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**Working Paper**

## Digital Social Security: Outline of a concept for the 21st century

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# WORKING PAPER FORSCHUNGSFÖRDERUNG

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## Digital Social Security

Outline of a concept for the 21st century

Enzo Weber

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Commissioned by  
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## Preface

In 2015, the Hans-Böckler-Stiftung established the “Commission on the Work of the Future” ([www.arbeit-der-zukunft.de](http://www.arbeit-der-zukunft.de)). The expert committee investigated how digitalization, globalization, and the transformation of values have changed the world of labour, and it made proposals for what needs to be done to guarantee a fair labour market and high social standards under these new circumstances.

We continue to develop new insights and suggestions for labour’s future with the support of a wide range of experts. One important goal of our activities is to develop, disseminate and promote specific policy proposals for the governance of new (and comparatively new) types of work.

One outstanding example of such a policy proposal is the Digital Social Security (DSS) model developed by Enzo Weber. The model solves the problem of severe gaps in the social security of platform workers. The global flow of digitalized and flexible labour on internet platforms cannot be stopped by national borders, and it cannot be governed by individual nation-states alone.

The DSS model leverages a transnational approach and digitalization itself to guarantee social security under these challenging circumstances, while retaining the sovereignty and flexibility of existing national systems. The model proposes that platforms all over the world implement a digital mechanism to transfer a certain share of each agreed upon remuneration to the global DSS account of the platform worker. The DSS account collects the globally generated contributions and transfers them on a regular basis to the social security system of the platform worker’s home country.

In this publication, the Hans-Böckler-Stiftung and its “Work of the Future” Research Unit present a revised outline of the DSS model by Enzo Weber. The revised model has benefited from many conversations and discussions with a wide range of partners. One of these partners was the “Work of the Future” Research Unit, which organized a workshop with Enzo Weber on “Digital Social Security” in Berlin in May 2019.

An important starting point of the debate about Digital Social Security was LABOR.A, an innovative forum of the Hans-Böckler-Stiftung that facilitates the exchange of ideas between worker representatives, firms, academics, think tanks, politicians, and unions. The collaboratively planned agenda of LABOR.A joins our activities about labour’s future with the contributions of a wide range of partners. Enzo Weber presented his [original DSS model](#) at the conference and won the audience award for best idea. We are particularly delighted now to be able to publish the revised and refined version of the DSS model.

For additional information about the work of the Research Unit on standards for labour in the digital age, please take a look at [www.arbeit-der-zukunft.de](http://www.arbeit-der-zukunft.de).

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## Summary

Platform work is increasing worldwide, various tasks are involved. The social protection of platform workers has serious gaps. The challenge lies in an internationally integrated, extremely flexible market with a multitude of small jobs and constantly changing contract partners. “Digital Social Security” establishes a concept on how to take advantage of digitalisation to organize social security even in such an environment. A digital mechanism is implemented in the platforms, which transfers a percentage of the agreed remuneration to the DSS account of the platform worker each time a job is finished. It is part of a digital personal account system and accumulates contributions from all platform activities. At regular intervals, the collected contributions are then transferred to the social security system of the country of residence of the platform worker. Optionally, the contributions – provided standardised interfaces – could also flow directly to the national systems. Here, claims are generated in established structures. The national social security thus retains its sovereignty and flexibility. For instance, the distribution to different social security branches is country-specific, minimum contributions can be implemented, etc.

Attaching to the platform, the DSS mechanism takes advantage of the fact that here all relevant information is available about the worker, the customer and the agreed remuneration. The latter usually has to be deposited in advance, and platforms require significant fees. So they would also be able to enforce the transfer of DSS contributions. Decisive for this is the political will. Ideally, as many countries as possible should participate.

The labour law status of platform workers is still subject to considerable uncertainty. However, DSS makes sense in any case: for those who are classified as dependent workers, it provides an efficient tool to organize social protection in an amorphous labour market. And for the self-employed and the large grey area DSS fills a real gap. Remuneration in platform work is often very low, which makes it difficult to finance social security. Without social protection, however, precarious situations are exacerbated in times of hardship, individual career investments in the future are hindered, and wages are pushed below a sustainable level in an unregulated market. In this regard, DSS can initiate positive social development.

