LABOUR RELATIONS IN THE PLATFORM ECONOMY[1]

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Summary

The advance of online platforms as work marketplaces is starting to have considerable effects on work relations. The link between consumption and work is becoming stronger, so that the consumption model adopted will ultimately shape the labour market model. The traditional boundaries between worker and business are also becoming fuzzy, with the creation of new figures and names in an attempt to achieve exclusion from labour law. The labour market is becoming polarised, as is society itself, which is becoming divided between "soft" engineers and "hard" labourers. The boundaries between personal life and working life are also becoming blurred, and algorithms are used as new control mechanisms by businesses. Because of this, training and minimum income are required to face the transition towards a digital economy, and the naive approach by which none of the traditional Labour Law concepts and instruments is useful any more should be rejected.

Keywords

Platform economy, Digitalisation, Virtual Work, Crowdworking, Work training, Minimum income

We are all Uber

The advance of digitalisation has brought digital platforms as the providers of services and jobs, what some call the "platform economy" and others "platform capitalism". The

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[1] In the *European Agenda for collaborative economy*, approved by the European Commission on 2 June 2016, available at http://europa.eu/rapid/press-release_IP-16-2001_en.htm (accessed 13 November 2017), the EU insists on using the term "collaborative economy" to refer to online platforms for the provision of services and jobs. I believe that the use of this term is misleading, as most platforms to not facilitate any collaboration between potential users, but the provision of services or jobs, which generates significant economic profits for the platform. For this reason, I prefer the term *platform economy* to designate this phenomenon.

already abundant literature describes the many advantages of these business forms, which Degryse (2016: 13) calls "21ˢᵗ-century factories", as well as the list of their endless drawbacks. After reviewing both, I have reached the conclusion – and I take the license of stating this colloquially – that we are all Uber (obviously I am using the name of this platform to represent all of them). We are all Uber because, firstly, the vast majority of the population have already used these platforms to consume some service. Who hasn't booked a car on Uber (or Cabify) because it's cheaper, more comfortable or safer? Who hasn't heard of or used Airbnb to find accommodation or BlaBlaCar to share a car or Deliveroo to be sent food from a restaurant? But we are all Uber also because the employment model that can be generated by the boom of these online factories may ultimately affect the shape of the labour market in such an intense way that we will all be also affected as employees, business owners, and a society.

These two sides, consumption and work, have always gone together. Some time ago, in the midst of the economic crisis, when I was examining a collective dismissal process or mass layoff in the agri-food industry, a good friend told me that we were all in a way responsible for those layoffs. To the extent that we as consumers demand or prefer low-cost or own brand products, we are in a way imposing a cost reduction policy that can force companies to restructure. It is true that this is only part of the truth, as the pressure derived from the consumption of low-price products can also be reduced by cutting back on profits (not necessarily salaries and jobs); but ever since that conversation, every time I see a particularly low-priced product or service, I wonder how little workers will have been paid for that product or service to cost so little.

I mean that the development of these online work platforms and their effects on the work market will ultimately depend also on our behaviour as consumers. For this reason, every time we examine how these platforms behave in the field of work relations, we must think that, as users, we may partly be responsible. All the more so when we take into account that we are also producers in these platforms, as the data which we provide – which are many – are analysed and sold, in turn, as valuable goods to many other companies. Hence the accurate term "prosumers", which is starting to be used to designate us all as data producers and service consumers through these platforms (Robertshaws et al., 2016).

It is true that the platform economy is not very developed yet, although I read with surprise in the Eurofound Report on New Forms of Employment (2015: 111) that Spain is a haven for online work platforms, with 28 active platforms. Even though they warn about the lack of official data regarding the number of people working on platforms, Huws et al. (2017: 23) point out that crowd work "had generated an income for 9% of the UK and Dutch [workers], 10% in Sweden, 12% in Germany and 19% in Austria", so it can still be understood as a mere marginal or minority way to make an income. But the signs are that it may increase, as its appearance, albeit recent, was not linked to the economic crisis, but to technological advance and what could be called business creativity or imagination, so that we must be ready for it to continue to grow.

