0 holds this cultural challenge, on the part of the users of the platforms as well as on the part of the owners of these platforms, who at the same time are the employers in this new configuration of labor market.

As we have stated, Chile’s labor market is extremely precarious, and telecommuting has been slow to emerge due to the need of employers to be able to supervise the work carried out. Hence, just as in the case of telecommuting, a better development of Industry 4.0 will depend on cultural factors, allowing for its better implementation.

B. *Independent workers’ unions*

One question which has had a major impact elsewhere is the emerging union movement in the gig economy. Employees under this new market configuration can collectively stand for their needs. This turns out to be a priority for the survival of the global union movement.

So, one may ask whether the labor legislation includes some regulation which allows the workers to form a union. In this context Article 216 of the Chilean Labor Code gives an answer by listing the types of unions which can be formed:

Trade unions shall be constituted and named in consideration of the workers who are its members, as for example:

- a) Company union: members are employees of one company
- b) Inter-company union: members are employees of two or more different employers
- c) Union of independent workers: members do not depend on any employer
- d) Union of occasional or transitory workers: members carry out work under dependence and subordination periodically or intermittently.

Specific collective rights of workers under Industry 4.0 do not seem to exist. The different forms of unions contained in the Chilean frame-

²⁶ *Idem.*

work do not beforehand include the possibility that these workers form a union. This is due to the basic principle that in order to form a union it is necessary to be a dependent employee.

However, the regulation contained in Article 216 authorizes the creation of unions of independent workers or freelancers, which is the only channel for them to collectively claim their rights. Nevertheless, this solution is tricky in various aspects. For example, the fact of making use of this union format implies that all the employees recognize themselves as freelancers or independent workers, thus waiving the possibility to apply the Labor Code.

Also, the fact that independent workers may negotiate their remuneration might lead to an involvement of the authorities on free competition. This has occurred elsewhere; the cases of Ireland and Holland are known in this context. In these cases, the juridical argumentation of the authorities considered that negotiating remunerations in a group of independent workers is violating free competition by setting prices and distorting the market by forming a cartel.²⁷

In Chile, drivers working under the Uber application have had to face this dilemma. On one hand they want to be considered employees and eventually form a union of self-employed workers, on the other hand they want to be considered individual contractors. Until now, they have acted through a spokesperson which shows that for them also, the matter is delicate.

In other cases, digital workers have formed unions and succeeded in improving their working conditions. The best example, which is also comparable to the Uber case in Chile, would be the case of the New York Taxi Workers Alliance (NYTWA).²⁸ This association is registered as a non-profit organization, but at the same time it works on the principle of membership, and it is the first organization established to represent non-conventional

²⁷ Cfr. Jonhston, Hannah y Land-kazlauskas, Chris, “*Organizing On-Demand: Representation, voice and collective bargaining in the gig economy*”, Condition of Work and Employment Series No. 94, Inclusive Labor Market, Labor Relations and Working Conditions Branch, International Labour Office, Geneva, 2018; RUBIANO, CAMILO, “Los trabajadores precarios y el acceso a la negociación colectiva: ¿Existen obstáculos legales?”, en Boletín Internacional de Investigación Sindical, 2013, vol. 5, issue 1, pp. 151-170.

²⁸ About this case see: Jonhston, Hannah y Land-kazlauskas, Chris, “*Organizing On-Demand: Representation, voice and collective bargaining in the gig economy*”, Condition of Work and Employment Series No. 94, Inclusive labor Market, labor Relations and Working Conditions Branch, International Labour Office, Geneva, 2018; Vandaele, Kurt, “*Will trade unions survive in the platform economy? Emerging pattern of platform workers’ collective voice and representation in Europe*” Working paper 2018.05, European trade union institute, etui, 2018.

workers which is a member of AFL-CIO,²⁹ identifying strongly with the idea of being a union. Through lobbying with public authorities such as the New York Taxi and Limousine Commission TLC, they have obtained higher salaries, reduced rents and regulations which allow the drivers who rent their cars to press charges against the vehicles' owners in the case of abusive charges. Furthermore, they proposed other regulatory reforms reducing the risk associated with driving a taxi.

