Regierungsforschung.de
Das wissenschaftliche Online-Magazin
der NRW School of Governance

Essay

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The Future of 'Smart City' and 'Smart Country'

26th February 2020

UNIVERSITÄT DUISBURG ESSEN

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www.nrwschool.de

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Redaktionsanschrift

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Zitationshinweis

Rüttgers, Jürgen (2020): The Future of ‘Smart City’ and ‘Smart Country’, Essay, Available from: regierungs-forschung.de

The Future of 'Smart City' and 'Smart Country'

By Prof. Dr. Jürgen Rüttgers[1]

I The big crisis

We live in a time of great challenges. Our world is changing fast and there is little time to make necessary adjustments. Added to this are the demographic changes in the various societies.[2]

We call these changes globalization, digitisation and knowledge society. All three processes lead to a demarcation of the world.

With the 'Great European Freedom Revolution' of 1989/90, the Cold War came to an end. Europe has since been reunited. Socialism as a leftist ideology has gone down with the Soviet Union. But also, the neo-liberal capitalism collapsed in 2008 with the global financial crisis, caused by investment bankers like Lehman Brothers, by their own greed and excess.[3]

The trend towards more inequality could not be stopped. The division of the European Union and its Member States has widened. The result is that many people are afraid of the future.[4]

Since 2000, Europe has been experiencing significant de-industrialization. The share of industrial production (manufacturing) dropped from 18.5 percent by the year 2000 and now stands at 16.4 percent in 2017.

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[2] Berbner, Bastian (2019), '7,7 Milliarden Menschen…', *Die Zeit (47)*, 13 November, p. 15ff. The United Nations estimates that the number of people living on our globe will grow from more than 7 billion in 2023 to 11 billion by 2100. Wolfgang Lutz, professor at Vienna University for Demography, assumes that a number of only slightly more than 9 billion will be reached, considering the decline in the rate of reproduction due to better education of women, especially in the Middle East and in Africa. More than half of all countries worldwide, including all industrialized countries (with the exception of Israel), have already fallen below the level of reproduction. In the long run, the world population is shrinking.

[3] Rüttgers, Jürgen (2009), 'Wir schaffen das', id. (ed.), 'Wer zahlt die Zeche? Wege aus der Krise', Essen, p. 91ff.; Wolfgang Streek, 'Rückkehr des Staates oder Ende der Politik? Die Gesellschaft als Geisel des Marktes', Jürgen Rüttgers, ibid., p. 103ff.; Timothy Snyder (2019), 'Die Zukunft wiederfinden', *Süddeutsche Zeitung*, 23 December, p. 11; *Frankfurter Allgemeine Zeitung* (2019), 'Ende des Kapitalismus, wie wir ihn kennen? ', 21 August, p. 15; Judith Niehues (2019), 'Ungleichheit zwischen Wunsch, Wahrnehmung und Wirklichkeit', *Frankfurter Allgemeine Zeitung*, 26 July, p. 18.

[4] Heuser, Uwe Jan (2020), 'Machen wir unser Ding', *Die ZEIT*, 9 January, p. 21; Dietrich Kreuzburg (2019), 'Der gespaltene Sozialstaat', *Frankfurter Allgemeine Zeitung*, 12 November, p. 17.

From 2008 to 2017, 2.9 million jobs were lost. The results were a recession and therefore lower economic growth, high unemployment, especially juvenile unemployment, with rapid technical progress.[5]

Western democracies are under pressure from inside and outside. The reason for the crisis of western, of 'liberal democracy' is the division of society.

The categories of division are old and young, poor and rich, locals and immigrants, people and elite, right-wings and left-wings, centre and periphery, between the 'somewheres' and the 'anywheres'.[6] The consequences are political populism and nationalism.

Specifically, this means:

- Political competitors are no longer just political opponents, but enemies,[7]
- Institutional mechanisms for the protection of democracy are abolished, partly by legal means,[8]
- Populist, radical and anti-Semitic parties are elected to parliaments, even governments,[9]
- Democracy slowly erodes in hardly noticeable relapses.[10]

The western democracies are in great danger. Konrad Adenauer, one of the founding fathers of the United Europe, once said: "Democracy must be lived."[11]

II How can we overcome the crisis? What do we have to do? What can we do?

Europe needs more growth, a growth that is "smart, sustainable and inclusive".[12]

Eighty percent of economic growth in the European Union is based on productivity gains. There has been significant de-industrialization in Europe since the beginning of the century.[13] Since 2000 there has also been no significant productivity growth. Drivers for production growth are innovations in research and technology. The European Union needs the best innovation system

[5] Re-Finding Industry – Defining Innovation, Report of the independent High Level Group on industrial technologies, chaired by Jürgen Rüttgers, European Commission 2018, COM (2018) 306 final, p. 5.
[6] Heckendorf, Katharina (2019), 'Stadt oder Land', Interview, *Die Zeit*, 11 July, p. 21; Gujer, Eric (2019), 'Die Machtverhältnisse sind klar', *Neue Zürcher Zeitung*, 31 August, p. 1. Gujer recommends replacing the "moralizing tone of the debate with a calm analysis" and not just perceiving each other "as a collective".
[7] David Goodhart says: "Anywheres are well educated, change means development for them. The somewheres are the ones left behind, for them change means menace", cited in Levitsky, Steven / Ziblatt, Daniel (2018), 'Wie Demokratien sterben', 6th edn. Munich, p. 9.
[8] Levitsky, Steven / Ziblatt, Daniel, loc. cit. 7, p. 10.
[9] Levitsky, Steven / Ziblatt, Daniel, loc. cit. 7, p. 8.
[10] Levitsky, Steven / Ziblatt, Daniel, loc. cit. 7, p. 11f. During the Cold War, "nearly three-quarters of democracies collapsed" through a coup d'état.
[11] Rüttgers, Jürgen (2017), 'Mehr Demokratie in Deutschland', Berlin, p. 149; Terhoeven, Petra (2018), 'Zur Archäologie des 20. Jahrhunderts', *Kölner Stadt-Anzeiger*, 2 August, p. 20.
[12] Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 5.
[13] The contribution of industrial production to GDP fell from 18.5 percent in 2000 to 15 percent in 2012. Between 2008 and 2012, 3.8 million jobs were lost in this sector, Re-Finding Industry - Defining Innovation, loc. cit. 5, p. 12.

worldwide. The new research framework 'Horizon Europe' for the years 2021 to 2027 with a volume of more than 100 billion euros is an important milestone in this respect.

With a share of 16.4 percent, mechanical engineering accounts for 63 percent of 'research and technology growth' and 40 percent of private sector innovation (2015). Every new job in mechanical engineering creates 0.5 to 2 new jobs in other sectors. More than 80 percent of EU exports are created by the European industry.[14] Since 2009 labour productivity has increased by 2.7 percent p.a., more than in the USA (0.7 percent) and Korea (2.3 percent).[15]

Although the European Union, with 510 million EU citizens, is one of the largest markets in the world, the European economy has not yet reached its potential for competition with China, India and the US.

A new industrial and innovation policy therefore requires significant changes. We know very well that the European Union does not have a deficit of knowledge, but of implementation.

I think the European Union must have the courage to make new 'very big efforts' to add to the big success stories of the last decades, for example the Euro, the opening of internal borders in the Schengen area, the ERASMUS programme, the European satellite programme for earth observation and positioning. The High Level Strategy Group I directed succeeded in focussing on the following new ideas:

- The creation of a sustainable, efficient, resilient, secure and inclusive energy system.[16] It would be a great mistake to put efforts only on one technology. It is not just about electric cars and batteries. We also need a system of hydrogen economy for the European industry. We also need to become independent from the supplies of raw materials from dictatorships and states that are unwilling to prevent the climate catastrophe.[17]
- We proposed to build a circular economy which uses CO2 emissions as full and feed stock, in order to make our industry production in Europe sustainable and more efficient.[18] This means Europe's industry goes the way "from climate killer to industry asset".[19]
- For us, digitisation is the European job engine[20]. Therefore, we support technologies in the area of security and connectivity. We want to build up a 'new internet'. Today, Europe is

[14] Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 13. The OECD finds the sluggish productivity growth "all the more strange because the digital revolution is currently supposed to give the economy new impetus. 'We see a real puzzle here, a new productivity paradox', emphasizes de Serres [leading economist of the OECD]. [...] 'You can see the computer age everywhere, just not in the productivity statistics.' [...] 10 percentage points more broadband Internet would boost productivity on average by more than 1.5 percent", cited in Philip Plickert (2019), 'Ökonomen auf der Suche nach dem heiligen Gral", *Frankfurter Allgemeine Zeitung*, 18 February, p. 16.
[15] Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 13.
[16] Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 6.
[17] Lepercq, Thierry (2019), 'Hydrogen is the New Oil', *Cherche Midi*, Paris.
[18] Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 6.
[19] Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 26; The new Commission President Ursula von der Leyen reaffirmed to the European Parliament in Strasbourg on 16 July, 2019 the "promise of a climate-neutral Europe by 2050 […] By 2030, carbon dioxide emissions are expected to decrease by 50, if not 55 percent, compared to 1990 levels", cited in Mühlauer, Alexander (2019), 'Die Welt braucht mehr Europa', *Süddeutsche Zeitung*, 17 July, p. 1.
[20] Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 6.

