

This is a draft final version of a book chapter. The final version is available in *Labour and the Platform Economy*, edited by Jan Drahokoupil and Kurt Vandaele, published in 2021, Edward Elgar Publishing Ltd, p. 81-95.

<https://doi.org/10.4337/9781788975100>

The material cannot be used for any other purpose without further permission of the publisher, and is for private use only.

Chapter 5

A historical perspective on the drivers of digital labour platforms

G rard Valenduc

5.1 Introduction

To what extent are the organisational work practices of digital labour platforms really new and to what extent do they differ from continuous changes in work organization enabled by information and communications technologies (ICT)? The development of flexible work practices and atypical work contracts linked to the diffusion of ICT were already on the research agenda more than thirty years ago. Digital platforms can be analyzed both as a continuing trend in the expansion of internet-based online services, starting in the 1990s, and as the disruptive emergence of new business models at the beginning of the 2010s. Elements of continuity and disruption are intertwined.

This chapter considers two successive periods. The first one can be characterized as the expansion of online services; it covers the ‘long nineties’ from the preparation of the European Single Market at the very end of the 1980s to the bursting of the dot-com bubble in 2000-01. The second period covers the shift from online services to digital platforms, from 2008 onwards, following the accelerated spread of smartphones and the increasing power of the major current players in the digital economy. In each period, the key drivers of innovation, both institutional and technological, are analyzed followed by the new features of work organization. While the first period was shaped by deregulation and liberalization, the second period highlights the drawbacks of these policies and calls for new models of regulation and public policy. New work forms which emerged in the first period have been continuously expanding during the second period. However, the economic models of former online services and current platforms are quite different.

5.2 Online services and flexible work forms during the ‘long nineties’

The expression ‘long nineties’ covers a slightly longer period than the 1990s decade; that is, from the end of the 1980s to the beginning of the 2000s. This period was characterized by intensive institutional and technological changes which shaped the development of the service economy and gave a decisive impetus to online services. In western countries, the decade following the end of the Fordist ‘golden age’ of 1945-1975 was marked by a strong decline in

employment in manufacturing and a rapid growth in services. The development of the latter was enabled by the widespread use of personal computers and data communications systems from the beginning of the 1980s.

5.2.1 Institutional and political drivers of innovation in online services

The European case highlights the role of policies and institutions in the development of the 'information society'. Among the aims of the Single European Act, which came into force in July 1987 as a follow-up to Jacques Delors's White Paper, a high priority was given to the removal of the technical and regulatory barriers to an open market for telecommunications services. Telecommunications were formerly the subject of state monopolies and administrative regulation. The completion of the European Single Market in 1992 required a series of structural changes in this sector from both technical and regulatory aspects: the end of monopolies; opening up to international competition; common standards for the digitalization of networks and data transmission; and the interoperability of value-added services. Between 1987 and 1992, the European telecommunications landscape radically changed. Former monopolies were either transformed into state-owned companies or privatized. Significant EU investments were made in ICT research, also covering the socioeconomic dimensions of the information society (Guzzetti, 1995).

Two key policy initiatives also appeared in the 1990s. In the USA, Al Gore's report 'The national information infrastructure: an agenda for action' (1993) paved the way for public and private investments in information highways and the development of online digital services. In the EU, the Bangemann report 'Europe and the global information society' (1994) was a decisive step in the liberalization of telecommunications markets. The implementation of a European-wide market for all kinds of online services – business to business and business to consumer – became a top priority on the political agenda. The European directive organizing this open market was adopted in 1996 and in force from early 1998 (Musso, 2008). The implementation of the GSM mobile network (1994) and the opening of internet access to commercial companies and the general public (1993-1995) happened in this context of accelerated liberalization. Eastern and central European countries experienced a direct transition from bureaucratic and state-controlled telecommunications systems to liberalized and privatized systems.

Beyond several well-known consequences – like the end of monopolies and administrative regulations, partial or full privatisation, independent regulatory bodies, increasing international competition and changes in workers' status and job stability in the telecoms sector – the liberalization of telecommunications also enabled the international development of devices and services which were previously limited by administrative barriers, such as automated call distribution systems, computer-assisted telephony and call centres. Although technically available, call centre systems could not have become widespread without a new regulation of telecommunications, as call diversion was considered illegal under monopolistic regulation. Within a few years, call centres had become a cornerstone in the development of online services.

