



State of horizon scanning 2020

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The highlight of the year 2020 is most evidently the COVID-19 pandemic. In the world of work, it first revealed inequality in situations of exposure to the risk of contamination. There were those, on the one hand, whose tasks potentially brought them into direct contact with the virus (care, logistics chain, retail, security, cleaning and maintenance, etc.) and on the other hand, those who, locked down in their homes, could perform their job remotely thanks to new technology. Moreover, this inequality was often associated with disparities in remuneration. But the pandemic also fast-tracked changes that had already started regarding work organisation, which were also directly related to the use of these new technologies.

Coronavirus and inequality: jobs in the coronavirus era¹

In a study published in April 2020 covering the first lockdown period, *France Stratégie* proposed a categorisation of workers in the light of the health crisis:

- the ever-vulnerable (4.2 million workers), often with a precarious status and having an activity that cannot be performed remotely (tradesmen and workers in building and construction and public works), are traditionally confronted with difficult living and working conditions,
- the newly vulnerable (4.3 million), who can no longer perform their job deemed non-essential and involving contact with the public (hotels and restaurants, culture and sport, etc.); occasional workers in the entertainment arts and independent contractors, at non-negligible proportions, are confronted with uncertainty about the future of their activity,
- the front-liners (10.4 million), whose activities are essential to the functioning of society: healthcare jobs, education, cleaning and maintenance, food and its distribution, sovereign jobs; 75% of these workers are in direct contact with the public, at the front line,
- teleworkers (3.9 million) are often white-collar workers who, thanks to new technologies, can perform their job remotely; during the crisis, they are often confronted with the difficulty in managing their professional and private life simultaneously,
- workers with part-time inactivity (4 million) generally do not have to fear losing their jobs in the short term because of their status; however, they are distanced from the professional sphere because of the impossibility to perform all of their work remotely.

Inequalities in contamination exposure also exist, based on gender and pay level. This appears very clearly in Figure 1 below, limited to employment categories with little economic vulnerability.

¹ <https://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/fs-2020-na88-metiers-corona-avril.pdf>