DSS makes it possible to implement a pay-as-you-go procedure for platform work. In view of high cash preference and information deficits, arrears of payment and surprising additional demands as well as contribution evasion are avoided. By the same token, it provides high efficiency for employers and platforms. The digital efficiency of the system also

makes DSS appear to be a promising perspective for social security as a whole.

## Introduction

Digitalisation changes the world of labour, and it does so in several dimensions. First, it shifts jobs: Some are destroyed, others are created. Second, it alters work itself, namely working conditions and tasks. And third, it provides new opportunities for the way labour markets operate: Specifically, digital interconnection makes it feasible to trade digital (or digitally transferable) work at online platforms without any physical contacts from the matching process to the completion of the work. The relevant tasks include more and more activities that are digitalised today but used to be location- or environment-specific in the past. The complexity widely varies, comprising tasks such as information collection, product testing, programming, writing texts, design etc. Moreover, the allocation of tasks through platforms is also going beyond digital work, sourcing services in regional areas (such as recording retail prices etc., but also work at the premises of the customer).

## What are developments and conditions in platform work?

Evidently, this development opens up new options for work outside the usual standard employment relationships. Platform work follows a strong trend – as Vili Lehdonvirta’s article from 2018 shows –, even if still from comparatively low levels in most countries. While numbers naturally depend on definitions and measurement methods, for instance a survey report of Ursula Huws and co-authors depicts shares of respondents having ever sold labour via an online platform between 9 and 22 percent for a sample of developed European countries. Platforms can increase market transparency, lower transactions costs and offer new efficient and flexible opportunities for firms – and may also accommodate the wishes of individuals regarding independent and self-determined activities. However, from the national policy perspective, platform work has an informal character. Many see cause for concern, amongst others since the basic risks of life such as sickness, accident, unemployment, old age and nursing care dependency are often not covered by the gainful activity. This is especially true for those individuals relying on platforms as their main source of income. But also in case platform work represents a secondary job, it leaves a gap in that the income from this source usually is not used to strengthen social security – what would often be necessary to reach an appropriate level of social protection. Of course, it is possible that in absence of platforms, individuals would have earned no income at all, and existing informal employment – with high shares especially in developing countries – could become more transparently organised via platforms. In any case, while taking no stance regarding the desirability of platform work in general, it remains an urgent question how to improve on the evident social deficiencies.

Consequently, it comes as a challenge to refine social security for a more flexible working labour force. After all, they are just as much in need of social security as if they worked in traditional employment relationships. If countries provide a relevant welfare system, in absence of social security and in case of need, social benefits step in. But then, tax payers end up as de-facto insurers actually subsidising a growing – often informally operating – sector where wages are pushed below a sustainable level and inducing false incentives to neglect individuals’ social security. Besides this moral hazard problem, adverse selection just as the need for cash discussed below make it unlikely that merely relying on private initiative of the individuals will lead to satisfying results. Beyond, social security is connected to further positive effects such as on health, the willingness to invest or the identification with the national

community. Importantly, it is not about limiting platform work, but about conditions that enable a more sustainable development of the potentials.

In sum there are good reasons to extend social security systems to platform work. However, there are also major obstacles many would deem prohibitive. These are discussed in the following.

## Is organising social security for platform work possible?

A significant challenge lies in the international, flexible and short-term character of platform work. In contrast, today's social insurances are tied to the national framework. Handling the multitude of jobs with ever changing contract partners within the administrative processes of various national social security systems is probably impossible to manage. The same holds true for the creation of a new fully-fledged international social insurance. However, digitalisation, while being a challenger, can also be used for the benefit of social security (compare Weber 2017). A flexible and practicable system would be given by what we call "Digital Social Security" (DSS). It would automatically pay a fixed percentage of the agreed salary into the personal DSS account of the platform worker (e.g. half on top of the agreed salary, as the employer's/customer's contribution, and half as a deduction, as the employee's/platform worker's contribution). This pay-as-you-earn mechanism would be the only element to be included into the different platforms. The accrued amounts would be transferred regularly from the DSS accounts to the relevant national social security systems. This would be the system at the place of residence, which is regularly identical with the actual place of work in the case of platform work, whereas tying social security to the country of the platform or the client would quickly lead to a fragmentation of claims over many national systems. There, all further steps could be handled within existing structures. This includes deciding how to distribute the DSS contributions to the different insurances and generating corresponding claims. The administrative costs would have to be covered as usual in the national system.

