



# 1. The Digital Remaking of Society

Society is changing at a breakneck pace, and only now are we beginning to discern the contours of the newly emergent form of life conjured up by the digital revolution and rapid technological change. The digital society of the future still has not found its appropriate form and function. Flows and consumption of commodities and information are being generated at a dramatically accelerated rate; the creation of value relies less on material things and processes than it once did; and institutions such as the nation state, which are limited to fixed geographic locations, are becoming relatively less important. At the same time, new patterns and practices are emerging and new kinds of commitment and attachment, especially involving the world of work, are on the horizon.

Powerful information and communications technologies and network infrastructures point to new possibilities for advances in productivity and efficiency, as well as the development and utilization of innovative products and services. They offer opportunities to enhance the quality of life while embedding sustainability permanently in our production and consumption processes by suggesting new ways to save energy and avoid overproduction. Digital applications also help us to manage increasing traffic volume and the consequences of the demographic transition. Furthermore, they enable us to reduce costs while raising the quality of products and services. But these new technologies also pose a challenge to us when it comes to such matters as the distribution of growing affluence, job replacement, data protection, ensuring the right to democratic participation, the preservation of our autonomy, and defence against the tendency of digital technologies to overwhelm their users.

So far as we can tell, the digital devices that are becoming omnipresent in our daily lives broaden our options, but they also impose new limits and constraints on us. They modify both our institutions and social practices, while opening up new dimensions of action that have not yet been surveyed, let alone institutionalized in our legal system. In other words, the new spheres of digital society both empower and limit human beings. On one hand they suggest previously undreamed-of possibilities for self-actualization; on the other, equally unforeseen in past ages and de-linked from those positive aspects, they have a downside: the need to protect people from being overwhelmed by digitalization and social stigmatization, and to shelter their intellectual property from data-mad Internet companies out for plunder.

The space of locations, long familiar to us, is gradually being supplanted by a space of flows. There, twenty-four hours a day, various forms of data pulse along, from information and the products of labour to private and social transactions. Our most important actions and transactions once took place in definite spaces; now they have been transferred into the digital sphere, and that has led to new architectures of power. Today, power accrues to those - like Google and the NSA - who have the most data, the best algorithms, and the most advanced computers.

The implications of digitalization for our society and democracy are coming into view, but only gradually. To be sure, many areas of politics, the economy, culture, and science have been shaken up - and in many ways permanently transformed by specific disruptive innovations. But at this time the implications of digitalization as a total phenomenon touching every aspect of life are revealing themselves, at best, only in broad outlines. Recent research indicates the ways in which personal identities manifest themselves differently in cyberspace, and even how brain functions change, both indicators of the reach of the epoch-making shifts taking place all around us. There is thus a great need for ideas with a long-term perspective on how to contain and shape the transition.

From the economic point of view, we can expect an “automation dividend” to flow from the further digitalization of industrial production and the emergence of new digital services. An increase in overall societal wealth can be foreseen. At the same time, the number of people benefitting directly from such productivity growth will diminish. For one thing, the number of those employed in highly automated factories will tend to decline; for another, most of the economic gains from a digitalized economy in Germany will go to a few branches of the export and digital sectors. But the latter will provide jobs for only a relatively small number of elite employees. In this respect, there is some risk that the income structure of wage labour will diverge into two tracks: ever-higher wages in those industries that remain competitive in the global market and have become disconnected from normal wage trends in the country, and stagnation in the latter. Even today, one explanation for the wage disparity between men and women is that most of the high-paying industrial jobs are held by men.

So digitalization also implies new distributive issues. For what ends should the automation dividend be used? How can we prevent a further widening of the income gap? And how can we distribute the fruits of increasing affluence so as to make our society more liveable - e.g., by strengthening professions devoted to social welfare? We want to make sure that digitalization leads not only to technical but also to social innovation, and that the revolution in communications also has positive effects on our common life and the ways in which we, the members of society, communicate with each other about all the issues in question. This paper is intended to stimulate thinking about just such matters. In our deliberations we take our bearings from the three fundamental values of social democracy: freedom, justice, and solidarity. In addition, particular attention is paid to changes in the nature of work precipitated by the digitalized society. We justify this point of emphasis on two grounds. First, work is the central theme of social democracy. Second, the dynamics of change are currently affecting work more powerfully than any over sphere of life.