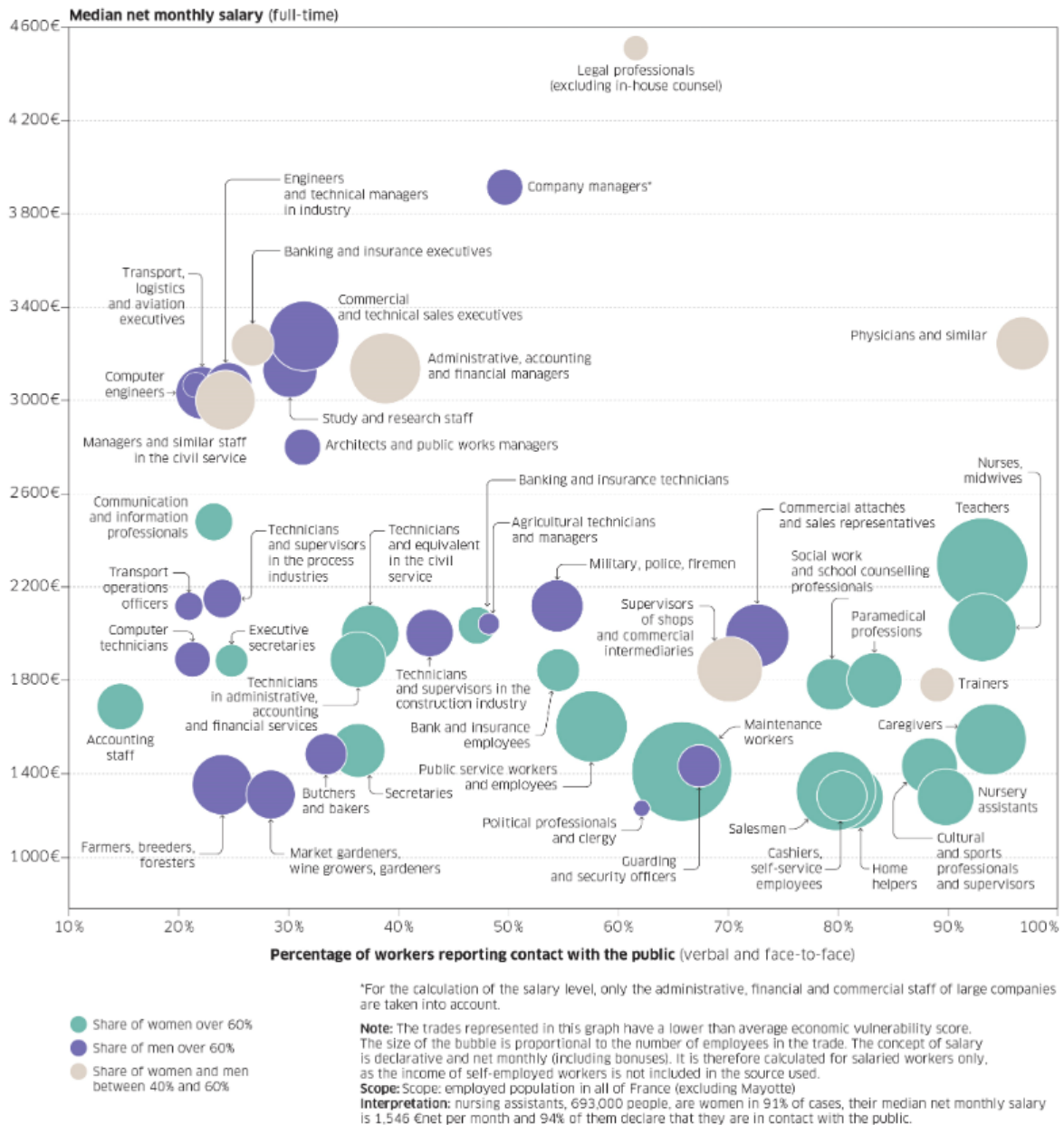


Figure 1

The health crisis fast-tracked technological changes and work transformations

The digital giants, headed by the famous GAFAM (Google, Apple, Facebook, Amazon and Microsoft), but also their Chinese counterparts, BATX (Baidu, Alibaba, Tencent and Xiaomi) are the biggest winners in the health crisis. “We saw the equivalent of two years of digital transformation in two months” said a delighted Satya Nadella, CEO of Microsoft². Amazon’s market capitalisation exceeded a trillion dollars. These companies have an almost unlimited investment capacity enabling them to continuously take advantage of technological innovations, either by funding the research and development work

² <https://www.lesechos.fr/tech-medias/hightech/les-geants-technologiques-affichent-leur-resilience-face-a-la-crise-1199979>

(particularly artificial intelligence), or by taking over competitors that have developed promising solutions.

The technologies and organisation models proposed by these companies indeed appear to have a bright future ahead of them. For many years now, several of them have enabled teleworking (electronic messaging, cloud, visioconferences, etc.) and e-commerce (marketplace platforms, search engine optimisation tools, data processing enabling marketing targeting, etc.). They have already transformed the activity of millions of workers contributing, in particular, to its intensification and fragmentation.

Their influence is wielded particularly on platform workers whose precarious micro-entrepreneur status was revealed by the crisis. This status tends to become more widespread, to the point where during the crisis, it was seen that large retailers resorted to jobbing platforms initially intended for catering jobs, to hire independent contractors to supplement their teams³. In the warehouses of large retail outlets and e-commerce businesses, information and communication technologies also play an increasingly growing role. In these cases, order pickers are generally not independent contractors, but their work is also directed by computer tools that give them tasks and continuously check their progress and the attainment of individual productivity objectives attributed to each worker⁴.

Will mass teleworking lead to the uberisation of white-collar jobs?