> advanced in robotic platforms, mechatronics and automation. Up to now, the US has been dominating the internet and its applications. With the new internet era, there is a great opportunity for Europe to gain a central position. With its strong democratic tradition, Europe can develop this new revolution – taking into account the rights of people faster than others and with the human being at the centre of new developments.[21]

Why do we have to go these new ways into the future?

First, we have not done the necessary things in recent years to remain competitive because there was no clarity about the goals and implementation.

Second, our policy was characterized by egalitarianism, perfectionism and liability.

Third, there was and is no fault tolerance. But in the digital world, mistakes are needed to learn. There is too much bureaucracy and control addiction in politics, public authorities and institutions.

Fourth, what can Americans do, that we cannot do?

Since I've dealt with the topics of 'future' and 'knowledge society', I hear: "The others are better!" To learn from Japan, many delegations visited the legendary MITI, the Ministry of International Trade and Industry, that as the powerful agency of the Japanese Government promoted Japanese industrial policy, research and direct investment. German entrepreneurs are going to Silicon Valley today because everything is supposed to be better there.[22] The West is looking fearfully towards China, which apparently is constantly trying to become the strongest and most modern country in the world.[23] Today, some admire DARPA, which has been promoting cutting edge technology for the US government and US army for more than 50 years. In 2018, DARPA announced a new $ 2 billion program for innovations in the AI sector. This "Defence Advanced Research Projects Agency" is now a myth and yet the director of the German Research Centre for Artificial Intelligence (DFKI) Wolfgang Wahlster says: "I think that AI horror scenarios are nonsense."[24] The "Enabling Digitalization Index" of the EULER HERMES company sees Germany in second place, the Netherlands in third place in its worldwide ranking in terms of regulation, digital literacy, networking, infrastructure and market size. "Western Europe, 'world leader'", headlines the study. 16 western European nations are among the best of the EDI ranking 'Digital Pioneers' of 30 March 2018.[25]

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[21] Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 29.
[22] Keese, Christoph (2014), 'Silicon Valley', 3rd edn. Munich, p. 12ff.
[23] According to a study by the Mercator Institute for China Studies (MERICS), China has "spent ten times as much on science in quantum research as the United States, estimates are equivalent to $ 50 million. In the field of AI alone, China applied for 30,000 patents [in 2018], two and a half times more than the United States", cited in Klaus Lüber (2019), Digitales Europa, *Auf die Zukunft – Das Magazin zum Innovationstag 2019, Frankfurter Allgemeine Zeitung.*
[24] Available at: www.bmbf.de/de/wolfgang-wahlster-ki-horrorszenarien-halte-ich-fuer-unsinn-7462.html (Accessed: 10 December 2018).
[25] Available at: www.t3n.de/news/digital-ranking-deutschland-1003908/ (Accessed: 7 September 2019, 13:23p.m.); Schmidhuber, Jürgen (2019), 'Die Wiege der Künstlichen Intelligenz', *Die Zeit*, 28 February, p. 29; similar the Global Innovation Index 2019 (GII 2019), *dpma.de*; as well the Bloomberg Innovation Index 2020 (www.bloomberg.com); Lanvin,

"Digitisation does not just create global products and global markets - and much faster than ever before. It also creates global values, global norms, a kind of creeping global morality whose power is difficult to defend itself against. Having a say in artificial intelligence, remaining a player and being able to help determine standards and values has long since ceased to be just a question that determines Germany as a business location".[26] That applies to Germany and Europe. And here there is a big challenge, as the philosopher Markus Gabriel emphasizes. Gabriel says: "A decisive factor is the scientific world view, which is demonstrably as wrong as any other world view and therefore invites to justified scepticism. It is based on the metaphysical, that is, in principle unprovable, assumption that the only reality is the material-energetic overall system of the universe. What is real would therefore be measurable. But it is simply wrong that only what is real can be measured". And he adds: "Those who think so fall victim to bad scientific superstition. Mind you, science superstition is wrong, but not science. The natural and technical sciences have had unprecedented advances in knowledge in modern times [...] It falls much too short after that if we adapt our ideas of progress to the natural and technical science dynamics alone. In this way, everything that the other sciences are researching, including the insight that the scientific world view is a form of modern superstition that has not been properly understood so far, falls by the wayside. Anyone who is only minimally theologically informed should be shocked by the extent of religious absurdity, which is reflected, for example, in Silicon Valley's technical obsession with its transhumanistic ideas that the silicon-based products of our new technologies could soon become the bearers of awareness."[27]

The state is not the better researcher. Much must become better. Public contracts must continue to be transparent and comprehensible in the future, not only because we have to be faster, but also because the state cannot plan progress. There is no progress without competition. What has to change, for example, is public procurement. If European states and governments not always only commission standard products and solutions because of their risk aversion, Europe will continue to struggle, even though, with the new 'Horizon Europe' program, the EU is currently bringing on its way the largest research funding program, worth 100 billion euros. The EU must also support the private sector by strengthening demand for state-of-the-art technologies and supply chain-building solutions. Moreover, European innovation institutions are not only responsible for technological solutions, but also for the cultural, social and sustainable side of progress. Many social goals can be supported by innovative awards. However, they take too long and mostly lag behind.

The EU institutions first try to define public needs, which must fail on a regular basis. The formulation of specifications and the definition of evaluation criteria before the call for tenders must inevitably lead to wrong paths. If public institutions can already describe the path and goal of innovation and assess in advance what is right, then tendering and financing will be superfluous.

With every "network-political problem" in Europe today "the relationship between state and digital world is again discussed: Big data in the healthcare sector, prohibition of coding, fight of hate speech

Bruno (2019), 'The world's most innovative countries 2019', *INSEAD*, www.knowledge.insead.edu/entrepreneurship /the-worlds-most-innovative-countries-2019-12016 (Accessed: 27 January 2020).
[26] Jung, Alexander et. al. (2019), 'Angsträume', *Der SPIEGEL*, No. 46, 20 November, p. 66ff.
[27] Gabriel, Markus (2019), 'Der nächste Fortschritt', *Süddeutsche Zeitung*, 25 October, p. 11.

with Facebook, autonomously driving cars [...]. Digitisation does not just challenge the state. It overwhelms him," notes the head of the department for 'Information Technology, Digital Society and Cybersecurity' of the German Federal Ministry of the Interior.[28]

Martin Schallbruch makes two key suggestions. First, "in trying to define the digital public service, i.e. the public service mandate in the digital space, we need to focus more on the basic digital life functions that these platforms implement: platform-independent accessibility, reliable login, payment service, secure cloud storage, and real-time communications service, a possibility for global publication, a two-way trading platform – all these are features we need from the platforms to live digitally."[29]

And second, "the definition of the public service mandate and of digital common goods has a second thrust, the sectoral one: the ability of the state to act in the digital space implies that he digitises existing common goods, i.e. updates the public service mandate with regard to digitisation. What does healthcare mean, what library, what public transport, what street infrastructure, what community college, what radio – in the digital space? Of course, as well: What does social insurance mean?"[30]

The High Level Strategy Group, which has developed proposals for a new industrial and innovation policy on behalf of the European Commission, is convinced that the European Union should neither steer the market process nor the innovation policy in industry, that all public decisions must be democratic, i.e. transparent, and that the issue of procurement is important for progress in Europe.