## **2. Challenges to the Fundamental Values of Social Democracy**

The digital revolution raises questions that touch on the core elements of social democratic values. The present text investigates whether the digital transformation can be controlled and shaped. It also inquires into the long-term changes that digital networking will bring to the creation of value, the production of knowledge, work, and social cohesion.

The fundamental social democratic values of freedom, justice, and solidarity have informed the European workers' movement since its inception. These values are inspired by the philosophy of the Enlightenment and the French Revolution. The workers' movement took its bearings from them, because their core content always could be adapted successfully to changing times. From the industrial age to the modern knowledge economy, from Imperial Germany to the reunified and democratic Germany of today, those fundamental values have been reinterpreted again and again, and applied to changed circumstances, in order to preserve their core elements.

Digitalization necessitates such a renewed sampling procedure for two reasons. First, the ongoing transformation is changing existing patterns of economic activity, learning, and life itself. Second - and this would appear to be the incomparably more important factor - it adds an entirely new sphere to the spaces of action that are familiar to us: the virtual space in which people spend more and more of their time for both professional and personal reasons. This space is intertwined with the real world, but it exhibits completely new features. In respect to social and legal norms, we have scarcely even begun to define its scope and form of integration into society, much less to order and regulate it.

The highly dynamic way in which such a new space has emerged necessarily raises questions concerning social democracy's fundamental values. Social democratic values must serve as the foundation upon which responses to the basic problems of the digital society will be found. In connection with those substantive issues, we must rethink the forms of organization appropriate for social democracy and labour unions, although that is an endeavour which this paper does not venture to undertake. In short, social democracy is facing a twofold challenge: adopting a political framework, based on fundamental values, suitable for the digital sphere, and modernizing its own forms of organization. In this conjunction of problems lies the key to exploiting the undoubtedly enormous potential of the digital society to enhance the common good while simultaneously getting a handle on its equally incontestable dangers. Here we focus on the three central values of freedom, justice, and solidarity.

### 3. Freedom

If we consider the origins and history of social democracy, we realize that it has always been a liberation movement. The idea was to empower human beings to lead self-determined lives. In the course of that project, social democracy developed a comprehensive understanding of freedom. Freedom does not mean merely emancipation from the arbitrary will of another or from oppression in the sense of those defensive liberties (“freedom from”) that afford protection against encroachments by the state or society. It also means freedom from want and fear; hence it implies that one has available the material means for leading an autonomous life in the sense of enjoying “enabling” rights to liberty (“freedom to”). Every person qua individual has a claim to this “ambitious” version of liberty, yet only society as a whole can insure that a person can make full use of his or her freedom.

When it comes to the opportunity to lead a free, autonomous life, digitalization works at cross purposes. The Internet can reinforce certain recurring tropes in the quest for liberty, for example by helping social minorities to organize themselves, encouraging new forms of participation and stakeholding, and enabling people to attain fuller sovereignty over their immediate living environment. The Internet has an enormous potential for expanding freedom. At the same time, digitalization reveals a paradox of freedom that can be traced all the way back to Plato: Opportunities to exercise unregulated freedom lead to greater liberty for the strong few, but less liberty for the weak.

In one sense digitalization opens up new spaces for interests to coalesce and be articulated. In this respect, there is now greater leeway for free expression. For example, groups in society that have been marginalized or stigmatized can organize themselves and carry on exchanges in social networks that transcend spatial boundaries. In this manner, their social networks can compensate for everyday experiences of marginalization. The scope of their freedom has expanded. However, the exponential growth of masses of data simultaneously reveals the potential of digitalization to jeopardize freedom. Everyone leaves digital tracks. The data is collected by professional contractors and exploited by means of highly sophisticated algorithms.

All this has quite seductive implications for the consumer. I am offered goods and services custom-tailored to my wishes, but I pay for that advantage with my data. One consequence of this trend is that human behaviour can be predicted with impressive mathematical precision. In fact, even the relationships of human beings with one another and thus the social nexus as a whole become predictable quanta. Interest in such data primarily comes from two directions. Private businesses want to use it to maximize profits, while the state cares about its potential for surveillance by secret services. However different these two groups of actors may be, their interests converge. Both would prefer to have human action be fully transparent so that it can be

predicted. Privacy, as when a person withdraws from public scrutiny, should be rendered obsolete.

But what happens to an open society when it becomes completely transparent and, as it were, naked? The answer is unequivocal: a completely transparent society becomes an unfree society. When it is possible to trace not only every click but even every movement, one is forced to ask: will this be used against me, and, if so, how and by whom?