Can crowdworking win over other jobs, particularly those currently occupied by white-collar workers of large businesses in the future? First of all, the lockdown boosted the trivialisation of teleworking. Systematically making employees telework led businesses to develop their approach to the matter and test the effectiveness of the different solutions proposed by digital companies. They were also faced with the difficulties raised by remote management and in exercising their employer obligations with regard to employees working at home⁵.

For some analysts⁶, the boom in remote work could lead to the birth of a generalised gig economy, which can also be characterised as a client/supplier relationship which tends to replace the work contract; a trend which could result in a certain number of white-collar workers, voluntarily or non-voluntarily adopting the status of independent contractor. This is already a significant occurrence in the United Kingdom where the portion of white-collar workers in the category of independent contractors increased from 33% in 2010 to more than 40% in 2019, while the total number of independent contractors went from 1.2 to 1.9 million over the same period (source Eurostat). In France, statistics already show a relative growth in the number of independent contractors in legal, accounting and management activities, but also in engineering and more generally in scientific and technical activities.

Also in the United Kingdom, this phenomenon is already accompanied by the relocation of white-collar jobs. While white-collar workers can move a few dozen or hundred miles away from London (improving their quality of life and purchasing power in this country where property is expensive), nothing stops

³ <https://www.marianne.net/economie/coronavirus-comment-la-grande-distribution-recrute-des-auto-entrepreneurs>

⁴ M. Malenfer, V. Govaere, A. Bingen, M-C. Trionfetti Impact des outils numériques sur les conditions de travail: l'exemple du commerce en ligne, HST n° 258, mars 2020

⁵ <https://www.nytimes.com/2020/07/26/business/economy/labor-remote-work-coronavirus.html>

⁶ Video by Xerfi : https://www.xerficanal.com/economie/emission/Alexandre-Mirlicourtois-Le-teletravail-accelere-l-uberisation-des-cadres_3749114.html

their employers from turning to independent contractors, thousands of kilometres away. Given the *lingua franca* status that the English language has acquired over the past few decades, there is even no need to be limited to English-speaking countries. The Daily Telegraph⁷ states that a few train or plane trips can be largely offset by the savings made on office property, especially in a context where all business travel costs could be revised downwards in the upcoming years, with many meetings possibly shifting in the long term to video conferences. And still on the topic of savings, Xerfi reports, again in the United Kingdom, an average 25% drop in the remuneration of white-collar workers having switched to independent worker status.

It is too early to identify the concrete consequences in terms of occupational risks. However, these new ways of working, already described in a previous state of horizon scanning concerning the artificial intelligence system Marcel, developed by Publicis and Microsoft, are likely to result in a breakdown in work communities, in a context where it may become more difficult to separate private life and professional life with collaborative work transcending time zones. Competition might even be exacerbated within these virtual teams when regulatory mechanisms are harder to implement.

Xerfi also underlines the possibilities of management being challenged, with a redefinition of their role but also with them potentially becoming victim to a certain degree of automation and digitalisation of work control.

MIT's point of view: social protection at the centre of discussions about the work of the future

Launched in 2018 at the initiative of the president of the Massachusetts Institute of Technology (MIT)⁸, reflection on the work of the future in the United States was published early November 2020 (*The Work of the Future: Building Better Jobs in an Age of Intelligent Machines*). For two and a half years, through a score of the Institute's researchers and as many PhD students, all of the Institute's departments came together on this issue: mechanical engineering, aeronautics, digital economy, but also the Sloan school of management, political sciences and anthropology. The operation had the support of two scientific committees (one of which is more specifically focused on research) bringing together the great names in global industry, but also politicians, researchers and a trade unionist (the president of AFL-CIO).

The report greatly reaffirms the conviction that automation, expected to accelerate in the next two decades, will not reduce employment, but will accelerate changes in labour needs. This is how 60% of jobs that exist today emerged after 1940 and it is likely that the trend will heighten. Concerning artificial intelligence (AI), the report projects its continued development but to the extent that it will significantly shape the work transformations over the period in question (up to 2040). It is mostly developments in internet technology, mobile computing, the cloud, and mobile phones that will bring about day-to-day work modifications compared to AI and robotics.