It is therefore advisable to carry out the enforcement and implementation in competitive procedures, in addition to the content-related requirements described. Important is a clear goal definition. Central to this is still a pan-European openness to participation in innovation processes. This can be both cross-technological and or even better across sectors. In addition to the economy and to scientists, the citizens, and also those affected, are to be involved in innovation processes from the very beginning, and not just in the definition of policy goals. The best ideas and solutions should take place on the basis of a transparent and legally secured subsidy. However, the use of the funds must be achieved by researchers, scientists, businesses and the regional public themselves.[31]

The digital world is a global world. The assessment of global business combinations or co-operations cannot and must not be based on national criteria. Flexibility and legal certainty should not be contradictory. The EU must ensure clear standards and norms in the digital world and thus

[28] Schallbruch, Martin (2018), 'Schwacher Staat im Netz, Wie die Digitalisierung den Staat in Frage stellt', *bpb,* Bonn.
[29] Schallbruch, Martin, loc. cit. 28, p. 234.
[30] Schallbruch, Martin, loc. cit. 28, p. 235.
[31] The German government has announced a competition for "sustainable urban mobility" and a competition for "Smart City". There, up to 50 municipalities or 8 cities are selected, in which "concepts for a liveable city of the future" are selected. In a second phase, 23 municipalities can develop planning and implementation concepts. Furthermore, an "urban data room" is to be created. Based on a study by three Fraunhofer Institutes (FOKUS, IAIS, IML), three model regions (Dortmund, Emden, Cologne/Bonn region) are to test "data exchange and cooperation in urban areas" in various fields of application. The urban data space is understood as a "digital space that contains all the information about the data and the data itself that are relevant to the municipal policy, administrative and economic space."; see also 'Small request of the FDP parliamentary group', German Bundestag, printed matter 19/7679 from 12 February 2019.

define the economic rules worldwide, as has already been achieved with regard to the data protection law and consumer protection. And it has to invest heavily in KETs (Key Enabling Technologies), especially in artificial intelligence, digital security and connectivity.[32] The goal must be to launch "missions", which understand "digitalisation as a European job engine", to develop and build a new "inclusive, sustainable and secure internet".[33] Application missions should aim to have a "circular economy" that enables a "shift to de-production and re-production", a "clean and safe mobility" by "carbon re-use from climate killer to industry asset", switching energy to renewable energy and building a European healthcare network for cancer prevention and treatment".[34]

III "The struggle for space and tranquillity"[35] How do we want to live?

1. Everyone is talking about digitisation. Many announce how we will live in 2050. Many rave about a world we know from science fiction films. If you take a closer look, we are probably talking more about the use of robots in industrial production, about faster communication, better and more transparent public administration, artificial intelligence, more driver assistants and the like. All of this has an impact on our life, our work, our learning, our research, our travel. So, it's about the places, in which we live, whether in metropolises, in peripherals, or in rural areas. So, it's also about justice. In addition to the Internet of Things, Industry 4.0, autonomous driving and the energy transition, the topic of 'Smart City' is one of the big topics of digitisation.

   "The concept of the Smart City is being used in a variety of ways by various actors from politics and urban development, from research and from industry and economy, without having come to a uniform definition so far. [...] Innovative infrastructures will be characterized by digital control systems with associated data processing in real time. Rooms and infrastructures are linked via innovative communication systems. The urgency of renewing urban infrastructures is not only characterized by insufficient conservation and provision of replacement and supplementation needs, it is also necessary because climate change and energy efficiency requirements call for new solutions. This applies primarily to energy infrastructure, but also to water, waste, recycling and recycling processes. New decentralized

[32] Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 22.
[33] *Solutions:* To develop new sensors and wearable devices that enable personal interaction with reality without being physically present. Physical devices should be able to guarantee reliability, safety and robustness, taking into account the impact of physical laws, the interaction with human beings, interaction with nature, and interaction with other devices. This requires high performance computing, quantum computing, ultrafast communication, optical fiber, optical communication and networks, system connectivity, power electronics, printed/flexible electronics, memory and storage, analogue and mixed signal devices, heterogeneous integration/embedded systems, optical components and systems, robotics, mechatronics, sensor technologies, smart manufacturing, human-machine interaction, virtual reality, intelligent/sensor-based equipment, electronic and optical functional materials, energy storage and generation, surface engineering and coatings, monitoring and control, connectivity standards, big data analytics, and sensor fusion. Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 29.
[34] Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 26.
[35] Rohwetter, Marcus (2019), 'Platz da!', *Die ZEIT*, No. 20, 9 May, p. 25ff.

systems will connect to large central networks. Building structures will be energy producers.

Ensuring resource-efficient mobility is another challenge for the cities of the future. On the one hand, Smart City concepts must therefore take account of the changes in the modes of transport to emission-free vehicles in the individual, economic and public transport sectors in the case of land allocations, stock development and urban renewal. On the other hand, impulses for novel vehicle and intermodal mobility concepts should also be given. The city administration will evolve from a public to an open administration. Risk assessment is a central component of this administration. By providing open data and services, the city administration will be increasingly understood as a platform for innovative urban applications and third-party solutions.

Linking technical innovations with societal perspectives, new governance formats and participatory structures characterizes the development of the smart city, including healthcare and public safety.

It is important to ask across all topics about how people interact on-site with new technical infrastructures, control systems, networks and urban spaces or rather bring these forth: Smart cities do not exist 'in themselves' but require smart people, who make and update smart cities in their daily actions - both top-down and bottom-up."[36]

Now the diversity of topics as mentioned above and the length of the definition of the topic 'Smart City' shows that otherwise than the term suggests, 'the' digitisation does not exist because such 'abstract summary terms' "distort or destroy" the phenomena that we experience.[37]

Claus Pias, Professor of Media Theory and Media History at the Leuphana University of Lüneburg, concludes that "debates about the so-called 'digitisation' are marked by the possibility of forgetting." – "Just because no-one remembers, 'digitisation' has been going on for a little over fifty years in a repetitive loop of excitement about slightly different motives: there is always too little bandwidth and there are always too few computers in the schools; AI will change everything, and the administration needs to be digitised; jobs are at stake and Germany needs to 'get in shape'; the revolution is already taking place and 'we' (whoever that may be) should not lose touch. Such urgent appeals and the demands and measures derived from them are then regularly forgotten so that they can be repeated," writes Claus Pias.[38]

[36] TU Berlin Smart City Platform. 'Smart City Definition'. Available at: www.smartcity.tu-berlin.de/smart-city-definition-an-der-tu-berlin-smart-city-platform.pdf (Accessed: 10 December 2018).
[37] Pias, Claus (2019), 'Die Digitalisierung gibt es nicht', *Frankfurter Allgemeine Zeitung*, 31 July, p. N4.
[38] Pias, Claus, loc. cit. 37, p. N4.

2. A current narrative of city planning was in an advertising supplement of a car company in the weekly newspaper 'Die Zeit'. It states: "We live in the century of the cities. Every second one of us is already a city dweller. The United Nations predict that by 2050, 70 percent of all people will live in urban areas. The more our world is determined by urban needs, the more people, goods and data circulate through urban space, the greater the challenge of meeting these sometimes conflicting needs. Because where life models and work environments change, living space and infrastructure cannot cling to old models. New solutions are needed."[39]

   And then there is a statement that in 1990 there were 10 cities worldwide with more than 10 million inhabitants, by 2018 already 28, including 2 in Europe: Paris and London, and in 2030 there will be 41 megacities. By 2050, according to this prediction, 10 billion people will live on Earth, requiring nearly twice as much food as today. In addition, it is to be read, in Los Angeles car drivers will sit 102 hours a year in traffic jams, in London 74 hours and in Munich 51 hours.