Workers, customers, or partners? Against technological determinism

I say creativity or imagination because, to begin with, these companies rarely appear as such. Sometimes they hide under pious sharing economy formulas when they are companies that generate large profits which they only "share" with their shareholders; and sometimes they appear as technological companies, thus concealing the service which they provide as much as possible. Irani (2013: 9), a (critical) expert on the *Amazon Mechanical Turk* platform, explains that these companies are somehow obligated to have this behaviour and conceal the fact that they are traditional companies with employees, as otherwise they are unable to find venture capital investors. This kind of companies do not like investing in jobs but in technology, as they seek - sometimes it all seems like pure snobbery - to have a disruptive effect on the business model. The obvious question is what the value of work is for these investors and these "modern" companies. Also, what the value of more traditional, more standard, less disruptive companies is for them. The answer – I believe – is no or very little value.

Of course they are sometimes reminded that even if everything appears to be extremely modern, a company is still a company and a worker a worker, even if he or she is called a partner, a customer, or a provider. The imagination and creativity of these platforms, which wish or are obligated to break the established moulds, changes the names of things and agents. This technique is not as innocent as it seems, as these flashes of modernity seek to create a narrative and convey disruption of the establishment. Let us think: if everything is so new, so disruptive, so innovative, how can it be subject to

existing rules, which were designed for past scenarios? The final message is "no, traditional rules do not apply any more". How can the link between the platform and a partner be examined using the traditional models for work relations if we are in a completely new scenario? Those models (for labour lawyers, subordination and the employment relationship) no longer apply. Now partners are freelancing, free contractors (which forebodes a strong growth in freelance work, as is already the case in countries like the United Kingdom[2]).

But, as I said, these platforms are sometimes reminded that, however much they change their names, things are what they are. The English ruling that settled the conflict between Uber and some of its drivers[3] states that, even though it presents itself as a mere technology provider, "this organisation runs a transport business and employs the drivers to that end"; that "the notion that Uber in London is a mosaic of 30,000 small businesses linked by a common 'platform' is to our minds faintly ridiculous" (*sic*); that the alleged existence of a contract between the driver and the passenger is "a pure fiction"; and what is actually the case is that drivers work "for Uber and have a work contract with it". Otherwise put: "Uber runs a transportation company. The drivers provide the skilled labour through which the organisation delivers its services and earns its profits".

Moreover, the judgment given in this ruling was issued following traditional guidelines for the analysis of the existence or non-existence of an employment relationship: dependency, as Uber sets the trips, routes, and prices, and controls, through its app, the conduct of the business; and the employment relationship, as these drivers do not work "for the world at large" but for Uber, which recruits them and integrates them as one more part of its business organisation, earns the profits (a percentage per trip) and assumes the risks of the productive activity (if a customer does not pay), and mediates for the transport service to reach the market / final consumer.

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[2] See https://www.theguardian.com/money/2016/dec/08/i-felt-vulnerable-freelancers-on-the-stress-of-self-employment (accessed 13 November 2017). For this reason, TUC has drawn attention on the impact which the intense growth in freelance work is having on the decreasing taxation and social security contribution (https://www.tuc.org.uk/economic-issues/impact-increased-self-employment-and-insecure-work-public-finances (accessed 13 November 2017). This warning call should be heeded in Spain and in any country in which freelance work is growing hypertrophically.

[3] The text of this Ruling can be found at https://www.judiciary.gov.uk/wp-content/uploads/2016/10/aslam-and-farrar-v-uber-reasons-20161028.pdf (accessed 13 November 2017).