Privacy is the prerequisite for autonomy. Truly free decisions are possible only when it is clear that not every one of my actions is public and will have consequences. Julie Zeh put this in a nutshell: "When a person is being stared at from all sides, s/he has no chance for free development." Eric Schmidt, Google's chairman of the board, indirectly confirmed how right she is in this piece of advice: "If there is something that you don't want anybody to find out about, then maybe you shouldn't do it." An open society also needs protected spaces, trust, and confidentiality, as well as the certainty that individuals can decide for themselves what to make accessible to others and what not to.

Post-privacy advocates have come up with fundamental objections to this claim. They assume that privacy, data protection, and thus potential data-sovereignty claimed by individuals are notions that have been rendered obsolete by technical realities and simply no longer work in a digitalized world. For them the goal instead should be to create the kind of society in which no one would have any reason to fear discrimination as a result of information that has become public. World-views, sexual preferences, faith, dreams - there should be no problem at all in releasing any of this information about an individual, because no one will any longer have to worry about its negative consequences. So say the proponents of this view, at any rate.

At least three objections must be marshalled against this argument. First, it tacitly assumes that the presumed trajectory of capitalist technological development must be taken for granted. But there is no doubt that such trends are made by human beings and thus can be shaped by them. Second, it is difficult to imagine a data-transparent society in which no individual suffers discrimination. If such a society did exist, it would be unlikely to last. In recent years there has been backsliding in many parts of the world in respect to levels of freedom previously attained. So what happens when the liberality that once prevailed is rescinded, but the data about me are still out there? Third and finally, the post-privacy advocates forget that one of the crucial features of free individuals is that they get to decide for themselves how much of their inner lives to reveal to the outside world. Only when people decide for themselves what to make public and what to withhold are they truly free. And it is only under those conditions that a free society can evolve.

What is to be done, then, if I would rather decide for myself which news reports to read rather than leaving it to an algorithm, or if I want to choose which sport to play rather than having the risk assessment bureau of my insurance provider make that choice for

me? What can we do, in other words, to use the opportunities that digitalization offers to develop a free society while minimizing the risks it poses? It makes sense to take a look at the actors with the biggest stake in having human beings be glassily transparent and predictable, and keeping society “naked”: private corporations and state surveillance agencies.

State actors play a Janus-faced role when it comes to matters affecting the freedom of society. On one hand they are the ones that have pushed surveillance to a level not even George Orwell could have conceived. This is especially true of the clandestine services of the “five eyes,” the United States, Great Britain, Australia, New Zealand, and Canada. On the other hand, of course, democratic state structures are also in a position to enact and enforce the parameters under which digitalized societies operate. Considering the scope of these issues, it is clear that they must be acted upon in a supra-national context. The European level could play an especially important role here, if it would finally acknowledge the need for action in this area and draw the logical conclusions in its decision-making. In addition to the European basic ordinance on data protection, there are other arenas in which measures are overdue, particularly those that would subordinate the Internet firms from Silicon Valley to European laws, at least in their European operations.

In respect to private businesses, we should take a hard look at the technical infrastructure itself. Vital data links in Europe are owned by British and American companies, which in turn may be accessed by the clandestine services of the country in question. Anyone who does not want to see “the most important sector of the twenty-first century delivered over to a handful of giant international corporations,” as Peter Glotz put it perspicaciously in 2000, should be talking about public infrastructure and public goods. In the medium term that would also ensure genuine net neutrality.

Still, the decisive issue is going to be how to handle data, the “raw material of the twenty-first century.” Here too, there is a disturbing tendency for a few firms such as Amazon, Facebook, and Google to monopolize data. These corporations have a natural interest in increasing their profits and using, combining, and selling more and more data to do just that. However, for the sake of a free society, that interest must be kept in check.

So far, issues of trans-national data protection remain completely unresolved, because companies like Google have been extremely reluctant to accept European data protection standards, and courts have been at pains to make them comply with even elementary norms. What is more, a few of the digital super-authorities assume that the democratically arrived-at systems of rules adopted by nation states do not apply to them. For now, the mélange of digitalization, globalization, and simple chutzpah with which some of these corporations operate globally, choosing the legal jurisdiction most favourable to them on a case-by-case basis, can only strengthen their perception that they are beyond national laws.

