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The digital spirit of green capitalism. How the European Union tries to save ecological modernisation

Abstract

Why, by whom and how is digitalisation and sustainability twinning presently being driven? The paper asks how political, economic and civil society actors are working to legitimise a digital-green modernisation of the economy. It argues that the nexus amounts to revitalising both digital and green modernisation, which are both facing crises of legitimacy. On the one side green modernisation has been criticised for its market-based strategies that create new inequalities and ecological problems while failing to adequately address pre-existing ecological problems. Global digital capitalism, on the other side faces criticism not only for increasing surveillance, but also for the negative impacts that digital technologies have on natural and social environments (consider the rising energy use by data centres and extractivism in the Global South). Documents, speeches, conferences and policy papers of the European Union as well as an Action Plan for Sustainability in the Digital Age worked out by civil society groups, non-profit organisations and business associations serve as an empirical basis. By using the conceptional background of the sociology of justification and situational analysis mapping strategies the paper shows that digitalisation, both on a moral and common good level, on an economic level and on the level of individual self-realisation, endows green modernisation with new action-guiding structures of meaning and thus turn it into a worthwhile, meaningful and "exciting" capitalist endeavor.

Keywords: Sociology of justification, ecological modernisation, digital capitalism

1. Introduction

On 19 March 2021, Digital Day 2021, initiated by the European Commission, took place online because of the COVID-19 pandemic. With an elbow bump, the moderator Filomena Cautela welcomed Portuguese Prime Minister Antonio Costa to the digital stage. It was a historic moment, she continued enthusiastically, because, for the first time, the EU Commission's Green Declaration would be signed by several CEOs of the digital industry sector, including some of the biggest companies in Europe. Indeed, a few hours later, the corporate leaders of Deutsche Telekom, Ericsson, Microsoft, Nos, SAP and IBM agreed to support the digital and green transformation in Europe – the so-called twin transition – and to ensure that digital technologies would be used primarily to realise a sustainable economy.

Specifically, the declaration contains provisions that commit corporations to invest in the development and use of green *and* digital solutions to achieve maximum benefits in terms of efficiency. Furthermore, standardised – but above all reliable – methods should be developed to assess the impact of green and digital technologies on the environment. Finally, the CEOs of small and large digital companies are committed to recommend the use of green digital technologies and foster workforce

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development. These range from smart technologies that reduce the consumption of fossil resources to big data analytics and monitoring applications that can capture and assess energy and efficiency gains to training for those who may be affected by the digitalisation of production processes.

The COVID-19 pandemic and associated importance of digital technologies to maintain or regain normality are certainly not the reason for the heightened interest of internationally operating tech corporations when it comes to taking a stand to save the planet. It is sufficient motivation to combine digital progress with the protection of the natural environment. In fact, the Next Generation EU Recovery Plan developed during the COVID-19 pandemic puts digitalisation on par with climate protection, with the European Digital Strategy pointing out that "without digitalisation, climate protection and ecological change remain pure wishful thinking" (European Commission, 2022a, own translation).

Digital Day 2021 and its corresponding actions refer to two important aspects: First, it suggests that a green *and* digital transformation – or, in concrete terms, an eco-digital modernised economy alone – is capable of solving ecological and climate challenges. Second, this reinforces the notion that both digital technological progress and the shift towards more sustainability are irreversible and might even be necessary developments that current societies need to respond to. Neither is a future without digitalisation conceivable, nor is one in which the need for sustainable change disappears. Yet the question remains regarding how societies and their embedded economies can address these challenges. Indeed, societies need to find legitimate and widely accepted solutions for the simultaneousness of these two transformations. What remains open is what these responses might look like. The present paper seeks to address this question by examining the normative foundations and legitimations underlying the responses and strategies.

Following the assumption that capitalism must always provide arguments that go beyond pure profit interests (Boltanski & Chiapello, 2007; Fourcade & Healy, 2007; Polanyi, 2017 [1978]) and drawing on the theoretical framework of the sociology of justification, the current paper examines how digital and environmental twinning is justified and argued for, along with how the common good is constructed (Boltanski & Thévenot, 2007, 93ff), here by using documents and initiatives that explicitly address the relationship between digitalisation and sustainability, such as action plans, roadmaps, coalitions, manifestos, EU communications or white papers and policy and position papers. I assume that the reasons must be justifiable and legitimate, both individually and in general; that is, they must survive a public evaluation to mobilise sufficient support (Boltanski & Chiapello, 2007). Thus, the "spirit" of capitalism is a normative point of reference or ideology that justifies engagement, both individually and collectively. Of course, this justification is most often not explicit or intentional but is inscribed in everyday practice as culturally accessible registers of social action. I argue that a motivation for addressing digital

and sustainable change concurrently can be found in the failures of both ecological and digital modernisation. For example, green modernisation has been criticised for its market-based strategies that create new inequalities and ecological problems while failing to adequately address pre-existing ecological problems. Global digital capitalism, meanwhile, faces criticism not only for increasing surveillance, but also for the negative impacts that digital technologies have on natural and social environments (consider the rising energy use by data centres and extractivism in the Global South). Nevertheless, the green digital transformation is supported not only by political and economic actors, but also by civil society groups from tech and ecology. A shared common point of reference among these groups with quite different interests is "sustainable digitalisation", that is, digital technologies designed and used in such a way that they promote sustainable solutions. Because these groups also have different ideas about sustainability and nature, they pursue different approaches to making digitalisation sustainable. The so-called twin transition, as envisioned by the EU, can be seen as an attempt to compensate for these mutual losses of trust and to absorb criticism towards both ecological and digital modernisation in order to render it harmless. However, it is not enough to simply provide plausibility for the instrumental dimensions of an eco-digital transition. To gain the public's support, the digital-ecological spirit must offer moral arguments about the necessity of the transformation; it must be seen as morally "right" for humanity and the natural environment, but without reducing economic securities too much. In addition to the moral question, the spirit must address the question of the EU's financial security and wealth.