The report also reveals that productivity has increased considerably in several decades, but that the benefits have been reaped by capital and not work. The least qualified workers in particular have seen their purchasing power plummet, a trend seen for some forty years now. The authors also highlight a factor particularly marked in the USA, that of a major polarisation of employment between the most

⁷ <https://www.telegraph.co.uk/news/2020/07/22/home-working-revolution-will-derail-middle-class-gravy-train/>

⁸ <http://workofthefuture.mit.edu/wp-content/uploads/2020/11/2020-Final-Report2.pdf>

qualified and least qualified workers to the detriment of a “middle” class which has seen their number of workers drop considerably over the last few decades.

The authors also note that the impoverishment of the most underprivileged classes will be an obstacle for the development of economic activity in the USA since it risks causing a scarcity of qualified workers and they recommend (among other things) the following measures:

- promote worker training through an increase in federal programme resources, both to support the acquisition of basic knowledge necessary for the inevitable career changes and to support the development of training to qualify workers,
- increase by 40% the federal minimum wage and index its value to inflation; liberalise access to unemployment insurance in particular for the least qualified workers; increase social benefits for part-time workers,
- strengthen labour laws, in particular by protecting unionisation of workers to promote collective bargaining; adapt it to the new rules for the organisation of the labour market, particularly by reforming the *National Labor Relation Act* which, apart from an amendment that weakened its scope, has remained unchanged since 1935,
- support innovation and ensure that it benefits the entire community, making sure that developments not considered sufficiently profitable but beneficial to the public good are not ignored or that entire parts of the country are not excluded from the development of an activity that would be limited to a few large cities,
- rebalance the tax system to bring taxation of wages and capital investment closer to parity.

It can be seen that the great majority of the measures directly concern workers and labour relations. The authors are explicit in that there can be no doubt about the private sector’s ability to develop innovation, but they fear its willingness to invest in activities not immediately profitable and clearly call on the State to intervene.

This need to modernise labour legislation in the USA is also highlighted by the economist David Deming, who states that with the same regulatory framework, workers’ protections will be increasingly eroded in the presence of a work environment affected by the gig economy and artificial intelligence. Just as regulations were gradually implemented following previous industrial revolutions and contributed to society’s prosperity, a new framework must be defined for us to take advantage of all of the possible benefits afforded by the development of artificial intelligence⁹.

Amazon: in the USA, automation to the detriment of occupational health

The Reveal news website site gained access to the occupational accident figures of Amazon’s logistics warehouses in the USA over several years¹⁰. These figures show that the company generally has much more mediocre results than the rest of the sector in this country, with an accident and serious injury rate almost twice that of its competitors. This rate is calculated using accidents involving work leave. In addition, it tends to increase heavily over time: +15% between 2016 and 2017, +13% between 2017 and 2018, for a relative stabilisation at +1% between 2018 and 2019.

One of the reasons for this increase could be the growing automation of production in the warehouses. Indeed, follow-up of the figures in a warehouse located in DuPont shows that the rate of serious injuries almost tripled between 2017 and 2019 (from 8 to 23), period corresponding to the introduction

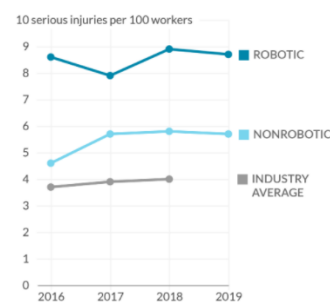
⁹ <https://www.nytimes.com/2020/01/30/business/artificial-intelligence-robots-retail.html>

¹⁰ <https://revealnews.org/article/how-amazon-hid-its-safety-crisis/>

of heightened automation. The main change is related to the fact that now it is the robots and no longer workers that move around in the workshop to pick the different elements of orders. The consequence is that the number of pickings jumped from 100 to 400 per work hour. As a result, more stress is placed on workers' upper limbs, causing MSDs. Lastly, the Reveal site compared (still based on the same indicator) the accident rate between Amazon establishments heavily or hardly automated and the rates of its competitors. The accident rate for Amazon's automated workshops is 50% higher than that of the ones with little automation, that rate itself also 50% higher than that of its competitors as shown in Figure 2.