So, it becomes clear that the union movement may be very relevant when trying to improve working conditions, also in the Industry 4.0 reality. Until now, the union movement is still present and its survival into the future will depend on its adaptation to the new market.

C. Administrative facilities related to social security

One of the areas of social law where Industry 4.0 may sooner produce an impact is social security. This is due to the fact that reforms resulting from the incorporation of new technologies could have a short-term impact in the coverage of unprotected groups within the working population.

An example of this would be the implementation of a platform several years ago, where social security contributions can be paid. This is an integrated system where large, medium-size and individual employers can pay their employees' social security contributions. It also allows for the contribution payment of self-employed workers. Upon registering as a user, you can manage your payroll and receive a certificate of paid contributions. This platform is called PreviRed.³⁰

²⁹ See: <https://aflcio.org>

³⁰ See: <https://www.previred.com/web/previred/>

GRAPH 6. PREVIRED PLATFORM



PreviRed is used by practically all social security institutions in Chile, including the pension funds AFP, IPS (ex INP), health insurance schemes Fonasa and Isapres, mutualities, occupational safety insurance companies, unemployment funds (AFC) and the main companies operating the voluntary pension savings scheme (APV).

Still, this online payment platform constitutes only a very low level of progress in a time where technology offers significant advances. The first aspect which opens up for criticism is that this platform is private. It is owned and administered by a private institution. Even so, the payments made and the certificates issued are recognized as officially valid. In fact, these documents are regularly used before the Labor Court in order to prove that social security contributions have been duly paid. Despite all that, the Chilean State as such has not yet developed a similar mechanism.

Even though this kind of mechanism increases social security coverage due to the increase of payments, there are no mechanisms in place which make it possible to make use of modern technology to determine the bases of contributions of payments. Here we are referring to the possibility to use the platforms to calculate the payment basis for categories of workers who

are *de facto* excluded from the system, or to facilitate the payment by using the smartphone. One example for the use of technology would be to determine a calculation basis for taxi drivers, with which they would be able to pay social security contributions based on the kilometres they use their car for. This information is available in the vehicle they work with, so it would be enough to adapt a calculation scheme in order to obtain the contributions to be paid. Currently, taxi drivers either work on a dependent basis, with a labor contract with the owner of the car who pays the social security contributions, or—more commonly—they work free-lance and are themselves responsible for the payment of their social security contributions. Quite logically, the drivers often will choose to not pay contributions in order to increase their income. The use of technology for determining the use of the vehicle could improve this situation and will thus protect free-lance taxi drivers.

Using the smartphone also opens a wide variety of possible situations. The simplest example is paying social security contributions via the smartphone. For example, a text message (SMS) could simply discount the contribution payment from the existing credit (in the case of a prepaid phone) or add it to the monthly bill (in the case of a contract mobile phone). This mechanism would allow extending social security coverage onto *de facto* excluded groups of the working population.

Generally speaking, when it comes to the public sector, progress in terms of social security within Industry 4.0 has been pretty slow. If there are—timid—developments, they can be found in the private sector, primarily in the shape of the PREVIRED platform.

4. Proposals for legal reforms and current projects as measures to solve national problems

Different initiatives have tried to regulate the activities of certain areas within the digital economy. These initiatives started with the invasion of the Uber application into the Chilean labor market. But there also are other applications, such as AirBnB, which are difficult to supervise and are eventually methods of tax evasion. It has also been aspired to reform the regulation on remote work in order to better adapt to the current labor market.

Uber's regulation is rather complex. Originally, the idea of the application was to connect the service providers, the drivers, with their clients. But eventually the Uber requirements, the working hours and payment schemes make this agreement look very much like a labor relation.

Moreover, in Chile, public passenger transport needs specific insurance in the case of an accident. Uber drivers/independent businesses do not comply with this regulation, as the application defines itself as an agreement between individuals. In view of this fact, associations of shared taxis, which do comply with the transport regulation, have repeatedly and vehemently protested and demanded that Uber drivers also be subject to this regulation. In October 2016, during the government of President Bachelet, a draft act was issued with the aim of modernizing legislation on paid passenger transport. This draft bill considers the payment of an operations permit, demanding a professional driver's license, and vehicle quality control. Until the present day, no progress has been made in this context, so Uber in Chile still is an activity on the verge of legality. Uber drivers have even shown a tendency to try and avoid police controls, which has led to situations where police officers were forced to use their gun.³¹ Until this service is not properly regulated, complex incidents will continue to happen.

