

Digital Humanism: In support of Global Public Goods

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Table of contents

1 Task.....	2
2 Digital Humanism: Scope and goals	2
2.1 What do we understand by Digital Humanism?	2
2.2 A broad concept driven by many actors	3
3 Public Goods, digitization and the global level	5
3.1 Public Goods and digitization, ... and private actors	5
3.2 Excursus: The Digital Public Goods initiative.....	6
3.3 Global Public Goods (GPGs).....	7
3.4 The influence of digitization on GPGs	8
4 How can Digital Humanism support the implementation of GPGs?.....	9
4.1 Not a standalone GPG	9
4.2 First ideas for methods, structures and recommendations.....	10
4.3 Some contributions from the Digital Humanism Initiative on subtopics	10
5 Literature	12

1 Task

The United Nations is currently taking decisive steps to better establish the concept of Global Public Goods (GPGs) in order to meet current major transnational challenges. As neither individual countries nor globalised market mechanisms alone can face these challenges, GPGs will play an essential role in understanding causes, negotiating answers, and solving problems where resources and goods are non-rival and non-excludable. Examples of such challenges include curbing climate change, instituting universal regulatory practices and limiting financial crises. In searching for solutions in such cases, GPGs – including institutions such as the rule of law – will be key, due to their ability to address underlying problems, like game theory issues.

The UN Secretary General has recently issued a call to identify and review the governance of GPGs. A High-Level Advisory Body (HLAB) is thus currently being established to prepare an independent report by early 2023. In this context, the UNU-CPR serves as a secretariat for the HLAB.

UNU-CPR has issued an invitation to submit a statement/presentation on a new initiative called Digital Humanism and how this initiative can contribute to the goal of better governance of GPGs.

Abstract: Global Public Goods are strongly affected by digitization, either through new Digital Public Goods or through new roles or functions of existing Public Goods. This requires discussion, structuring, and potentially new policy concepts and mechanisms. Beyond this public debate, global platform companies today claim that they now deliver the real Global Public Goods. The downsides of this development and the price to pay for societies are becoming clearer. Digital Humanism is an initiative for human centred digitization that wants to help transform our existing institutional framework into an even more humanist and integrative digital future. Therefore, it can play a role in the discussion of current and future Global Public Goods.

2 Digital Humanism: Scope and goals

2.1 What do we understand by Digital Humanism?

In many parts of the world, concerns have been growing about the downsides of the digital revolution. While this revolution is ongoing, fascinating, and all-encompassing, the accompanying downsides have also been increasing. Although digitization has made our lives richer and better in many respects, some of those who co-invented key tools such as the internet now say: “The system is failing” (Berners-Lee, 2017).

Some of these downsides are – by definition, through sheer facts or through norms – universal. Prominent examples include the threat of fake-news, the infringement of Human Rights as stipulated in the Universal Declaration (United Nations, 1948), or the creation of monopolistic actors. Other downsides take specific forms in different parts of the world; these include the digital attacks on democratic systems or the spread of digital influencing of human behaviour by large platform companies (Zuboff, 2019) or by state actors.

Despite their different manifestations, all such tendencies – monopolies, digital surveillance, behavioural extraction, fake news, etc. – infringe core human values and societal fabrics in one way or another. Therefore, to counter such developments, Digital Humanism seeks to embrace both the digital revolution *and* our achievements as civilisations. The term civilisations should include both our global achievements as humanity (singular) and regionally different cultures, accomplishments and norms (plural). At its core, the initiative combines scientific, technical and cultural efforts to better orient digital technologies towards people, their values and towards societal needs.

What do we want to achieve with Digital Humanism?

- Adopt an approach towards digitization that is based on human needs and human values. Digitization should be governed by better and fairer rules, standards, norms and practices for individuals, groups and societies
- Defend and promote democracy in the digital era, strengthening and expanding fair and inclusive societies
- Safeguard a high level of fundamental and other human rights
- Develop a better understanding of the co-evolution of man and machines (Lee, 2020), including divisions of tasks, functions, learning processes and feedback loops
- Establish discussions and search for solutions in how important institutions, including (social) market economy or the rule of law, can be further strengthened in and through the digital wave, instead of being reduced in their scope and threatened in their existence.
- As a process, Digital Humanism is about the development of the digital world through dialogue and mutual understanding of different groups of actors. The rich knowledge of Humanities and Social Sciences must be actively integrated at the outset of formulating digital theories, models, and tools, rather than lying dormant at the side-lines or being considered only at late stages. Education should better couple the different disciplines, while civil society must gain a stronger say in issues of data use and democratic governance.