We have recently learnt that this Judgment was confirmed on appeal[4]. The arguments given by the Court were basically two. The first one consists in the statement that, rather than the labels or names which the parties use in their contracts, judges should bear in mind the facts underlying those labels or names, as in work relations there is a significant imbalance between worker and business owner as regards their bargaining power. The second argument has to do with the control exercised by Uber over drivers and drivers' integration as part of its transport business. The Judgment on the appeal confirms that Uber has control over its drivers, which is not the result of any regulation imposed on the company, and that, as the first instance judgment ruled, "there was a contract between ULL and the drivers whereby the drivers personally undertook work for ULL as part of its business of providing transportation services to passengers in the London area".

However, perhaps what is most valuable about these Judgments is that they have had the courage to make a break with the sort of "technological determinism" (Valenduc and Vendrain, 2016: 25) that overwhelms us. In a way, we are all uncritically accepting the disruptive discourse of digitalisation and its inevitable impact on the labour market. We assume that, because everything is new and different and inexorable, we lack the tools to deal with this process. There are probably many aspects to be reconsidered – as it is true that digitalisation / automation / robotization poses many questions regarding such basic (and traditional) labour institutions as working time, the workplace, and the sustainability of the Social Security System as we know it. But we should not be naively tempted to believe that, as everything is new, we must "reinvent the wheel", as it is also likely that many of the labour definitions and institutions which we have used so far can continue to be useful with the suitable adjustments (it is certain, for example, that an extensive interpretation of the right to privacy can continue to serve as a barrier against the strict control of personal life enabled by digital progress).

Benefits and problems of crowd working

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[4] The text of the judgment on the appeal in the Uber case can be found at
http://www.littletonchambers.com/lib/judgments/uber_b.v._and_others_v_mr_y_aslam_and_others_ukeat _0056_17_da.pdf (accessed 13 November 2017).

Nor should be take a narrow-minded view, believing that all that is afforded by the development of platforms and the 4.0 economy is wicked. To begin with, analyses agree that this kind of online companies and work facilitate access to the labour market for groups that find it hard to access traditional work. Residents in areas far from urban areas, people with disabilities or diseases, and people (I refuse to say women, although it is almost always women) who must care for their relatives can access work through online platforms, even if it is in such an unconventional way. They just need a good Internet connection and a credit card.

However, work is not always good. There are already hundreds of thousands of "microworkers" all over the world, waiting at all times for a request for work to arrive at the online platform in which they are registered in order to carry out one thousandth part of the function or task which a job used to entail, and thus be paid one thousandth part of a salary. Webster (2016), an expert on virtual work, describes them as precarious (in terms of employment and income) and isolated.

Work bipolarity: "soft" engineers and "hard" labourers

This is, without a doubt, one of the main effects of digitalisation: its potential to create a bipolar labour structure. At the summit would stand those whom I call "soft" engineers (engineers, programmers, highly qualified professionals, managers, etc.), located at the top of the star system, with inflated salaries and jobs in which traditional stability hardly matters, as they have the talent, creativity, and professional prestige to change jobs whenever they wish. At the base are the "hard" labourers: microworkers awaiting a bid on the online platform for one thousandth of a job or the drivers, bikers, cleaners, etc., linked to an app, awaiting a job (what Huws (2003) calls the "cybertariat"); network and technology installers with dropping salaries whose work, stability and income last for as long as the project lasts; and a myriad of unqualified workers doing jobs which cannot be digitalised or offshored, with very short contracts and poverty-level wages.

What is worst is that this bipolar structure of the labour market, where workers with intermediate qualifications can hardly find a place, is reflected in society itself. As digitalisation / automation / robotization advances, an economic and professional elite associated with the technological development of the economy emerges, as well as a

base of unskilled workers with very low salaries and hardly any rights or professional consideration, as their productive provision is regarded as a mere commodity or good for purchase/sale.