The development of online services raises new questions related to free trade in services as far as online services can be produced, managed, provided and consumed in different countries subject to different national regulations. The project of the liberalization of service provision, covering a wider scope than online services, was launched in 2000 together with the Lisbon strategy. The first Commission proposal, known as the 'Bolkestein directive', raised huge

political controversies and strong opposition from trade unions and NGOs. After long negotiations and compromise, the revised version of the directive on service provision was adopted in 2006 and came into force in 2009. A set of public or social services, including education and labour market intermediation, were made subject to limitations on free trade.

5.2.2 Technological drivers for innovation in online services

Several technological innovations converged towards the development of online services during the long nineties. The full digitalization of telecommunications networks started in the mid 1980s and required a period of about 10-15 years before completion depending on the size of the country, the quality of the existing analogue networks and the investment capacities of state operators. This was a pre-condition for the implementation of end-to-end digital services. In the area of mobile telecommunications, a decisive step was passed in 1991 with the adoption by the EU of the GSM standard, developed in the labs of the International Telecommunications Union in Geneva and experimented on in the Nordic countries. The digital GSM standard immediately replaced former national systems, which were not interoperable, and spread around the world. Still in the area of mobile communications, the US government allowed in 1996 the ‘dual use’ (that is, for both civilian and military purposes) of the US Army’s Global Positioning System (GPS), opening the way for geolocation in business, transport and leisure (Musso, 2008).

In parallel, the opening of the Internet in the public domain and to commercial activities, after 1993, inaugurated a new period in the development of online services. In the first place internet services were mainly information services with a low level of interactivity. Using the principles of the World Wide Web, designed in Geneva in 1993, the first browsers were developed in 1996 and become increasingly popular. At the same time, new infrastructures for digital data communications (ADSL, asymmetric digital subscriber line) were progressively implemented in European networks, allowing for higher data transfer rates. The potential of web services started to be harnessed.

5.2.3 Work organisation patterns shaped by ICT in online services

The shift towards online services entailed many changes in work organization in services industries. During the long nineties several sectors were extended from face-to-face towards online service provision. Banking and insurance, real estate, travel and accommodation, retail trade, education and ticketing for cultural events are typical examples of the services which were concerned with this shift. Either such services became directly accessible for consumers through websites or call centres, or face-to-face service provision became ‘telemediated’ through computers and networks.

There are three main changes which will have further impacts on the development of the platform economy: the extension of the market sphere in services; the rise of a ‘24 hours / 7 days’ or ‘around the clock’ society; and the increasing enrolment of the customer in service provision.

1. ICT makes services increasingly tradable as they can be produced in one location and consumed elsewhere. Production and consumption may happen at different times and different places, such as for material goods, leading to an industrialization of services. Not only are market services concerned, but also non-profit ones such as education and training,

public administration and social assistance. The online model is progressively shaping all domains of service provision and consumption.

2. Through the dissociation of the production and consumption of services, and their increasing tradability, continuous availability has become a key factor in competition and non-profit services have been forced to follow this trend. Call centres play an important part in the development of this extended availability, 24 hours a day and seven days a week. Service provision has been externalized from core companies to call centre companies located in different countries. Jobs have consequently been transferred from core companies to subcontracting call centres, covered by lower level collective agreements and offering lower wages.
3. Moreover, online services rely on an increasing involvement of customers in the service process. In banking, insurance and travel, as well as in public administration, customers are pushed to encode their data themselves, check validity, ensure data security, manage outcomes and archive their files (Dujarier, 2014). Several tasks have been shifting from workers to consumers.

Workers have been deeply affected by this shift towards online service provision. They are required to be flexible, i.e. to carry the adjustment to market strategies and technological hype themselves (Gadrey, 2003). Flexibility has become a key word in human resource management – and a matter for social conflict and bargaining in many service enterprises, whereas flexibility issues were formerly concentrated in the manufacturing sector.