2.2 A broad concept driven by many actors

Can Digital Humanism be defined in a strict sense? The answer is no, for three reasons:

Firstly, *digitization* is a fast-moving process, confronting us with major shifts and tensions in quick succession. The pace with which AI / machine learning-based solutions and research papers are being brought forward is increasing nearly exponentially. At the same time, digitally based business models and state interventions have started to fundamentally transform our societies. Though indisputably fundamental in nature, the exact consequences for cognition and behaviour, contractual relations, collective action, work relations are far from being clear – even if we consider that some of the fears and expectations of AI and digitally driven societies might be exaggerated (for both points see the contributions in Ford, 2018).

Secondly, the *humanism* aspect requires different approaches, depending on the level at which it is considered. As long as we focus on the Human Rights Declarations and other Charters / principles, we are on somewhat safer common ground. However, when we consider different cultures, contexts, and the digital sphere, we are confronted with new fundamental questions, tensions and differences. The impact of and on culture is therefore immense (see e.g. Nida-Rümelin and Weidenfeld, 2020). Facing the digital revolution, we must rethink many approaches towards achieving – and hopefully improving – the guiding principles of our civilisation. These include the rule of law, fair

contracts, free speech, trusted and evidence-based information and communication, and more. While our current level of civilisations is not perfect and certainly allows space for improvement, we must simultaneously acknowledge that a great deal of blood, sweat and tears has been spilled to allow us to stand where we are today.

Thirdly, our dialogue in the Digital Humanism movement does not occur within the confines of a distinct scientific discipline – nor does it unfold in an exclusive sphere where politics, diplomacy, corporate and other actors deal with issues of rules, power and governance. Rather, it is a cross-cutting dialogue that sets people (individuals, communities, constituencies) and their needs first, vis a vis power relations, new digital rooms and governance models. This prioritization of people is reflected in the establishing and safeguarding of decision rules, social rights, equitable contracts, protection of privacy, transparency, levels and contents of education, the importance of cultural heritage – amongst others (See the Vienna Manifesto, 2019; Werthner et al., eds., 2022). Remarkably, most of these manifestations can be considered Public Goods, at least in a broader definition, and in many States and cultures.

Despite the above caveats, Digital Humanism can contribute to the Public Goods debate in a meaningful way. One important reason is the variety of involved institutions that must be considered, which requires a variety of approaches. In a seminal paper, Douglass North (1991) describes how institutions, i.e., norms, organisations, beliefs, practices and even taboos, are shaped (or arise under) the influence of technological, commercial and cultural practices. The institutions then are constituted – or even constitute themselves – and they form and determine path dependencies. Historically, many of these paths have been circular and ended in stagnation, while others have spurred innovation, collaboration and far-reaching societal institutions, such as law courts, contracts, infrastructures and beliefs that allow for continually increasing returns. Such increasing returns then, in turn, corroborate successful sets of institutions. Many of the institutions described by North are Public Goods, and their absence or ineffectiveness leads either to huge imbalances or to stagnation. State action or other top-down policies must by no means come first; however, at a certain point, such evolving trajectories require the State (national or transnational) as a provider of rules and norms to guarantee long-term increasing returns. In our case, the digital revolution, we see massive increasing returns, massive imbalances, private actors as rule-setters and, therefore, an overwhelming need to re-shape a number of tangible and intangible institutions. This is the cue for Digital Humanism to enter the stage.