This will increase salary and social inequality and make the middle class lose weight. It is precisely middle-class jobs that are starting to be replaced by technologies, so either we increase their qualifications to become part of the star system, or they (we) will be obligated to compete against unskilled labourers for precarious, badly paid jobs with much lower professional requirements than their qualifications, causing overqualification and a race to the bottom as regards salaries. The fact is that we will be unable to stop it, as we are not (and should not be) 21st-century Luddites, but rather we should deal with this intelligently.

Training and minimum income for the transition towards the digital economy

Thus, one of the first measures to take is training, the only way to achieve a transition with fewer "losers". It is clear that one of the consequences of digitalisation will be that all those who are unable to adapt to the new ways of working that are starting to emerge (changing, in constant transformation, where the unexpected is the rule and there is close collaboration with machines) will be excluded from the production process. These will be the "losers" of digitalisation as they were unable to adapt. No society should blithely coexist with this loss.

On the contrary, a work training strategy should now start to be planned and funded, so that millions of workers can begin digital training, and all the rest who already have it can continually update it. To this end, investment in active labour policies should be substantially increased (particularly in Southern European countries), aiming it – if not exclusively, almost exclusively – to the development of this strategy for training in digital competence.

Furthermore: the training for employment model should be radically changed, so that it can adapt to the characteristics of training in the digital era. The first one is the speed and dynamism of technological change, which should also apply when obtaining the competences or skills required to increase worker's knowledge and professional

experience. "Technology", says a report by the 1º de Mayo Foundation (2016: 8), "advances faster than training and even than the economy". Hence learning and updating throughout one's professional life should cease to be a nice slogan and become a fact; hence purely occasional training methods – which current training courses are to a large extent – will not longer serve.

Training should increasingly focus on business, using traditional teaching methods but also "collective learning" among workers themselves (as already happens in some technological companies, where some workers teach others about the new developments in algorithms and computer applications), and using the potential of technology, as in Massive Open Online Courses (MOOCs), to make training increasingly extensive, fast, and affordable (European Parliament, 2016: 41).

In turn, education needs to deal with the profound de-professionalisation that can be caused by technological progress. As we saw when discussing work on online platforms, a sort of "digital Taylorism" is taking place (Degryse: 2016: 36), in the sense that work is being fragmented into small tasks commissioned through the platform to a "swarm" of workers. Workers usually perform multiple micro-tasks to increase their remuneration, as the fragmentation of work that takes place on these platforms also fragments the wages obtained through them. This means that workers do not specialise in any specific task, and have no specific profession (or professional identity). Furthermore, progress in digitalisation means that many workers practically operate following the orders of the machines which they carry, so that their function consists only in following the detailed instructions given by the machine (Degryse, 2016: 39-40). This can lead to a loss of professional know-how and to a need to approach multiple micro-tasks online equally skilfully.

Translated to the field of training, this obviously poses the additional difficulty of establishing what workers should be trained in. The answer is not simple, but seems to involve what some call soft skills or transversal competences. The idea is not so much to train workers in a specialised task and change it whenever the configuration of their jobs changes, but rather to supplement the hard training which workers already have with competences that enable them to face the constant changes and uncertainty generated by the advance of digitalisation as regards jobs. Being ready to work in

changing, uncertain environments interrelated with machines, collaborating online, having social and cultural skills, etc., are some of the soft or generic competences that digital era workers must have (European Parliament, 2016: 58).

Secondly, it should also borne in mind that, even if we were able to launch a training strategy such as is needed, there will always be unemployed workers. There have always been unemployed workers, but now many jobs will be lost and the creation of new jobs will most likely not be enough to replace most of the jobs lost, at least at the start of this technological transition. In countries with high unemployment rates such as Spain, this can have a terrible effect, as it can doom large parts of the population to poverty.

Hence we must consider which measures we will take as a society to avoid a significant increase in the number of homes with no work income. This not only a matter of justice, but also of efficiency, as homes with no income are homes with no consumption, among other negative effects. I am not positing (at least, not yet) the idea of a need for a basic income for all citizens, although in almost every debate on the effects of digitalisation it ultimately appears a way of distributing wealth in societies where work is hardly needed to generate it. But, given the more than obvious fact that digitalisation will increase unemployment rates, we should start thinking about the need for a minimun income for all the individuals who will be made jobless due to technological advance.

