

Realizing sufficiency-oriented lifestyles

Towards Digital Growth-independent Societies

Growth-independent areas are a prerequisite in enabling the environmental policies needed to prevent environmental depletion. Yet, digitalisation is reshaping our economy in a way that could both hamper and benefit growth-independent areas.

By Josephin Wagner and Steffen Lange

If we are to face the challenges of climate change, of biodiversity loss and of exceeding other planetary boundaries, radical environmental policies are needed. However, concerns regarding the negative impact of such policies on economic growth often impede their implementation. These concerns stem from central societal areas such as employment and social security systems depending on economic growth – at least under existing conditions (Petschow et al. 2018). To facilitate the required social-ecological transformation, these areas must be transformed to become growth-independent.

While a social-ecological transformation is still to be realized, the digital transformation is reshaping our economic and social systems. Digitalisation is fundamentally transforming production structures and consumption patterns. The application of information and communication technologies could increase efficiencies and optimize processes, lifting environmental burdens (Jungblut et al. in this issue). At the same time, digitalisation, as it is unfolding today, brings with it rising energy and resource consumption by the digital technologies themselves (Pohl et al. this issue), as well as rebound mechanisms that increase environmental throughput (Lange et al. 2020). Moreover, digital transformation could also worsen or counteract existing growth dependencies. Digitalisation therefore needs to be reconciled with growth independence and social-ecological transformation (Lange/Kristof 2020). This is illustrated in Figure 1.

In the following, we first describe the relationship between the concept of growth independence and digitalisation. In doing so, we look at the extent to which automation processes can lead to an increased dependence on growth for employment and for the financing of social security systems. In addition, we present two approaches to counteract this dependence on growth on the macro-economic level. Afterwards we turn to the micro-economic level and focus on consumption patterns.

We delineate the circumstances under which the potentials of digitalisation could be reaped to support the adoption of sufficiency-oriented lifestyles in a growth-independent society.

Growth independence and digitalisation

Urgently needed strong environmental policies are being pushed back if they are considered to limit economic growth. This “put-on-hold attitude” is hampering the social-ecological transformation. For example, politicians controversially debated the pricing of climate-damaging CO₂ emissions in connection with the new climate protection law in Germany in 2019. While the federal Environment Agency estimated damage costs related to CO₂ emissions to be 180 EUR/tCO₂, the price that has been set is now 25 EUR. Arguments in favour of this low price were that a high price for CO₂ might negatively impact private consumption and Germany’s international competitiveness thereby endangering companies’ growth targets. In the end, these concerns outweighed the insight that a low CO₂ price does not have the necessary steering effect to avert the consequences of climate change, which are associated with considerable social costs.

But why is it the case that growth targets repeatedly dilute environmental policy decisions? One reason is that several societal areas are growth-dependent. These areas fulfil a socially desirable function and contribute to an important societal goal. But under current conditions, their functionality and contribution to society depend on continuous economic growth (Petschow et al. 2018, Zahrnt and Seidl 2009). The growth-dependent areas are, amongst others, social security systems and employment (Petschow et al. 2018). Environmental policies possibly leading to a decline in economic growth threaten the viability of these areas. Shaping the latter in a way that they can fulfil their socially desirable function even if the economy is not growing would release environmental policies from any reservations regarding limiting growth. In other words, establishing growth-independent areas is necessary if Germany, and other developed countries are to be steered onto a path towards staying within planetary boundaries.

How does digital transformation affect the establishment of growth-independent areas? At first glance, digital transformation increases the growth dependence of social security systems and employment as it enables automation processes. Overall, the automation of production processes through digitalisation increases labour productivity, which means that, for the same

