

Global governance and data ethics challenges in the context of digital transformation

Marja Nesterova¹, Olena Yatsenko²

¹Dragomanov Ukrainian State University - email: marja@cessie.eu

²Bern University of Applied Sciences – email: olena.yatsenko@bfh.ch

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Abstracts

This article examines the impact of digital transformation on global governance, with particular attention to the ethical challenges arising from data-driven technologies and artificial intelligence. The aim is to describe the impact of digital transformation on global governance and how it is involved the data ethics issues. What can we suppose as a digital transformation in the sphere of governance and which points of data ethics are crucial soon. The accelerating pace of digital transformation is fundamentally reshaping the structures and mechanisms of global governance. The growing reliance on data-driven technologies, AI and other algorithmic-based decision-making systems affects not only economic and organizational processes but also the distribution of real power, responsibility, and legitimacy of decision making across contemporary societies. This article describes the governance challenges emerging from the digital age, with particular attention to the role of data as a strategic resource and the ethical implications of its collection, use, and commercialization. Drawing on contemporary research in global governance, digital transformation, AI governance, data governance, and discourse ethics, the article analyses the tensions between economic value creation, the protection of fundamental rights, and the pursuit of public good within the emerging data economy. Special attention is devoted to the concepts of digital sovereignty, human agency, and distributed responsibility as key dimensions of governance in increasingly “digitalized” and “datafied” societies. The article further presents the Discourse Data Ethics project at Bern University of Applied Sciences and its Ethics-as-a-Service (EaaS) model as an innovative approach to ethical data governance based on participation, communicative rationality, and stakeholder dialogue. It is argued that effective global governance in the digital age requires not only technological innovation and regulatory frameworks, but also new mechanisms of ethical deliberation, accountability, and human-centred decision-making to balance competing social, economic, and political interests.

Keywords: artificial intelligence; global governance; data governance; digital transformation; discourse data ethics.

1. Introduction

The current geopolitical crisis, characterized by the general non-linearity of social processes, the rapid complexity of the world, regional and global conflicts, digital transformations and growing uncertainty, forms new requirements for managing complex systems (Nesterova, 2026). The impact of globalization process, without any doubt, is a constant attribute of current stage of our society development, therefore it is a complex phenomenon, which is in the focus of scientific interest of contemporary researchers – not only theoreticians, but also practitioners. For example, the Global Governance Institute (GGI) is an independent think tank, which focuses on advancing research and policy solutions in the following fields of global governance: peace and security, democracy and human rights, climate governance, migration, and artificial intelligence governance (Global Governance Institute, 2026). Through interdisciplinary research and international cooperation, the

Institute promotes innovative approaches to addressing complex global challenges in an increasingly interconnected world. More theoretically, but also with the practical implementation in the sphere of social relations, public and community governance, is an approach, which is promoted by the Department of Global Governance at the University of Graz. The Department of Global Governance was founded at the end of 2020 at the Institute of Foundations of Law at the University of Graz. The kick-off event in 2021 was the online symposium "Unpacking Global Governance," followed in 2023 by the conference "Global Governance: Between Multipolarity and Universality". The Department of Global Governance at the Institute of the Foundations of Law explores cultural, political and legal challenges of globalization. It brings together "wide-ranging expertise to tackle multi-disciplinary issues on local, national, transnational and international dimensions" (University of Graz, 2026). Attention of the researchers in the field of global governance is devoted to questions of global citizenship, sustainable development, and the ways these concepts are conceptualized and implemented within national policies and educational environments (Amin et al., 2023). For example, the education system must face previous external challenges due precisely to the impact of globalization; they can be perceived as threats or great opportunities and possibilities. And, if we are planning to initiate meaningful reforms and innovations, these challenges should become important to develop initiative-taking actions (Spulber, Figus, 2022).

The modern anthropological transition in the digital age has been fostered not only by global political and social transformations, but also by the rapid development of digital technologies, primarily Artificial Intelligence (AI). We are in a state of transit, a change in the technological order, which requires deep understanding, serious and large-scale research. At the same time, it can already be argued that the modern digital age is changing the nature of knowledge and ways of thinking and therefore changing both the form and content of education and the forms of participation in management, while creating new opportunities and risks (Nesterova, 2026). We are considering the importance of the context of digital transformation, because digital transformation is not only a technological phenomenon, but also a challenge for a governance. Modern digital algorithms are implemented in most of the governmental spheres. They affect how decisions are made, who exercises authority, how accountability is distributed, and how legitimacy is established across local, national, and global levels of governance. They are enhanced by fast-developing AI-system of decision-making support, so their impact is increasingly substantial (European Commission, 2019, 2021, 2024).