   The intention is clear: it's about cars in the city. The topic 'City as Innovation Lab' is one such title, which is still an empty phrase as well. Indeed, innovations are necessary everywhere, even in the cities and metropolises. If you want to be an "Innovation Lab", you have to offer solutions for future-oriented questions. Does it really make sense to propagate immigration into the city when already today there is too few affordable housing available? Does it make sense to drive the commuters out of the city if public transport does not work? How should a change in traffic look like? What should be the incentive not to drive to the cities by car? Where do the inhabitants of inner cities park without a parking space or garage? What will become of the ever-increasing delivery traffic, if we continue to shop on Amazon, Zalando and partners? When will the new suburban and city trains announced for decades finally be built? What do the commuters use to drive into the cities when it is raining or snowing? Where are the rental bicycles, e-scooters, e-buses, e-vans parked? Experts agree that without an overall concept, neither the CO2-free/-poor city is conceivable nor a mobility of the future that does not dry out the cities.[40]

   The same applies to the construction of the digital city. To lay only fibre optic cables makes little sense, if the so called "services" are not digitised. The Germans need 400 million hours to reconcile their lives with the wishes of the state and municipalities. Germany is afraid of digitisation and politicians are afraid of digital citizens. And yet, 93 percent of German households have an internet connection.[41]

[39] BMW AG, Mini Deutschland (ed.) (2019),*The sooner now - fvt - Mini*, 'Jetzt beginnt die Zukunft! Was machen wir daraus', Hamburg, p. 1.
[40] Bartsch, Mathias et al. (2019), 'Mobilität ohne Stau', *Der Spiegel*, 29 June, p. 14ff.; Rohwetter, Marcus (2019), loc. cit. 35, p. 25, writes: "Too narrow, too loud, too dirty: There would be enough public space in the streets and squares of the cities. But it is blocked."
[41] Goos, Hauke et al. (2018), 'Im Ja-aber-Land', *Der Spiegel*, 24 November, p. 66ff.

3. The world-famous Dutch architect Rem Koolhaas was right to state: "To supply the ever-growing cities with food to sustain life in the metropolises, the country has become a huge backyard, organized with inexorable […] severity. This system is proliferating to unprecedented levels. The change that goes along with it is radical and universal."[42] Rem Koolhaas therefore believes that what is happening in the countryside at the moment can make societies "change more sustainably" than the growth of cities.

   Whoever is looking for suggestions on how to deal with such fundamental contradictions will be left behind clueless.

   Some talk about densification, skyscrapers, the car-free city, too high rents and environmental problems, the others about the desolation of the villages or the dying of the homeland. So, is it all about "urbanization" of the countryside and "ruralisation" of the city? Landscapes should not only be cultivated and sealed, but increasingly "developed […] in a bio-industrialisation process with energy crop monocultures, wind-'parks', photovoltaic 'fields', power lines and plant installations." If all state requirements for the expansion of 5G networks were implemented in Germany, a cell tower would have to be built every 400 meters throughout the country. In the densified city "roofs and facades [...] are to be greened, vegetative ventilation corridors [...] become master of summer overheating. Tree protection regulations raise trees to natural monuments." So, it's about the "ecological urban redevelopment".[43]

   What should the citizens think of the scientists and the politicians, if some want to "give up the rural areas"[44] and the others want to concrete everything, "too many new greenfield construction areas, too few construction projects in the inner cities"?[45]

   How cities and rural areas should contribute to stopping climate change remains elusive.

4. Similar discrepancies exist with regard to the radicalization of parts of the respective population in Europe. Wherever a division of society has taken place, the breaking edges lie between the centres and the periphery. The consequence also is the emergence of foreign-hostile, populist and right-wing parties as in France, Spain, the Netherlands, Poland, Austria, Germany, the Nordic Member States, Italy. "Where companies have migrated, doctors' surgeries been closed, railway tracks abandoned, restaurants and youth centres shut down, in 'zones of depopulation' (Le Bras), where they flee because of resignation or exasperation",[46]

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[42] Koolhaas, Rem (2017), 'Die Provinz ist die Zukunft', *Süddeutsche Zeitung*, 16/17 December, p. 5; see as well Freiberger, Harald (2019), 'Das Darben der Dörfer', *Süddeutsche Zeitung*, 22/23 June, p. 26; Weisser, Wolfgang W. (2019), 'Dicht an dicht', *Süddeutsche Zeitung*, 2 August, p. 5.
[43] Musso, Florian (2019), 'Der Flächenfraß in Stadt und Land', *Frankfurter Allgemeine Zeitung*, 2 August, p. 13.
[44] Gropp, Reint E., Leibniz Institute for Economic Research Halle (IWH) (2019), cited in Freiberger, Harald (2019), 'Rettet die Provinz', *Süddeutsche Zeitung*, 3 April, p. 15, and the German Institute for Economic Research (DIW), that claims the very opposite, Freiberger, Harald, ibid.
[45] *Frankfurter Allgemeine Zeitung* (2019), 'Deutschland baut an den falschen Orten', 23 July, p. 15.
[46] Cited in Leggewie, Claus (2019), 'Landleben ist kein politisches Schicksal', *Frankfurter Allgemeine Zeitung*, 16 January, p. N4.

parts of the population become radicalised. At the same time, "social inequalities and social-political catastrophes"[47] are exacerbating.

If the trenches in a society become too big, democracy is in danger. "The left behind rebel against those affiliated."[48]

The "critics see digitisation as a foreign power that occupies society and subjects it to an invisible mechanism. Resistance is rising against this – against the elimination of jobs through automation, against control and surveillance functions, against the spectre of a self-sufficient technology, and the manipulability of a quantified citizen and consumer."[49]

The escape from rural areas not only exacerbates the social situation in the peripheral areas. Two-thirds of French households living below the poverty line live in "urban and semi-urban areas". While "average incomes are generally higher, purchasing power is lower and public services are expensive."[50]

The densification strategy demanded everywhere for big and prosperous middle-class cities and aiming at building more and more housings also divides society. This does not only apply to neglected suburbs.

5. On the one hand, the debate over the densification of inner cities and the outer districts leads to violent political conflicts. "The urbanistic stress symptom of the present day is network densification and urban expansion."[51]

   At present, 78 high-rise residential buildings with 11,467 apartments are to be built by 2020 in the largest cities in Germany. In Frankfurt am Main, a 172-meter-high 'Grand Tower' is being built "with luxurious equipment, an in-house concierge service and a nearly 1,000 square meter roof garden. From the 43rd floor upward [...] the four-room apartment quickly costs three to four million euros."[52]

   This project is unlikely to contribute to the creation of affordable housing.

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[47] Leggewie, Claus, ibid.; Uwe Ebbinghaus reports that in the state elections of Thuringia in 2019 in those constituencies, "which had lost by more than five percent of [their] inhabitants, [...] up to twenty-five percent showed a sympathy for the state AfD". - "Especially the East with its changeable history seems to have little social and cultural counterpart to it. People, even though they do not suffer social hardship, feel like losers, marginalized, devalued." Ebbinghaus, Uwe (2019), 'AfD-Erfolg in Thüringen, Die unterschätzte Landflucht', *Frankfurter Allgemeine Zeitung*, 29 October, p. 11.
[48] Guilluy, Christophe (2019), 'No Society', cited in Leggewie, Claus, loc. cit. 46.
[49] Leick, Roman (2018), 'Verschwindendes Individuum, Sachbuchkritik'. The sociologist Armin Nassehi presents his "Theory of the Digital Society". It is pretty disillusioning, *Der Spiegel* (36), 30 September, p. 109.
[50] Leggewie, Claus, loc. cit. 46.
[51] Matzig, Gerhard (2019), 'Wer drin ist', *Süddeutsche Zeitung*, 16/17 February, p. 15. Matzig reports that a declaration initiated by Christoph Mäckler et al., according to which the ordinance on use of buildings (BauNVO) should be changed so that the contained "upper density limits" are changed, they were "obsolete" and would be "diametrically opposed to the European city", which is defined as "compact", so rather dense and differentiated. Likewise, the "technical instructions for protection against noise" should be reformed, cited in Matzig, Gerhard (2019), 'Stadtfragen sind Menschheitsfragen', *Süddeutsche Zeitung*, 16 July, p. 9.
[52] Matzig, Gerhard (2019), 'Luft nach oben', *Süddeutsche Zeitung*, 1/2 June, p. 53.