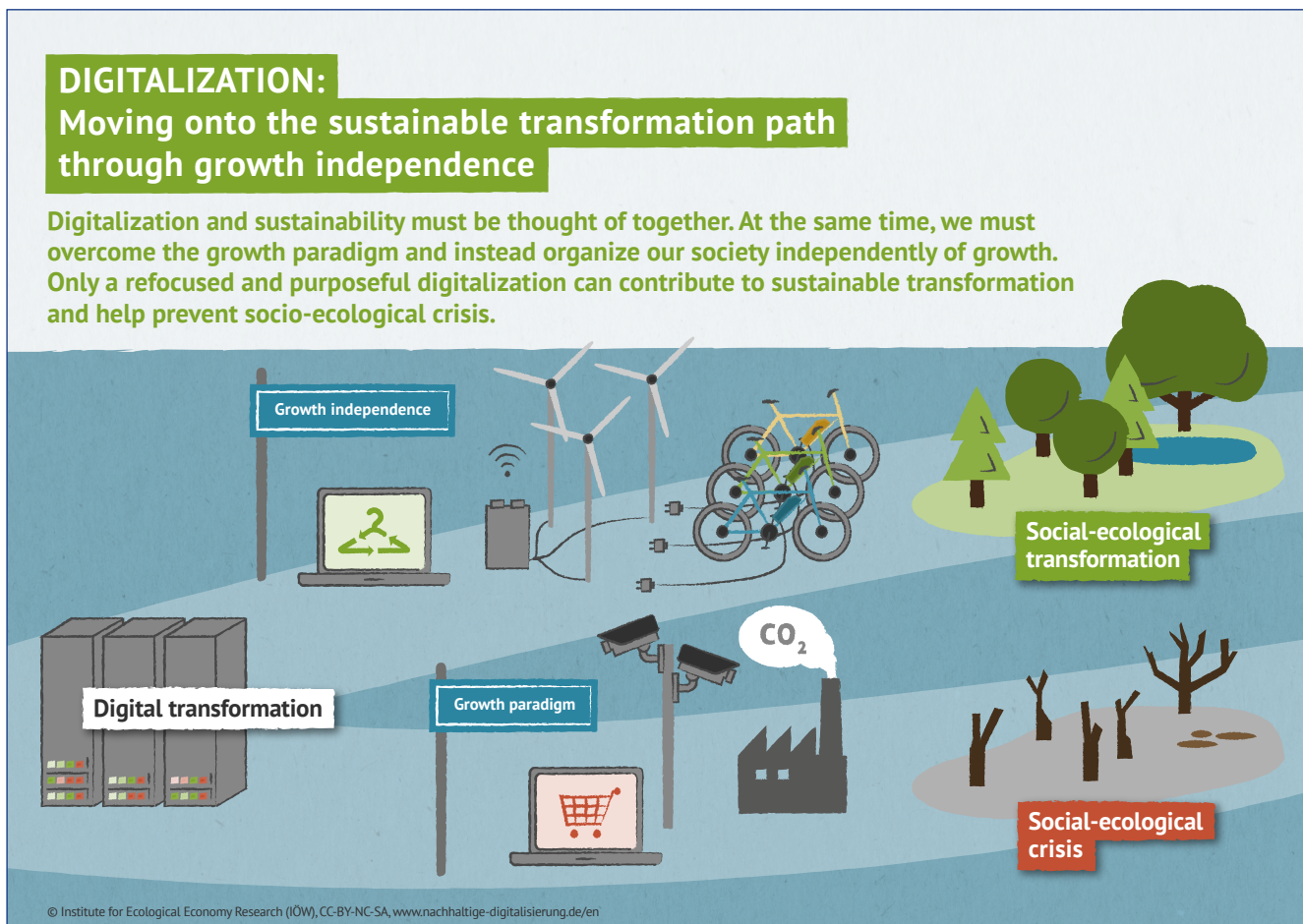


Figure 1: Digitalisation: Moving onto the sustainable transformation path through growth independence

output with the same average working time, less employees are required. This productivity increase reduces employment. It also dampens social security payments, as these primarily come from wages. Social security payments are put under pressure – in addition to the increasing unemployment – due to two additional developments related to automation. First, automation changes production structures in a way that decreases demand for certain qualifications while increasing the demand for others. Those changes in demand hit low-skilled workers particularly hard because new jobs tend to be created in higher-skilled areas. Newly created jobs for low-skilled workers are relatively more often not subject to social insurance contributions. Hence, contributions to social security tend to decline. Second, wages make up a smaller part of overall income, while the share of capital income rises. As income from capital does not contribute to social security payments under current systems in Germany and many other countries, further pressure is put on financing social security.