A final point here: Who are we? Digital Humanism is a young initiative, with several similar efforts emerging around the globe. One such effort is a grassroots movement in Vienna that started in early 2019. The Vienna Science and Technology Fund launched a programme to fund interdisciplinary research (WWTF, 2020) and help build up a dedicated community, while academics and other actors at the Technical University of Vienna set up a broad transnational platform to foster dialogue and agenda-setting. Initial outcomes of these efforts include the Vienna Manifesto on Digital Humanism (Vienna Manifesto, 2019) and the recent multi-author book that covers a multitude of perspectives on this topic (Werthner et al., eds., 2022). The network has expanded to now include ACM, the largest computer scientist organisation, IEEE, which issued the first ethical AI industry standard in 2021, as well as several European government actors who are actively advancing this topic ('Slavkov declaration', Federal Ministry for European and International Affairs, 2021). Most importantly, a network of experts, consisting of many hundreds of researchers, intellectuals and innovators has been established across many countries – all sharing the common goal of finding answers and solutions across disciplines and continents (see again contributions in Werthner et al., 2022, as an example).

3 Public Goods, digitization and the global level

3.1 Public Goods and digitization, ... and private actors

Public goods are characterised by two main features: non-rivalry and non-excludability (Musgrave, 1969; Samuelson, 1969). The first means that consumption by one or many does not impede the consumption by others. The second refers to the quasi-ubiquitous nature of such goods due to their natural (“fresh air”), intellectual (“ideas”), normative (“justice”) or technological (“digital data”) character. Only the combination of both characteristics constitutes public goods in the full sense. Increasingly over time, the State has regularly provided or defended Public Goods, as – again regularly – markets face several difficulties here, because they encounter financial risks or because they cannot appropriate the benefits. If benefits can be appropriated, the State must decide whether to provide a structured framework for market participants (like Intellectual Property Rights regimes) or to make the production of these goods a responsibility of the government. If benefits cannot be appropriated or the State takes over, such Public Goods as a rule are provided for free, which also assures social fairness and equity. Note that there are, in addition, impure Public Goods, in which one of the two elements is (partly) lacking. Whether and how such *toll goods* or *commons* affect our discussion about Digital Humanism and Public Goods will not be further discussed in this setting.

Public Goods can be regarded as remedies to market failures (an argument brought forward by most economists from Samuelson and Musgrave onwards). Alternatively, they can be viewed as necessary elements – or institutions – in their own right that strengthen societies and contribute to a shared sense of belonging and citizenship. The point of departure for this latter, more social-science- and society-driven approach is twofold: firstly, an effort to govern communities better and more actively; secondly, to promise more than simply filling a gap in otherwise perfect markets. Different Public Goods are either well-suited to support social justice or to support connectivity or to support identification (see Kallhoff, 2014). Although economists have tried to include such considerations into their models, there are some arguments to see questions of societal bonds and structures (together with the cost they produce) as basic needs and not as a kind of *failures*.

Regardless of whether Public Goods are seen through a market failure lens or with a broader societal approach, it is today mostly the State that organises and guarantees for them. We pay taxes, we vote for political representation and, through these democratic mechanisms, it is the general will, or majorities or certain communities that establish Public Goods. This basic model is influenced by a wide array of concepts and instruments, as well as various helpful or hindering political frameworks (for a broader view of Public Goods in the U.S. see Sekera, 2016), ranging from the democratic Welfare State to market liberalism, from participatory to rather autocratic forms of decision making. Whether weak or strong, the State has been – and remains – our choice of provider of Public Goods.

In the last twenty years, however, digital platform companies have promised an alternative, by using the internet infrastructure to build vast search machines, digital shopping malls and service providers, and above all, social media platforms. They are global, their way of achieving non-rivalry is the digital character of the information and services provided. Their way of being non-exclusive, at least in highly networked societies, is the promise of the free internet: all can participate, nobody must pay for the platform providers. Therefore, private players in this utopia overwhelmingly do care, or at least claim to care, for Public Goods in the digital sphere.