Furthermore, Big Data has an enormous influence on the production of knowledge and the procedures we use to generate it. Chris Anderson, the long-time editor-in-chief of Wired magazine, has already proclaimed the “end of theory.” According to him, the ready availability of easily-analysed data has led us to the point at which we no longer need to understand the causes and effects of illnesses, markets, and crimes. Instead, vast quantities of data can be browsed through at lightning speed to establish patterns and correlations that enable us to make predictions about trends, as it were blindly, without any epistemological premises.

In this sense Big Data also affects fundamental social democratic values in ways that transcend the achievements of the rule of law. Freedom also entails the capacity to exercise control. Can human beings remain in control when the data rule? Isn't the quest for explanations, causes, and hypotheses long since outmoded when one can sift through enormous batches of data to find answers to every question? Does ethics have a role to play in such analyses and the approaches to control inherent in the social technologies derived from data analysis? The questions keep on coming, yet no answers from Big Data are possible.

That is precisely the reason why models of data-pooling such as those proposed by Evgeny Morozov are so interesting. In his scheme, encrypted data would be stored in a widely accessible data base. No one would be allowed to use them for commercial purposes. Another promising approach under discussion would be for users to have the option of making data collected by one firm available to other ones if they wished. This would strengthen users' power of self-determination in regard to data about them. Ultimately the goal must be to create an up-to-date form of data protection to reinforce the individual's data-sovereignty. The data may have arisen in interactions with third parties and been collected by corporations, but they originated with individuals who ought to have the right to dispose of them as they see fit.

These examples suggest that digitalization can be channelled and shaped, but they also indicate how urgently necessary it is to do so. Social democracy succeeded in converting the social upheavals associated with industrialization into greater freedom for the individual. It is our job to make sure that digitalization broadens the scope of freedom and does so in a more egalitarian manner than hitherto.



## 4. Justice

What does justice mean in an era when Internet access increasingly has become a prerequisite for finding one's way in the world, securing paid employment, performing skilled labour, and carrying on social communication? In this era monopolies have emerged that - in a "winner takes all" fashion - sweep away traditional branches of industry and acquire gigantic fortunes in stunningly brief spans of time.

One thing is certain: Opportunities to play a significant role in society and earn an income are increasingly contingent on access to the Internet. In addition to differences in the available Internet access (quality, speed, etc.), there are also different individual capabilities in its use (media competence, etc.) that lead to considerable inequalities. In the case of the expanding cloud- and crowd-working, what really matters for participation in the labour market is quick access to the Net. Conversely, Internet work opens up opportunities for inclusion to those who have been shut out of the normal labour market for one reason or another (such as living in the "wrong" place or not being available at the right times). The implications of digitalization for labour market policy will entail enormous challenges to the goal of achieving social justice.

Tendencies driven by technological progress not only will intensify already-existing inequalities, but also will give rise to new ones - and this at a time when we have once again begun to tolerate unacceptable levels of inequality, as Thomas Piketty has shown so impressively. Research done by digitalization experts such as Erik Brynjolfsson and Andrew McAfee suggest the hypothesis that the worst is yet to come for us. Trends that will probably intensify the polarization of society will hit us with their full force as the economic and social effects of digital technologies accelerate and ripple outward.

As Erik Brynjolfsson notes: "There's kind of a dirty secret in economics that not many people recognize (...). While technology can grow the economic pie (...) there is no economic law that says that everyone's going to benefit from those technological gains. (...) It could be 50% or more of people who don't share in those benefits, and the data suggests that in the past 10 to 15 years, that has been the pattern that has been emerging. Technology has been making the pie bigger, but most of those benefits have been accruing to a relatively small group."

If one combines the outlook of Piketty, whose book *Capital in the Twenty-First Century* exposes fundamental structural problems in primary systems of distribution, with that of Brynjolfsson and McAfee, who point to the increasing future impacts of digital technology, one comes across a serious political problem. If a great many members of the middle class are in fact threatened by unemployment or the eventual worthlessness of their job résumés through no fault of their own, the political pressure they exert will spike dangerously.

As previously suggested, labour markets seem especially likely to bear the brunt of disruptive modernization and most likely will be the scene of emerging problems of justice. A majority of the tasks that today typically are assigned to the office or the production line can and will be automated in the near future. In a study of U.S. labour markets, Carl Benedikt Frey and Michael A. Osborn of Oxford University concluded that some 47% of all careers in the United States are at risk. Although there are spirited debates about the long-term consequences of the digital revolution, most observers agree that we will have to reckon with serious problems in the short run.