2. The main principles of global governance and challenges of industrial capitalism

Globalization in recent decades has placed increasing pressure not only on public institutions, but also on businesses to change. The Fourth Industrial Revolution is characterized by the convergence of physical, digital, and biological systems,

fundamentally transforming economic, social, and political institutions (Schwab, 2016). Challenges of industrial capitalism under conditions of globalization require businesses to efficiently integrate to not only stay alive but thrive in competitive environments. At least through digitalization tools (collaborative tools and digital processes) could achieve efficient integration (White, 2012). To better understand our future scenarios in this transition we must find answers, why and how the fourth industrial revolution will impact great power politics. The global, neoclassical approach could help to assess how far the development of AI, national and localized technological ecosystems, in particular, cyber-warfare will affect great power politics in the next century (Diesen, 2021).

Global governance is an answer for the most pressing challenges of contemporary societies (climate change, migration, public health, security, etc.), which cannot be effectively managed by individual national governments alone. Therefore, the under the global governance we understand “the rule-based political order beyond the nation-state in which various international institutions claim political authority in their own right, often with a strong imprint of economically and socially liberal values” (Global governance, 2026).

Of course, we can confirm the main challenges of global governance, which must meet the challenges of industrial capitalism in the digital age. These include primarily educational challenges, because learning in this era should include at least the development of systematic and critical thinking, the ability to work with the future, no longer limited to Foresights and Strategic Forecasting (Amin et al., 2016), and using mechanisms for complex modelling and working with artificial intelligence (AI) systems that work with large amounts of data (so-called Big Data). Managers of various levels, including the global level, must be able to model and prepare for various scenarios — mobilization, survival, mixed, bifurcation, as well as the ability to act in conditions of uncertainty, rapid changes and time pressure. In addition to these cognitive competencies, it is necessary to develop creativity as a mechanism for finding solutions in unstable circumstances, and emotional resilience, including self-regulation and the ability to work in stressful situations (Nesterova, 2026). “A central question for public governance is how to develop frameworks and institutional governance arrangements that can sustain a legitimate jurisdiction while fostering human-centred values amidst contesting values, normative differences, and complex trade-offs among nations, corporations, social groups, and individuals” (Sigfrieds et al., 2023). The global governance challenges of the modern anthropological transition in the digital age are fostered not only by global political and social transformations, but also by the increasing reliance on datafication, algorithmic governance, and artificial intelligence, which are fundamentally reshaping the conditions of human agency, responsibility, and ethical decision-making. As decision-making processes become increasingly data-driven, questions of accountability, legitimacy, and ethical governance gain growing importance (Schwab, 2016). The most obvious is importance of the above processes in government and military spheres. Current military conflicts are governed by AI-

systems of decision-making support and appropriate infrastructure. As digital infrastructures become embedded in public administration, security systems, healthcare, education, and economic management, governance increasingly depends on data infrastructures, algorithmic systems, and transnational technological actors.

3. Digital transformation: what are the main challenges?

The concept of digital transformation has become so deeply embedded in contemporary discourse that it is frequently treated as self-evident. Digital transformation understanding is leaving its underlying assumptions and implications insufficiently examined. For better understanding of digital transformation, it is necessary to explain the previous stages – digitization and digitalization (see Table 1). The first stage – digitization – was the process of transfer from analogue format to digital. The most well-known turning point was in the end of previous century, when a rise of commercially available high-resolution paper scanners serves as a technical trigger for the mass conversion of analogue data (paper archives) to digital format. But that was not even digitalization, because the process was the same, only the format has been changed. It is important to notice that digitalization does not result in digital transformation. Digital transformation is a technology doing things differently creating a completely new business model by using modern information and computer technologies. Digital transformation leverages existing knowledge to profoundly change the essence of the organization-its culture, management strategy, technological mix, and operational setup. It places the customer at the centre of all its decisions and actions. According to the International Data Corporation (IDC), digital business transformation happens when companies "pursue new revenue streams, products and services, and business models" (Savic, 2019). We can understand digital transformation as "a change in how a firm employs digital technologies, to develop a new digital business model that helps to create and appropriate more value for the firm" (Verhoef et al., 2021). In business and in public administration, in governance, the digital transformation could be evident in various forms and allows us to launch many types of data and business models in business and public governance as well.