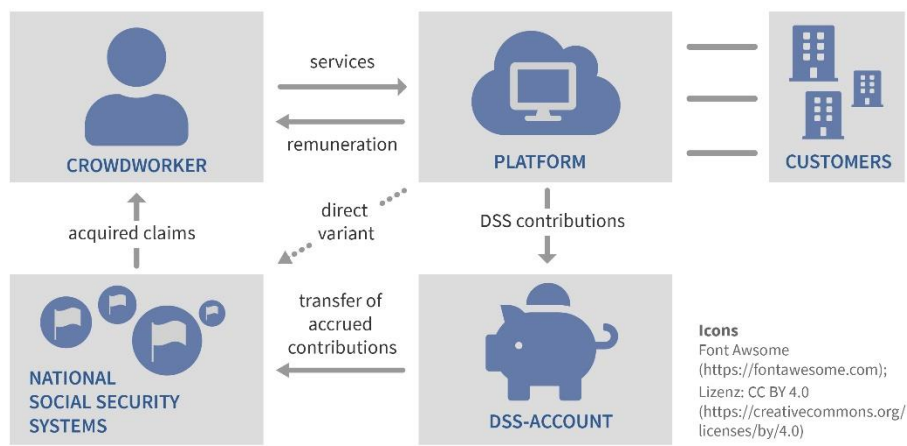
The DSS account system could be administered by an existing international institution such as the ILO or the World Bank.<sup>1</sup> While this would provide a common infrastructure, the national social security systems would remain fully in charge, and social security would remain in national sovereignty. An overview of the system is given in Figure 1. Key is the automatic mechanism in the platforms, which replaces a probably infeasible direct coordination between all customers and social security systems on a case-by-case basis. It would be conceivable, as a variant, to direct the contributions from the platforms directly to the national systems without the intervention of a DSS account system, as is increasingly the case, for example, with the transfer of VAT. The contribution ac-

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1 At European Union level, support for DSS via the new "Single digital gateway" and the expanded "Internal Market Information System" (IMI) could be a possibility.

counts would then be completely managed nationally. In this case, technical standards for interfaces and processes should be defined, as they would anyway be used in the DSS account system. This would avoid overburdening especially smaller and new platforms lacking comprehensive administrative capacity. The single countries could either make use of the DSS account system or opt for the “direct variant” (Figure 1).

Figure 1: Digital Social Security: How does it work?



Source: Enzo Weber

## How does Digital Social Security adjust to different national systems?

Even though dealing with quickly moving, (partly) internationally integrated markets, DSS maintains the flexibility of national social security systems. The usual country-specific regulations can be followed once the accrued DSS contributions cross the border into the national social security system. In particular, this concerns the distribution of the DSS contributions to different insurances/purposes, which varies from country to country. Naturally, if a uniform DSS contribution rate were to apply, it would not reflect the diversity of national individual regulations. This could be taken into account if one may proportionately scales the insurance claims to the ratio of contribution rates from the DSS and the national system. If – for example - the contribution rate in the DSS system is 20 percent below the contribution rate in the national system, the claims will also be 20 percent less. Such a scaling is already practiced today in cases of social insurances for self-employed, for example in Germany. For instance, one could first pay into those insurances that do not work according to the principle of equivalence (usually health), and distribute any remaining amounts to other insurances (such as pension) where claims could be scaled as described above. Thereby, regulations on minimum contributions could be followed, such as already present for social insurance for self-employed in several countries. If the DSS contributions alone do not reach these limits, further funding would have to be used. Private/non-governmental insurances could be considered, e.g. in case no fully-fledged social security system is available or if choosing private insurances is allowed for following compulsory insurance. Any contributions that would not be mandatory according to national regulations could be paid out again following a yearly final account. Besides overpaid contribution rates this may concern contributions beyond relevant assessment ceilings/minimum contributions or contributions for earnings below certain limits, which are exempt from compulsory social insurance. From the outset generous lump sums could be recognised in the calculation of claims taking into account that platform workers incur certain (usually rather limited) costs, such as depreciation on IT-equipment, in order to earn income.