A study carried out for the European Parliament at the end of the 1990s (Gillespie et al. 1999) on ‘technology-induced atypical work forms’ highlighted the role of ICT as an enabling factor in flexible work patterns. In his influential book *The Rise of the Network Society*, Castells (1995) analyzed this enabling role of ICT. Although organizational changes are implemented independently of technology, in order to cope with a constantly changing operational and economic environment, Castells suggests that, once these changes start to take place, the feasibility of organizational change is ‘extraordinarily enhanced’ by ICT. During this period, an abundant literature started to question the technological determinism in the relation between ICT and work organization (Orlikowski, 1992; Kling and Lamb, 1999) and to highlight that, although designers included an ‘implicit organizational design’ in technology, it is shaped by social relations (Alsène, 1990).

Indeed, this period was characterized by an increasing diversification of flexible work forms in which ICT had played an enabling role. More than just information and communications, ICT is, first of all, a set of technologies for the management of time and space. Therefore, basic concepts of working time and work location are deeply challenged by ICT.

Box 5.1 summarizes the key trends in the development of flexible work forms in four areas: working time; work location; work contracts; and subordination links. During the 1990s particular emphasis was put on spatial flexibility and distance working, with a strong focus on telework or ‘e-work’. Working time and work contracts also became subject to new trends, for instance the development of on-call work, zero-hours contracts and online standby. Among other dimensions of ICT-enabled flexible work practices, particular attention was also paid to new forms of subordination links: secondment; detachment; freelancing; subcontracting to the self-employed; and a work status existing in between employment and self-employment (Serrano and Crespo, 2001).

Box 5.1 ICT-enabled flexible work forms

Working time	Work location
<i>Flexible work forms</i> Variable part-time working Flexi-time working Shift work (twilight or night) Variable overtime working On-call working Online stand-by <i>Enabling roles of ICT</i> Extending services accessibility, lengthening the working day Tuned management of task flows and quantitative manpower needs Just-in-time production in services	<i>Flexible work forms</i> Mobile working, itinerant work Remote office working, remote call centres Homeworking, telecommuting Working in telecentres or co-working spaces Remote computer-supported teamwork <i>Enabling roles of ICT</i> Extension and diversification of distance working and itinerant working Remote organisation and planning of project work and management by objectives Ubiquitous work
Work contracts	Subordination links
<i>Flexible work forms</i> Fixed-term, temporary or seasonal contracts Contracts with annualized working hours Zero-hours contracts (without fixed volume) Piecework Performance-related pay Task-based contracts <i>Enabling roles of ICT</i> ‘Just-in-case’ manpower management Modelling and planning of atypical work contract management Electronic performance monitoring coupled to performance-related pay.	<i>Flexible work forms</i> Working for an agency Self-employed subcontractor, freelance Employed by third party supplier Work contract transferred to third party supplier Working for several employers Franchising <i>Enabling roles of ICT</i> Support for subcontracting and externalization Coordination of remote independent subcontractors Co-working platforms

Source: adapted from Valenduc and Vendramin (2002), pp. 186-187

It appears clearly that some features of work organization in the current platform economy are rooted in the organizational changes summarized in this table. On-call working, remote co-working, task-based contracts, piecework, agency work, freelance work and the blurring of subordination links were emerging trends at that time while some of them are even older (Stanford, 2017).

5.2.4 Call centres, precursors of platforms?

Call centres were mentioned above as a cornerstone in the development of online services. There are different categories of call centre. Inbound call centres manage incoming calls and workers have to provide responses to customers: help desk; after-sales; assistance; and e-commerce. Outbound call centres initiate phone calls: surveys; marketing campaigns; and

advertisements. Several studies highlight a clear trend of the externalization and subcontracting of the business functions supported by call centres (Flecker, 2009; Doellgast and Pannini, 2015). During the nineties, many inbound call centres evolved towards contact centres combining phone, email and chat, harnessing a more efficient integration of computer-assisted telephony, internet and databases.