Economic growth under the current systems helps to prevent unemployment in the face of automation and continuing increases in labour productivity. Growth also helps finance social security systems since, by preventing unemployment, it

also supports contributions, as these are directly linked to wage income. Hence, under otherwise equal conditions, automation processes increase the growth dependency of both the employment and the social security systems.

Two approaches for reconciliation

There are, however, approaches to reconciling digitalisation and growth independence. The first approach addresses the relation between employment and growth by changing the relative prices of environmental throughput and labour. It tackles the roots of rising unemployment in connection with the digitalisation processes, i. e., the rising labour productivity outlined above. Instruments such as abolishing ecologically problematic subsidies (Paech 2012), introducing environmental taxes (Daly 2008, Binswanger et al. 1981) and establishing cap and trade systems (Daly 1991) aim at increasing resource and energy costs. At the same time, labour costs could be reduced – which does not mean to reduce wages. Rather, social security payments from wages [1] and taxes, in particular on low and medium wages, can be reduced in order to make labour effectively cheaper from the firms' perspective. Both combined – higher costs for environ-

mental throughput and lower costs for labour – would greatly change the relative prices of energy and resources compared to the price of labour. Thereby companies would be incentivized to steer their research and innovation activities towards developing resource- and energy-efficient technologies rather than to increasing labour productivity. These adjustments would lead to energy and resources being substituted by labour so that labour intensity would stop decreasing or even increase. Also, it would lead to rising costs for resource-intensive products while costs for work-intensive products would decrease, positively affecting both the environment and labour demand. Both effects – the application of different technologies and a consumption shift towards labour intensive products – would increase employment, wages and social security payments.

The second approach is to reduce average working time. Working time reduction is an instrument for coping with the consequences of increasing labour productivity. To save jobs, instead of increasing the output, employees could spend less time working. This instrument is, however, associated with concerns from both employers and employees. For employers, the proposal to reduce working time often raises concerns regarding increasing costs stemming from the time needed to coordinate working packages between employees, especially for job sharing. However, digital tools can help to address these issues: A growing number of information and communication technology (ICT) solutions can simplify collaboration processes at work, which can reduce coordination costs. From employees, fears are arising that reduced working time could lead to declining real wages. This decline does not, however, have to be the case. On a macroeconomic level, the idea is that increases in labour productivity are used not to increase wages but to decrease average working time. It does not mean that wages fall but rather that they stay constant.

The two approaches could and should be combined on the path towards social-ecological transformation. While getting the prices of environmental throughput and labour right will lead to additional employment in some sectors, other sectors will reduce production and unemployment will rise. If those people cannot find a job in another sector – be it because the employment is geographically far away or because it requires a different skill set – reducing working hours can be part of the solution. Unfortunately, the associated decline in real income can threaten livelihoods of low-wage earners. At the same time, for well-paid households, reduced working time can result in time affluence without serious financial bottlenecks. Hence, the political task would be to design working hour reductions so that low incomes increase instead of decreasing. For example, wage compensation payments that are graduated according to income and family status can distribute the financial effects of working time reductions in a socially just manner (Wuppertal Institut 2008). However, it is also clear that the two approaches outlined here do not suffice to counteract social inequalities that are already present in society and are likely to be exacerbated by digital transformation.

Sufficiency-oriented lifestyles

Turning to the micro-economic level we focus on the question of how digitalisation can transform consumption patterns towards growth independence. Such consumption patterns become necessary as meeting planetary boundaries calls for an absolute reduction in the consumption of energy and resources and the avoidance of environmental pollution (Alfredsson et al. 2018).