In concrete terms, I ask how political, economic and civil society actors are working to legitimise a digital-green modernisation of the economy. I argue that the nexus amounts to revitalising both digital and green modernisation, which are both facing crises of legitimacy. Before presenting my findings in more detail, I first outline the developments of green and ecological modernisation, focusing on their normative foundations. Following this, I introduce the theoretical foundation with the concept of the "spirit of capitalism" or orders of justification, describing the data basis and methodological approach. Against this background, I reconstruct typical normative points of reference for connecting ecological with digital modernisation, hence identifying the significance for the renewal of the European spirit of capitalism. I will show that digitalisation, both on a moral and common good level, on an economic level and on the level of individual self-realisation, endows green modernisation with new action-guiding structures of meaning and thus turn it into a worthwhile, meaningful and "exciting" capitalist endeavour. Finally, I discuss the implications of the empirical analysis for the current and future transformations of modern societies in the face of climate change.

2. Why now? The collision between digital and ecological modernisation

The two transformation dynamics of digitalisation and sustainability have long run parallel in discourse and practice. On the one side, there were the "techies", and on the other side, there were the "ecowarriors" or environmentalists. Both relied on their own visions, professions, political ideas, histories and specific social movements (for ecological issues, see Brand, 1999; for technological issues, see Daub, 2021; Storper & Salais, 1997). Since the 1970/80s, several movements on ecological issues have criticised industrial capitalism as an inherently antiecological and antisocial system. The 1972 *Limits to Growth* report (Meadows et al., 1974) and the famous Brundtland report (1991), first published in 1987, mobilised activists, civil society and partially politics, demanding a reduction of industrial production and consumption so that the needs of the present would not come at the expense of future generations. Both reports have been central to the emergence of environmental movements, claiming that if humanity fails to limit the depletion of finite resources as quickly as possible, it risks depriving itself of the basic necessities of life through continued global growth. The Brundtland report, however, moved beyond the concern of limits to growth and, with the idea of sustainable development, argued that a reduction of social inequality and fight against poverty also contribute to environmental sustainability. By pointing out that the use of nature to satisfy ever greater desires must end, both reports showed that the capitalist system cannot guarantee the continuity and future of humanity. In other words, it became obvious that capitalism, by its very function, would lead directly to the destruction of civilisation (Chiapello, 2013).

The Absorption of Environmental Criticism through Markets

During the 1970s and 1980s, ecological critique was not yet sufficiently powerful and, thus, hardly represented an obstacle to capitalism (Chiapello, 2013, 63). With the confirmation that, at the very least, climate change is not a one-time exceptional phenomenon and, at the best, traceable to the natural evolution of the earth (Steffen et al., 2015) but man-made, the critique of the inherent risks of industrial capitalism and ecological critique gained an unprecedented driving force. Early in the new millennium, for the first time, Paul Crutzen (2002) referred to the new human-dominated age of the earth, terming this the Anthropocene. Decades later, this proclamation was followed by the identification of the so-called "Great Acceleration" (Steffen et al., 2015), meaning that since the 1950s, the world's population, the loss of biodiversity, the amounts of CO_2 and methane in the atmosphere, erosion and deforestation have been increasing extremely rapidly. Changes in human production and consumption, as indicated by gross domestic product, direct foreign investment, energy consumption and telecommunications, have been reflected in changes in the earth's natural systems: climate (greenhouse

gas levels, global temperature), ocean acidification, terrestrial biosphere degradation and fish capture.

Although the threats posed by climate change are becoming ever greater, it is not the capitalist system per se that is being called into question but merely its mechanisms and instruments. Accordingly, as a response to the challenges caused by climate change and the loss of biodiversity, a green economic model of market-based forms of production, distribution and consumption was established during the 1990s and 2000s, in which even nature has been ascribed its own economic value (Fourcade, 2011). For example, in their book *Natural Capitalism*, Hawken et al. (1999) argued that there is capital within nature as "natural capital". Economic wealth, they stressed, depends on ecosystems and their ecological returns. Thus, they concluded that environmental problems might best be solved by means of market-based policy instruments, such as a carbon tax. The expression of such a "green spirit of capitalism" (Neckel, 2018), "green capitalism" (Goldstein, 2018; Kungl, 2022) or "ecological modernisation" (Mol et al., 2016) can be distinguished by its promotion of a type of capitalist economy that reconciles growth with increasing commitment of companies to corporate social responsibility (Carroll, 1999) and the global spread of socially and ecologically responsible investments (Louche, 2006; Louche et al., 2012) or ecological banking (Lenz, 2018; Lenz & Neckel, 2019). With the 17 SDGs enacted in 2016, sustainability has become an umbrella term and subject of almost every political, administrative and corporate action (Adloff & Neckel, 2019; Görgen & Wendt, 2015).

Broken promises of digitalisation

Digitalisation was experiencing its golden age in the late 1990s and early 2000s, while ecological critique had already been absorbed into market-based modernisation. Here, representatives of the open-source and hacker movements criticised private-sector organisation and the resulting lack of participatory opportunities, emancipation, democracy and inclusion (Castells, 2005, 53). Thus, one declared goal was to democratise information and communication technologies, making them more accessible to everyone. Open source and open software are often referred to as "development facilitators" (Busch, 2007). Wikipedia, for example, was created with the aim of ensuring participation in knowledge production and of democratising access (Elder-Vass, 2016). The internet – according to the early hopes – provided a starting point for a horizontal, egalitarian and participatory society, and even the means to transform the economy towards post-capitalism (Mason, 2016). Common-based peer production ought to be the organisational centre of these transformations as it enables cooperation between large groups of individuals with no need for market pricing or management hierarchies (Benkler & Nissenbaum, 2006, 394). "[I]n the niches and cavities of the market system, parts of economic life are beginning to obey other laws", states Paul Mason (2016, 143). Thus, even today, platforms such as vinted or Pixabay are still geared towards collaborative

sharing and thus also aim to establish a counterweight to commercial trade. Others are organised as cooperatives whose members – as so-called "prosumers" – produce and consume products themselves (Klemisch & Boddenberg, 2016). The original idea of this commons-based peer production (CBPP) or sharing economy (Vallas & Schor, 2020) was to "enable cooperation between large groups of individuals without relying on market prices or management hierarchies" (Benkler & Nissenbaum, 2006, 394). Thanks to open technological infrastructures, individuals could then be enabled to communicate, organise themselves and create new, non-market-based value (Bauwens & Pantazis, 2018).