	Digitization	Digitalization	Digital Transformation
Focus	Data conversion	Information processing	Knowledge leveraging
Goal	Convert paper documents, photos, microfilms, LPs, films, and VHS tapes to digital format	Creation of completely digital work processes	Creation of new digital company or transformation to a digital one
Activity	Computers and conversion/encoding equipment	IT systems and computer applications	Matrix of new (currently disruptive) digital technologies
Tools	Volume Material	Price Financial	Resistance to change Human resource
Challenge	Scanning paper-based registration forms	Completely electronic registration process	Everything electronic, from registration to content delivery
Example (?)			

Table 1 Digitization, digitalization, and digital transformation reviewed through five facets: focus, goal, activity, tools, and challenges, with examples of each (Savic, 2019)

In modern society data and data governance touch on most topics of research. A key current topic is that of digital transformation (Kraus et al., 2021; Majchrzak et al., 2016; Wessel et al., 2021). One of the key issues is digital inclusion. As formalized workshop methodologists and participants – Participation of all. “Everyone must be able to participate in the digital transformation and derive appropriate benefits from it. Participation is not just the use, but the widest possible inclusion in decisions about for what purposes and for whom digital developments are advanced. This includes the development of user-friendly and inclusive technologies as well as measures to ensure financial accessibility and to support disadvantaged population groups in the use of such technologies. Digitization is a right, not a duty. Therefore, access to equivalent services in analogue form must be ensured” (Savic, 2019).

The complexity and interconnectedness of digital technologies, from the one side, and non-linear and non-stable social reality, from another side, require new governance models capable of addressing ethical, social, and political implications beyond traditional regulatory approaches (Schwab, 2016). At the stage of digital transformation, global governance is increasingly shaped by vast volumes of data (Big Data). New governance technologies rely on large-scale data collection, allowing organizations and marketers to gather extensive information about individuals, including income, credit history, interests, travel, health concerns, and spending habits. This intensive profiling of personal behaviour and preferences is often described as the “creep factor” of Big Data. In this context, one of the main challenges and risks is artificial intelligence (AI), which is undergoing rapid global growth; in particular, machine-learning solutions based on Big Data have expanded significantly over the past decade (Dignum, 2019, Chapter 2). We consider the AI ethics so important in digital age, therefore ethical harms of AI systems in governance are in the focus of researchers and practitioners. “AI is an umbrella term that encompasses a range of computer-aided processes and data analytics” (Bellaby, 2026). Many researchers of EU policies and studies note that Europe is at a turning point, in particular, in digital transformation and AI impact regulation (European Commission, 2023, 2024). Thus, think thank CEPS founded, that Draghi report

supported the limited adoption of AI in industry and governance. The European Commission is now focusing on applying and scaling up AI in key domains such as science, industry and government, especially after a regulation period marked by the AI Act (CEPS, 2026). In January 2025, the Competitiveness Compass announced the creation of a “CERN for AI” to provide the necessary coordination and support for both fundamental and applied research. We then saw the launch of RAISE, devoted to resources for AI in science, and the Apply AI Strategy, focusing on promoting uptake in eleven sectors. All in the name of competitiveness, but also AI sovereignty. The question is no longer whether AI will reshape Europe’s economy, it is whether Europe will lead that reshaping or watch from the sidelines. This is why CEPS is launching a dedicated Task Force to bridge the gap between policy ambition and on-the-ground reality avoid risks of non-fair digital transformation (CEPS, 2026). Recently, the World Bank created network of Digital Data Centres Building on Korea’s advanced digital governance model and the World Bank’s global development network, this Digital Centre converts accumulated expertise into scalable and operational digital solutions. Positioned at the intersection of policy, technology, and development, the Centre enables low- and middle-income countries to accelerate digital transformation and AI adoption through knowledge exchange, institutional capacity building, and implementation support (Korea World Bank Digital Knowledge Data Centres, 2025). Recent decades World Bank has a strong impact on global governance institution, it pays a lot of attention to digital aspects of governance.

Digital transformation is a powerful engine of economic growth, competitiveness, job creation, and inclusion. It is changing how people learn, work, and interact. Yet billions still lack basic internet access, and as AI evolves rapidly, the digital gap between countries is widening. Many nations do not yet have the infrastructure, skills, or systems needed to fully benefit from these opportunities. Closing this gap is essential for creating more jobs and ensuring sustainable, inclusive growth (Korea-World Bank Report, 2025).