The idea behind the free internet is libertarian, individualistic, techno-utopian and distinctly anti-State. In its early stages, it was supported by some quarters of the political and societal spectrum searching for new goals and visions, or electorates (*"the Atari Democrats"*, Lepore, 2018, p. 845 ff. [German edition]; *"the hippies"*, Vardi, 2018). As Moshe Vardi, one of the world's most renowned computer scientists, puts it: The slogan "information wants to be free" came as a libertarian quest, leading or contributing to a huge non-regulated field of *commons* where neither the market nor the State provided for proper structures. At the end, we are not only faced with monopolies, tax evasion and incredible lobbying pressure on political institutions, we must also pay with our data and the extraction of our feelings, experiences and future behaviour, which is then sold to industry customers to feed their targeted advertisements and other commercial goals (Zuboff, 2019; see e.g. pp. 337 ff., a chapter called *"How did they get away with it?"* See also the detailed report on frustrated and abandoned regulation efforts).

With the large market capitalisation following the initial inflow of venture capital (that followed the invention of the targeted advertisement business model), a huge market indeed has been created. However, the market is an opaque and perhaps even distorted one – one where we pay for free information with an invisible tax, coupled with high levels of surveillance (again Vardi, 2018; and Zuboff, 2019). We agree to the terms of the platform companies by "non-contracts" where we do not know what we have agreed upon, thus forfeiting most rights as customers and as legal persons. The "invisible tax" comes in vast amounts through data sale income and stock exchange valuation. The rich platform companies therefore can afford to apply all types of pressure to keep regulations out and preserve the status quo. Their seemingly compelling argument is that all-encompassing innovation that should not be stifled by any kind of public intervention. However, when taking into account market forces and private innovation, it is remarkable how large companies claim that the entire internet-based economy has been created solely through private initiatives. This narrative excludes decades of publicly funded scientific and strategic research on the foundations of hard- and software, including AI (Mazzuccato, 2013).

Some Public Goods strongly affected by the digitization wave therefore include:

- Rule of law and market frameworks ensuring fair competition
- Social justice and participation
- Human and fundamental rights, including privacy and security
- Publicly funded, open and accessible education and research structures

The relevant point here is: There is a need for a democratically legitimized public intervention.

3.2 Excursus: The Digital Public Goods initiative

Before we discuss Global Public Goods, UN organisation and digitization, acknowledgement must be given to a relevant initiative that was officially launched in 2019 by the Secretary General's High-Level Panel of Digital Cooperation. The Digital Public Goods (DPG) initiative aims to foster open data, open software, open AI models, open content in order to better serve the Sustainable Development Goals (SDGs). These will be achieved through trusted and carefully developed solutions without legal or technical barriers, which can be used by low- and middle-income countries to adapt and implement their own solutions and / or to better collaborate across borders. As the SDGs serve as the foundation for this initiative, the solutions should indeed serve Public Goods like environmental

protection, fighting pandemic viruses, securing water supply or similar efforts. The central properties of Public Goods (non-rivalry, non-exclusiveness) and of digitization (infinite copying, storage, distribution and adaptation / creation of variety possible) are interacting here. The initiative has been driven by the Governments of Norway and Sierra Leone, private foundations and UNICEF, with other actors joining. (see Digital Public Goods Alliance, 2022, webpage).

The relevant point here is: There is already a running UN-co-governed digital GPG initiative called DPG that deals with some of aspects of human-centred digitization.

3.3 Global Public Goods (GPGs)

While the Nation State has been a latecomer compared to civic or religious institutions in providing Public Goods (North, 1991; Kallhoff, 2014), it has also been a highly successful one: As stated above, most Public Goods are now State-guaranteed and tax-funded, they are provided (or made accessible) for all citizens, inhabitants or beneficiaries, and they can be coupled with democratic and participatory mechanisms to achieve increasing returns for society. The massive globalisation of the last five decades, while creating hitherto unknown wealth (and planetary stress), has also stepwise rendered this nation-based governance model less effective: Global phenomena like climate change, spread of contagious diseases, financial and trade interdependencies or security problems cannot be dealt with national approaches alone. For better or for worse, national fences are full of holes when examined at a global level: Large transnational actors can effectively choose if, where and to what extent they want to comply with rules and norms. Some (potential) Public Goods are now neither State-guaranteed nor subject to a tax base as they – or certain actors – transgress national borders.