Amazon's robotic fulfillment centers have higher serious injury rates

Injuries at Amazon's sortable warehouses



Note: Serious injuries are work-related injuries and illnesses that require days away from work or a job restriction. Sortable warehouses, which ship small- and medium-sized items, are the most common type of Amazon fulfillment center. The data for 2019 includes 46 robotic and 13 nonrobotic sortable warehouses.

Sources: Reveal analysis of internal Amazon data; U.S. Labor Department
Credit: Soo Oh/Reveal

Figure 2

The company's commitment regarding occupational risk prevention appears to take a back seat to customer satisfaction and therefore to the increased productivity necessary during major sales periods (Black Friday, Christmas, etc.). At those times, preventive measures such as rotating tasks are abandoned and the work day can be lengthened to 12 hours. These periods also see a large influx of temporary workers, who have little knowledge of the establishment and the techniques used.

Amazon's difficulty in managing prevention also results in a significant number of conflicts with subcontractors tasked with managing the infirmaries of some sites. Several of them put an early end to their contract complaining that they were prevented from doing their jobs.

In another field, related to the COVID-19 pandemic, studies showed a high level of contamination in US counties where many logistics centres are established, a link being established between these two occurrences¹¹.

¹¹ <https://www.nytimes.com/2020/07/09/us/coronavirus-ca-warehouse-workers.html>

New proposals for the protection of platform workers

Observing that “the development of digital work platforms is a social phenomenon that can bring great hopes for employment and social progress, but also pave the way for new forms of work precarity”, the French digital council, (CNNum) took up the matter of platform work¹². It made several recommendations aimed at correcting a certain number of inequities caused by these workers’ independent contractor status. It calls for a regulation of the operation of digital platforms which to restore equitable conditions.

The recommendations included, in particular:

- ensuring that platform workers have work conditions equal to those of employees through sector agreements establishing a minimum wage for the work of these independent contractors, once legal obstacles have been eliminated,
- introducing a time/kilometre remuneration obligation, based on the taxi model, on a transitional basis for ridesharing platforms; and for delivery platforms, creating an obligation to return to the system of hourly pricing, on an experimental basis; this can be implemented before negotiations between employer associations and trade unions, and then enshrined in an agreement between both sides of industry.

The report also highlights that “while digital intermediation enables unprecedented business agility and responsiveness, it is also the cause of unprecedented suffering at work”. In that regard, it recommends that platforms apply the provisions of the labour code relating to occupational safety and health. It also proposes affiliation of platform workers with the general social security scheme for the compensation of occupational accidents and diseases, noting that an added advantage of this would be to enable quantification and qualification of accidents for these activities. Such businesses would therefore have an incentive to establish an occupational risk prevention policy.

The proposals of the Frouin¹³ report, published early December 2020, take another direction. It did not adopt the creation of an intermediate status between “employee” and “independent contractor” because initial experience in this field (in Italy and Spain in particular) seems to have generated at least as many questions as it has resolved. Moreover, since public authorities (who commissioned this report) did not have on their agenda the recognition of employee status for platform workers, this possibility was also discarded.

The report therefore proposes a new path, that of using third parties to “hire” platform workers: this option is already proposed by umbrella companies and business and employment cooperatives. The worker would therefore have access to the general social security scheme, unemployment benefits, and more generally all the rights and advantages related to employee status. There would be no relationship of subordination towards an employer and their salary would depend on their turnover. The additional costs related to the use of this intermediary would be shared between the platforms and the workers.

The workers would evidently maintain the possibility of organising themselves into cooperatives. This model is already used for certain taxi companies and last-mile delivery businesses¹⁴.