Work in call centres is given particular attention in socioeconomic research for at least three reasons. Firstly, it is considered as illustrative of ICT-enabled flexible work forms. Although case studies of call centres observe some variations in work organization patterns, most of them underline that call centres are a laboratory for flexible work practices (Pichault and Zune, 2001; Greenan et al. 2009). Concerning work location, the externalization of call centres entails a relocation of service provision and often offshoring. Wage differentials are a key driver: not only lower wage levels in destination countries but also wage differentials in the same country; and between the provisions of collective agreements in core and outsourced firms. On the issue of working time, most call centres operate with extended working hours, including evenings, nights and weekends. Regarding work contracts, a high proportion of call centre employees have temporary or agency contracts, some of them being zero-hours (Doellgast and Pannini, 2015). In connection with subordination links, externalized call centres are typical examples of a triangular employment relationship in which workers are confronted with the requirements both of their employer and of client companies. Secondly, work organization and work content are strongly prescribed and formatted by software tools: there is a standardization and fragmentation of tasks; tasks are prescribed by scripts; and there is online performance monitoring and continuous control over work methods and procedures. Workers have to follow the procedures imposed by algorithms and feed databases of frequently asked questions (Greenan et al. 2009). Thirdly, the expansion of externalized, subcontracted and offshored call centres reflects the growing globalization of service industries and the impacts that this has had on workers (Flecker, 2009).

Many services (for example, travel and accommodation, delivery and labour market intermediation) which are nowadays provided by platforms were provided through call centres and contact centres during the long nineties. Work organization in call centres prefigured a series of features of work organization in platform-based services: remote work; the adjustment of working time to customer expectations; fragmented employment; blurred subordination links; the prescription of tasks by software; intrusive supervision through computers and networks; the enrolment of the customer in the service provision process; and the management of local services on a global scale.

5.3 From online services to digital platforms

The second period considered in this chapter starts from the worldwide financial crisis in 2008 and the irruption of the smartphone into the market of end-user technologies in 2007-08. How and why are these two distinct events related and with what consequences in the area of work organization?

5.3.1 Institutional and economic drivers leading to the platform economy

Scholars in evolutionary economics highlight that the financial crisis of 2008 cannot be attributed solely to the collapse of the sovereign debt and mortgage lending markets; it was also the outcome of the unfettered digitalization of the financial system (Perez, 2013, 2016). The

first warning shots were fired when the speculative dot-com bubble burst in 2000-01. However, the 2008 crisis marked a turning point in the development and implementation of the techno-economic paradigm, or ‘great surge’, based on digital technologies: between the period of installation, from the emergence of ICT to the frenzy for digital networks in the long nineties; and the period of deployment, starting after the crisis and requiring a deep institutional reconfiguration (Perez, 2013; Valenduc, 2018). Other authors refer to this turning point as the transition from the ‘information age’ to the ‘internet age’ (Huws, 2013; Veltz, 2017), occurring between 2000 and 2010 and heralding an explosion in virtual work which, in this context, refers to online and networked tasks which are easy to outsource at global level.

This turning point was marked by tensions and conflicts between the logic of liberalization and deregulation which characterized the deployment period of the paradigm; and the need for regulation and new roles for public institutions required by the development period. The advance of the platform economy is a typical case of such tensions and conflicts. In the European context, platform owners systematically enter into conflict with the regulatory system in the areas of labour law, professional regulation, privacy protection, commercial regulations and so on.

Another significant economic driver was the development of two-sided markets, according to a recent theoretical model that appears particularly relevant to the digital economy (Wauthy, 2008; Tirole, 2016, Chapter 14; Veltz, 2017, pp. 45-8). In this model, the platform owner delivers products or services to two distinct user groups at the same time – the two sides of the market – through an online system. One side of the market is made up of consumers who benefit from access to low-cost or free services and positive network externalities since services become more attractive as user numbers grow; by accessing these services, however, and whether they realize it or not, they are supplying the platform with sets of data on their personal profile, location and consumer habits. The other side of the market comprises economic players which are involved in the provision of platform-based services and which also benefit from positive network externalities in proportion to the size of the consumer base. The value of a service for actors on one side of the market is correlated to the number and the quality of actors on the other. Economists refer to such phenomena as ‘cross network externalities’ and regard them as a typical feature of two-sided markets. Platforms of this kind are funded by levies on the transactions between the two sides of the market, but the information which is collected is valuable to actors on both sides, representing not only a source of data but also a body of knowledge. The platform itself is, therefore, the primary location of value creation for both sides. Examples of platforms which correspond to this description include Google, Booking.com, Uber, Amazon, Facebook and many others (Casilli, 2019, pp. 63-91).