The next chapter will be devoted to the sample of human values transfer – “Discourse of Data Ethics” (DDE), which is implementing at Bern University of Applied Sciences. This project is, on the one hand, a classic research project, and on the other hand, a pioneer in applying a discursive and ethical approach to balancing ethics and business in the digital economy under the influence of artificial intelligence technologies. The use of data based on individual consent protects personal rights, but at the same time exacerbates the problem of social justice for communities (Vinuesa et al., 2020). And this gap is not narrowing but widening with the rapid and unpredictable growth of the integration of artificial intelligence into business processes and education. In this approach, "ethics as principles" is transformed into "ethics as a process" – a dynamic, continuous practice of discussion and decision-making, rather than compliance testing (Morley et al., 2023). This approach could be interpreted as an innovative governance mechanism designed to strengthen legitimacy, participation, accountability, and distributed

responsibility within data-driven organizations. Thus, the central challenge of global governance of the complex socio-technical systems (i.e. global society, organization, communities, etc.) in the digital age is concerned less the regulation of technologies, but more the impact, knowledge, and decision-making.

As data ecosystems, particularly those involving artificial intelligence technologies, involve numerous stakeholders, value-based, ethically oriented mediation between economic incentives, technical constraints, and regulatory requirements become critical. For industrial capitalism technical progress continues to lead to rapidly growing amounts of digital data. “Data sources including social media, sensor networks, the Internet of Things (IoT), wearable devices, and many others lead to the rapid expansion of the amount and type of data that are collected. Data governance has an important role to play in supporting the intended and beneficial use of these data and in preventing unintended and malicious use. Data governance structures can be used to strengthen the security of data and data protection; they can foster data sharing, reuse, and collaboration. Briefly, they have an important impact on how data are used and thus on the ethical implications of data use” (Stahl, 2025). The accelerating pace of technological innovation creates significant challenges for governance institutions, which often struggle to adapt regulatory and ethical frameworks to emerging digital realities (Schwab, 2016). The societal challenges generated by digital transformation require governance approaches capable of addressing not only technical efficiency but also ethical, social, and institutional consequences (Majchrzak et al., 2016).

In addition, for global governance in the digital age, the discourse of digital ethics is of particular interest — how the presence of cognitive assistants can be ethical and justified both in teaching and, for example, in the field of decision-making. The presence of such cognitive tools allows us to talk about cognitive improvement — reducing the number of errors, the speed of information processing, and the scale of research. But on the other hand, this phenomenon can be called cognitive simplification, impoverishment. It manifests itself in a decrease in the depth of reflection, the ability to critically analyse, and independently search for solutions. In neurophysiology, the same principles of weakening function, if not used, apply as in Physiology. Therefore, overall, the threat of "excessive consumption" of information and the weakening of mental functions in the learning process should be considered. So, in the sphere of global governance, this creates a complex paradox: in an age of increasing complexity, humanity needs stronger cognitive abilities, but the mass use of AI significantly reduces the cognitive autonomy and potential of social actors. Another challenge with applying AI in governance is threat of geopolitical pressure on data usage. Suddenly, Anthropic confirmed that “it has cut access to two powerful artificial intelligence (AI) models after a United States government order citing national security concerns. The sudden block marks a major escalation in Anthropic’s growing showdown with the Trump administration after failed negotiations earlier this year over potential US military and intelligence use of its technology” (Martin N., 2026). The Anthropic case demonstrates that

digital transformation now is not only a technological process but also a geopolitical and governance transformation. Advanced AI systems by developed countries (first USA) are increasingly treated as strategic assets whose accessibility is determined by national security considerations, which dominate on her than principles of global openness and knowledge sharing. This development raises fundamental questions concerning digital sovereignty, global governance, and the future distribution of epistemic power.

The emergence of companies such as Palantir demonstrates that digital transformation increasingly involves data-driven governance infrastructures, which can influence strategic decision-making in public administration, security, business, and international relations. “Data is almost universally recognized as being of high importance in today’s organizations and society, which is reflected in growing awareness of the importance of data and its governance in the field of information systems. Enormous resources are being invested into means of collecting, storing, processing, and retrieving data, both in private enterprises and in publicly funded projects and institutions (Stahl, 2025). So, as one of the important challenges of digital transformation we can mention the contradiction between the lack of digital sovereignty and growing concentration of data infrastructures, cloud services, AI models, and computational resources. Unfortunately, only a limited number of states and corporations raise questions of digital sovereignty. Access to data and advanced AI capabilities increasingly becomes a matter of geopolitical competition, transforming digital governance into a strategic dimension of global governance.

4. Data as a factor in overcoming the paradigm of industrial capitalism

The search for, establishment of, and justification of differences is a fundamental quality of human cognition. Understanding information as a reflection mirror of objectively existing patterns and connections—may rightly be called a form of reductionism. From the ancient Stoics to the linguistic turn in the history of philosophy, the concept of the creative, voluntarist, and transformative potential of descriptive practices, whether natural language or other forms of symbolization, has been fruitfully developed. With the advancement of digital technologies, the transformative potential of descriptive practices increases significantly. Information is not a mirror, but something endowed with a distinct ontological status, embedded within a complex interplay of objects of various natures and orders (see Luciano Floridi’s philosophy of information).