Densification alone does not solve the housing problems of big cities. "European places of longing [...] such as the cities of Vienna, Paris or even Venice [...] are all cities that are [...] much more 'densely built up'."[53] "One thing is clear: Domestic density, which proves to be too high (and misplaced), therefore stressful, can damage one's health."[54]

6. Another problem is that the ecological consequences of new buildings "produce at least as many greenhouse gases as global air traffic".[55] In the last 10 years, around 2.2 million housings have been newly built. They sealed the ground. Each additional house must be heated and illuminated. The energy demand increases. It is particularly high in the high-rise buildings. There, the rooms must be air conditioned. The elevators are in operation day and night. Pumps are required for water supply. Waste disposal is centralized. All this requires energy and pollutes the climate. Today's skyscraper architecture builds glass facades that are energetically particularly problematic.[56]

   In addition, digitisation will massively increase energy consumption.[57] Not to forget: In order to complete the energy transition and meet the energy needs of the digital economy in production and services (smart home, smart city, autonomous driving, cyber security, etc.), according to the German radio DLF (Deutschlandfunk), the construction of another 40,000 wind turbines will be necessary.[58]

7. In addition, today's architecture has lost every claim for design. In the metropolises, a monotonous architecture is emerging. "The ugliness of many new buildings is not ugly because architects or urban planners would not know it better [...] It is ugly, because the conditions are [ugly] […]. The more expensive the houses become, the cheaper they look. The more exalted the price, the simpler the appearance [...] It is all about profit, and the buildings look accordingly plump. Gigantic sums of money flow into the ground and land, steel and glass and into the coffers of the speculators - while the houses look increasingly haggard. It is a wealth that makes many people poor: poorer are becoming those who pay more rent than ever [...] And so, the 'society of singularities' [...] forces itself into the ghetto of dreariness."[59] Jörn Köppler, architect and lecturer at several European universities, therefore asks: "Where is the beautiful here?" and answers: "It is as if conditions had trained us and, what is even worse, our works to a rigid-silent conformity, which determines the expression of

[53] Matzig, Gerhard (2019), 'Dichter denken', *Süddeutsche Zeitung*, 25 July, p. 9.
[54] Matzig, Gerhard (2019), 'Dichter denken', ibid.; "This ranges from cardiovascular symptoms to schizophrenia." 40 major German cities have demanded in a joint declaration: "Finally do change the building laws!", *Frankfurter Allgemeine Zeitung (*2019), 'Ändert endlich die Baugesetze', 7 May, p. 12. It says: "The urban quarter of the European city has a special structural compactness. It is structurally more energy-efficient, reduces land use, minimizes traffic and is thus climate-friendly through lower CO2 emissions, increases the efficiency of public transport and promotes pedestrian and bicycle mobility." True! But why do they not build such in the cities? "
[55] Rauterberg, Hanno (2019), 'Die Heimsuchung', *Die Zeit*, 23 May, p. 41f.
[56] Rauterberg, Hanno, ibid.
[57] MIT estimates that "training a deep learning program releases as much CO_2 as five cars over their lifetime", cited in von Eichhorn, Christoph (2019), 'Weg in die Winzigkeit', *Süddeutsche Zeitung*, 13/14 July, p. 34-35.
[58] Rüttgers, Jürgen (2019), 'Die Investitionswut des Staates lähmt die Wirtschaft', *Die Welt*, 18 February, p. 2.
[59] Rauterberg, Hanno (2019), loc. cit. 55; Reckwitz, Andreas (2018), 'Die Gesellschaft der Singularitäten', Berlin.

new urban architectures such as the Potsdamer Platz in Berlin up to the HafenCity in Hamburg."[60]

8. Is there any chance for rural areas? Anyone who denies the answer to this question, openly or covertly, divides our western society. Anyone who declares rural areas, and including the peripheral agglomeration areas, as the annex of the metropolises, to the storeroom for the "left behind", as Hillary Clinton has said, is destroying the future of Europe. Anyone who builds gigantic wind turbines in the forests of the Sauerland or the Bavarian state forest loses every right to criticize others who destroy the primeval forests of Latin-America. These accentuations make it clear that a policy that abandons the province also blocks the future of the metropolises.

   Therefore, proliferation of the metropolises in surrounding areas must stop. The commuter belts and rural areas must defend themselves against this as well as those who can no longer afford to live in the city. Rural areas should not be the place for the settlement of the surface-intensive and low-employment industry, such as the large logistics buildings, which are only distribution points for the delivery of goods from all over the world, for the large-scale retail, "the branches of the supermarket chains with their large parking lots that give the town exits in the direction of the nearby national roads their [monotonous] look"[61]. The rural area is also not the disposal area for the garbage of the city. In the surrounding area no estates of terraced houses and suburbs may simply be conjured up out of thin air. Those who want a sustainable and inclusive society must concede to the province its own and unique character. The French geographer Christophe Guilluy even attributes the revolt of the yellow vests to the pent-up anger of the people against the change in their daily way of life. He speaks of the "peripheral France", where the last bakers' and butchers' shops are closing, the inner cities are declining and society is breaking apart.[62]

   Researchers at the Leibniz Institute for Regional Geography have now found out that "the prevailing EU maxim of growth through innovation, which is readily retold and promoted with plenty of money in every European capital, is not appropriate for every region. There is no model solution. Each region has its own strengths, which it must use for its development." And: "In Europe, not only a decoupling of metropolises and provinces, but also of successful and unsuccessful regions can be observed, but also a decoupling of growth and people's satisfaction. Economic growth in the regions does not come as prosperity growth

[60] Köppler, Jörn (2019), 'Wo bleibt denn bitte hier das Schöne?', *Frankfurter Allgemeine Zeitung*, 16 January, p. 12.
[61] Haneke, Alexander (2018), 'Der Dorfkern soll leben', *Frankfurter Allgemeine Zeitung*, 29 December, p. 5.
[62] Cited in Haneke, Alexander (2018), loc. cit. 61; Judith Niehaus points out that "at least two-thirds of the so-called 'hidden champions' [...] [have] their location in cities with less than 50,000 inhabitants, although predominantly in West Germany, but scattered there broadly. For the Economist, this is one of the main reasons why there are no 'yellow vest' protests in Germany", Niehaus, Judith (2019), 'Ungleichheit zwischen Wunsch, Wahrnehmung und Wirklichkeit', *Frankfurter Allgemeine Zeitung*, 26 July, p. 18. The Polish scientist Adam Soboczynski points out that "feeling notoriously disadvantaged is still popular in East Germany, Poland or Hungary", Soboczynski, Adam (2019), 'Die heimlichen Gewinner', *Die Zeit*, 15 August, p. 37.

[...] If the lighthouses and the neo-liberal policies of the EU do not change this, you have to search the region for its own light sources and not just complain about the darkness."[63]

The unimaginative and unproductive city-country debate does not take us any further. The attempts to outsource the problems of the cities to the surrounding area must be stopped. The rural area will become the place where the biggest problems of our time can be solved in the coming years. "In the midst of man-made climate change and in parallel with global population growth, especially the nutrition requires new concepts. The need to open up new sources of energy leads as much to the countryside as do the never-ending refugee crises. And the strongly deteriorated demographics - especially in rural areas - must be […] balanced urgently."[64] This is where digitisation can help. We need a policy for a smart country. But for that, the current urban development policy must end.

So, stop with the boundless designation of building land. Citizens must be able to decide what their homeland will look like in the future. Competitions for urban and rural development are suitable for this purpose.[65] All regional planning must be reviewed for "smart, sustainable and inclusive ideas for the future"[66]; no longer allow building land projects that create new traffic. The separation of homes and work in city and country must be overcome. After the industrial world had separated both by pollution and traffic, the digital world makes this possible again. Anyone who wants "unity in diversity" must not permit neither a monotonous architecture nor metropolises and l'Europe profonde characterized all by uniformity.[67]

9. What may such a humane urban development look like?

Trying to build cities according to the rules of the digital world is inhumane and will fail just like the car-friendly or car-free world. The French philosopher Gaspard König points out that people who are deprived of their liberty and controlled by Artificial Intelligence (AI), as is currently to be seen in the People's Republic of China, will resist or refuse to take political action. "Today, the algorithms decide, as God used to. [...] The 'smart city' is becoming an efficient habitat where everyone is satisfied. But ultimately, the 'smart city' is dead because it does not tolerate any deviation from the norm." He asks: "In the future, may I drive

[63] Wagner, Gerald (2017), 'Stadt, Land, Kluft', *Frankfurter Allgemeine Zeitung*, 4 October, p. N4.
[64] Ebbinghaus, Uwe, loc. cit. 47, p. 11.
[65] Heringer, Anna (2019): „ We have to design the processes in such a way that not only houses are built but also communities are formed", Martin Hogger (2019), 'Stadt, Land, Plus', *Süddeutsche Zeitung, Plan W,* February, p. 16ff.
[66] Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 26ff.
[67] Gropp (2018), Reint E. 'Miese Luft bei bester Oper', *Frankfurter Allgemeine Zeitung*, 26 November, p. 16, opposes a "centrally steered overall strategy for rural areas". As part of a competition, the municipalities should answer the question: "Where do you want to be in 10 years?" New studies indicate that "in Germany, especially the East and rural areas are in danger of losing touch." - "Investments in the infrastructure of mobility and digitisation [are necessary] […] Civic engagement should be strengthened as well[...] It is 'politically, socially and economically fatal to give up regions,' said Michael Hüther, director of the Institute of German Business", cited in Balser, Marcus (2019), 'Rostgürtel an der Ruhr', *Süddeutsche Zeitung*, 9 August, p. 15.

a car manually or without a data connection, or will this be banned, because this will make me a security risk?"[68]

The Swiss architect and Harvard visiting professor Vittorio Magnago Lampugnani chooses a different approach.