The Pew Research Center surveyed nearly 2000 experts about their expectations for the next decade: "Half of these experts (48%) envision a future in which robots and digital agents have displaced significant numbers of both blue- and white-collar workers – with many expressing concern that this will lead to vast increases in income inequality, masses of people who are effectively unemployable, and breakdowns in the social order. The other half of the experts who responded to this survey (52%) expects that technology will not displace more jobs than it creates by 2025. To be sure, this group anticipates that many jobs currently performed by humans will be substantially taken over by robots or digital agents by 2025. But they have faith that human ingenuity will create new jobs, industries, and ways to make a living, just as it has been doing since the dawn of the Industrial Revolution."

By no means can these predictions be reduced to differences of opinion about the short-term impacts of the digital revolution. Rather, they are rooted in the question of whether the economy can repeat historical patterns and create more jobs than the number destroyed by technology-influenced changes. In fact, current research results on the high-tech sector in the United States would lead us to conclude that considerably fewer jobs are created there than are lost to automation. But even if the optimistic scenarios should turn out to be right some day, there is still a danger that massive unemployment will result in the interim. And that is the reason why it is urgently necessary for political decision-makers to intervene and shape the outcome.

If job categories are likely to become superfluous or occupational profiles to change radically, a proactive educational policy is called for. Therefore, it is high time to rethink educational policymaking as it is practiced today. In an age when direct access to global information and data is taken for granted, a premium should be placed on creative and analytic capabilities so that information and data can be transformed into knowledge. Furthermore, some crucial issues have to be clarified that are still flying under the radar of political debates. Those issues centre on the distribution of whatever work remains and the protection of the social-welfare aspects of labour, not only the income derived from it.

The call for a rethinking of the allocation of work time has grown louder, not only in labour union ranks, but even in business circles, within which Larry Page of Google and Richard Branson of Virgin merit special mention. If there is a trend toward producing more and more with less and less work, then it makes sense to revisit the distribution of the remaining work, quite apart from the potential creation of new jobs. Here one

might make use of the digitalization dividend to keep more people at work while simultaneously enhancing personal freedom. It is not yet clear whether the digitalization dividend will make a few people obscenely rich while raising the pressure on labour markets for the majority of society, or whether it will lead primarily to a restructuring of labour and freedom. In either case it is an issue of distribution and thus a direct challenge to social democracy's vision of justice.

## 5. Solidarity

For the workers' movement, solidarity afforded the opportunity to make freedom a reality even under conditions of inequality. Because some were willing and able to participate vicariously in the experiences of others, humiliating conditions could be eliminated. Solidarity was given concrete, palpable expression in the social-welfare state. In the era of digitalization, the conditions under which people can join together in solidarity have changed in many respects. Solidarity has become both more difficult and more necessary for several reasons: The public sphere has become compartmentalized; work has moved out of the factories; the social-welfare state must cope with new and different demands; and libertarian discourse has grown more influential.

It is becoming more difficult to muster up solidarity, because it has been parcelled out to numerous subgroups. Social networks, news reporting tailored to individual users or user-groups, and search engines are conducive to a changed and often blinkered view of social reality. The spaces in which discussions were once carried on and the publics that participated in them have begun to diverge and fragment, all the while becoming more self-referential. Solidarity, which is the readiness to share in the experiences of the other without a formal obligation to do so, thus becomes more elusive, since the other is less and less likely to come into our field of vision.

In and of itself, the shift of work out of factories poses immense challenges to the workers' movement, which had always organized solidarity at the factory or firm level. More and more, the location in which solidarity usually had been practiced in the past is disintegrating. New forms of solidarity designed for the click- and cloud-workers have not yet evolved fully, even though the unions, which have adapted rather successfully to the new environment, have begun to find some preliminary answers.

Immense changes are also occurring at the level of the nation-state. If American cultural trends are becoming a model for digitalization in Germany and Europe, then the institutionalized solidarity embodied in European welfare states is hanging in the balance. Calls from Silicon Valley for a libertarian-style basic income with no strings attached have become more insistent. But they are not only intended to counteract macroeconomic problems caused by the impact of the digital revolution on the supply side - after all every supply does require some demand. Moreover, at bottom they are based on a libertarian vision of social organization.