Moreover, online platforms have also developed in the labour market as intermediaries in the demand and supply of fragmented or freelance work.

Finally, another decisive change since 2008 has been the increasing power of the new major players in the global digital economy; that is, the so-called GAFAM (Google, Amazon, Facebook, Apple, Microsoft). This raises increasing challenges for the European economy and for EU policies (Finck, 2017).

5.3.2 Technological drivers leading to the platform economy

It is worthwhile questioning the effective novelty of a series of innovations that arrived on the market in the second part of the 2000s. Several authors have pointed to a threshold effect for

digital technologies, in connection with their exponential leaps in performance: ‘little by little, then all at once’ (Brynjolfsson and McAfee, 2014), whereas others wonder if leaps in performance are likely to trigger effective changes in the workplace (Holtgrewe, 2014).

Six key innovation areas can be identified regarding their potential impact on workplaces and jobs: cloud storage and cloud computing; big data and algorithms; smartphones and mobile apps; geolocation of people and objects; the Internet of Things and connected objects; deep learning and artificial intelligence systems (Valenduc and Vendramin, 2016). The cloud is both a driver for the growth of all forms of remote and virtual work as well as a tool for implementing outsourcing and offshoring strategies. Big data collection and analysis expand the possibilities of surveillance, monitoring and tracking. The use of consumer-generated big data is also transforming work practices in the fields of commerce, marketing and financial services, and indeed all client-facing activities. Geolocation has a major impact in terms of the planning, monitoring and tracking of mobile workers in delivery, maintenance and repair, as well as in inspection operations, transport and logistics. Artificial intelligence systems raise issues of competition or complementarity between human capabilities and machine performance.

When taken separately, each of these areas of innovation can be analyzed as a mix of elements of continuity (incremental innovations) and factors of change (radical innovations), given the different pace of the diffusion of innovations into economy and society. The effective novelty comes from the extended possibilities provided by the combination and recombination of these six areas. The development of the platform economy intensively harnesses the potential of this new set of innovations.

5.3.3 New forms of work in the platform economy

Key aspects of platform work such as workers’ status, working conditions, the risks of precariousness, workers’ rights, challenges for collective bargaining and the need for renewed labour regulation are extensively developed here in this volume. They are inherited from ICT-enabled flexible work forms during the long nineties but have been enhanced in the platform economy (Stanford, 2017; Valenduc and Vendramin, 2017) and sometimes ‘relabelled’. For example, the word ‘gig’ was rarely used previously to describe fragmented and precarious work, but it is currently used nowadays. Crowdfunding and platform-based on-demand work can be characterized as virtual work, but the latter also includes any kind of ICT-mediated mobile work. A broader concept, virtual work thus points to global outsourcing and the fragmentation processes of dematerialized tasks that can be carried out anytime, anywhere (Huws, 2013). It is linked to the processes of globalization and the restructuring of value chains.

The focus will be put here on three new concepts which are typical of the platform economy: digital labour; ‘prosumer’ work; and open work.

The concept of digital labour covers a continuous spectrum between non-remunerated online work, underpaid or precarious activities such as for platforms, casual work and zero-hours contracts, and flexible jobs in outsourced tasks, at local or global level (Casilli, 2019). Casilli distinguishes three types of digital labour. The first is on-demand work, organized through digital platforms. Uber, Deliveroo or Task Rabbit belong to this category. On-demand digital labour amplifies several flexible work practices which emerged during the long nineties: contractual precariousness, unpredictable working time and tight and permanent supervision, often by means of algorithms and geolocation. In the platform model, workers are not only delivering a service but also feeding databases and algorithms.