From a global perspective, Public Goods with their characteristics of non-rivalry and non-excludability appear to be prone to (i) *real-world politics* problems such as inequality, power imbalances and missing resources, (ii) *conceptual* problems such as freeriding, under-provision, disincentives to act as a first mover or coordination issues, (iii) *information* problems such as fake news or campaigns to prevent global action, or (iv) in some cases the lack of or limits for transnational *organisations* to deal with actions to solve great challenges through the provision of Public Goods.

In an early summary of concepts, policies, and strategies to provide GPGs and curb “Global Public Bads”, Kaul et al. (1999) identify three major gaps leading to dangerous over- or underuse / under-supply: A jurisdictional gap, a participation gap and an incentive gap, and provide proposals to close some of the loops. In a recent survey on GPGs, Buchholz and Sandler (2021) discuss in great detail the *anarchic international scene with no movement toward global governance* and highlight the necessity of a game-theoretic foundation to counter freeriding, uncertainties, equity worries, lack of international institutional arrangements or of leading nations. Individual GPGs are being analysed with the additional element of *aggregator technologies*, which have demonstrated that different GPGs need different forms of national contributions and engagements, from equal summation to weighted sums, from best shots (strongest countries develop solution) to weakest links (concentrate efforts on weakest countries that render the global system vulnerable). Based upon these developments, a range of instruments and proposals for new trans-national institutions and organisations have been put forward.

The relevant point is here: GPGs are extremely hard to provide and to govern, necessitating inputs from inter- and cross-disciplinary settings.

3.4 The influence of digitization on GPGs

The influence of the digital revolution on GPGs has been quickly growing for several reasons. (i) Advances in technologies create novel digital GPGs and they are instrumental for the measurement and analyses of other, non-digital GPGs and Global Public *Bads* (Buchholz and Sandler, 2021). (ii) The specific nature of digital products, networks and services allow for ubiquitous, trans-border global use, as long as individual governments do not shut down national electronic borders. (iii) Digital, distributed services enable the creation of completely new forms of infrastructures in fields such as distributed energy production, media or banking, which is particularly attractive for countries lacking proper pre-existing infrastructures: In these fields, entrepreneurs or public actors can just start – often easily – from the scratch. (iv) Compared to traditional industries in the past, large internet platform companies can now reap the benefits of globalisation benefits much faster and more cheaply: they can scale up rapidly, raise capital due to scalable business models, find regulation-free zones, automatize, find cheap (distant) labour, locate tax havens, form new cultural symbols and meanings that are shared globally. The last point is perhaps the strongest driver, and yes, it is not wrong to have also TikTok in mind here.

To better grasp the link between digitization and GPGs it might be useful to discuss three different phenomena.

The first are direct “*digital*” GPGs. Three different and diverse examples serve as illustration:

- Socio-Technical systems and properties: Cybersecurity (Buchholz and Sandler, 2021) and connectivity are examples of web properties with a non-rival and non-exclusive nature; further properties with a similar nature exist.
- Platforms: Large platforms themselves have a public good character (Bauer and Latzer, 2016). This means that the internet is an enabler of platforms, who themselves facilitate the generation and exploitation of knowledge and innovation. Thereby they help to internalize externalities and to overcome some of the Public Good problems related to finding, sharing, producing, and connecting knowledge. However, all depends on *how* the platforms are being designed, owned, regulated and what purposes they serve (see the chapters above).
- Open Science and Education: Massive Open Online Courses (MOOCs) reach a vast number of learners all around the world and are either organised as a club good with low entry barriers or as a Public Good. Sharing a similar nature are Open Science tools such as pre-prints, certain forms of open access or digital exchange of research data: The latter has proved effective during the COVID-19 pandemic as a seamless form of scientific exchange (OECD, 2021, ch.5) for public good.

The second are traditional GPGs that are massively transformed by digitization. Again, three examples from different areas typify these “*digitally affected GPGs*”:

- Global health issues: As already mentioned, fighting global pandemics has completely changed due to global digital communication and collaboration.
- Climate change: Both global digital communication and digitally driven measurement (sensors, satellites, ...) have massively improved the abilities to detect, measure and model climate change indicators, especially carbon dioxide emissions.
- Global financial stability: Here digitization works both ways – as a GPG and as a “Global Public Bad”. While digitization increases stability through digital systems against money laundering or risky investments, it also decreases stability through high-speed trading, exotic

derivative investment forms, shadow banking, speculative new currency forms and numerous other instruments.