At the same time, however, the development of digital technologies and of the internet were supported from the outset by scientific, techno-meritocratic elites whose fundamental value orientations were based on performance and excellence in technological development (Castells, 2005, 59), not a priori on equality and justice. This became more evident when Bill Gates publicly denounced the illegal distribution of the programming language Alair Basic on February 3, 1976 (Gates, 1976). He said that professional work cannot be done for free, thereby placing money-making above technological innovation (Castells, 2005, 48). Despite the certainly strong and action-driven conviction that technological innovations should be accessible to as many people as possible, the entrepreneurial spirit was the central "core code" of techno-cultures (Castells, 2005, 57). Based on this normative foundation, the rise of California's high-tech industry and the establishment of Silicon Valley as the starting point of a new digital transformation resulted from unique fusions of high educational resources, creative thinking and a belief in equality with commercialised mass markets for new types of products. Silicon Valley created not only a new kind of consumer demand, but also a multitude of new employment opportunities (Storper & Salais, 1997, 174 ff).

Currently, the promises of digitalisation and the internet are confronted not only by reservations of the social dimension of surveillance or competition instead of corporation, but also increasingly with the negative effects of digital technologies on the natural environment. However, although leading economists and climate researchers such as Mariana Mazzucato and Björn Rockström have argued that digital transformation is a key prerequisite for sustainable transformation (Sachs et al., 2019), the criticism is that digitalisation will exacerbate environmental problems. Prompted by the negative and paradoxical effects of digitalisation on natural environments (Hazas & Nathan, 2018, 3), for some years now, a common but quite conflicted discussion has been taking place in the economy, in politics and in civil society (Lenz, 2021, 2022). Digitalisation has been facing accusations not only of controlling and monitoring everyday life, but also of further driving climate change.

The negative effects of digital technologies on social and environmental sustainability have been frequently emphasised because global digital infrastructures, such as

data centres, require ever more electricity. Simply focusing on energy efficiency and a reduction in CO_2 emissions is not enough because this paradoxically amplifies the climate-damaging effects again, producing the so-called rebound effects. For example, energy-saving measures through smart physical systems in production can result in an increase in energy consumption because it is now possible to produce more in the same amount of time than before (Hilty, 2012). Even though ICTs can, for example, reduce resource consumption through dematerialisation and replace global air travel through online conferences, software cloud services, platforms and video tools require roughly the same amount of energy as they were originally intended to reduce (Andrae & Edler, 2015). The French think tank The Shift Project concluded that the power consumption of internet-enabled devices in Germany is around 18 %. The production, use and disposal of digital hardware not only incurs high energy costs, but because of their short lifespan, more and more metal, plastic and glass is also required. There is also a fear that monitoring biodiversity will not only open up new profits for the old, big players but will also legitimise the control and optimisation of other impacts of climate change, such as migration (Caffentzis, 2019).

What is evident, however, is that the EU and other industrialised nations of the Global North are investing a lot of resources into the digital revitalisation of green modernisation at the level of economic policy. At the same time, however, those who are to realise the eco-digital transformation must be convinced that it is right and makes sense: companies, their managers, their employees and their customers. They all must be sure that, despite all the criticism, it is morally right and financially and individually worthwhile to commit to this change. Against this background, I focus on the "work" done on the justifications and legitimations already adopted by a number of initiatives, political packages of measures and business associations.

Like the recent activities of the EU described at the beginning of the present paper, a new action-oriented compromise is emerging that both frees digitalisation from the accusations of surveillance and makes green modernisation seem more credible because of the advantages of digital technologies. After all, both digital and green modernisation have been facing considerable criticism for some years now and must face the crisis of delegitimising. The harmonisation of growth and sustainability, as condensed in ecological modernisation, has been as greenwashing or, as a result of the climate protests of recent years, considered insufficient for combating climate change.

3. Theoretical framework: The capitalist spirit's social and normative foundations

Based on the insights of the sociology of justification it is clear that actors have the capacity for critical reflection and judgement (Boltanski & Thévenot, 2007). Rather than retreating behind objective structures or following them mechanically,

human actors weigh their actions and evaluate others' actions. Thereby, they refer to beliefs that are recognised at a certain historical period to be legitimate arguments. Thus, these beliefs – or "spirit" – are historically changeable and depend on the respective actors to be mobilised, their desires and hopes they grew up with and the respective specific accumulation regimes, for example, the coordinated capitalism of the postwar period or the flexible-neoliberal capitalism (Boltanski & Chiapello, 2007, 25). Capitalism depends on the "spirit" because the only way to persist is to mobilise the actors needed.

> *"If, contrary to prognoses regularly heralding its collapse, capitalism has not only survived, but ceaselessly extended its empire, it is because it could rely on a number of shared representations – capable of guiding action – and justifications, which present it as an acceptable and even desirable order of things: the only possible order, or the best of all possible orders." (Boltanski & Chiapello, 2007, 10)*

To stabilise this participation incessantly, the spirit of capitalism must offer normative points of reference. These different orders of justification are characterised by the standards of valuation that enable us to judge and classify objects, persons and actions. These evaluations are essential to the hierarchisation and positioning of persons and groups at a certain point in time; they refer to what or who is "of value" and what or who has "grandeur". For example, in the order of justification based on domestic standards, a person's value depends on one's position within the hierarchy of trust, such as being a father or supervisor. In turn, within project- or network-based conventions, value is placed on individuals who are more active or mobile than others and can mediate efficiently and frequently between other individuals and projects. These orders then provide answers to questions about under what conditions the "spirit" can attract those actors who are necessary for profit making. In other words, how can the spirit get people to commit to capitalism?

To unfold extensive mobilisation power, however, the spirit must correspond to both the individual and collective dimensions of social reality. In the collective dimension, the spirit must provide answers to questions about a just society centring on principles such as freedom, equality and justice (Boltanski & Chiapello, 2007, 16). Like the way societies change, the expressions of these principles are linked to history. Notions of justice oriented to competition and competitiveness assign free market regulation with the ability to establish a harmonic order, while the establishment of justice and prevention of injustice in the industrial regulatory ideal are ensured by the belief in progress and hopes in scientific and technological achievements, productivity and high performance.

At the individual level, reasons must exist that justify someone's participation in capitalist activities. The assumption is that people never act in a vacuum of fixed interests or preferences but are always integrated into social reality and social conditions. Neither is profit alone sufficient motivation for the entrepreneur to constantly expose themself to the risk of losing money. Similarly, at most, wages motivate people to stay in a job but not to engage (Boltanski & Chiapello, 2007, 8).