Finally, right in the first instance country-specific DSS contribution rates may be considered in order to replicate the national conditions (from the platform worker's country of residence) exactly. On the downside, it may be undesired to distort competition (beyond the effect of the strongly different living costs) and one would still not mirror any regulations that make contribution rates person-specific.

A genuine distinction could, however, be made in the case of platform orders between place-bound activities such as gardening and non-place-bound activities such as programming services. Place-bound activities are purely in the national context of place of residence and place of work. Country-specific contribution rates could easily be applied here. The advantage of DSS would be to be able to leverage the efficiency of the pay-as-you-go mechanism as well as the transparency of platforms, in order to better tap into the existing grey area in many service activities for social protection. In the case of non-place-bound activities, on the other hand, there is the internationally integrated market described above where social protection can be handled via the DSS concept.

## Which social insurances should be taken into account?

The largest branches of social insurance are pension and health insurance. This covers essential risks, which are also taken into account by DSS. Unemployment is a relevant phenomenon also in platform work. Research results show that by no means one can assume a steadily available inexhaustible pool of jobs, but that work is also insufficient. Accordingly, inclusion in unemployment insurance should also be considered – even more so if it also comprises continuing education services to which platform workers without a firm context do not have organised access. Finally, the risk of accidents at work has to be considered. In accident insurance, prevention options can also play a role. Scalability of benefits is given in pension and unemployment insurance, but not in health and long-term care insurance and partly in accident insurance. Scaling would thus only be applied in the relevant cases, minimum contributions could be handled as described above.

All that said, obvious difficulties arise in countries equipped with no social security system. Still, one may consider involving private insurances or similar local organisations then – a new transparency through digital platforms can also help to make many jobs reachable for social protection in the first place. Notwithstanding, in these cases more fundamental political steps would be of prime importance. For countries with fully tax-financed social security benefits, DSS might not be eligible. However, it would be relevant whether single social insurances have contribution financing or to what extent supplementing a basic level provided is common and sensible.

For illustrating the functioning of DSS, the box describes three exemplary cases. As explained above, the concrete regulations remain flexible in that they are up to national political determination.

### Examples of DSS in practice – three fictional case studies

#### Case study A

Person A performs programming tasks on platforms in a developed economy, earning on average 6.000 euros a month. Her DSS contributions are shared among (1) the health insurance, (2) the pension fund and (3) the unemployment insurance. In (1), the payments exceed the minimum contribution, such that A has full health insurance. Regarding (2), contributions are paid until the applicable assessment ceiling, so that substantial pension claims

are generated. In (3), A gains claims for unemployment benefits (with the amount determined by her contribution level), since over, say, twelve months average contributions reached the relevant minimum amount. Since due to A's high income, DSS overpays social security contributions specified by the national regulations, the amount not distributed in (1) to (3) is refunded to A.

**Case study B**

Person B receives social benefits and conducts microtasks on different platforms for an extra income of about 100 euros per month. B is covered by the health insurance provided by the state for welfare recipients. B's DSS contributions are directed to the pension fund, where his claims from a former regular job would be slightly increased. According to national regulations, due to the low earnings, B can also opt for a refund. However, in order to improve work incentives, the country currently considers lowering the burden of social security contributions not exclusively for very small jobs, but from a certain salary limit onwards. Moreover, secondary jobs should be subject to social security.

**Case study C**

Person C lives in a developing country and tops up her income from a local job of 200 US dollars via platform work. While no fully-fledged social security system exists in C's country, a basic health insurance is currently being created. C's first income does not suffice to make the necessary payments. However, her DSS contributions can be directed to the health insurance and augmented by further own payments from the local job in order to reach sickness insurance coverage.

## Can social security be tackled without comprehensive regulation?

Regarding platforms and platform work, there is need for broader political action beyond social security. Determining the legal status of platforms as well as clearly defining and distinguishing self-employment under the circumstances of diverse and flexible labour markets is key. Various issues such as working time, data protection, work safety, minimum wages or collective bargaining hinge on that, besides social security. It is likely that a non-negligible part of platform work should be classified as dependent employment. These jobs should be treated accordingly, which includes access to the full set of employees' rights applying in the territory where the worker is based. DSS is explicitly not an instrument to deviate from this in such cases to create a "second-class worker". Quite the contrary, in these cases DSS is useful as an efficient tool to organise social security in an amorphous labour market environment without red tape. Beyond, platform work will also involve many genuine freelancers and many more cases in the light grey area, where realistically a classification as dependent employment can be bypassed, given the international and flexible character of platform work, the potential for collusion between customers and workers and the limited range of formal national regulations facing a rapidly changing market. Here, DSS fills a real gap.