The third are again traditional GPGs that are instrumental for the deployment and governance of digital GPGs. While they are also transformed by digitization, they play a fundamentally different role. Such GPGs are pillars of stability-setting frameworks for discourse, norms, and action in all the other GPGs. Two prominent examples for such “*fundamental GPGs*”:

- Rule of law and existence of proper regulations: The current global rise of platform economies is based on the lack of clear regulations. *Moving fast and breaking things* would not be acceptable in the analogue industrial world. However, there are various frameworks in the making, namely in the realm of the European Union and its various legal acts on data protection, digital services, digital markets or AI development and deployment. This is complemented by efforts to give back control to communities, constituencies and states through various legal instruments such as taxing the company where the serviced customer is based.
- In a similar way Human and Fundamental Rights are necessary to ensure proper digital Public Goods, by guaranteeing such features as privacy, free speech and other participatory rights.

The relevant point is here: Firstly, we need a framework of rules and rights to govern GPGs. Secondly, it is a priori not clear which of the GPG concepts need adaption or new avenues of thinking with regard to the advent of the digital revolution and the large platform companies.

4 How can Digital Humanism support the implementation of GPGs?

4.1 Not a standalone GPG

In the preceding chapters it was shown that (i) the sphere of Public Goods is becoming increasingly global, (ii) such GPGs are extremely difficult to establish and govern, (iii) existing (G)PGs have been transformed through digitization, while new digital GPGs have also emerged and (iv) the digital globalisation has led to questionable regimes and business models such as the platform company as surveillance capitalist. In addition, (v) Digital Humanism was presented as an instrument to understand and change the digital status quo, following humanistic values. However, there are two reasons why we do not propose Digital Humanism itself to be considered as a GPG:

Firstly, Digital Humanism is more a discursive process than a Public Good with a measurable and definable character, like fresh air or the rule of law. Digital Humanism is rather a movement than a precise instrument like the aggregator technologies analysed in Sandler and Buchholz (2021). However, as it deals with many issues connected with global digital phenomena and developments – from platform economies to higher education issues, from fundamental rights to digital sovereignty – it can be helpful in the GPG discussion.

Secondly, there is already a UN-sponsored initiative dealing with Digital Public Goods on a global level and it would be most difficult to introduce another one with a similar name. To set up another one in parallel would not help to create clarity.

4.2 First ideas for methods, structures and recommendations

The concepts and expertise that have arisen through Digital Humanism can be useful to consider in the UN call *Our Common Agenda*, as well as in the development and government of Global Public Goods. The following ideas for contribution are of a more horizontal, i.e., cross-sectional character for the HLAB work. Therefore, a proposal for *models of governance* might be premature at the current stage. Ideas for follow up could include:

- **A Working Group on Digital Humanism and GPGs:** Such a group can serve as a sounding board for HLAB when it comes to (i) general principles of GPGs, (ii) models for the governance of “direct digital GPGs”, (iii) support to understand and improve the influence of the digital revolution on traditional, “digitally affected GPGs”, (iv) support to help develop the “fundamental GPGs” to provide a proper framework for the digital world. Such a Working Group or similar structure can provide expert papers, organise discussion fora and workshops, either digitally or as in-person meetings. As an example, see: <https://dighum.ec.tuwien.ac.at/lectures-program/>; for the next larger event in March 2022 see: <https://dighum.ec.tuwien.ac.at/dighum-2021/>.
- **A pool of experts from the global Digital Humanism movement** to support the work on individual strands / individual GPGs in the framework of Our Common Agenda and HLAB. Digital Humanism is a movement, and we can help UN organisations to identify experts, including renowned scholars from the digital world.

Further and more detailed proposals can be rapidly developed upon requirement or interest.

The main **recommendations** to the HLAB are the following: Take the claim of the platform companies seriously. Their ambition is to provide GPGs through private delivery but without proper democratic, participatory or transparency standards.