¹² https://cnnumerique.fr/files/uploads/2020/2020.07.29_Rapport_Travailleurs_des_plateformes_Access.pdf

¹³ https://www.gouvernement.fr/sites/default/files/document/document/2020/12/rapport_reguler_les_plateformes_numeriques_de_travail.pdf

¹⁴ <https://www.facebook.com/watch/?v=647593402854332>

The matter of occupational health and safety would come under the realm of social dialogue. Apart from public policy provisions, collective bargaining by sector would be mandatory between platforms and elected worker representatives on eight topics. One of these topics concerns: “working conditions and in particular the measures aimed at preventing occupational risks and limiting working time”.

Circular economy – Acceleration of the greening of the automobile industry

The Renault group announced the closure of the assembly line of its historical factory in Flins by 2024¹⁵. A sign of the times, this factory will become “Re-Factory”, devoted to reconditioning of second-hand vehicles, recycling of end-of-life vehicles, repair and reuse of batteries, as well as research. In the long term, by 2030, this first European circular economy factory in the area of mobility is expected to employ 3,000 people. The goal is for it to have a zero-carbon footprint.

Almost simultaneously, we learned about the ban on the sale of new combustion-engine cars (petrol and diesel) in the UK by 2030 (instead of 2035 scheduled previously) and on new hybrids as from 2035¹⁶. While Norway has made the same decision with a target set for 2025, most European countries have set the limit at 2040.

With the installation of a Tesla factory close to Berlin¹⁷, European vehicle electrification is growing faster than expected. This “greening” will have consequences on the entire ecosystem related to car manufacturing. For it to be substantial, industrial organisation will have to ensure that battery recycling operations take place in Europe. Several studies have already showed the difficulty of performing these operations safely for workers: grinding operations and pyrometallurgical processes in particular can cause exposure to high levels of metals during recycling.

Transformations in the textile sector and their consequences on working conditions

Low-cost relocations, the hazards of fast fashion

The era of autumn/winter and spring/summer collections has been over for several years now. Under the influence of fast fashion companies such as Zara, large textile chains initially reduced the lifetime of their collection to six weeks. But new technology and the boom in e-commerce further accelerated the movement and gave birth to exclusively online companies. The most iconic is probably Fashion Nova, founded in California in 2006. Although it still has a few outlets, almost all of its activity is online. The backbone of its business model is an Instagram account with 17 million subscribers, the company’s only asset, where influencers present the brand’s clothes. The second characteristic is that the brand creates between 600 and 900 new models per week which are generally sold only for a few days. The acceleration of the production line is such that a product proposed by a stylist and accepted by the brand must be available for sale online within 48 hours to then be delivered to the first clients’ homes

¹⁵ https://www.lemonde.fr/economie/article/2020/11/25/renault-confirme-la-fermeture-de-la-chaine-d-assemblage-de-son-site-de-flins-pour-en-faire-une-usine-dediee-a-l-economie-circulaire_6061108_3234.html

¹⁶ <https://www.lesechos.fr/industrie-services/automobile/royaume-uni-linterdiction-des-2030-des-voitures-thermiques-accroit-la-pression-sur-les-industriels-1266135#:~:text=Les%20constructeurs%20ont%20ainsi%20appris,interdites%20%C3%A0%20compter%20de%202035.>

¹⁷ https://www.tesla.com/fr_fr/gigafactory-berlin

in less than half a day. For this purpose, production had to be returned to the US (85% of the total) since this model does not tolerate long shipping times.

The model is based on complete outsourcing of production and marketing¹⁸: from the graphic design of the clothes to the delivery of products. With the clothes going for cheap, manufacturing costs have to be very low. Small workshops therefore sprung up in California and neighbouring states to make the clothes. Most of the workforce are undocumented people paid below minimum wage. The existence of these workshops is short, so as to avoid identification and investigation by state officials. The work conditions do not comply with regulations and non-payment of overtime is frequent. Fashion Nova, which has no legal connection with the companies accepts no responsibility and hides behind its specifications which require subcontractors to comply with regulations in force.