In general, workers' rights are meant to protect employees given their dependency on the relationship with the employer and the unequal bargaining positions. But social security arguably represents a crucial issue regardless of individuals being classified more as employees or as freelancers – or as something in between. Indeed, in several countries social security contributions concern also self-employed, either compulsory or on-demand. To conclude, DSS makes sense even facing ambiguities about the employment status of platform workers, which are not yet resolved and which might be treated differently over time. Indeed, it follows an effective principle that connects social protection to the earning of income rather than to a specific legal status such as a standard employment relationship, but adapts the rules appropriately addressing the specific needs of atypical workers (compare Schoukens/Barrio 2017). If, in any case, social protection is provided for regardless of the concrete legal employment status, for DSS it would make sense to use a broad definition of "platforms" – in order to make the most of the advantages of an efficient digital pay-as-you-go procedure. However, a limit might be reached with online services that provide practically only information about supply and demand and do not take on any further functions.

## **Do platform workers have the means to afford social security contributions?**

Platform workers often earn low wages, especially for simple tasks, which is to be seen against the backdrop of diminished transaction costs leading to strong international competition. For instance, in a forthcoming study, Uma Rani, Marianne Furrer and Christina Behrendt find average hourly wages of workers with 1 to 2 years' experience on microtask platforms of USD 4.92, or USD 3.76 including unpaid work (such as search and communication), with the distribution being left-skewed particularly in lower-income countries. Wages naturally depend on the type of work, e.g. regarding microtasks vs. more qualified jobs.

It is well known that under these circumstances, a need for cash often dominates motives to provide for the risks of life. What should be the consequences? In many countries, the beginnings of today's social security systems were organised in the late 19<sup>th</sup> and the first half of the 20<sup>th</sup> century. By that time, workers were arguably more in need for cash than today. Imagine reformers would have refrained from establishing compulsory social security based on this argument – societies would have lost a lot. Today, again, there is much to lose from political inactivity. Indeed, the medium-run goal of DSS is meant to be to initiate dynamics leading to better protection of platform workers and more sustainable wage developments.

The income of workers must suffice both to make a living and to make provisions for old age, the case of sickness etc. But if this is not fulfilled, the absence of social security is surely no solution. Quite the contrary, if risks actually occur, in times of hardship without social security precarious situations are exacerbated – e.g. if time cannot be spent for education anymore or personal capital goods have to be sold. Without social protection, individual investments in the future, for example in education and training and career development, will be thwarted for fear of calamities. All this speaks in the sense of a need of social protection and an increasingly blurred separation of self-employed and dependent work for compulsory social insurance. DSS offers the option of an efficient pay-as-you-go system, which, before the background of a high cash preference and typical information deficits, ensures payments. Surprising additional demands, for example when income exceeds exemption limits, and other uncertainties are avoided by DSS. In many developing countries with often high shares of informal employment, digital platforms might represent an opportunity how these jobs can become more organised, including the implementation of social protection following the DSS principle. Beyond, adequate poverty reduction policies are

called for, including to a certain extent reformation of platform work. Notwithstanding, in order to gain acceptance, in the context of experiments the DSS project could start from low contribution rates – if only a few percent. And one may consider topping up private DSS contributions by public means, as far as compatible with the national social security framework. One example is given by the additional public contribution amending the pension contributions of self-employed in Austria.

## Would social security contributions be evaded?

Obviously, compulsory financial contributions in informal worldwide employment relationships could be subject to substantial evasion effects. However, increased transparency on digital platforms can not only improve matching processes, but may also support the installation of a DSS system. Importantly, both the information on the contractor of a job and the stated salary are digitally stored. Therefore, platforms could enforce adherence to the DSS rules, especially as the payments often have to be deposited in advance.