An interesting approach is the initiative to have certain platforms pay taxes for the services they offer. The principle of platforms is that all they do is establish contact between individuals. However, their activities are regulated and subject to tax payment due to the service they provide. An example of this situation is the accommodation service provided by the application AirBnB. Clearly, the individual renting the room does not declare this activity and hence does neither pay VAT nor income tax. This initiative has been discussed during the early stage of President Piñera's government, and operators have been open to the idea of paying taxes.³² It still remains to be seen, if they are willing to consider their operators as employees, protected by labor legislation.

Another reform repeatedly announced by President Piñera during his campaign and the first months of his government, and even explicitly mentioned in his first state-of-the-nation account, has been the reform on teleworking.³³ However, it is still unknown what this reform will look like. Apparently, the idea is to better reconcile work and family life, which seems perfectly important to us, but is in no way the only aspect to be considered when talking about remote working. Another reform project seems to be

³¹ See: <http://www.elmostrador.cl/noticias/multimedia/2018/06/13/carabino-le-dispara-a-conductor-de-uber-en-el-aeropuerto-tras-confuso-procedimiento/>

³² See: <http://www.emol.com/noticias/Economia/2018/06/21/910703/Uber-y-anuncios-de-Hacienda-sobre-impuestos-Estamos-abiertos-a-contribuir.html>

³³ See: <https://prensa.presidencia.cl/discurso.aspx?id=75941>

the digitalization of the government platform *Chile Atiende*, in order to reduce the need for paperwork and bureaucracy. This measure will have a significant impact when providing social security benefits. For the time being, though, it is only an initiative in progress and it remains to be seen how it will be implemented.

Finally, we must highlight, however, that among all the different proposals which are currently being discussed, there is no initiative which helps workers in Industry 4.0 have access to better benefits through collective bargaining. In this context the currently active regulation is the 2016 reform of Law 20.940.³⁴

III. CLOSING REMARKS

First and foremost, it should be concluded that the actual impact on jobs under what is generally understood as Industry 4.0 is relatively low in Chile. The development of Industry 4.0 is only very hesitantly taking place, compared to the countries of the Northern hemisphere, where Internet connection is better and faster and culturally, teleworking is much more part of the reality.

To tell the truth, although this type of work does dogmatically constitute a challenge for social rights, its practical impact remains minor. This is even more so in a fragmented labor market, or fissured as some like to say,³⁵ as is the case in Chile, where the majority of jobs are generated in atypical categories of employment.

Interesting initiatives are currently being discussed, both in parliament and in public, but none of these has been able to really deal with the challenges presented by Industry 4.0. In this context we want to insist again that, if these measures do not take the characteristic features of the Chilean labor market into account, they might eventually rather increase the precariousness of the legal situation. In our opinion, one way to progress in the protection of these workers' social rights would be to develop new forms of unions, for which the promotion of union freedom seems essential.

³⁴ On this reform and its effects see: Arellano Ortiz, Pablo; Feres Nazarala, María Ester y Severin Concha, Juan Pablo (eds), *Reforma al Derecho Colectivo del Trabajo. Examen crítico de la ley núm. 20.940*, Thomson Reuters, Santiago de Chile 2016; Arellano Ortiz, Pablo; Liendo Roa, Ricardo, y Walker Errazuriz, Francisco, *Reforma Laboral Ley N°20.940, Moderniza las relaciones laborales*, Librotecnia, Santiago, September, 2016.

³⁵ *Cfr.* Veil, David, *The Fissured Workplace: Why Work Became So Bad for So Many and What Can Be Done to Improve It*, Harvard University Press, 2014.

Let us face it, economic activity based on platforms is a reality which is sure to become more and more important in the years to come. For the time being, what is interesting is the way how social law pretends to protect this new category of workers. Hence, social rights continue to apply, and they are facing a major protective challenge.

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