In addition to an efficient use of energy and resources, it is important to promote sufficiency, which can be understood as avoiding over- and underconsumption through reducing material consumption levels in affluent societies (Princen, 2005). Social innovations such as peer-to-peer sharing or subsistence-oriented activities like “do-it-yourself” could enable sufficiency-oriented lifestyles as they facilitate an extended or more intensive use of products by swapping, gifting, reselling, co-using, lending, renting or repairing (Scholl 2018, Jaeger-Erben et al. 2017). The number of goods required to satisfy consumer needs thereby decreases (Gossen et al. 2019).

Peer-to-peer sharing, and subsistence-oriented practices also enable consumers to satisfy their needs more independently of their income. Sharing allows them to access products without buying them and repairing prolongs a product’s lifecycle. Consequently, consumers do not have to buy new products as often. In this sense, these practices enhance growth independence. Making the satisfaction of needs less dependent on income could be a useful complement to working time reduction in connection with increasing growth independence of employment (see above). Peer-to-peer sharing and subsistence-oriented practices can, in turn, benefit from reducing working time, as these practices are originally connected to community building and collaboration, which require time that would be made available.

Digital tools bear the potential to support sufficiency-oriented lifestyles. For example, digital peer-to-peer platforms that act as facilitators between “peers”, lower transaction costs of sharing and enable the efficient distribution of shared goods among large user communities (Benkler 2004), thereby giving more people access to shared goods and broadening the range of what is shared (Gossen et al. 2019). Moreover, digital facilitated open education (Voigt in this issue) can be used to build competencies for subsistence-oriented practices. For instance, peers can broadly share know-how on making, repairing, and upcycling on wikis or wiki-based websites such as ifixit.com. Web based community mapping projects can furthermore increase the visibility of local sites like maker spaces, community gardens or common fruit meadows which promote subsistence-oriented practices (e. g., on sharing city community maps or mundraub.org). However, the growth-dependent design of currently prevailing peer-to-peer platforms and the dominance of commercial players (often in monopoly-like positions) counteract digitalisation’s potential to support sufficiency-oriented lifestyles.

Idle potentials

Wikis for subsistence-oriented practices face the challenge of animating users to share their knowledge while competing for attention with commercial providers who dominate the internet (Frick et al. this issue). Thus, it is not surprising that these kinds of wikis struggle to achieve widespread impacts and therefore cannot widely reap their potential to support sufficiency-oriented lifestyles (Frick/Gossen 2019). The inferiority of wikis is strikingly illustrated by the fact that Wikipedia is the only non-commercial website among the 50 most visited websites today (Frick et al. in this issue). A lack of funding for not-for-profit actors that aim at providing sufficiency-supporting services and are organized collaboratively adds to the challenge of catching up with the commercial players (Frick/Gossen 2019, Frick et al. this issue).

Peer-to-peer platforms (e. g. Airbnb or getaround) promote using instead of owning. However, the current state and predicted development of peer-to-peer platforms show that most of these platforms operate under a growth paradigm at risk of counteracting their potential to support sufficiency-oriented lifestyles. Increasing economies of scale, predominant venture capital funding, positive network effects and additional value creation through data collection and processing create growth pressure for peer-to-peer platform providers (Behrendt/Henseling 2018, Light/Miskelly 2019, Peuckert/Pentzien 2018, Srnicek 2018). Taken together, these factors lead to most sharing markets tending towards monopolies (Peuckert/Pentzien 2018). As peer-to-peer platforms expand, sharing between peers turns into sharing “with an anonymous general public” (Gossen et al. 2019, p. 7). Trust between peers is replaced by trust in the platform with the help of technical fixes such as rating systems (Light/Miskelly 2019). Interpersonal relationships between peers become superfluous, and the originally collaborative act of sharing turns into a cost-efficient, flexible, and spontaneous mode of consumption (Behrendt/Henseling 2018). At the same time, a growing number of consumption opportunities open up for users. These opportunities, however, have possible rebound effects in consumption behaviour that counteract the objective of lowering levels of resource intensive consumption. For instance, a study on the peer-to-peer platforms for accommodation Wimdu shows that users’ travel activities increased due to the increasing availability of cheaper accommodation provided by these platforms. As half of the destinations are reached by car, about a third by plane and a fifth by train these additional trips cause the emission of 25 kg CO₂ equivalents (Ludmann 2018).