Concretely, part of the deposit could be automatically retained and transferred to the DSS account, where, depending on the sharing rule, the required deposit would comprise a certain markup on the agreed salary. At least, platforms also enforce payment of their fees that are often higher than usual social security contributions. Then, it is up to political decisions within the countries to set such activity in motion. Optimally, there should be a consensus among as many states as possible to get active.

By threat of restricting the activities of non-compliant platforms on their territory, states in general have the means to do so. Since platforms rely on openness and network effects, even a simple illegalization without further action would be a considerable lever. The organisational and negotiation power would increase in the number of participating countries. In this regard, also the European Union could take a productive role.

Realistically, fraud is unlikely to be completely prevented, but the conditions to ensure compliance would be much better than for offline cash-based labour. The rule compliance could also be checked by incognito random tests. Optionally, public institutions could also foster the creation of platforms that adhere to specific ethical and social standards and operate with reduced fees to leave room for DSS contributions.

The DSS concept also offers the platforms a high level of efficiency with the digital transparent mechanism and the standardised DSS account system (or interfaces to social security systems). The customers (or employers) as well as the platform workers are also greatly relieved of uncertainty and bureaucracy.

Special attention should be paid to the interaction of DSS and the official declaration of income. It stands to reason that unreported income is quite prevalent in platform work. If the system allows tax and labour market authorities to learn of DSS money flows, as a side benefit, tax

evasion and welfare fraud would be complicated – as in the case of the automatic provision of income data from Uber drivers in Estonia.

On the downside, this could reinforce incentives to switch to (potentially newly developing) unregulated platforms. In any case, to take full advantage of DSS, as a part of an established political consensus, authorities would have to enforce regulations and hinder illegal platform activities in their territory.

## Conclusion

In the light of these arguments, DSS appears as a promising option. Starting it via limited experiments with low contribution rates would allow market participants and policy makers to gain experience with the new instrument. Once institutional structures have been established and further developed, the scope could be extended and the quantitative level could be raised. In the same context, further countries might be motivated to join, in addition to those having made the first move. DSS represents a concrete step forward, being both feasible and socially beneficial. Naturally, there are some difficulties associated with the introduction – but it does provide a viable way to deal with growing risks of social problems that so far remain out of control. Equally, it is about developing the existing potential of platform work on a sustainable basis.

If social insurance institutions set up digitized processes and interfaces and this is also the case on the employer side, processes in this area could be carried out (while maintaining data protection) to integrate a digital system.

As digitalisation progresses, perspectives for established national, non-platform-based social security would also be conceivable in line with the DSS concept. If social insurance institutions set up digitised workflows and interfaces and this is also the case on the employer side, here too (while preserving data protection) processes could be integrated into a digital system. For example, for a planned wage payment, a signal could be sent to the social security interface, which automatically collects the relevant contribution. In addition, services like digital insight of the employee into the DSS account and automatic information about the acquired claims would be conceivable.

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**Professor Enzo Weber** holds the Chair of Empirical Economics, in particular macroeconometrics and the labour market, at the University of Regensburg. He is Head of the Research Departments “Forecasts and Macroeconomic Analyses” at the Institute for Employment Research (IAB) and works in the fields labour market, macroeconomics, forecasting, financial markets and econometrics. Professor Weber is also a Research Fellow at the Institute for East and Southeast European Studies (IOS) and a consultant and Research Affiliate of BE Berlin Economics. He graduated in economics and completed his PhD at the Freie Universität in Berlin. Here he acted as a teaching and research assistant at the Institute of Statistics and Econometrics. He also participated in the Collaborative Research Center 649 “Economic Risk” at the Humboldt University in Berlin and visited the Japan Center for Economic Research. He held a postdoctoral position at the University of Mannheim and was Junior Professor of Economics at the University of Regensburg. In addition, Enzo Weber has served as a Research Professor at IAB.

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In this publication, the Hans-Böckler-Stiftung and its “Work of the Future” Research Unit present a revised outline of the DSS model by Enzo Weber. DSS (Digital Social Security) solves the problem of severe gaps in the social security of platform workers. The model proposes that platforms all over the world implement a digital mechanism to transfer a certain share of each agreed upon remuneration to the global DSS account of the platform worker. The DSS account collects the globally generated contributions and transfers them on a regular basis to the social security system of the platform worker’s home country.

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