Work time and life time without borders

One second benefit that is always mentioned when talking about virtual work is autonomy in the organisation of time and space and the possibility of reconciling work and personal life. It is clear that the possibility of working anywhere, even in the worker's home, at the time and for as long as the worker sees fit, constitutes a much freer way of working than that which takes place on business facilities during traditional working hours. According to a recent Eurofound and ILO Report (2017: 10), this type of work with no direct control on the part of the business owner regarding the location, the time, and the extent of the work is growing more slowly in those countries which have a more "presentist" and less "trusting" business culture as regards fulfilment of work obligations by worker.

However, this freedom can be a good in itself for a class of workers who find subjection to "common" working hours and a workplace uncomfortable or unsuitable for the type of work which they perform (for example, an international consultant who needs to adapt his or her working hours to clients' time zones). This is even more so if professional life is to be reconciled with care of children and/or other relatives. In this case, the possibility of working at any time and in any location afforded by the extension of digitalisation can make it much easier to reconcile work time and private life – which is actually one of the main needs among the new generations of workers.

A generational change seems indeed to be taking place in the world of work. The desire for "sovereignty" over working time, mainly in order to care for children, starts to be a recurring concern among young workers, both men and women (in previous generations, it was found mainly among women workers). Moreover, the concept of the "rush hour of life", which can be found in German literature, also starts to indicate a different way of thinking of the length and distribution of working hours. Being more available / having less work when you are starting a family, even if it involves being less available / having more work once your family has been started, can be seen as desirable by younger generations of workers[5]. All these flexible combinations of working hours are perfectly possible in digital environments and online platforms, and thus as positive aspects of virtual work.

However, studies on this way of working question to a certain extent that these positive effects are being generated. To begin with, in all cases in which work is digital and mobile, working hours are extended beyond the standard applied to workers in a company. This is the case when online work completely replaces "common" work; all the more so when virtual work is supplementary to the working hours on the company facilities, which is often not regarded as working hours when it comes to remuneration (Eurofound and International Labour Office, 2017: 21-23).

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[5] This new concept of the *rush hour of life* was considered in the Green Paper issued in 2015 by the Federal Ministry of Labour and Social Affairs (2015: 20) on the impact which the advance of digitalisation could have on labour relations. However, the analysis of the problems associated with working hours and digitalisation under this approach does not seem to have been very successful, as the *White Paper* drafted on the basis of the *Green Paper Work 4.0*, after consulting with trade unions, business owners, and other civil society agents, no longer mentions the *rush hour of life* approach when describing the need for a better balance between working time and care time. See Federal Ministry of Labour and Social Affairs (2017).

This tendency towards the intensification of work, in addition to its consequences regarding workers' health (stress, burnout, etc.), clearly poses a considerable hindrance to the reconciliation of professional life and private life. Working more hours entails in itself having fewer hours to devote to family life. All the more so if workers must always pay attention to a micro-offer for a job or commission to come in through the online platform for which he or she works. In this case, rather than reconciliation, what Webster (2016: 60) understands as a total "invasion" of work life in private life takes place. A kind of mixture of working hours and private life hours makes it impossible to clearly define work time and private time, which will most likely make both unsatisfactory: when caring for one's family, you have the feeling of failing in your obligation to work; and when working, you have the feeling of failing in your family duties. Hence, except for some younger workers who seem to enjoy this way of mixing life and work, digitalisation requires a strong discipline on the part of workers so as not to erase the borders between work and everyday life, or a French-style regulatory intervention regulating the "right to disconnect" and legally imposing the margins of that border[6].

Is it really freelance work?