Information, as description, provides the grounds for establishing similarities and differences between objects and processes, thereby enabling safe and effective interaction between human beings and the surrounding world (“information is a distinction that makes a difference”, according to Durante (2010). The dynamics of this process can be described in terms of Hegelian dialectics as an “ascent from the abstract to the concrete”—namely, as a hierarchy from “data as ‘know-nothing’, information as ‘know-what’, knowledge as ‘know-how’, and [...] wisdom as ‘know-why’” (Zeleny, 1987). and Ackoff, 1989).

The use of data in various areas of social life significantly transforms not only the reality surrounding us but also changes the format, pace, and content of human interactions. The global challenge lies in ensuring that every stage of the transformation of data into “wisdom”—that is, its application in a pragmatic key—is governed by ethical principles and guided by virtuous ends. The ethical framing of the issue of data use is determined not by expediency—it is obvious and in demand—but by the fact that the regulation process based on ethical considerations requires specificity and adjustments to certain cases of data use at every stage of implementation in corporate work. This focus provokes heated discussions and brings close attention to the problem from both professionals and amateurs. Such interest is explained by the scale of negative consequences of unethical data use that might have an impact on everyone without exception.

The problem of goal setting, the clash of priorities, and the challenge of understanding and adhering to values—that is, the concrete articulation of ‘know-why’—constitutes the stumbling block, or the flint from which the sparks of turbulence are struck in the context of data usage.

If we reduce the entire diversity of goals and values in data usage to their core, we find an antagonism—or a trilemma—between protecting fundamental rights, generating economic value, and serving the public interest (Zygmuntowski, 2023). This contradiction is rooted both in the very nature of data and in the context of their use.

Nowadays, data is often viewed as “new oil”, which means it is some sort of raw material from which various goods and services, that are in demand of consumers, can be produced. This analogy is compelling, but not accurate. Unlike oil, a mineral resource that is being depleted, the accumulation of data is growing exponentially. Moreover, data is a commodity, “that satisfies human wants,” (Alfred Marshall, 2009), of ideal, not material nature, and thus can be used and sold many times for a wide range of potential applications. Therefore, it is more accurate to define data as a new form of capital, constituting a strategic asset for securing competitive advantages, stable innovative development, and economic growth through effective analytics, both current and forthcoming. According to Marxist theory, the means of productive and production relations that affect the social structure undergo essential transformations due to changes of the form of capital. Consequently, this activity directly relates to the entire hierarchy of social relations. In other words, businesses actively use data as a powerful tool in competitive fights while this directly involves the public at large, as it affects individuals’ rights and interests. Tendency “treating data as a commodity directly or indirectly reinforces, harmful practices of surveillance, problematic dependencies, and the exploitation of those involved in the production of data”, but also “may result in the market logic “transgressing” into non-market ‘spheres’ of life where exchange and commodification are not desirable, e.g. family and community relationships” (Purtova, van Maanen, 2024). In other words, understanding data as a commodity facilitates the extrapolation of commercial values and evaluative frameworks into other spheres of life. This is

particularly evident in the most contentious issue surrounding data use—namely, privacy protection. Personal information is treated as the private property of data subjects, a notion that has already been thoroughly critiqued by several scholars (Zech, 2020).

Analyses of data ownership are carried out simultaneously from two distinct perspectives: the material (pertaining to the sphere of distribution) and the socio-cultural (pertaining to the sphere of recognition) (Hummel, Braun, Dabrock, 2021). This duality is entirely logical, given that “personal information is often formed in relationship with others” (Solove, 2010), and privacy is not synonymous with isolation, detachment, or ostracism. As Martin notes, “Defining privacy as a state of inaccessibility is neither practical nor desirable and, ironically, renders privacy as a form of punishment” (Martin, 2016).

Understanding personal data privacy as private property to be concealed is not a productive approach for implementing ethical data-use principles. Rather, it resembles a negotiation over the extent to which objectification—that is, consumerization and exploitation—of data subjects is possible and permissible.

A meaningful counterbalance to the economic paradigm of valuation and decision-making strategies is the concept of human rights, and by extension, the rights of data subjects. This may be interpreted as a kind of demarcation line between the degree of influence/exploitation exerted on personal data and the realm of personal freedom, that is, self-determination. Since the very nature of data—including personal data—is inherently collective or collaborative, the very notion of human/data subject rights represents, in Ronald Dworkin’s words, “an individualized political purpose” (Dworkin, 2013), or “know-why” stage of cognition.