The second category consists of micro-work platforms. Such platforms, like Amazon MT, establish a global marketplace for micro-tasks in areas including web development, design, software, image recognition, data replication, translation, audio transcription and data mining. They result from a process of virtual Taylorism, separating design from execution and fragmenting the work process into elementary units that can be outsourced to the global crowd. Tasks can be outsourced to anybody, amateur or professional, without any control over skills; only the rating is relevant. Work is turned into drudge. Casilli emphasizes the role of ‘click workers’, frequently located in low-pay countries and carrying out all the tasks that bots, apps or artificial intelligence systems are not able to do accurately; in this case, humans replacing robots. The development of an offshored, low-paid and precarious manpower reserve was already underlined some years ago by Huws (2003) when she introduced the word ‘cybertariat’ as a portmanteau word drawn from cyber and proletariat.

These two categories, on-demand work and micro-tasks, fall under crowdworking or crowdsourcing, but the latter also encompasses global platforms for freelance work, addressing freelance professionals who must be accredited as such by the platforms. Some platforms are marketplaces for freelance tasks on which prices and deadlines can be negotiated; while others play a role of intermediary in the labour market for self-employed professionals, like an agency. The border between freelance crowdworking and micro-work is, however, thin as the outsourcing process often leads to an increasing fragmentation of work.

The third category refers to the participation of users in producing and sharing information in social media or similar settings. Any kind of user-generated content contributes to the process of value creation on the platform. As such tasks are often compared to leisure, sociability, creativity or fun, they partially overlap the concepts of ‘prosumer’ or open work.¹

The concept of prosumer work is linked to the business model of digital platforms, refreshing the role of individuals who both produce and consume digitized information: prosumers. Although rarely paid, prosumers carry out work by supplying data and services for which employees were previously at least partly responsible, such as reviews of services or products, the rating of services and data entry¹. In a less explicit way, a wide range of our daily digital activities as users of social networks, mobile apps, search engines and connected objects contributes to the production of economic value which is captured by the platform owners. Such activities could be considered ‘work’ if they comply with three conditions: they produce value captured by economic players; they are subject to a minimal level of contractual agreement, usually accepted by ticking a box; and they provide performance indicators as regards rating, reputation, consumer satisfaction, quality assessment and popularity measurements (Cardon and Casilli, 2015, pp. 12-14). Indeed, referring to the Marxist approach, an activity which generates value for a capital owner, which is subject to a contract and which produces marketable outputs has to be considered as labour (Scholtz, 2012).

Prosumer work can be regarded as an extension of the enrolment of the consumer in service provision which started with the development of online services and call centres (Dujarier, 2014). Another trend in prosumer work is the development of evaluations and ratings by lay people instead of professionals (Pasquier, 2014) and its consequences for platform workers. Several problems are raised by prosumers’ evaluations: biases in the selection of evaluators, and in the scope and methods of rating; control of the authenticity, validity and relevance of

¹ Contributions to Wikipedia represent an example of user-generated content that does not fall under prosumer work.

ratings; and the use of ratings by market players and employers. Platform workers often report the pernicious influence of consumers' rating on their working conditions, reputation or employability (Eurofound, 2018; Drahokoupil and Piasna, 2019).

The concept of open work raises questions about the boundaries between paid and unpaid work, between formal and informal work and between creative and productive activities carried out at work and those carried out elsewhere – boundaries which are blurred by digitalization. Digitalization can lead to a blossoming of 'making' activities or, in other words, a broad spectrum of pursuits which allows people to get active or creative outside the formal world of work – ranging from do-it-yourself to volunteering in the non-profit sector and skill-swapping networks – which many individuals find more conducive to personal fulfilment than jobs which are increasingly standardized and dehumanized (Flichy, 2017). Flichy names 'open work' among these new forms of 'making' activities facilitated by platforms outside the spheres of wage employment or formal self-employment. This perspective addresses the meaning of work. While a number of jobs are increasingly under pressure, open work gives more space to self-accomplishment and gratification. The likely outcome of this process is a gradual decline in the centrality of formal work in people's lives. Work loses its presumed and actual importance as it becomes just one of many different ways of 'making'.