He points out that landscape until today was considered "an infinitely available and freely usable commodity". "In the era of industrialization and rapid population growth, the landscape was mainly one that conquered new homes, new factories, and new transport infrastructure. Modernization and economic growth legitimized all exploitation until late into the twentieth century. In the last decades, awareness has changed and the reality has not changed: in Switzerland, which deals in a rather exemplary way with its territory, we still install about one square meter of land per second; almost ten times more in Germany, even more so in France or Italy."[69] Lampugnani deplores the current tax depreciation mechanisms, which are based on a "rapid devaluation of real estate". Old, beautiful houses and those only in need of renovation are "demolished without need, and replaced by buildings that are designed from the outset as a disposable and dilapidated architecture and with an expiration date."[70]

Lampugnani points out that in commercial construction, many buildings are empty and "next to it, new buildings are being built for exactly the same purpose" because they "expend soil and do not take into account the waste of resources and the environmental impact".

He writes: "The construction industry consumes a lot of materials and energy […], producing mountains of partly highly toxic waste and is responsible for more than half of the greenhouse gas emissions that threaten our climate, our land, our livelihoods and our future."[71]

Lampugnani, who sees the alternative of "longevity as an ecological strategy", goes one step further.

Because he rejects the emergence of a so-called 'suburban' periphery development of European cities, he demands: "We should build less." The reason is: "This new alternative city has long since proved intolerable. It is expensive because its development and maintenance costs are astronomical: about twice as much as the traditional city. It is inhospitable because no one walks its streets, especially since nothing is close enough to be reached on foot, and there is no significant public space: it prohibits any social connection to life private. It's ugly because the ambitions of its people are concentrated on their private homes and the community is neglected. Above all, it is deeply unecological. [...] access to traffic occupies vast

[68] Cited in Schubert, Christian (2019), 'Der neue Weg zur Sklaverei', *Frankfurter Allgemeine Zeitung*, 15 November, p. 9.
[69] Lampugnani, Vittorio Magnago (2019), 'Für eine dauerhafte und sparsame Architektur', *Neue Zürcher Zeitung*, 2 November, p. 28f.
[70] Lampugnani, Vittorio Magnago, ibid.
[71] Lampugnani, Vittorio Magnago, loc. cit. 69,

areas. [...] The natural landscape is eaten [...] Energy consumption and CO2 emissions are also huge in the suburbs."[72]

His conclusion is: "The compact city alone is sustainable. It occupies little space and thus spares the landscape. [...] The options for action are: to prevent our real estate stock from being underused or even emptied, build less, rebuild and condense the few facilities permanently. We need to promote sound construction, avoid vacancies, support uses, intermediate uses and their underlying communities."[73]

By the way: "With block perimeter construction and the courtyards [...] an equally high density for living can be achieved, a municipal, an urban density."[74] Residential high-rises are therefore unprofitable, climate killers, anonymous and ultimately inhumane.

IV What exactly is "Smart City"?

In the Gabler dictionary of economics there is an online acknowledgment that this is a "non-uniformly used term that in general describes all concepts of modernizing and making cities more liveable through the potential of new technological developments as well as information and communication technologies in terms of ecology, social coexistence, political participation, etc."[75]

Undoubtedly, this is a very general definition, as we know it from the Silicon Valley world: give us the data, we reinvent the city! At second glance, examples such as "the more sustainable use of resources" in the transport systems, the "digitisation of the administration".

For Wikipedia, a Smart city is "an urban area that uses different types of electronic Internet of things (IoT) sensors to collect data and then use these data to manage assets and resources efficiently. This includes data collected from citizens, devices, and assets that is processed and analysed to monitor and manage traffic and transportation systems, power plants, water supply networks, waste management, crime detection, information systems, schools, libraries, hospitals, and other community services The Smart city concept integrates information and communication technology (ICT), and various physical devices connected to the IoT network to optimize the efficiency of city operations and services and connect to citizens. Smart city technology allows city officials to interact directly with both community and city infrastructure and to monitor what is happening in the city and how the city is evolving. ICT is used to enhance quality, performance and interactivity of urban services, to reduce costs and resource consumption and to increase contact between citizens and government."[76]

[72] Lampugnani, Vittorio Magnago, loc. cit. 69, p. 29.
[73] Lampugnani, Vittorio Magnago, ibid.
[74] Lampugnani, Vittorio Magnago, ibid.
[75] Gablers Wirtschaftslexicon. Available at: https://wirtschaftslexikon.gabler.de/definition/smart-city-54505 (Accessed: 19 August 2019).
[76] Wikipedia, 'Smart City', (Accessed: 19 August 2019).

In many definitions and reflections about the 'future of the city' the following problem areas are mentioned again and again

- Mobility
- Housing
- Open administration
- Public services of general interest
- Power supply
- Waste management
- Knowledge society (universities, schools, research institutes etc.)
- Public safety.

These public and thus political as well as democratic structures are to be digitised. Central and profitable areas are to be privatized. "Google founder Larry Page complained in 2013 that he did not find the right 'interface' for the government. 'Old institutions like the law' would no longer be able to keep up with the speed that was caused by technological change. 'When we went public, the laws were 50 years old. A law cannot be right when it's 50 years old.'"[77] However, technical solutions often substitute "an old one for a new problem". The "excessive collection and linking of personal data" is not a solution, but only a continuation of old thinking.[78]

In contrast, the critics of a heteronomy through data: "In smart cities, politicians rule their citizens with datasets and direct their decisions to rankings and values [...] That with the installation of a cybernetic regulatory cycle programmers implement target sizes and the sovereign is disempowered, is the flip side of the coin. Governing threatens to decline to process management."[79]

Behind the concept of Smart City is thus in the Silicon Valley world the attempt to privatise communal services and abolish communal democracy. The road to success begins with the use of public and private data to "forge profitable alliances with the other powerful puppet masters in the cities, i.e. real estate developers or institutional investors."[80]

Such a city might be smart. However, it is by no means sustainable and inclusive. So, it is time to start the socio-political discussion on how we want to live in the future. In particular: he, who cannot say which jobs will be dropped and which new ones will emerge, who cannot explain how the resilience of our society can be strengthened, how the functionality of the services of general interest (energy and water supply, waste disposal, fire brigade, health care, transport, etc.) can be ensured, must not succumb to the slogans of the Silicon Valley industry. No system is sustainable that is not resilient. Anyone digitising everything must also explain the sustainable solutions he uses to save the climate. He also has to explain how digital services of general interest work, how the energy

[77] Cited in Lobe, Adrian (2019), 'Von Maschinen lernen', *Süddeutsche Zeitung*, 8 January, p. 11.
[78] Briegleb, Till (2019), 'Im Privatjet zum Klimaziel', *Süddeutsche Zeitung*, 4 October, p. 15.
[79] Lobe, Adrian, loc. cit. 77, p. 11.
[80] Morozov, Evgeny (2017), 'Demokratische Kontrolle? Übernehmen wir auch gerne!', *Süddeutsche Zeitung*, 25 October, p. 11.

needs of the computers used are ensured and what happens when the supercomputers fail during power outages.[81]

V. The digital "European way of life"

If we want to preserve the "European way of life" in the 21st century as well, if we want to live in a human society in which it is fair, where freedom is the supreme good, in which "unity in diversity" is possible without foreign power through machines, through echo chambers, through political, economic manipulations in state, society and civil society, then we must not make our society dependent of anonymous data, inscrutable algorithms, anonymous power centres like 'Silicon Valley'.[82]

Alex Pentland, a computer science professor at the Massachusetts Institute of Technology (MIT), writes: "One of the most telling insights in looking at AI[83] is that bureaucracies are similar to artificial intelligence: they operate according to rules that we call laws, add government data and make decisions that affect our lives. The bad thing is that we hardly have an overview of these bureaucracies. The one control we can exercise is to destitute them. We have to monitor bureaucracies more closely. We need to record the data that have flown into each of their decisions, and we need to have the results analysed. Incidentally, that's the way the legislator has intended."[84]

It is indispensable that

- Everything that is legally valid offline is also valid online,[85]
- Only algorithms are used whose contents and changes are documented,
- The liability for the use of 'artificial intelligence' is regulated by law,
- The social networks are defined as media and the responsibilities correspond to those of other media,
- All media used in Europe are subject to the same data protection rules as all other producers, providers and users,
- All rules and standards, in particular the liability and tax laws, also apply to the computer, network and media industries,
- Our digital infrastructure is better protected against attacks, terrorist attacks, theft of intellectual property and above all against manipulations of our democracy. We need a secure internet that protects our data,
- Digital monopole companies are controlled and, if necessary, also unbundled according to the rules of European monopoly law.