Luciano Floridi argues that the genuine foundation for defending individual self-determination is not the inviolability or inalienability of privacy, but rather the value of human dignity: “The protection of privacy should be based directly on the protection of human dignity, not indirectly, through other rights such as that to property or to freedom of expression. In other words, privacy should be grafted as a first-order branch to the trunk of human dignity, not to some of its branches, as if it were a second order right.” (Floridi, 2016).

This position is by no means an attempt to deny the necessity or utility of guaranteed rights for individuals or data subjects. It is presented here to illuminate the underlying contradiction between competing objectives: economic, political, individual, and societal. The above-mentioned trilemma in data governance—between fundamental rights, economic benefit, and the public good—becomes, in this light, a closed loop, within which data usage is fraught with potential risks and challenges.

5. Data ethics as a form of social communication

The most prevalent approach to ensuring ethical and safe data use centres on identifying and mitigating potential harm such as "privacy by default," among others. One way or another, all currently functioning models of Digital Sovereignty—namely, “the rights-based model, market-oriented model, centralization model, and state-based model” (Fratini, Hine, Novelli, Roberts, Floridi, L., 2024)—adhere to the principle of mitigating risks and preventing harms. But is this approach sufficient for protecting privacy as human dignity and for preventing the objectification and exploitation of data subjects?

Justly noted is the claim that “the market is noxious, that is, ‘toxic to important human values’” (Satz, 2010). The same can be said of the state, especially in totalitarian countries. Therefore Justly noted is the claim that “the market is noxious, that is, ‘toxic to important human values’” (Satz, alongside the “harm criterion,” which allows for “normative judgments outside of the economic analysis of privacy,” we must also consider “The second criterion, which we will call the agency criterion, relates to whether the market reflects or engenders the weakened agency of some of its participants.” (Pham, Castro, 2019).

How can the agency criterion be applicable to the protection of data subjects’ privacy, if data as such is the result of interaction and collaboration? The phenomenon of objectification or exploitation of data subjects does not arise in the process of generating or exchanging data, but rather when third parties are involved—that is, in the context of a market economy where data becomes a commodity and alienable property: “sharing is typically an activity in which one shares with another something that one owns, sharing in (data) commons is an activity in which a second party shares something with a third party that is belonging to anyone or no one, it is a different mode of sharing” (Søe, Mai, 2023).

The essence of data as commons, commodity, capital, etc., reveals the limitations and inadequacy of the industrial capitalism model in contemporary realities. In other words, “The property regime we take for granted today that underpins industrial capitalism took centuries to develop, and this process is only just beginning for data capitalism.” (Hicks, 2023). From this, we may conclude that in order to realize agency as the foundation of self-determination—and, consequently, human dignity—it is necessary to revive certain principles and formats of traditional, pre-capitalist economies, the rules and frameworks of which have not only been tested over centuries, but are also understood and accepted as just in the eyes of the public. With this statement, we are not advocating a return to barter, sabotage of big tech companies, digital detox, or disconnection practices. The implied consequence of this thesis is the so-called “distributed responsibility,” wherein “Sharing and data commons are social enactments of collective, shared, goal-directed activities that rely on active members of the community. Members of the practice depend on each other and are only individually successful, if the practice as a whole is successful.” (Søe, Mai, 2023).

In this sense, the protection of privacy takes the form and interpretation of a social contract, which “offers a more nuanced, context-dependent understanding of privacy while not venturing into the territory of relativism.” (Martin, 2016). The definitions, principles, and red lines of such a social contract—or any social contract—are the subject and contested domain of discursive ethics, public dialogue, and the search for consensus.