Moreover, capitalism must provide all the participants with minimal security for themselves and their children's futures (Boltanski & Chiapello, 2007, 16). Thus, the sense of security in the industrial spirit was essentially linked to the belief in rationality and predictive planning. In addition, companies – especially in the 1950s and 1960s – also created their own sense of security when they created educational structures, free time and housing facilities (esp. 1950s and 1960s).

Within the collective dimension, this accumulation regime of coordinated capitalism (Windolf, 2005) was essentially characterised by a peaceful social partnership between enterprises, the welfare state and society: "Firms are at the heart of a societal project" (Boltanski & Chiapello, 2007, 86). Going beyond personal commitment and security motives, to generate sufficient involvement, the capitalist spirit must also address the dimension of the collective common good and a just society. Each spirit is based on a definition of human nature, which guarantees that all human beings have the ability to attain a higher status/value, given that they do what is necessary to attain a higher-value status and pay the necessary sacrifices. Max Weber describes in the work on protestant ethics that the rise of capitalism is closely linked to a specific professional ethic that calls for moderation, hard work and dedication to money-making (Weber, 2013 [1920], 92). Within workers' everyday morality of the industrial spirit, "thrift" and "meritocracy" – the belief that everyone can rise socially, free of class and status, by merit alone – has served as instruments for upward social mobility (Parsons, 1996 [1972]). However, the meritocratic ideal was also the basis for the rise of corporate management, drawing its attractiveness from career security and career planning. The aspects of autonomy are embodied in the second, industrial spirit through the opportunities young graduates have to rise within the corporate hierarchy to positions of power "from which one could change the world" (Boltanski & Chiapello, 2007, 18).

When job security and career planning lost their significance in the 1990s, it became clear that the spirit was a historically changeable phenomenon. Project-based work, openness to new projects and people, reactivity and flexibility, careers as a stringing together of projects and the accumulation of acquired skills replaced the industrial model of advancement. This shows that it is above all the young up-and-coming academics – the carriers of a new spirit of capitalism – who must be convinced that this also offers new and "stimulating" forms of self-realisation and autonomy (Boltanski & Chiapello, 2007, 16). Thus, the capacity of the spirit to mobilise that was seen in the 1990s has been reflected in the ability to independently choose the projects or jobs in which one takes part. The ideal types of the "entrepreneurial self", which has been urged to permanently optimise itself and increase its employability and that helps in dissolving the boundaries between privacy and work, include freelancers such as coaches or the start-ups that were newly emerging at the time (Bröckling, 2007). Within this spirit, the specific common good and value of a person depend on, for example, how the project manager increases the employability of the team members, who ambitiously and in

a goal-oriented way engage in the project. The goal must be to enhance the network of employees or cultural capital. Project managers or "great men" should inspire others with their talents, involve them in the products of their work, for example, as coauthors; in turn, this can help them increase their standing and reputation (Boltanski & Chiapello, 2007, 122).

Against this background, the present paper asks what the arguments that legitimate and justify actors to engage within European eco-digital modernisation are, along with how these reasons are constructed to mobilise people for engagement. In doing so, I use situational analysis to reconstruct where and how the two worlds of digitalisation and sustainability collide and the promises stemming from the negotiations between them.

4. Data and methods

For the current paper, I conducted a situational analysis of narrative discourse (Clarke, 2012, 217ff) to identify the hidden patterns of justification and legitimation that make digitalisation plausible for revitalising ecological modernisation. The types of data that serve as the basis for this analysis consisted of narratives that individuals and groups created about others and that have focused on a particular happening, process or development. These can be textual data such as books or articles or auditory data, the so-called "soundscapes", like online discussions, conferences, lectures or recorded interviews (Clarke et al., 2012, 218; Poland, 1995). The objective is to identify legitimation and justification patterns that shed light on the normative foundations and social conditions surrounding the claimed digital and ecological transformations. Data have been selected via theoretical sampling (Glaser & Strauss 1970), so the data are not statistically representative; instead, the aim was to take an in-depth analysis of the patterns of legitimation and justification that have emerged at the intersection of both discursive and practical intersections, or "worlds", of digitalisation and sustainability, and that underpin a transformation of the current economic structures. The emergence of a new eco-digital world depends on the consolidation of negotiated compromises in certain arenas. An essential basis for this is the normative points of reference that are experienced as legitimate and feasible in practice by the actors who act in them. Simply investing energy in a subject, task or project is not enough; rather, the people involved must be convinced that they can contribute towards the vision. Therefore, if the question is what the conditions are for strengthening the digital spirit of green modernisation, the normative foundations must first and foremost be addressed.

Drawing on Adele Clarke's situational analysis, I explicitly focus on these sites of negotiations between actors and their relations to each other. Because of its openness to empirical reality, situational analysis is particularly suited for exploring new social locations (Clarke, 2012, 35). Here, the context merges into the situation; that is, structures do not act on the situation from the outside but emerge

within it. In other words, Situational Analysis opens up possibilities for analysing highly complex situations like those arising from the entanglements between digital progress and sustainable change because of climate change. Therefore, the situation itself is the ultimate object of research, and the understanding of its elements and their relationships is the primary goal of the investigation (Clarke, 2012, 24). Unlocking the situation itself – its practices, relationships and dynamics – is the crucial objective of research. In doing so, my analysis focuses on the overall situation, including narrative, visual and historical discourses, to come closer to the "big picture" of the situation (Clarke et al., 2018, 75). Data are analysed using the grounded theory coding procedure and by mapping social worlds and arenas (Glaser & Strauss, 1998). This mapping strategy reveals the process through which "worlds" and "arenas" emerge, including their evolving collective forms of action and beliefs. Thus, in the first step, the study specified those narrative discourses relevant to the analysis of patterns of legitimation and justification, that is, which ones negotiate the digital and green transformation in their mutual entanglement. This reveals how the actors in various social worlds discuss and debate their positions in so-called arenas and may come to compromises in terms of practical action. Social worlds are relatively stable and enduring routines within institutionalised spaces of perception and action that rely on the division of labour. In contrast to everyday knowledge, social worlds are characterised by specialised knowledge geared towards specific work and problems and that exists relatively independently. These obligatory, collectivising and identity-forming ideologies structure everyday action in a complex world (Clarke, 2012, 188; Clarke et al., 2018, 71), here based on objective theories, rules of disciplines, beliefs or notions of justice. Accordingly, digitalisation and sustainability are two social worlds that are constituted by the joint actions of actors and are founded on different attitudes, discourses and practices. Being structural representations, social worlds provide information not only about relationships, but also about how they interrelate, construct or counteract each other (Clarke et al., 2018, 220).