Reaping the potentials of digitalisation

A highly commercialised internet and pressure for scaling up platform activities are obstacles to exploiting the potential of digital tools to promote sufficiency-oriented lifestyles. The question is how to tackle these obstacles.

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A possible approach to overcome the scaling-up imperative of platforms due to their source of funding are platform cooperatives. The platform corporativism movement addresses, among other issues, the question of a platform’s ownership (Scholz 2016; Schneider and Scholz 2017), which is linked to the question of whose interests need to be satisfied. Instead of scaling up platforms to generate short-term profits for investors, platforms that are owned and governed collectively can pursue values such as sufficiency. While this freedom can be used to encourage users to reflect on their consumption levels instead of aggressively expanding reach, positive network effects also apply to collectively owned platforms. That means a peer-to-peer platform needs to gain a certain minimum reach to generate benefits for its users. Achieving the required reach is particularly difficult for new competitors entering sharing markets that are dominated by platforms in monopoly-like positions. Users who already value and seek for sufficiency-oriented consumption alternatives are likely to engage even in a small sharing community (Behrendt/Hensling 2018), which would not be able to offer the same benefits as larger ones in terms of variety or flexibility. However, users who are merely interested in the cost-efficient, flexible, and spontaneous mode of consumption that large-scale peer-to-peer platforms offer would have high opportunity costs associated with switching to smaller, sufficiency-oriented platform cooperatives and will be very likely not willing to take such a step (Gossen et al. 2019). In order to bring these platforms out of the niche competition would need to be spurred and the dominance of growth oriented commercial platforms would need to be broken. It is therefore necessary to level the playing field and generally address the prevalence of growth-oriented players in monopoly-like positions in the internet economy, e. g., by adapting funding programs and competition law (Frick et al. in this issue for more and an in-depth discussion of measures). Transforming the internet economy in such a way would also benefit the visibility and reach of wikis for subsistence-oriented practices. In addition, amplifying the platforms’ impact locally can help to embed sufficiency-oriented lifestyles in local communities. Coop-

eration at municipal level can be a helpful instrument to ensure that a platform addresses specific local needs and is well adapted to local circumstances (Light/Miskelly 2019, Pentzien 2021). Adaption to local circumstances might also involve reflection on the configuration of digital tools used to support a platform's activities. To foster cooperation and interpersonal relationships, digital tools should primarily be used "to support leadership, management, engagement and coordination tasks" (Light/Miskelly, p. 614), thereby making time for and not replacing valuable community labour. A tool's configuration should mirror the community members' needs and evolve over time as those needs change, which might also mean uninstalling obsolete digital infrastructure. For instance, digital tools to promote trust in systems (such as PayPal or rating systems for trusted brokering) might be replaced by actual trust between the members of the community that was built over time (ibid. 2019).

Conclusion

The digital transformation is currently reshaping economic and social practices like no other technological changes. To prevent catastrophic climate change, biodiversity loss and transgressing the other planetary boundaries, digital tools need to be propitiated with radical changes in practice. Growth-independent areas are an important prerequisite on the macro-economic level to facilitating the environmental policies needed. Hence, the digital transformation needs to be reconciled with growth independence. It is important that digitally enabled automatization processes do not exacerbate the growth dependence of employment and social security systems. We showed that working time reduction and getting the prices for environmental throughput right are two useful approaches to prevent this exacerbation. On the micro-economic level digitalisation needs to transform consumption patterns towards sustainability. Digital tools like peer-to-peer sharing platforms, wikis which share know-how on subsistence-oriented practices and web-based community mapping projects have the potential to promote sufficiency-oriented lifestyles, which are necessary to achieve at least partial independence of living standards from income and to satisfy needs even in a non-growing economy. To reap the tools' sufficiency potentials, however, growth dependencies of platforms and the commercialization of the internet must be contained.

Annotation

[1] This would reduce the social security payments and would therefore make the financing of social security more difficult. At the same time, the tax incomes from environmental taxes can be used to help finance them.

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