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[6] On the basis of the Mettling Report, drafted by Bruno Mettling, CEO of Orange, at the request of the French Minister for Labour, on 25 March 2015 (http://www.ladocumentationfrancaise.fr/var/storage/rapports-publics/154000646.pdf (accessed 13 November 2017), the French legislator has acknowledged workers' right to digital disconnection. Acknowledgement was made through Law no. 2016-1088 of 8 August 2016, through the inclusion of a new section 7 in article 2242-8 of the Labour Code, which regulates the contents which the company has the duty to regulate. Thus, all French companies have the duty to negotiate "the modalities for full exercise by workers of their right to disconnect and the launch by the company of devices for the regulation of use of digital devices". Should no agreement be reached when negotiating this matter, the business owner is obligated, after consulting with workers' representatives, to "draft an action policy in this regard, (establishing) the modalities for the exercise of the right to disconnect". It should be pointed out that this right had been previously established prior to its legal recognition in some collective agreements, the first and best known of which was the agreement on working hours entered by SYNTEC and CINOV, on the business side, and FIECE CFE-CGC and F3C CFDT, on the trade union side, on 1 April 2014, article 4.8.1 of which ordered to "establish the provisions required for workers to be able to disconnect from the remote communication tools made available to them". The recognition made in the Italian Law of 22 May 2017 (http://www.gazzettaufficiale.it/eli/id/2017/06/13/17G00096/sg (accessed 13 November 2017), is much smaller. It regulates "agile work", a way to work which can be agreed between the worker and the business owner, which consists in combining hours of physical presence in the company and hours working outside the company "with the potential use of technological tools to perform the work activity". Article 19.1 establishes that the agreement to give way to "agile work" should establish rest periods as well as "the technical and organisational measures required to ensure workers' disconnection from the technological work tools".

Finally, it is also questionable that the autonomy of digital work is as intense as it seems. It is true that one of the defining factors of working for online platforms or through technologies that make it possible for workers to work at any time and from any location is the possibility of organising work as they see fit. Business control over this kind of work is certainly mitigated, so workers hardly fall under the business owner's power. This is the reason why most of these workers have an uncertain legal status (and social security protection). Nonetheless, the trend is to highlight their freedom when providing the productive service, and thus to regard them as freelancers or independent "contractors".

However, technology has a huge power of control over people's lives and work. All that is done online is recorded somewhere and can be monitored. Everything is constantly subject to rating and tracking. In the same way as Uber is aware, through its app, of the last detail of how drivers perform the transport service, other platforms have full knowledge of how, when, and where the worker provides his or her service, although these data are rarely transparent to workers. We have all seen, as in game, the scores and stars that serve to rate the provision of services in some platforms, which, according to what Schmidt (2017: 11-12) calls "*algocracy*" and "*gamification*", often also serve for platforms to evaluate workers' performance. On the basis of this evaluation, platforms penalise, reward, and rank workers, excluding some of them from certain offers, and even completely denying them the possibility of working through them (a sort of dismissal through exclusion from an app). Hence freedom or autonomy in performance of the work is much smaller than it might seem, and the businesses' control over workers' work (and lives) enabled by use of technology can be very intense (Huws et al., 2017: 20-24).

In these conditions, claiming with total certainty that these virtual workers are completely independent or autonomous, and thus they fall under the legal system of self-employment is really very risky. This may sometimes be the case, but other times we may be dealing with hybrid figures of economically dependent freelancers, and yet other times clear signs of employment may be found (even though the platform exercising the power of control and the power of discipline is not personified). Hence the announcement of the end of employment as a result of digitalisation or the need to

create new legal provision to regulate digital-era work, which is being repeatedly made, is, in my view, rash or clearly biased.