As depicted by Nathan Schneider in *Vice* magazine, the American financial elite and the matadors of Silicon Valley see no necessary connection between welfare and the welfare state. Hence, proposals to finance a basic income tend to be combined with plans to cut back on the services now provided by the state. In plain language, this version of the basic income idea, as interpreted by libertarians, implies that solidarity will wither away, while individuals will have to provide insurance against the vicissitudes of life for themselves. Thus it takes an axe to the core value of the

European social model: collective insurance against life's risks such as unemployment, illness, and old age. Anyone receiving a basic income can insure himself or herself against such risks individually, at least that is the way the argument runs.

In this context it is also worth noting that the labour market tendencies already described could cause serious trouble for the German social insurance system, which is financed on a "parity" basis, i.e., through equal contributions by employers and employees. If the displacement of jobs out of factories and the diversification of work models proceed apace, the entire system will have to be redesigned and strategically expanded to make sure that the welfare state's long-term financial needs are met and that it covers adequately freelance and other forms of employment. Work that we today prefer to call "atypical," in the future may become standard, and the welfare state has to respond appropriately.

The fact that the welfare state may be undermined by these structural problems, especially when alternative libertarian models are already at hand, shows how important it is for social democrats to rethink the idea of social solidarity and its institutional forms in the digital age. Technological change requires greater social cohesion if its benefits are to be widely shared and its risks cushioned by collective action. However, the libertarian lifeboat ethic (everyone looks out for himself or herself) already has become well entrenched.

## 6. Work

Considering how central the topic of work is for social democracy, the trends discussed above must be placed in a broader context. It should be possible to describe and catalogue many of these novel challenges at least in their broad outlines, if not yet in exhaustive detail. The creation of social democracy as an expression of emancipatory and participatory interests was closely bound up with the industrial revolution. By now the developments currently underway have earned the sobriquet “the fourth industrial revolution.” Its distinguishing feature is the deployment of information technology in all phases of manufacturing, such that all of the facilities involved in the process of production are networked with one another.

Even in the classical phase of industrial robotics, computers played a key role; today they have attained a position of overall dominance. The evolution of the fourth industrial revolution began with the rise of mainframe computer facilities in the Fifties, expanded with the introduction of desktop PCs as mass consumer products in the Eighties, then culminated in the networking of all digital equipment in the Nineties. The latter step made possible the superstructure that has evolved today - the integration of production, knowledge, and social networks into one single network.

The further development of digitalization currently underway is driven by four trends:

1. the miniaturization of terminals that can be installed and put to use almost everywhere nowadays;
2. the exponential increase in sensors and SIM-cards, the basis of data exchange;
3. the constant improvement of available computing power since the Sixties;
4. the sheer availability of masses of data, which is the basis for all Big Data models.

Taken together, these trends alter the nature of work at every level, in knowledge and service industries, in state administration, and increasingly in social or “caring” professions as well. But it is industrial labour that is currently the focus of debate. New production models under discussion today as “Industry 4.0” are grounded on the above-mentioned trends, and, as they evolve, they will give rise to a new “social system of production” (Werner Abelshauser). Basically, all this means that the products themselves will become smart and will direct themselves of their own accord through the multiple stages of the manufacturing process.

And the consequences of “Industry 4.0” will be far-reaching: the substitution of machines for human labour on a grand scale; the disappearance of entire career categories such as logistics and layout; the displacement of human beings from many of the processes of material production, and a massive speed-up in innovation. The latter will lead to an increase in cloud- and crowd-working outside of normal work relationships. On the credit side of the ledger, new opportunities will also arise for humanizing labour by intelligent robotics and the implementation of models for

diversified, high-quality production at a level hitherto unattainable. At the same time, new employment opportunities will emerge in the software and IT sectors.

But it would be premature to think that “Industry 4.0” will be nothing more than a welcome impetus behind the modernization of German industry. This viewpoint overlooks a deeper structural transformation of the economy, in the wake of which businesses engaged in the processing trades and heavy industry will tend to become less important, while those in the digital sector will become the avant-garde by nearly every relevant measure: earnings, market value, innovation, culture, and personnel policies. That transition will have geographic implications as well, as Silicon Valley becomes the global epicentre of value-creation.

If nothing else, the view into this valley near San Francisco should suggest how the nature of work - and especially highly-skilled work - is likely to change in the digital economy. Here too, the shifts will come about gradually and often imperceptibly, yet inexorably and emphatically. Nowadays, digital and networked labour is already the cornerstone of many sectors and branches of the national economy, ranging from the service sector through production, distribution, and servicing, to IT and the “creative” economy. In the course of that transition, not only the content of work but even its basic structures will be altered, and this is the case for more and more working people. Currently we are seeing a push for a more thorough digitalization of work in the service sector. Such an innovation would affect up to two-thirds of all employees in that sector, including white-collar workers and those in the “free professions” such as law.