[81] See Welzer, Harald (2019), 'Künstliche Dummheit', *Die Zeit*, 15 August, p. 6.
[82] See Ramakrishnan, Venki (2019), 'Künstliche Intelligenz, Werden Computer unsere Oberherren sein', *Süddeutsche Zeitung*, 17 July, p. 11.
[83] See Ramakrishnan, Venki, ibid.
[84] Pentland, Alex „Sandy" (2019), 'Noch einmal mit Gefühl', *Süddeutsche Zeitung*, 24 July, p. 10; see as well Rüttgers, Jürgen (2017), 'Mehr Demokratie in Deutschland', loc. cit. 11, p. 48.
[85] See as well the French anti-hate campaign, Altwegg, Jürg (2019), 'Siehe da, Frankreich reglementiert das Gesetz', *Frankfurter Allgemeine Zeitung*, 13 July, p. 14.

- Europe must protect its industry. Data are important to the digital industry. But they belong to the data producer. If data are used, safety must be ensured. That is why we need a 'Euro-Cloud' and 'Euro-Router'. Instead of making the Internet more troubled by state trojans, software for a secure Internet should be promoted. Software security should become a hallmark of European digitalization, end-to-end encryption mandatory.[86]

Europe's alternative is the "European - the political and the economic including - culture, not as a museum or tourist event [...] Europe's star is its culture and the lived clarity on the cultural form and cultural essence of the modern world."[87]

What is needed is an alternative for the European city, which is not totally supervised by computers, monopole companies and bureaucracies and then controlled in a heteronomous way. Every part of our lives must not be discussed, data-driven and "thought of by a neoliberal side of optimization" as in the US. "The city makes a mathematical value the standard of politics [there]."[88] Nor should it be the object of a total surveillance of the citizens, such as by the party dictatorship in China.[89]

The prognosis of the UN takes no account of the structure and culture developed over thousands of years in Europe. It is a prognosis of technocrats.

„The landscape of cities shows there are 18 EU cities of over one million inhabitants, with strong impacts on their hinterlands. Increasingly they are metroregions. An additional 43 cities have [more than] 500 000 inhabitants, with 85 between 250 000 and 500 000 inhabitants. Significantly, nearly 700 cities have [fewer than] 250 000 and [more than] 50 000 inhabitants. This makes the EU a place of smaller cities within which a few cities dominate as transactional hubs that contribute to shaping the strategic global economic, political and cultural agendas. They are intensely connected into the global system."[90]

Europe does not want, Europe does not need uniform cities. It needs new ideas, courage for the future, research and technology, knowledge and innovation, and cities and rural areas where people like to live.

In the age of digitisation, a city as well as the rural area need

- Democratic legitimacy by the citizens,

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[86] See Rüttgers, Jürgen (2019), 'Guten Morgen, Europa!', Baden-Baden, p. 67f.
[87] Mittelstraß, Jürgen (2016), 'Europa? – Europa!', *Conturen*, p. 48; see as well Rüttgers, Jürgen (2017), 'Mehr Demokratie in Deutschland', loc. cit. 11, p. 149ff.
[88] Lobe, Adrian, loc. cit. 77, p. 11.
[89] Deuber, Lea (2019), 'Waffen statt Träume', *Süddeutsche Zeitung*, 28/29 September, p. 2, reports: "In Beijing, a small apartment in the city centre costs already 1 million euros, the school education with tuition for a child quickly up to a thousand euros, the price for a kilo of apples is almost 4 euros. The health system is overloaded. When a family member becomes ill, it often means financial ruin. Many university graduates also do not find a good job. The factories in the south must close. Migrant workers return to their villages. The starting salaries are too low in many places. At the same time, inequality is growing in the country."
[90]European Commission (2019), 'The human-centred city: Opportunities for citizens through research and innovation', Report of the High-Level Expert Group on Innovating Cities, Brussels, p. 21f.

- An open administration whose basis for decision-making is transparent,
- An energy supply that is not only climate-neutral, but that does not separate the climate issue from the social question,
- A waste management industry that is sustainable and does not incapacitate society,
- A society that can be sovereign because it is educated, trained and innovative,
- A space where people can live safely,
- The ability to give each person work and income within their skills and abilities, and not deny help to those who need it.[91]

Such a city will continue to be an area of freedom in which everyone knows that urban society is "not an object that can be 'instrumentally' prescribed, but works according to its own logic that you have to beat with your own weapons: politically, economically, scientifically, and in terms of the conditions of behavioural change that has been called a social issue since the mid-nineteenth century."[92]

For rural areas too, the digital world, which already includes the many villages, communities and middle-sized cities, offers many new opportunities. Again, there are no patent solutions. Every community and every village has to find its own way, not against the cities, but with the citizens. Imagination knows no limits.[93]

Summary[94]

Since the beginning of this century there has been a significant de-industrialization in Europe.[95] The consequences of this de-industrialization were a recession, lower economic growth, high unemployment, especially juvenile unemployment, with a concurrent rapid technical progress.

The result was a division of society in many European countries in old and young, natives and immigrants, people and elite, right-wings and left-wings, centre and periphery, and between 'somewheres' and 'anywheres'.

Europe therefore needs more growth, a growth that is "smart, sustainable and inclusive" because 80 percent of the European Union's economic growth is based on productivity gains.

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[91] See Cremer, Georg (2016), 'Armut in Deutschland', *bpb,* Bonn, p. 10ff.
[92] Nassehi, Armin (2019), 'Denkfaule Demokratieverächter', *Süddeutsche Zeitung*, 2 August, p. 9.
[93] For Georg Cremer, this can make public life more attractive, with a mixture of government concern for a minimum of services of general interest and the personal commitment of those who wish to continue living there, as well as initiatives for a village shop, neighbourhood help and car-sharing and other innovative ideas, Cremer, Georg (2018), 'Deutschland ist gerechter als wir meinen. Eine Bestandsaufnahme', *bpd,* Bonn.
[94] The summary was the basis of a speech at the European Union Congress in Brussels on the topic "Smart City as Innovation Lab" in September 2019.
[95] Re-Finding Industry – Defining Innovation, loc. cit. 5, p. 13. Nevertheless, Europe is still a world leader in green and efficient energy, new and secure jobs despite the use of many robots, innovative and customized goods and services. The share of industry has increased by 6 percent since 2009. 1.5 million new jobs have been created in the industry since 2013. Labour productivity has risen since 2009 by 2.7 percent per annum, ahead of the US and Korea (0.7 percent and 2.3 percent).

The division of civil society is not overcome despite a good economic situation. The reason for this is that many people are afraid: of the future, the loss of work, and too many new and strange things.

The people's parties in the European democracies, which after World War II contributed to the reconstruction, the European unification, the rule of law and the separation of powers, are under massive pressure. Populists, right-wing radicals and anti-Semites fight democracy and the social market economy. They believe that only national states can set new boundaries and guarantee security and progress.

In Britain, people want to leave the EU because they want to regain control over their state, economy and society. The movement of the President 'La Republique en Marche' in France has destroyed the old party system. In Spain, there is no government majority. Catalonia wants to leave Spain. The division between East and West in Germany is getting deeper and deeper. In Italy there were neo-fascist ministers. The remaining left-wing parties want to make more debts and return to state economy. The centre-right-wing parties have little power to defend freedom and the social market economy. Politics are unable to solve the great challenges of our time, globalization, the impending climate catastrophe and digitisation.