Funding

References

Degryse C (2016) Digitalisation of the economy and its impact on labour markets. *Working Paper 2016.2 ETUI*: 1-80. Available at https://www.etui.org/Publications2/Working-Papers/Digitalisation-of-the-economy-and-its-impact-on-labour-markets (retrieved 9 November 2017)

Eurofound (2015) *New forms of employment*. Publications Office of the European Union. Available at https://www.eurofound.europa.eu/es/publications/report/2015/working-conditions-labour-market/new-forms-of-employment (retrieved 13 November 2017)

Eurofound and International Labour Office (2017) *Working anytime, anywhere: The effects of the world of work*. Publications Office of the European Union, Luxembourg, and the International Labour Office, Geneva. Available at https://www.eurofound.europa.eu/publications/report/2017/working-anytime-anywhere-the-effects-on-the-world-of-work (retrieved 13 November 2017)

European Parliament (2016) *Employment and Skills Aspects of the Digital Single Market Strategy*. Available at http://www.europarl.europa.eu/RegData/etudes/STUD/2015/569967/IPOL_STU(2015)569967_EN.pdf (retrieved 13 November 2017)

Federal Ministry of Labour and Social Affairs (2015) *Green Paper Work 4.0*. Available at http://www.bmas.de/SharedDocs/Downloads/DE/PDF-Publikationen/arbeiten-4-0-green-paper.pdf;jsessionid=5FD119E1FBF2808DF1DB88DD65EA0410?__blob=publicationFile&v=2 (retrieved 13 November 2017)

Federal Ministry of Labour and Social Affairs (2017) *White Paper Work 4.0*. Available at http://www.bmas.de/SharedDocs/Downloads/EN/PDF-Publikationen/a883-white-paper.pdf;jsessionid=4EFC8B2008C3D4B26D6D6DE92F979F06?__blob=publicationFile&v=3 (retrieved 13 November 2017)

1º de Mayo Foundation (2016) *La digitalización en el mundo del trabajo*. Available at http://www.1mayo.ccoo.es/nova/NBdd_ShwDocumento?cod_primaria=1185&cod_documento=4869 (retrieved 13 November 2017)

Huws U (2003) *The Making of a Cybertariat: Virtual Work in a Real World*. Monthly Review Press

Huws U, Spencer N H and Joyce S (2017) *Crowd Work in Europe. Preliminary results from a survey in the UK, Sweden, Germany, Austria and the Netherlands*. Available at http://www.feps-europe.eu/assets/39aad271-85ff-457c-8b23-b30d82bb808f/crowd-work-in-europe-draft-report-last-versionpdf.pdf (retrieved 13 November 2017)

Irani L (2013) The cultural work of microwork. *New Media & Society* 0 (0): 1-21. Available at https://quote.ucsd.edu/lirani/files/2013/11/NMS511926-proof-li-2.pdf (retrieved 13 November 2017)

Robertshaws S, Giuliano A, Achilleopoulus N, Bengtsson JE, Crehan P and Soldatos J (2016) The Impact and Potential of the Collaborative Internet and Additive Manufacturing on the Future Economy. *Business and Economic Journal* 7 (4): 1-7. Available at https://www.omicsonline.com/open-access/the-impact-and-potential-of-the-collaborative-internet-and-additivemanufacturing-on-the-future-economy-2151-6219-1000266.pdf (retrieved 13 November 2017)

Schmidt F A (2017) *Digital Labour Markets in the Platform Economy. Mapping the Political Challenges of Crowd Work and Gig Economy*. Available at http://library.fes.de/pdf-files/wiso/13164.pdf (retrieved 13 November 2017)

Valenduc G and Vendramin P (2016) Work in the digital economy: sorting the old from the new. *Working Paper 2016.03 ETUI*: 1-51. Available at https://www.etui.org/Publications2/Working-Papers/Work-in-the-digital-economy-sorting-the-old-from-the-new (retrieved 13 November 2017)

Webster J (2016) Microworkers of the Gig Economy: Separate and Precarious. *New Labor Forum* 25 (3): 56-64 Available at http://journals.sagepub.com/doi/abs/10.1177/1095796016661511?rss=1 (retrieved 13 November 2017)