Digital work can be understood both as empowerment and as potential burn-out. On one hand, the digitalization trend brings with it new forms of pressure on employees and the risk that work will be re-Taylorized by digital devices for measuring performance, as well as radical structural shifts in job qualifications and capacity management, i.e., in harmonizing the demand for labour with system capacities. But it also offers tremendous opportunities, including more flexible models of work and scheduling to relieve some of the burdens on employees. Despite the ambivalent character of these ongoing developments, one thing is clear: In the digital age employees will need new protections. As labour in the digital society ceases to be confined to specific spaces and times, there will also be a tendency to abolish the separation between the private sphere and the world of work.

What will the world of work look like in fifteen years, given trends of this kind? What will be the most crucial influences upon a person’s everyday working life, job requirements, and employment potential? Technological developments are starting to emerge that will have an impact on life in the workplace. Even today, remarkable progress is evident in technologies that link artificial intelligence with data mining, machine vision, and computational statistics. Machines are becoming increasingly more intelligent and able to learn. As they do so, they will be able to take over some of the mental labour traditionally reserved for human beings.

Continually improving algorithms in tandem with perpetually growing mountains of data make possible the simulation of human mental activities. Inventions such as driverless cars, robots with the ability to learn, or digital diagnostic systems, which were considered science-fiction just a few years ago, now show potential for achieving data-based approximations of human capabilities. Thus, they can be used as substitutes for, or enhancements of, specific human capacities. The replacement of human labour by machines thus can lead to new kinds of assembly-line production, although of course they will have to be digital. Employees who perform relatively homogeneous tasks will be grouped together in pools or crowds so that their abilities can be standardized and thus easily compared.

Thus, processes of adding value emerge that can be accommodated only in part within individual firms and that frequently overshoot organizational boundaries. In this manner, members of the working crowd can develop into something like a digital proletariat. But this crowd also could be composed of individual sovereign entrepreneurs who confidently and autonomously market their refined skills and capabilities, agreeing to work for the highest bidder. Many experts note that some workers in this category - e.g., those disadvantaged by their social origins or physical and social handicaps - could benefit from anonymous spot-labour markets. In short, when it comes to the future of work, there is a tension between dystopian and utopian visions. At one end of the spectrum looms the nightmare of infantilisation, heteronomy, and total surveillance. At the other end so-called "entrepreneurs of life" abound - people who take sovereign responsibility for their own role in the economic system and get involved in the labour process whenever and wherever they please, but always in a spirit of fun and enthusiasm.

Even today, a whole series of new labour law issues awaits resolution. These touch on matters such as licensing and permits for machinery, statutory rest periods for digital workers, the reach of formal collective bargaining agreements when so much work is being done outside of any specific location, intellectual property in one's work outputs, and the blurring of the traditionally clear dividing line between work as an independent contractor versus work for one or more employers. Then too, issues concerning working hours, qualifications, or even the amount of time spent at work during an entire lifetime regularly come up for review. Given all this uncertainty it is crucial - especially for employee organizations - not to let any blind spots arise and not to allow the emergence of an international digital sub-proletariat deprived of any representative. The organization of a flexible, even fluid, digital workforce is becoming so vital and complex, that even business enterprises cannot escape the onus of offering solutions to these questions.

In this context, notions of good digital work ("Work 4.0") are proving to be more and more important. In general, digital work in Germany nowadays is marked by the tendency to apply the old regulatory framework, designed for industrial society, to the new circumstances of the digital economy: e.g., the characteristically rigid separation between work and free time or the strong attachment of labour law to the employer's physical premises. Assuring good digital work is a challenge for Germany if it wants to



remain an attractive location for business. Business enterprises, labour unions, and works councils would be well-advised to devise models that reduce digital stress and enable employees to benefit from greater flexibility and enjoy more freedom to choose the times and places of their work. It is the job of politics to adapt the norms and regimes of labour policy to the circumstances of the digital society.