If trenches in a society become too big, democracy is in danger. "The left behind rebel against those affiliated."[96]

The escape from rural areas does not only exacerbate the social situation in the peripheral areas. Two-thirds of French households living below the poverty line live in "urban and semi-urban zones." While "average incomes are generally higher, the purchasing power is lower and public service expensive."[97]

The densification strategy demanded everywhere for big and prosperous middle-class cities and aiming at building more and more housings also divides society. This does not only apply to neglected suburbs.

On the one hand, the debate over the densification of inner cities and the outer districts leads to violent political conflicts. "The urbanistic stress symptom of the present day is network densification and urban expansion."[98]

Separation of homes and work in city and country must be overcome. After the industrial world had separated both by pollution and traffic, the digital world makes this possible again. Anyone who wants "unity in diversity" must not permit neither a monotonous architecture nor metropolises and l'Europe profonde characterized all by uniformity.[99]

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[96] Guilluy, Christophe, 'No Society', cited in Leggewie, Claus, loc. cit. 46.
[97] Leggewie, Claus, loc. cit. 46.
[98] Matzig, Gerhard, 'Wer drin ist', loc. cit. 51.
[99] Gropp, Reint E., 'Miese Luft bei bester Oper', loc. cit. 67, opposes a "centrally steered overall strategy for rural areas". As part of a competition, the municipalities should answer the question: "Where do you want to be in 10 years?" New studies indicate that "in Germany, especially the East and rural areas are in danger of losing touch." - "Investments in the

Researchers at the Leibniz Institute for Regional Geography have now found out that "the prevailing EU maxim of growth through innovation, which is readily retold and promoted in every European capital with plenty of money, is not appropriate for every region. There is no model solution. Each region has its own strengths, which it must use for its development." And: "In Europe, not only a decoupling of metropolises and provinces, but also of successful and unsuccessful regions can be observed, but also a decoupling of growth and people's satisfaction. Economic growth in the regions does not come as prosperity growth [...] If the lighthouses and the neo-liberal policies of the EU do not change this, you have to search the region for its own light sources and not just complain about the darkness."[100]

In many definitions and reflections about the 'future of the city' the following problem areas are mentioned again and again

- Mobility
- Housing
- Open administration
- Public services of general interest
- Power supply
- Waste management
- Knowledge society (universities, schools, research institutes etc.)
- Public safety.

The associated central and profitable areas are to be privatized.

In contrast, the critics of a heteronomy through data: "In smart cities, politicians rule their citizens with datasets and direct their decisions to rankings and values [...] That with the installation of a cybernetic regulatory cycle programmers implement target sizes and the sovereign is disempowered, is the flip side of the coin. Governing threatens to decline to process management."[101]

Behind the concept of Smart City is thus in the Silicon Valley world the attempt to digitise and then privatise communal services. The road to success begins with the use of public and private data to "forge profitable alliances with the other powerful puppet masters in the cities, i.e. real estate developers or institutional investors."[102] For municipalities, there remain the unprofitable tasks.

Such a city might be smart. However, it is by no means sustainable and inclusive. It is time to start the socio-political discussion on how we want to live in the future. In particular: he, who cannot say which jobs will be dropped and which new ones will emerge, who cannot explain how the resilience of our society can be strengthened, how the functionality of the services of general interest (energy

infrastructure of mobility and digitisation [are necessary][…] Civic engagement should be strengthened as well[...] It is 'politically, socially and economically fatal to give up regions,' said Michael Hüther, director of the Institute of German Business," cited in Balser, Marcus (2019), 'Rostgürtel an der Ruhr', *Süddeutsche Zeitung*, 9 August, p. 15.

[100] Wagner, Gerald, loc. cit. 63.

[101] Lobe, Adrian, loc. cit. 77, p. 11.

[102] Morozov, Evgeny, loc. cit. 80.

and water supply, waste disposal, fire brigade, health care, transport, etc.) can be ensured, must not succumb to the slogans of the Silicon Valley industry. No system is sustainable that is not resilient. Anyone digitising everything must also explain the sustainable solutions he uses to save the climate. He also has to explain how digital services of general interest work, how the energy needs of the computers used are ensured and what happens when the supercomputers fail during power outages.[103]

"The landscape of cities shows there are 18 EU cities of over one million inhabitants, with strong impacts on their hinterlands. Increasingly they are metroregions. An additional 43 cities have [more than] 500 000 inhabitants, with 85 between 250 000 and 500 000 inhabitants. Significantly, nearly 700 cities have [fewer than] 250 000 and [more than] 50 000 inhabitants. This makes the EU a place of smaller cities within which a few cities dominate as transactional hubs that contribute to shaping the strategic global economic, political and cultural agendas. They are intensely connected into the global system."[104]

If we want to preserve the "European way of life" in the 21st century as well, if we want to live in a human society in which it is fair, where freedom is the supreme good, in which "unity in diversity" is possible without foreign power through machines, through echo chambers, through political, economic manipulations in state, society and civil society, then we must not make our society dependent of anonymous data, inscrutable algorithms, anonymous power centres like 'Silicon Valley'.[105]

Europe's alternative is the "European - the political and the economic including - culture, not as a museum or tourist event [...] Europe's star is its culture and the lived clarity on the cultural form and cultural essence of the modern world".[106]

What is needed is an alternative for the European city, which is not totally supervised by computers, monopole companies and bureaucracies and then controlled in a heteronomous way. Every part of our lives must not be discussed, data-driven and "thought of by a neoliberal side of optimization" as in the US. "The city makes a mathematical value the standard of politics [there]."[107] Nor should it be the object of a total surveillance of the citizens, such as by the party dictatorship in China.[108]

The prognosis of the UN takes no account of the structure and culture developed over thousands of years in Europe. It is a prognosis of technocrats.

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[103] See Welzer, Harald, loc. cit. 81; Rüttgers, Jürgen (2019), 'Die Interventionswut des Staates lähmt die Wirtschaft', *Die Welt*, 18 February; Adrian Lobe points out that there is a trade-off between "knowledge production and ecology". "Internet activity leaves a huge environmental footprint." He asks: "Are supercomputers possibly the much bigger muddlers than SUVs? Is AI the ultimate climate killer?" Lobe, Adrian (2019), 'Cyberfossiler Kapitalismus', *Süddeutsche Zeitung*, 7 October, p. 11.
[104] European Commission (2019), 'The human-centred city: Opportunities for citizens through research and innovation', Report of the High-Level Expert Group on Innovating Cities, Brussels, p. 21f.
[105] See Ramakrishnan, Venki, loc. cit. 82.
[106] Mittelstraß, Jürgen, loc. cit. 87; see as well Rüttgers, Jürgen, 'Mehr Demokratie in Deutschland', loc. cit. 11, p. 149ff.
[107] Lobe, Adrian, loc. cit. 77, p. 11.
[108] See Deuber, Lea, 'Waffen statt Träume', loc. cit. 89.

Europe does not want, Europe does not need uniform cities. It needs new ideas, courage for the future, research and technology, knowledge and innovation, and cities and rural areas where people like to live.

In the age of digitisation, a city as well as the rural area need

- Democratic legitimacy by the citizens,
- An open administration whose basis for decision-making is transparent,
- An energy supply that is not only climate-neutral, but that does not separate the climate issue from the social question,
- A waste management industry that is sustainable and does not incapacitate society,
- A society that can be sovereign because it is educated, trained and innovative,
- A space where people can live safely,
- The ability to give each person work and income within their skills and abilities, and not deny help to those who need it.[109]

Such a city will continue to be an area of freedom in which everyone knows that urban society is "not an object that can be 'instrumentally' prescribed, but works according to its own logic, that you have to beat with your own weapons: politically, economically, scientifically, and in terms of the conditions of behavioural change that has been called a social issue since the mid-nineteenth century."[110]

For rural areas too, the digital world, which already includes the many villages, communities and middle-sized cities, offers many new opportunities. Again, there are no patent solutions. Every community and every village has to find its own way, not against the cities, but with the citizens. Imagination knows no limits.[111]

[109] See Cremer, Georg, 'Armut in Deutschland', loc. cit. 91, p. 10ff.
[110] Armin Nassehi, 'Denkfaule Demokratieverächter', loc. cit. 92, p. 9.
[111] For Georg Cremer, this can make public life more attractive, with a mixture of government concern for a minimum of services of general interest and the personal commitment of those who wish to continue living there, as well as initiatives for a village shop, neighbourhood help and car-sharing and other innovative ideas, Cremer, Georg (2018), 'Deutschland ist gerechter als wir meinen. Eine Bestandsaufnahme', loc. cit. 93.