4.3 Some contributions from the Digital Humanism Initiative on subtopics

The contributions of Digital Humanism to the GPG HLAB initiative can be manifold. An initial overview is provided in **Table 1**. This table is first structured along the **four problem fields that GPGs often face** (see chapter 3.3 above): (i) *real-world politics* problems such as inequality, power imbalances and missing resources, (ii) *conceptual* problems such as freeriding, under-provision, disincentives to act as a first mover or coordination issues, (iii) *information* problems such as fake news or campaigns to prevent global action, or (iv) in some cases the lack of or limits for trans-national *organisations* to deal with actions to solve great challenges through the provision of (global) Public Goods. The second dimension is the **type of GPGs in times of the digital revolution**: (i) “*direct digital GPGs*” such as platform economies, technical standards or scientific cooperation, (ii) “*digitally affected GPGs*” such as climate or financial stability, (iii) “*fundamental GPGs*” such as rule of law or fundamental rights.

One of the key challenges is to identify good and robust institutions in the digital age. In other words: Where do we have to re-shape market regulation and who should provide which Public Goods? Do we need new institutions? The advantage here is that computer scientists are already at the core of this quest, together with researchers from other disciplines. Possible changes that have been discussed range from new paradigms for AI development (Russell, 2022), the need to also rely on non-digital forms of knowledge (Nowotny, 2021), the governance of fair algorithmic innovation systems

according to a number of fairness principles (Akkermans et al., 2022) to ethics and value-based approaches in global AI issues (Tamburrini, 2022; Spiekermann, 2016, followed by the work for IEEE 7000).

This table provides preliminary suggestions for what might be done, and the ways in which Digital Humanism could make essential contributions.

Table 1: How can Digital Humanism support the HLAB?

Problems / GPG forms	Direct digital	Digitally affected	Fundamental
Real-world politics	Organise workshops on global equity or precautionary-driven regulation regimes in the digital age	Promote human-centred digital solutions to reduce inequalities and power imbalances	
Conceptual	Use the model of “aggregator” technologies in workshops and discussions to better understand how global digital governance models might work	Provide experts and results in current digital analytic methods; see e.g., Complexity Science provided by institutions like the SFI in Santa Fé or the CSH in Vienna	Support UN and other organisations in defining and interpreting human and fundamental rights in the digital age. This dialogue has already started.
Information-related	Concepts and actions against behaviourism and behavioural extraction by large platform companies Organise HE teaching	Provide experts and results on privacy, hate speech, fact-based information e.g. in climate research	Organise HE teaching
Organisational	Contribute to global discussion at inter- and transdisciplinary fora, e.g. on AI regulation models Provide expertise when new organisational settings are being prepared for GPGs		

Disclaimer: The Digital Humanism movement is a network of volunteers, supported by an increasing number of organisations, but without a strong central organisation or readily available budgets. Nevertheless, a number of initiatives have been successfully started in recent years.