This is the case because new forms of dependency and insecurity have emerged alongside the potential gains in freedom wrought by digitalization. Only when the appropriate political and legal framework is in place can the digital networking of labour open up new spaces of freedom and augment the potential for a more humane existence. For that reason social democracy has been justified in calling for a “policy on Internet work.” As a general principle, the efforts of labour unions and policymakers ought to be directed toward preventing the employers’ interest in higher productivity from dominating the process whereby a new work regime will be enacted.

From our perspective there are several paradigms that should guide policymaking on good digital work:

1. Networked labour is no longer confined to specific times and locations; hence, there is now greater latitude for shaping the terms and conditions of work in the digital age. The employers’ interest should not be the only one that is consulted in this process; employees’ interests must also be taken into account.
2. Digital networking has “pushed the envelope” of traditional work relationships, thereby creating new kinds of stresses and strains. Those must be minimized as much as possible.
3. Individual and collective rights of access, communication, and participation in the Net must be guaranteed, above all in cases where the Net is equivalent to the firm itself. Moreover, rights to co-determination in the firm and mechanisms of participation have to be developed further to fit the new circumstances.
4. Social-welfare systems must be adjusted to cope with the changed parameters of work.

## 7. The Politics of Social Democratic Values in the Digital Society

The contexts analysed here should serve principally as illuminating examples indicating how we might discern the outlines of the digital society. In order to present even a reasonably complete inventory of the dynamic elements of the digital society, we would have to include studies of many other spheres of economic and social life, such as the challenges to democracy lurking behind digitalization, new technologies of social control stemming from Big Data, resource efficiency, changes in the production of culture, new patterns of social interaction, the future of the service sector, and of public administration, among many others. Yet the Janus-faced nature of the trends currently taking place should have become apparent from what has already been presented. Numerous restrictions and dangers stand in the way of efforts to realize the potential for global freedom and progress implicit in globalization.

The revelations about the activities of the NSA and its affiliates have exposed quite starkly the vulnerability of our digital communications structures. As users we are aware of the small and large attempts at fraud perpetrated on the Internet. As politically engaged people we know the impact and defamatory power of shitstorms. And as Europeans we value the multi-dimensional plurality that forms our identities and is put at risk by the dominance of the monoculture characteristic of the “California ideology” served up by Internet firms as well as the power of the military-industrial complex. All these concerns point to the ambivalence and vulnerability of fundamental European, German, and even social democratic values in a rapidly digitalizing society.

Incidentally, we are not facing exclusively German problems here. On the contrary, when it comes to shaping the digital transformation, the European level has a special mission, which becomes obvious when one considers the need to rethink the European social model. Where digitalization is concerned, there is a tendency for nation states to adopt a lower profile in shaping outcomes than they would in many other policy areas. And that is all the more reason for Europe to take centre stage here. It also explains why we need to have a process of clarification concerning Europe’s future role. Our continent is not only the birthplace of democracy; it is also the cradle of industry. That is why part of the discussion about fundamental social democratic values in the 21<sup>st</sup> century must include, for example, the question of whether we want to be so glaringly dependent on the United States for the creation of IT-products, or whether we should instead go our own way. It would not be far-fetched to conclude that democracy and self-determination in the digital society can be assured only if we are willing to invest massively in the technologies of the future. All of a sudden, the politics of values would dovetail with the promotion of the economy - and the latter would then have to be prioritized and coaxed along with the appropriate commitments.

Currently, Germany finds itself in a precarious “sandwich” position which may jeopardize our social system of production, but also, for that reason, help justify one of the essential points of orientation in the social democratic catalogue of policy

objectives. If China is destined to be the world's machine shop and thus the primary venue of material production in the world, while the U.S.A. dominates software production and product design, Germany could risk losing its status as an industrial nation and as the world's equipment maker, a crucial part of its self-perception and self-confidence. The prognosis of the moment, according to which the Internet of things fits seamlessly into the German tradition of industrial robotics and thus holds out enormous promise for the future, could quickly begin to seem naive. If things were to reach that point, we would have to interrogate the worth of notions on which even we, as social democrats, pride ourselves: expertise and professionalism, excellence in the skilled professions, and superior organization. And that is another reason why we have to get involved in the discussion about digitalization.

From what has been said, it should be apparent that those who hope to preserve basic individual rights and the cohesion of society as a whole, all in the spirit of fundamental social democratic values, must try to shape digitalization. Social democracy, which moulded industrialization and channelled the forces unleashed by it into affluence for the whole of society as well as respect for individual liberties, is especially well suited - indeed really obliged - to assume responsibility for this entire project.

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