The concept of open work raises, however, the question of the actual autonomy of workers. Empirical evidence does not allow the conclusion that increasing autonomy could be a general trend in the platform economy (Abdelnour and Méda, 2019). The downgrading of working conditions, increasing precariousness and threats to solidarity appear as if widespread whereas positive improvements seem limited to high-skilled workers or creative activities.

5.4 Conclusions

What can we learn from this historical overview? Evolution, disruption or both? Work organization on platforms amplifies a series of features that were already emerging with the development of online services during the long nineties, in the areas of working time flexibility, flexible work location, atypical work contracts and blurred subordination links. This amplification was not unexpected, as it was in line with the evolution of managerial strategies and the weakening of the bargaining power of trade unions, already visible at that time. Twenty years ago, however, the expansion of flexible work practices was regarded in the framework of continuing trends in economic development: perspectives of European enlargement; globalization of value chains; and the new international division of labour in services. The economic theory of two-sided markets was not even published yet and the technological infrastructure was not ready. Looking back at various foresight publications at the turn of the millennium, the future of work was regarded in the context of the so-called e-economy, without having the potential for significant disruption. The first studies of crowdsourcing only appeared at the beginning of the 2000s and they were regarded with scepticism. In other words, the platform economy has not so much created flexible work forms, but these existing forms have been extraordinarily enhanced by the development of platforms.

Both evolution and disruption are at stake. At first glance, most of the flexible features of platform work had already been implemented in online services – but not all. Platforms rely on a radically new economic model, new predominant global companies, new power relations and a changing approach to the meaning of work.

Now, what about the future prospects of platform work in the framework of digital transition? Instead of a technological revolution, the current digital transition can rather be considered as a turning point between the development and the deployment phases of the techno-economic paradigm of digital technologies. The transition towards the deployment phase should require significant institutional reconfiguration and adapted regulation, as well as a revival of the dominant role of public institutions (Valenduc, 2018). If platform work is only conceptualized as an amplified continuation of past trends, there is a risk that policymakers and social actors might develop reactive answers, mainly on the basis of the adaptation of existing regulatory frameworks. Proactive regulatory answers would be required, however, if the disruptive aspects of platform work are also taken into account. Such proactive answers must consider the changing meaning of work, the place of work in life trajectories, changes in our working and living environment and new forms of solidarity and engagement, as well as the new roles expected of public authorities and social protection institutions.

References

- Abdelnour, S. and D. Méda (2019), *Les nouveaux travailleurs des applis*, Paris: PUF coll. La vie des idées.
- Alsène, E. (1990), 'Les impacts de la technologie sur l'organisation', *Sociologie du travail*, **3**, pp. 321-37.
- Brynjolfsson, E. and A. McAfee (2014), *The second machine age. Work, progress and prosperity in a time of brilliant technologies*, New York: Norton.
- Cardon, D. and A. Casilli (2015), *Qu'est-ce que le digital labor?*, Paris: INA éditions.
- Casilli, A. (2019), *En attendant les robots. Enquête sur le travail du clic*, Paris: Seuil.
- Castells, M. (1995), *The rise of the network society*, London: Wiley-Blackwell.
- Doellgast, V. and E. Pannini (2015), 'The impact of outsourcing on job quality for call centre workers in the telecommunications and call centre subcontractor industries', in J. Drahokoupil (ed.), *The outsourcing challenge*, Brussels: European Trade Union Institute (ETUI).
- Drahokoupil, J. and A. Piasna (2019), 'Work in the platform economy: Deliveroo riders in Belgium and the SMART arrangement', Working Paper ETUI 2019.01, Brussels: European Trade Union Institute.
- Dujarier, M-A. (2014), *Le travail du consommateur. Comment nous coproduisons ce que nous achetons*, Paris: La Découverte.
- Eurofound (2018), 'Platform work: types and implications for work and employment – Literature review', Working paper WPEF18004, Dublin: Eurofound.
- Finck, M. (2017), 'Digital regulation: designing a supranational legal framework for the platform economy', LSE Working Papers 15/2017, London School of Economics.