Meanwhile, Boohoo, a company using very similar methods is prospering in the UK. With about ten million subscribers in the different social networks and selling massively online, it was well-positioned to turn in profits during the coronavirus crisis: moreover, it revised its annual growth forecast upwards, from 25 to 32%¹⁹. This meant having a supply chain operating fully during the lockdown. It is comprised of a network of hundreds of small workshops mostly based in Leicester which supplies Boohoo with about 80% of the clothes it sells. The continuation of this activity during the peak of the epidemic in spring is one of the reasons why an early second lockdown in Leicester was decided by the authorities on 29 June 2020.

No physical distancing was possible in these workshops which were mostly dilapidated and poorly ventilated. Their workforce is mostly undocumented migrant workers (37% are of Indian or Pakistani origin) who, given the low pay they receive (often \$3 to 4 per hour), have no choice but to continue to work, without any form of protection, regardless of the circumstances. This modern slavery moreover was already denounced by the non-governmental organisation Labour behind the label²⁰ and was recognised by Boohoo²¹.

A sector also concerned by the circular economy

In favour of a partial relocation of its production to Europe and the Maghreb, the company Promod decided to offer its clients the possibility of customising some of their clothes²². They are also introducing a growing quantity (with a goal of 100% in 2025) of eco-friendly materials in the fabric: organic cotton, viscose produced from wood coming from sustainably-managed forests, recycled fibres. The goal is to produce with a more specific target to avoid product surplus and discounts, which undermine margins. The company does not project a massive relocation of production to France, which would certainly resuscitate the French textile industry, but new manufacturing techniques based on new technologies open the door to new prospects for certain production segments²³. Models more virtuous than that of Boohoo and Fashion Nova are being tested, as part of efforts to shorten supply

¹⁸ <https://www.nytimes.com/2019/12/16/business/fashion-nova-underpaid-workers.html>

¹⁹ <https://www.theguardian.com/business/2020/sep/30/boohoo-reports-sales-surge-despite-leicester-supplier-scandal-covid>

²⁰ <https://labourbehindthelabel.org/boohoo-this-black-friday-pay-back-your-workers-and-go-transparent/>

²¹ <https://www.theguardian.com/business/2020/sep/25/boohoo-report-reveals-factory-fire-risk-among-supply-chain-failings>

²² <https://www.lesechos.fr/industrie-services/mode-luxe/promod-veut-multiplier-les-productions-de-vetements-a-la-demande-1268235>

²³ <https://theconversation.com/mode-la-fabrication-a-la-demande-tendance-de-demain-123204>

chains, by important players in the sector. These new models could result in job creations in France or elsewhere in Europe²⁴.

“Work today and in the future”: a report on work transformations intended for the labour inspectorates of Nordic countries

In 2016, the labour ministries of Finland, Sweden, Denmark, Norway and Iceland created a working group tasked with supplying a view of work transformations and their occupational health and safety effects, intended for their labour inspection services. This collaboration gave rise to the publication of a report in September 2020²⁵. The approach represented below in Figure 3 highlights a number of issues for which the authors propose recommendations intended for labour inspection services and other stakeholders.

They recommend for example, promoting the assessment of risks (particularly psychosocial) associated with new technologies as of their design, better incorporation of occupational health and safety issues in public health policies, upskilling employers and workers to improve the quality of risk assessments performed at the workplace, in order for them to be adapted to the technological developments and take into account the delayed effects.

²⁴ <https://fr.fashionnetwork.com/news/La-production-a-la-demande-au-coeur-d-un-sourcing-qui-se-reinvente,1173421.html>

²⁵ <https://julkaisut.valtioneuvosto.fi/handle/10024/162419>

Figure 3.

The figure represents the core of the Nordic Future of Work Group. The four main drivers impact many occupational safety and health related issues in present and future work. A set of practical recommendations are derived from the discussion.