Second, the identification and analysis of the central arenas of action and of the negotiations surrounding the integration of digitalisation and sustainability is central to the present study. Naturally, different situational definitions compete with each other (Park, 1952), resulting in action and interpretation problems. Arenas represent those "sites of hyperprojectivity" (Mische, 2014), in which problems are debated, fought out, manipulated, maintained or even enforced (Strauss, 1993, 226), usually over a longer period of time (Bolter & Grusin, 1999). However, arenas are also zones of cooperation and agreement, for example, when the actors involved can agree on common guidelines that enable them to work cooperatively.

Narrative discourse documents cover two dimensions: he first is that of the European Commission, and the second is that of political, civil society and business actors.

1. At the EU level, I analyse 20 documents, talks and conferences, communications, policy papers, fact sheets and adoptions corresponding to the EU Strategy and its six Commission Priorities for 2016–2024 (European Green Deal, A Europe fit for the Digital Age, An Economy that Works for People, Promoting our European Way of Life and A New Push for European Democracy). Particularly important for the twinning of digitalisation and sustainability are both the European Green Deal (EGD) and A Europe Fit for the Digital Age. Furthermore, the analysis relies on seven documents of the European Recovery Plan (incl. NextGenerationEU), which was established during the COVID-19 pandemic in 2021.
2. The second dimension consists of initiatives that are not primarily economically oriented, networks of civil societal groups, nonprofit organisations and science. These are included in the analysis in a compressed way. As a paradigmatic example, the Coalition for Digital Environmental Sustainability (CODES) represents multistakeholder networks that explicitly address the issue of sustainability in the digital age. At the heart of the initiative is an Action Plan for Sustainability in the Digital Age (CODES 2022a) developed in a consultative process through several drafts, in which the virtual public participated via the sparkblue.org platform in May 2021. The result was launched at the Stockholm +50 Conference on June 3, 2022, highlighting three necessary changes and 18 strategic priorities for achieving a sustainable planet in the digital age. In the very first pages of the report, Antonio Guterres, Secretary-General of the UN, points out that, in light of the COVID-19 pandemic and major dislocations in politics, business and civil society, a unique "opportunity for change" and "a unique window of opportunity [is] opening to address the challenges of green and digital transformation" (CODES, 2022a, 11). Accordingly, stakeholders aim to mobilise both the public and private sectors to build an inclusive and nature-friendly economy. Digital technologies should be made sustainable, and digital innovations should be harnessed for sustainability.

The analysis aims to understand how the use and implementation of digital technologies is justified for climate change mitigation. Through its focus on the arenas in which these action-guiding orientations are negotiated, the analysis of narrative discourses can provide insights into how the actors relate to each other, which hierarchies emerge as a result of certain promises and how these promises are strengthened by distinguishing themselves from others. Accordingly, the study connects to research on both the justificatory structures of digitalisation and those of ecological modernisation (Neckel 2018; Kungl 2022; Lenz 2022), shedding light on the normative foundations of an economy that needs to accommodate both digital progress and the necessary transformation to sustainability, which are often in diametrical opposition to each other. The three mapping strategies – from situation to social worlds/arenas to positions – make accessible the process of creation of "worlds", including their new collective forms of action and beliefs.

5. The digital spirit of green capitalism

The mapping brought to the fore three justification and legitimation patterns for a digital and, at the same time, green transformation. These patterns mobilise for global justice on the moral level, as well as providing sufficient arguments for individual and collective participation in capitalism on the financial level. In addition, the new orientation of economic policy in light of climate change conveys the reasons not only to participate in digitalised green capitalism, but also to advance individual self-realisation through an orientation to corresponding values, for example, to rise to positions of power in large IT companies (cf. Kratzer et al., 2022).

The digital transformation of green capitalism draws its power to mobilise from the fact that "time is running out". Temporal situatedness first provides the starting point for tackling climate change. In this respect, Gengnagel and Zimmermann (2022) noted that the "race to conquer planetary boundaries" implies economic and geopolitical questions of war and peace, in addition to ecological issues. Indeed, in November 2022, the World Meteorological Organisation (WMO) repeatedly stressed at the World Climate Conference in Egypt that the 1.5-degree target would not be achievable even in the near future, which once again raised the question of how much time is left. This justification figure of urgency, typical of the European Green Deal (cf. Gengnagel Zimmermann, 2022), is, in this context, also linked to the call to catch up in the development and implementation of digital technologies. The COVID-19 pandemic offers a blueprint for linking the two dynamics of transformation, including their respective urgencies. Against the backdrop of the COVID-19 pandemic and major disruptions in politics, business and civil society, a unique "opportunity for change" and "a unique window of opportunity to address the challenges of green and digital transformation" is opening up. Digital technology, as Antonio Guterres, Secretary-General of the United Nations, put it, is shaping history. However, there is also the sense that "digitalization is running away with us" (CODES, 2022b, 11). In this way, he referred to uncertainty regarding whether digital technologies make societies more or less equal, more or less sustainable, whether they enhance or diminish rights and dignity or whether they bring with them more or less security.

Two overarching patterns of interpretation are observable in the context of the digital and green transformation of the European economy. First, it has been argued that Europe needs the digital and green transition to become resilient to and better forecast or predict external shocks (both climate and geopolitical) by using huge amounts of data (big data). Faced with global warming, rising seas, the overshooting of planetary tipping points, the loss of biodiversity and the intensification of extreme weather events, which threaten ever larger parts of the earth's population (also in the Global North), the importance of digital data or sensor data has increased (cf. Gabrys, 2020). Models and concepts, such as Destination Earth, a

high-precision digital twin model of the earth, carry the hope of providing greater countermeasures to environmental damage and disasters by predicting them, thus contributing to the security of future generations (CODES, 2022a, 18). Belief in the rationality of numbers and regulatory power of monitoring, control, real-time data and predictive analytics points to a reinterpretation of the earth as an industrial complex that merely needs to be properly observed and managed to save it.