- Flecker, J. (2009), 'Outsourcing, spatial relocation and the fragmentation of employment', *Competition and change*, **13** (3), pp. 251-66.
- Flichy, P. (2017), *Les nouvelles frontières du travail à l'ère numérique*, Paris: Seuil.
- Gadrey, J. (2003), *Socio-économie des services*, Paris: La Découverte, coll. Repères.
- Gillespie, A., R. Richardson, G. Valenduc and P. Vendramin (1999), 'Technology-induced atypical work forms', STOA Report, European Parliament [PE 167.794].
- Greenan, N., Y. Kocuglu, E. Walkowiak, P. Csizmadia and C. Makó (2009), 'The role of technology in value chain restructuring', WORKS report for the European Commission, Leuven: HIVA.
- Guzzetti, L. (1995), *A brief history of European Union research policy*, Luxembourg: Office of Publications of the European Communities.
- Holtgrewe, U. (2014), 'New "new technologies": the future and the present of work in information and communication technology', *New Technology, Work and Employment*, **29** (1), pp. 9-24.
- Huws, U. (2003), *The making of a cybertariat. Virtual work in a real world*, New York University Press.
- Huws, U. (2013), 'Working online, living offline: labour in the Internet age', *Work organisation, labour & globalisation*, **7** (1), pp. 1-11.
- Kling, R. and R. Lamb (1999), 'IT and organizational change in digital economies: a socio-technical approach', *Computers and Society*, **29** (3), pp. 17-25.
- Musso, P. (2008), *Les télécommunications*, Paris: La Découverte, coll. Repères.
- Orlikowski, W. (1992), 'The duality of technology: rethinking the concept of technology in organizations', *Organization Science*, **3** (3), pp. 398-427.
- Pasquier, D. (2014), 'Les jugements profanes en ligne sous le regard des sciences sociales', *Réseaux*, **32** (183), pp. 9-25.
- Pichault, F. and M. Zune (2001), 'Une figure de la déréglementation du marché du travail: le cas des centres d'appels', *Enjeux de l'information et de la communication*, **2001** (1), pp. 83-96.
- Perez, C. (2013), 'Unleashing a golden age after the financial collapse: drawing lessons from history', *Environmental Innovations and Societal Transitions*, **6**, pp. 9-23.
- Perez, C. (2016), 'Capitalism, technology and a green global golden age', in M. Jacobs and M. Mazzucato (eds), *Rethinking capitalism – Economics and policy for sustainable and inclusive growth*, London: Wiley-Blackwell.
- Serrano, A. and E. Crespo (2001), 'Emerging experiences of work in a changing economy', *Transfer – European review of labour and research*, **7** (2), pp. 183-196.

Stanford, J. (2017), 'The resurgence of gig work: historical and theoretical perspectives', *The Economic and Labour Relations Review*, **28** (3), pp. 382-401.

Scholtz, T. (ed.) (2012), *Digital labor: the Internet as a playground and factory*, New York: Routledge.

Tirole, J. (2016), *L'économie du bien commun*, Paris: PUF.

Valenduc, G. (2018), 'Technological revolutions and societal transitions', *ETUI Foresight Brief* #04, Brussels: European Trade Union Institute.

Valenduc, G. and P. Vendramin (2002), 'ICT, flexible working and quality of life', in European Commission, *Unity and diversity: the contribution of social sciences and humanities to the European research area*, Luxembourg: Office of Publications of the European Communities [EUR 20484], pp. 186-90.

Valenduc, G. and P. Vendramin (2016), 'Work in the digital economy: sorting the old from the new', Working Paper ETUI 2016.3, Brussels: European Trade Union Institute.

Valenduc, G. and P. Vendramin (2017), 'Digitalisation, between disruption and evolution', *Transfer – European review of labour and research*, **23** (2), pp. 121-34.

Veltz, P. (2017), *La société hyper-industrielle*, Paris: Seuil.

Wauthy, X. (2008), 'Concurrence et régulation sur les marchés de plateforme: une introduction', *Reflets et perspectives de la vie économique*, **XLVII** (1), pp. 39-54.