There has been a lack of sufficiently effective and detailed practices for interaction between public and private stakeholders to determine mutually beneficial principles and rules for ethical data conduct. Ethical norms have been being formed, tested, and established in culture over a long time, centuries and decades. The current social era is very intense in terms of data accumulation; thus, effective ethical solutions are needed today. Though it is difficult to speed up the search for new ethical norms and principles, as they require careful consideration. Firstly, there is a need for the creation of a unified field for the legitimate use of data, as declared in the fundamental principles of GDPR. Secondly, there is a gap between theory and practice, caused by the abstract nature of ethical requirements, and the need to review their implementation in relation to each specific situation. Companies and organizations that use data are forced to develop an optimal strategy for integrating ethical rules into existing processes, striving to maintain their efficiency and profitability. Thirdly, many technologies that are already on the market, were developed and implemented without consideration of current ethical regulations. For example, like it was in the case with Alexa. This case is well known because of a rude privacy invasion. Private conversations of customers were recorded and used for AI models training without informed consent from their side. The legal actions and public backlash have pushed Amazon to commit to overhauling its deletion practices and to implement stricter privacy safeguards. These changes were mandated as part of a proposed federal court order, requiring Amazon to delete certain data and restrict its use in training algorithms. The scandal has sparked broader discussions in the tech industry about the responsibilities companies have regarding data privacy. Nonetheless, companies will face significant challenges when they are to modify their existing products every time new ethical / legal regulations take place, as it requires additional investments to reorganize the pipelines of production process at multiple levels. This situation clearly illustrates the conflict between economic benefit and the observance of the fundamental rights of the individual and the data subject.

The situation described above can be interpreted as an acute social demand for effective scientific communication, in which ethical values and principles determine the creation and implementation of innovations, rather than being attached as a superstructure to a finished product. It is scientific communication that can bridge the gap between complex ethical principles of data use and practical business decision-making strategies. Data ethics operates at the intersection of moral norms, legal regulations, and technological optimal solutions. Accordingly, every managerial decision in this area exemplifies scientific communication. It should be noted that

effective communication is possible when participants are on an equal footing. Therefore, the ethics of data use should be understood as an important component of modern business strategies, contributing to the stable growth and competitiveness of a company or organization in the market.

6. Capability approach in Discourse Data Ethics

Ethical rules and values are epistemologically close and intuitively understandable to most people—including the principles and norms of data ethics. They appear simple, logical, and self-evident in their justification. However, many researchers (Gogoll et al., 2020; Brent Mittelstadt, 2019) note that the exponential growth in ethical guidelines and recommendations does not lead to substantial positive qualitative changes in the implementation of ethical values within the dynamics of economic activity. The almost yearly multimillion-dollar penalties (Nicoli, Iosifidis, Wörsdörfer, 2022) imposed on digital giants such as Google or Amazon serve as eloquent confirmation of this.

Moreover, knowledge of ethical principles and norms does not automatically translate into their practical application, which is fraught with numerous challenges and barriers. It is symptomatic that “Our findings show that individuals within companies are aware of the potential negative effects of digital technology and their social responsibilities, but they do not apply this awareness to their own role, and above all, often experience a conflict between the need for rapid innovation and the time required for ethical reflection, which often leads to such considerations being sidelined.” (Ernst, Matter, 2025). Pedagogical science has demonstrated that abstract knowledge without concrete practical application is of limited effectiveness, and therefore: “Empowering innovators to navigate ethical considerations requires training in ethical theory and moral reasoning. Without such preparation, structural interventions such as ethical guidelines or frameworks risk being ineffective.” (same) The argument presented above once again underscores the importance and necessity of rethinking and expanding the context of individual agency in the development and implementation of digital innovation in general, and especially in the use of personal data for both economic benefit and public good. But what does it mean to expand the context of individual agency in the realm of innovative technologies and the use of personal data?

A productive solution that sheds light on the content and potential realization of this thesis appears to be the so-called capability approach, since “The concept of capability is closely related to the concept of individual freedom because it makes sure that the individual is not prevented from choosing what she has reason to choose and it provides some means to realize what she has chosen.” (Gotoh, 2021). Since “... data is a dual-purpose commodity that has both commercial value and social application” (Virkar, Viale Pereira, Vignoli, 2019), a productive solution to the trilemma of data subjects’ rights, economic benefit, and the public good—alongside risk prevention—is the necessity to increase the degree of agency, and consequently

the capability, of participants in data operations. This approach makes it possible to protect privacy as a recognition of human dignity and to realize data subjects' right to self-determination.

Let us recall that data in and of itself is "know-nothing," and "The value created from data is the combined result of the dataset and the analysis applied to it. The two are inherently inseparable in the value creation process, just like the movement of a car cannot be fully attributed either to the engine or to fuel" (Smichowski, 2018). This social nature of data manifests at all stages of the data lifecycle: collection, storage, cleaning, use, and destruction. It is therefore unsurprising that this circumstance provokes ongoing debate around data ownership rights. The issue of data ownership lies at the heart of the differentiation between data as a product and data as a service (DaaS), which, in the context of real-world business practices, leads to fundamentally different approaches to organizing data use models.