A second pattern of legitimisation goes beyond the technological opportunities and pitfalls associated with the advancement and proliferation of digital technologies. The discussion about a digital-ecological transformation has also been characterised by the rising power of large technology corporations. An umbrella interpretation aims to maintain European sovereignty and autonomy vis-à-vis the U.S. free market model and the Chinese model of authoritarian state capitalism. According to Antonio Costa, the Portuguese Prime Minister, economically, the green orientation of European digitalisation aims to strengthen the competitiveness of European innovations in global (digital) markets to "compete with the US and China" (Euractiv, 2018). In terms of economic policy, establishing a green and digital European market also aims to create sovereignty, resilience and adaptability to external shocks. For example, the transition to a greener, more digital and more resilient economy must be linked to the appropriate "business models" that can promote the "independence of member states and regions from external suppliers or a limited number of economic activities" (CODES, 2022b, 10). Consequently, the European member states' companies – and with them the employees, too – must face up to the conditions of the digital-ecological transformation and be able to put them into practice. Merely competing for and maintaining Europe's capacity for innovation is not enough as a motivating force.

5.1 Justification of a renewed and digital humanism

To develop action-guiding strength, however, superordinate economic and geopolitical arguments are not sufficient. Moreover, such orientations must respond to the expectations of society (Boltanski & Chiapello, 2007, 17). These moral foundations must transmit a sense of what is "right" and of how one's own behaviour contributes to the common good and welfare' that is, it is not only entrepreneurs or managers who benefit from change, but also employees and workers in different sectors and industries. Hence, economic and political goals must always be consistent with the historically bound interests of the common good and concepts of justice. Constitutive for the second spirit of capitalism (1930–1960) was an industrial regulatory ideal built on the collective belief that scientific and technical progress, economic productivity and one's own achievement rather than ascription ensured individual and collective prosperity (Sachweh et al. 2018; Boltanski & Chiapello). In a similar vein, the powerful and mobilising belief in knowledge and science along with the idea that everyone benefits when it is made accessible (CODES, 2022b, 10), is also reflected in the moral expressions of the digital-eco-

logical spirit. The establishment of a new science-based social contract consolidates the notion of rightness and justness, in which information creation and sharing are fundamental (CODES, 2022b, 18). For example, the CODES-community's Action Plan for Sustainability in the Digital Age identifies one key injustice where developing countries are not properly connected to digital infrastructures. However, this digital inclusion is needed for the global fight against climate change.

> *"The implications of the digital divide sit at the heart of these fundamental questions. There exist deep inequalities in the accessibility and availability of digital rights and services and a wide gap between the digitally connected and unconnected. According to data from the ITU, approximately 4.9 billion people – or 63 per cent of the world's population – used the Internet in 2021. This represents an increase of 17 per cent since 2019, with 782 million people estimated to have come online during that period. Of the 2.9 billion people off-line, 96 per cent live in developing countries. Indeed, the WEF Global Risks report for 2021 listed "digital power concentration" and "digital inequality" as number 6 and 7 on the critical short-term threat list – both representing a clear and present danger to social and political stability […]. If digital capacities are to be leveraged for global environmental and social sustainability, the digital divide needs to be closed in a sustainable and equitable manner." (CODES, 2022b, 10)*

Closing the digital divide, creating global digital infrastructures and disseminating creative knowledge commons that make knowledge about sustainability openly and comprehensively available should not only guarantee political and social stability, but by reducing inequalities, they can also make an important contribution to sustainable development and "the empowerment of marginalized and underrepresented groups" (CODES, 2022b, 26). Thus, the CODES Community Action Plan clearly states that "if digital capacities are to be leveraged for global environmental and social sustainability, the digital divide needs to be closed in a sustainable and equitable manner" (CODES, 2022b, 10). Fundamental to this is to foster the acceptance of those who have not yet been able to participate in digitalisation. Connections to the digital infrastructure and associated possibility of global networking are fundamental:

> *"Women and youth literacy and capacity to benefit from these digital innovations will ensure technological uptake that is both sustainable and builds the social and human capital of those often left behind." (CODES, 2022b, 27)*

Following from this inclusive ideal of justice, high value is ascribed to those persons who not only generate information and knowledge, but also who make it accessible to all people. These people advocate for a "renewed humanism" that guarantees the "dignity of the human being".

> *"For a dignified life, individuals need fundamental opportunities to realize their potential and a chance to participate in shaping society, i.e. a minimum level of inclusion. Protecting the individual's Eigenart also means valuing it as endowed with human dignity and recognizing such fundamental categories as vulnerability or mortality as part of human Eigenart." (Fromhold-Eisebith et al., 2019, 41)*

Such a fundamental definition of humanity first frees it from inequality and implies that everyone has the capacity to achieve a higher status or value. However, it presupposes that the marginalised need to make "necessary sacrifices" and contribute to the common good (e.g., by producing valuable data). For example, this could

be done by taking responsibility and the ability to network to spread knowledge and information worldwide to benefit as many people as possible. In sum, it can be argued that, at the very least, the concept of humans as producers of data can initially even have an equalising effect because every individual is actually capable of generating data (Gandy, 1993). However, the value and usefulness of the data determine what a person is worth. The measurement of everyday life and related collection of personal data has already resulted in the establishment of new evaluation and classification schemes that favour a "new economy of moral judgment" (Fourcade & Healy, 2007, 24), where only those who generate not just sufficient, but also exploitable, data are of value.

5.2 Justification of a derisking state

One of the last elements of a "spirit" that could mobilise as many people as possible by offering plausible beliefs relating to the level of morality. In addition to moral arguments, a digital and, at the same time, ecological spirit must also address questions of individual social upward mobility or status preservation. In this respect, economic arguments need to create a minimum of security guarantees for the actors involved and their children (Boltanski & Chiapello, 2007, 54). Although security during the 1950s and 1960s was expressed in the belief in rationality and forward-looking planning, current security guarantees are constantly threatened by erosion in the face of multiple crises (refugee crisis, economic and financial crisis, climate crisis, etc.). A new state-market alliance, especially in the field of digital technologies such as artificial intelligence, has already demonstrated the attempt to counteract these erosions, disruptions and ruptures. The initiative CODES, for example, aims to mobilise entrepreneurs, governments and civil society groups for digital sustainability (CODES, 2022b, 3). A key component of this digital-ecological promise of security is providing government resources for digital investments in "regionally relevant digital innovations that catalyse climate change mitigation and adaptation and reduce impact on nature" (2022b, 27). This type of collaboration is capable of "channelling large investments" (ibid.) into digital-ecological innovations, which, in turn, should, according to CODES, "transform systems, incentives and business models through digital innovations for sustainability" (ibid.).