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5 Literature

- Akkermans, H., Gordijn, J. and A. Bon (2022). Return to Freedom: Governance of Fair Innovation Ecosystems. In: Werthner, H., Prem, E., Lee, E.A. and C. Ghezzi, eds. (2022). Perspectives on Digital Humanism. Cham, pp. 53-60.
- Austrian Federal Ministry for European and International Affairs (2021). <https://www.bmeia.gv.at/en/the-ministry/press/news/2021/06/austrias-chairmanship-of-the-slavkovausterlitz-format-ends-with-the-signing-of-the-poysdorf-declaration-on-digital-humanism/>
- Bauer, J.M. and M. Latzer (2016). The economics of the Internet: an overview, in: Bauer, J. and Latzer, M., eds., Handbook on the Economics of the Internet. Cheltenham, Northampton, pp. 3-20
- (Tim) Berners-Lee on the future of the web: “The System is Failing”. (2017) In: The Guardian, 16 Nov 2017, <https://www.theguardian.com/technology/2017/nov/15/tim-berners-lee-world-wide-web-net-neutrality>
- Buchholz W. and T. Sandler (2021). Global Public Goods: A Survey. In: Journal of Economic Literature Vol. 59/2, pp. 488-545
- Digital Public Goods Alliance, website Feb 22: <https://digitalpublicgoods.net/>
- Ford, R. (2018), Architects of Intelligence. The Truth about AI from the People Building It. Birmingham.
- IEEE (2021). IEEE 7000TM-2021 Standard. Addressing Ethical Concerns During Systems Design. <https://engagestandards.ieee.org/ieee-7000-2021-for-systems-design-ethical-concerns.html>
- Kaul, I., Grunberg, I. and M.A. Stern (1999). Global Public Goods. Concepts, Policies and Strategies, in: Kaul, I., Grunberg, I. and M.A. Stern (eds.). Global Public Goods. International Cooperation in the 21st Century. New York, pp. 450-507
- Kallhoff, A. (2014). Why societies need public goods. In: Critical Reviews of International Social and Political Philosophy, Vol. 17/6, pp. 635-651
- Lee, E.A. (2020), The Coevolution. The Entwined Futures of Humans and Machines. Cambridge, MA.
- Lepore, J. (2018 / DE 2019). These Truths. A History of the United States. New York. The page reference is from the German edition “Diese Wahrheiten”, chapter 15)
- Mazzuccato, M. (2013). The Entrepreneurial State. Debunking Public vs. Private Sector Myths. London – NY – Melbourne – Delhi
- Musgrave, R.A. (1969). Provision for Social Goods. In: Margolis, J. and Guitton, H., eds., Public Economics: An analysis of Public Production and Consumption and their Relation to the Private Sectors. London, pp. 122-144
- Nida-Rümelin, J. and N. Weidenfeld (2020). Digitaler Humanismus. Eine Ethik für das Zeitalter der Künstlichen Intelligenz, Munich
- North, D.C. (1991). Institutions. In: Journal of Economic Perspectives, Vol. 5/1, pp. 97-112
- Nowotny, H. (2021). In AI We Trust. Power, Illusion and Control of Predictive Algorithms. London

- OECD (2021). OECD Science, Technology and Innovation Outlook 2021: Times of Crisis and Opportunity, <https://www.oecd-ilibrary.org/sites/e0643f52-en/index.html?itemId=/content/component/e0643f52-en#figure-d1e10485>
- Russell, S. (2022). Artificial Intelligence and the Problem of Control. In: Werthner, H., Prem, E., Lee, E.A. and C. Ghezzi, eds. (2022). Perspectives on Digital Humanism. Cham, pp. 19-29
- Samuelson, P. (1969). Contrast between Welfare Conditions for Joint Supply and for Public Goods. In: The Review of Economics and Statistics, 51/1, pp. 26-30
- Sekera, J.A. (2016). The Public Economy in Crisis. A Call for a New Public Economics. Cham
- Spiekermann, S. (2016). Ethical IT Innovation. A Value-Based System Design Approach. Boca Raton – London – NY
- Tamburrini, G. (2022). Digital Humanism and Global Issues in Artificial Intelligence Ethics. In: Werthner, H., Prem, E., Lee, E.A. and C. Ghezzi, eds. (2022). Perspectives on Digital Humanism. Cham, pp. 83-88
- United Nations (1948), Universal Declaration of Human Rights, <https://www.un.org/en/about-us/universal-declaration-of-human-rights>
- Vardi, M. (2018). How the Hippies destroyed the Internet. In: Communications of the ACM, July 2018, Vol. 61/7, p. 9
- Vienna Manifesto on Digital Humanism (2019). <https://dighum.ec.tuwien.ac.at/dighum-manifesto/>
- Werthner, H., Prem, E., Lee, E.A. and C. Ghezzi, eds. (2022). Perspectives on Digital Humanism. Cham. See also the open access version: <https://dighum.ec.tuwien.ac.at/perspectives-on-digital-humanism/>
- WWTF (Vienna Science and Technology Fund), website Digital Humanism (2020 call), <https://www.wwtf.at/funding/programmes/ict/index.php?lang=EN#ICT20>
- Zuboff, S. (2019). The Age of Surveillance Capitalism. The Fight for a Human Future at the New Frontier of Power, London