The social nature of data as a basis for its commodification, on the one hand, and its fundamental inalienability due to the intrinsic value of human dignity, on the other, highlights the urgent need to "... feel more free to reimagine the terms of social cooperation – not less." (Pasquale, 2015). In this regard, we are once again convinced of the validity of the thesis that it is necessary to reconsider and expand the possibilities for agency among data subjects. Consciously or instinctively, people strive to avoid objectification: "People accept active sharing where they are consciously involved in the exchange but are much less positive about passive collection of information. Data use is fine for them if it is part of an ongoing relationship." (Spiekermann, Böhme, Acquisti, Hui, 2015). The authors further conclude that "Context of data exchange is even more important than the data itself." Why is context (or the organizational model of the data market) so important? Because "... trust is, in fact, a solution for dealing with uncertainty" (Driessen, Monsieur, Van den Heuvel, 2022).

Trust is a highly complex phenomenon with a long and rich tradition of study in the humanities and social sciences. Without delving into its internal contradictions, it is worth noting that trust arises in situations of uncertainty, but not in those of complete unknowns or anonymity. In other words, trust requires a certain level of informed awareness about the factors influencing change dynamics—based either on prior experience or on declared shared goals and values. Since the data economy is a relatively novel phenomenon, prior experience alone does not yet provide a sufficiently common and resourceful foundation for building trust-based cooperation. Shared goals and values, and collective visions and efforts regarding desired outcomes and the means of achieving them, thus appear to be a more favorable foundation for effective activity under conditions of uncertainty.

The "Discourse Data Ethics" project at Bern University of Applied Sciences develops and evaluates the Ethics-as-a-Service (EaaS) model as an alternative approach to ethical data governance. Rather than viewing the ethical approach in digital business as a compliance audit procedure, EaaS proposes understanding ethics as an ongoing process of reflection and communication among all

participants. This model does not involve developing ready-made ethical solutions tailored to specific situations. Its goal is to improve the company's organizational culture and facilitate open dialogue while minimizing hierarchical pressure.

Drawing on the principles of discursive ethics and the concept of communicative rationality, this project explores ways to empower data subjects and employees by creating an environment within the company that fosters informed, reflective, meaningful, and responsible participation in data management decision-making processes. EaaS is based on the tension between viewing data as property, a commodity, and a social product—the result of interaction. By highlighting this tension through discussions of the various perspectives, risks, and opportunities associated with data use, the model aims to foster more sustainable data management practices.

More broadly, the project explores the potential of discourse-based data management practices to improve organizational culture within companies, with the aim of ensuring their sustainable development in the digital economy, in contrast to the hierarchical models of industrial capitalism. Thus, EaaS is not just another ethics framework, but rather a consulting service designed to improve a company's organizational culture—a model for implementing participatory decision-making based on the principles of distributed responsibility and adaptive institutional learning.

7. Conclusions

Thus, global governance in the digital age requires a certain set of values, ethical foundations that promotes, rather than eliminates, the need to shape the thinking, resilience, ability to act in crisis situations, and creativity needed to work with complex systems. Digital transformation affects the introduction and dissemination of common standards, key indicators and competence frameworks that determine how social actors should act in the current geopolitical and economic crisis. And ethical dimensions of digital transformation, including awareness and responsibility use of AI and data are questions of the highest priority.

The use of data in modern society has a strong impact on the improvement of quality of life through rapid transformation but brings along considerable consequences and risks. This is why an ethical format for making business decisions about data use is no longer just a recommendation, but a strict requirement at both the legislative level and in the context of social responsibility, reputation, and public trust.

The abstract nature of ethical requirements and the practical necessity of their implementation into direct business activities (and in governance process at the various levels of social-technical systems) can be interpreted as a serious challenge in the context of scientific communication, as making well-founded, productive, and fair decisions in data use requires the involvement of specialists from various fields of expertise. This necessitates the installation of ethical determinants into the overall

architecture of governance process (in business activities or in higher level of socio-technical systems – states, regions, etc.).

In conclusion, data governance should be understood not merely as a technical or regulatory issue, but as a central dimension of global governance in conditions of digital transformation. Modern data-driven technologies increasingly shape decision-making processes. They raise questions of legitimacy, accountability, human agency, distributed responsibility, etc. The Discourse Data Ethics approach demonstrates that effective governance of socio-technical systems requires not only technological innovation (and legal compliance) but also social communicative infrastructures. They should support ethical deliberation, stakeholder participation, and adaptive institutional learning. Therefore, ethical data governance is a prerequisite for balancing economic interests, fundamental rights, and the public good overcoming challenges of industrial revolution and immanent its digital transformation, for example, AI governance (AI in data governance, AI-system decision-making support, etc.). The relevance of these challenges is reflected in the growing academic attention devoted to global governance studies.

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