These beliefs are supported by economic policy measures and regulations that facilitate market access, especially for entrepreneurial initiatives, and reduce bureaucratic barriers. Thus, the proposal of the European Commission, the so-called "Digital Compass", clarifies the implementation of secure and sustainable digital infrastructures and the ambitious transformation through investment in key technologies such as cloud computing, artificial intelligence or blockchain (European Commission, 2021a). The required investments amount to 125 billion euros per year (European Commission, 2021c, 16–17). Consequently, to ultimately create a stable economic structure that is both digital and sustainable, private investors in particular must be convinced that participation is worthwhile. To "attract" them,

the Digital Compass proposal aims to incentivise, reduce regulation and eliminate "complex tax systems" (European Commission, 2021a, 15).

> *"Strong and efficient Capital Markets Union and Banking Union are needed, to mobilise the flow of private money necessary to support the twin transition." (European Commission, 2022c, 12)*

These arguments ground entrepreneurs' sense of security and create a culture of state-supported digital-ecological innovation. Thus, the role of the state is supposed as being almost exclusively to hedge private investment. To unleash the full transformative power, however, more than just companies need to act in a digital-ecological way. Rather, those who work in these companies must also be convinced. For workers, too, the digital-ecological spirit holds normative reference points and the promise that their own and their children's financial security will be guaranteed. Contrary to the widespread fear that digitalisation and automation will lead to the loss of jobs, especially in the area of routine jobs, the European digital-ecological modernisation strategy emphasises investment in the (further) education of workers and equitable design of the economic transformation (CODES, 2022b, 18). Indeed, innovative products and services, new business models and a "well-prepared and adaptable workforce" are needed to implement "massive" change at all levels, as the European Commission has stated (European Commission, 2022c, 13). Further development and reshaping, as well as the socio-critical focus on improving working conditions, makes the digital-ecological spirit of capitalism seem secure and stable, even in the eyes of those who previously had to suffer from digital structural change:

> *"The fairness of the twin transitions will also require measures to promote adequate working conditions, including as regards minimum wage." (European Commission, 2021b, 12)*

5.3 Justifications as avant-garde and superheroes of the green revolution

So far, we have seen that the digital-ecological spirit is based on the human image of renewed humanism, as well as on the promise of a stabilising market–state cooperation to secure the material resources of industries. As an important prerequisite, this alliance is supported not only by companies and EU politics, but also by initiatives of certain professional groups such as the Green Software Foundation, institutes such as the Stockholm environmental institute, software services such as Terraso, that provides landowners, smallholder farmers indigenous people, pastoralists and local governments with software, data tool. Furthermore, the alliance is supported y governments, as in the case of the Digital Future Society programme in Spain. The regulatory narrative of free and globalised markets is replaced by a belief in the stabilising effects of such collaborations.

However, even beneath this organisational level, the spirit of digital-ecological capitalism must provide "personal commitment" that "can be described as 'exciting' in contrast to the alternative opportunities" (Boltanski & Chiapello, 2007, 16). Typically, such orientations occur in occupational ambitions. However, even beneath

this organisational level, legitimate arguments are needed to justify individual commitment. Typically, such orientations occur in occupational ambitions. Whether new occupations are arising or old ones are gaining importance can serve as an indicator of a very specific form of self-realisation, especially among younger people.

According to Boltanski and Chiapello, the "coach" has become a paradigmatic social figure of the 1990s. With new management, old rigid corporate hierarchies are dissolving and professional careers have begun to resemble a series of projects. In this context, however, companies increasingly depend on their employees' loyalty and integrity and on the fact that they can apply emotional and communicative skills alongside their professional skills. Coaches are becoming almost industrial psychologists who are responsible for constantly rekindling the commitment of employees. Liberty, autonomy and creativity remain convincing arguments, at least for some of the professionals. However, what drives young graduates to become involved with green software or hardware? One argument is certainly the financial security that the IT industry now promises. Another motive that can be found in the data is the distinction from big tech companies and emphasis on one's own innovative activities. For example, the *Manifesto for Europe's Digital Future* by an association of small- and medium-sized enterprises refers to the long history of European innovations, which is now threatened by competition from Chinese and US companies:

> *"The world we live in today is radically different from our reality only ten years ago. Our social and economic activities are shifting towards the net and advancements in technology are only speeding up this process. Europe has been the birthplace of world-changing revolutions, such as the first industrialization, and it has been a center of innovation for centuries to follow. Although Europe is still at the forefront of innovation and inventions, many European digital players seem to have difficulty scaling up to the same extent as their foreign competitors. The most valuable global companies of today are digital – and are born either in the US or China." (European Digital SME Alliance, n.d., 12)*

In other words, the problem does not primarily lie in a lack of innovation but instead can be found in the international competition within the digital sector, in which European SMEs cannot keep up. However, one solution is the establishment of norms and standards to which international companies must adhere, at least within the borders of the EU. The ambition to be the avant-garde in driving forward green and digital transformation is often raised because, without these standards, the ambitions of a "climate-neutral, resilient circular and digital economy" cannot be realised (European Commission, 2022b). However, this is at risk when the availability of data, its analysis and evaluation are concentrated in the hands of a few companies that actually have "more money, power and reach than most national governments" (CODES, 2022b, 18). In this context, elements of the European digital-ecological spirit focus on entrepreneurial action that is both innovative and oriented towards supranational and international guidelines (CODES, 2022b, 19). In this way, members of the CODES-Community believe Europe can once again become the "centre of innovation". From this perspective, it is necessary to reduce

dependencies (e.g., in digital infrastructure) on other dominant digital industries (United States and China) through European standardisation. This constitutes the basis for the self-image of a European digital-ecological avant-garde.

At the same time, the digital spirit of green capitalism also exhibits individual motives that not only aim for corporate and economic autonomy, but also turn the once "boring" IT job into the linchpin of corporate management. Chief information officers, in short "CIOs are making Sustainable IT a top priority" This is because companies are becoming increasingly dependent on software, which at the same time drives up the power consumption of data centres. CIOs have to ensure that company software doesn't inflate the companies' costs. (Giles, 2022). Along with this, companies around the world are increasingly required to disclose climate risks that impact their businesses and finances, as well as certain climate-related metrics. In the United States, this was encouraged by the SEC in March 2022 (International Telecommunication Union, 2022). In the EU, the so-called taxonomy stands for the classification of sustainable economic activities (European Commission, 2020). Against this backdrop, chief technology officers (CTOs) and chief information officers (CIOs), the top-level executives responsible for corporate IT and software, are becoming increasingly more important: "CIOs will have a significant influence on what appears in those SEC-mandated reports, given IT's growing carbon footprint" (Giles, 2022). Worldwide, initiatives and networks, such as SustainableIT.org or the Green Software Foundation, have been founded, considering sustainability as a central prerequisite for future achievements and innovations in digital technologies. Accordingly, young IT experts can refer to the digital spirit of green capitalism to "save the world" and make a career at the same time. In this sense, "IT departments can again be the changemakers, superheroes of the current green revolution, as they lead from the front to enable organizational sustainability" (Green Software Foundation, 2022).

The eco-digital spirit of capitalism seems to generate its greatest persuasive power in the context of individual self-realisation. Although the business of digital tech workers had, over time, left their nerdiness and their urge for self-commercialisation behind for the sake of a "good life" (Dorschel, 2022), what has emerged is the revitalisation of a power-oriented self that paradoxically draws its strength from the justifications of sustainability. What is astonishing is that these "IT superheroes" rise in the corporate hierarchy because they influence the standards that are supposed to protect the natural environment from negative externalities, such as the high-power consumption of data centres, using this to their advantage.

6. Discussion and conclusion

The present paper has explored the normative conditions of a future eco-digital transformation that is already emerging in EU economic policy debates and in discussions of specific initiatives dealing with the mutual entanglements between

digitalisation and sustainability. It has been argued that such a change is not sufficiently justified by political regulations or economic profit motives. Rather, it must be built on a normative framework that addresses the issues of long-term financial security, status preservation, upward mobility and overall justice. It has been argued that, in the current expression of the capitalist spirit, this link appears essential because both green market-based and digital modernisation face inherent legitimacy problems. To overcome this crisis, new powerful and action-guiding arguments need to be generated to justify the engagement of the actors involved (managers, entrepreneurs, workers and consumers).

First, it has become clear that the digital progress of the EU and other countries of the Global North are primarily driven by the fear of losing competitiveness when compared with the United States and China. At the normative level, the common good addresses the preservation of democratic structures, according to which it is inevitable to defend the "third way" against the market-driven or state-capitalist system. In this area of conflict involving two powerful data economies, in which private data are regarded both as a kind of public good in the service of the state and party (China) and as the property of private companies such as Alphabet and Meta, the EU seeks ways of ensuring its own sovereignty and prosperity, for example, by establishing a European cloud infrastructure such as Gaia X. The latter serves as an important legitimation frame for individuals and companies when it comes to establishing and maintaining current and future stability. However, it nevertheless remains doubtful whether this European data infrastructure will be able to prevail over already widespread and established structures. Another factor to consider is that the EU is also pursuing digital deglobalisation, with barely foreseeable consequences so far.

Second, it could be observed that another important normative point of reference to strengthen the sustainable spirit of capitalism through digitalisation refers to the idea of a new large-scale and global "digital humanism" that neither evokes apocalyptic doomsday scenarios nor raises technistic hopes of salvation. This new digital humanism is intended to guarantee that even those who have previously had no access to digital change will benefit from it. The most important groups and environments are women and people living in developing countries. It is considered essential to create a digital infrastructure that closes the digital divide, guarantees access for all and creates the conditions for a new science-based understanding of digital technologies as a "part of a new social contract for the digital age" (CODES, 2022b, 18). This new science-based social contract consists of "developing a progressive vision for a digitalisation that fosters environmental and social sustainability using system thinking" (CODES, 2022a, 12).

Thus, the digital spirit of green capitalism draws a significant part of its legitimacy from the cooperation between state, economy, civil society and science. Here, a regulatory model seems to be revived that is both structured along the lines of

rationalist and natural science and argues morally, according to which "digital humanism" is supposed to counteract digital inequalities. However, in view of the importance of digital data through tracking and sensoring, for example, when regulatory power is to be strengthened through planetary monitoring, as can be seen in projects such as Destination Earth, this raises questions of what the "value of a person" is. If the status of a person in digital humanism depends on the information, that is, the data, that they can generate and share for the common good, then digital humanism runs the risk of turning into digital colonialism. Often, developing countries risk "becoming mere providers of raw data, while having to pay for the digital intelligence generated using their data" (UNCTAD, 2019).

As far as financial security is concerned, the new digital spirit of green capitalism draws its persuasive power primarily from government support measures that address both companies and ordinary workers in the form of digital literacy programmes. According to this, incentive systems offered by the state, such as the dissolution of the "complex tax system", are unavoidable when trying to attract private investors who are meant to ultimately contribute to the green and digital transformation. However, this often drives forms of supply-side economic policy, which entails a reduction of regulations, thus contradicting the original demands to regulate digitalisation in the interest of sustainability. In addition, in this eco-digital transformation, state-funded and investor-driven large tech corporations will again determine what is and what is not sustainable. Whether this contributes to intergenerational justice than depends on such powerful companies.

Here, there is a risk that the intended state security guarantees will be undermined if European SMEs cannot provide the resources for an eco-digital transformation and do not attract the interests of private investors, despite state-led investment efforts (e.g., through the EU taxonomy). Sector associations, for example, have criticised the fact that digital solutions for achieving sustainability objectives have not yet been sufficiently considered in the EU taxonomy. This, by the taxonomy aimed at profound restructuring of financing and in which the financial sector appears as an agent for the implementation of sustainability, at least raises the question of whether this is the return of a Keynisanistic investment state, which primarily has the welfare of domestic companies in mind, or is rather a "hidden" coinvestor of public–private partnerships that is much more likely to support the establishment of an asset manager capitalism (Braun, 2021; Knoll, 2022; Mertens & Thiemann, 2019).

There are still some open questions. Further studies, for example, in the sociology of work, must ask how the subjective attitudes of "normal" tech workers differ from those of green tech workers. Whereas the former keep to the boundaries between private and professional life and have a 9–5 job, the subjectivity of the new green tech workers is very close to the former Silicon Valley flair and tends to blur such boundaries. It is this specific belief in developing the "right" technology and

working for the "good". This may point to a shift in the professional landscape, professions, business models and production processes that constitute the material foundations of the digital spirit of green capitalism.

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