

Technological Sovereignty: Democratising Technology and Innovation

Green Paper v2

15 November 2018

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Based on contributions and a first round of feedback on v1, published here, by DiEM25 members.

This is the second draft (v2) of the Green Paper of DiEM25's pillar "Technological Sovereignty".

After publishing the first draft, we received dozens elements of input, some general, some more detailed.

Based on that feedback, we now issue a second version of the Green Paper.

As with the first version, we ask you to provide feedback and comments, so we can use the collective intelligence of the DiEM25 membership.

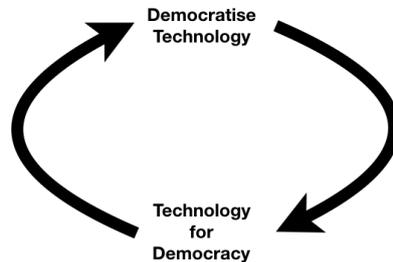
Please help us by following these guidelines for giving feedback:

- Concrete and constructive feedback helps us the most. Please ALWAYS refer to the number(s) of the paragraph(s) that you give feedback on, otherwise your comment may get lost.
- To foster the dialogue within our movement, please use the forum to give your feedback: <https://discuss.diem25.org/t/green-paper-2nd-draft-feedback-forum/16760>
- If you do not want to use the forum you can also send us an email to techpillar@diem25.org
- Feedback that arrives before 31 December 2018 has the best chance of helping us - but we will look in the forum and the email account after that date.

The Paper consists of the following parts:

- An introduction, laying out some general points, and introducing the most important policy points;
- Chapters 1 – 3: the main body of the paper, detailing what we believe are the issues, and how to deal with them on a short to long term basis;
- Chapter 4 with next steps and action points to reach a final draft; and
- Annex 1: the general principles underpinning the DiEM25 approach.

Introduction: For democracy to be possible, technology must be democratized.



0.1 Technology is essential

1) Our civilisation heavily depends on technology. Technology provides us with the possibility to feed more than 7.5 billion people, to prevent or cure sickness, to multiply social and cultural interaction and creation, to care for those in need, to learn and teach more, to provide safety and security and to improve the quality of life and increase happiness in many ways for all.

2) But it is only that: a possibility. Not a certainty, and, today, certainly not a reality.

3) DiEM25 is the one political movement that wants to create, shape and drive political debate and democratic process around technology, based on the concept of technological sovereignty.

4) Why? Because, for DiEM25, it is clear that without the introduction of technological sovereignty, through the democratisation of technology, democracy itself is no longer possible.

5) The examples are manifold. We see monopolistic digital platform providers with tremendous powers to shape what we see, who we hear from or how we think, without any democratic accountability for that power. We become subject to automated decision-making, wrongly labeled “artificial intelligence”, functioning as a black box, without any transparency or accountability. We are told about killer robots, we breath new pesticides, we anticipate automation of truck driving, cooking and many other professions. All of which may cause massive disruption.

6) But there's more. We see how the costs of technology's development and its usage are socialized, but the benefits are privatized to a very small group. We see how decisions on the choice of which technological development is prioritized are kept away from transparent and public debate.

7) We see how neo-liberal dogma leads to the financialization of the startup entrepreneurial process (where the financial aspect thereof is considered to be the sole and exclusive expression of its value in society), acting as a parasite on the entrepreneurial spirit while trying to convince people of the absurd notion that the purpose of innovation is to make rich investors richer still.

8) And we are told that we don't have the power to change anything.

9) DiEM25 disagrees. We are convinced that, while technology is essential, technological sovereignty through democratization of technology is an absolute necessity for democracy to be possible.

10) We know innovation can be beneficial to all. We want to end the practice of socializing the costs and privatizing the profits from technological change. Instead we want to foster innovations for the common good. We want to see an inclusive innovation ecosystem where all stakeholders, such as users, employees, citizens, authorities, are equally important. An inclusive system where women and other historically marginalized communities are empowered to actively participate in shaping our common technological future. A system in which society as a whole benefits from the liberated energy of socially responsible and democratically accountable entrepreneurs who are no longer shackled by the financialization of their efforts. We believe in a positive and strong partnership of the public and private sector in creating and sharing knowledge, creativity, research and development, and innovation, to the benefit of the whole of society. And we also see the vast opportunities of commons and cooperative approaches that can be fostered with new technologies.

11) And we believe that Europe can become a beacon of hope if it unites political, social and technological progress. If it fosters a new enlightenment and puts the flourishing of all human beings in the centre of technological change. This could have transformative impact on a global scale.

0.2 The relationship between people and technology

12) Today people are increasingly defined as users or consumers of technology - even as the product itself - rather than citizens. Remember, when the service is free, you're not the user, you're the product.

13) But, as users, consumers or products, people are not empowered. They are not citizens who contribute and have a voice on how technology is shaped, who pays for it, and who benefits from it. They don't get the real benefits of the knowledge, research and development funded by their tax money. They are effectively powerless against the monopolies of the platform technology giants.

14) DiEM25 wants technology to reflect the values and diversity of the society we aspire. Our different genders, ethnicities, capabilities, values and - most important - our dreams, shall be supported by technology. Technology has to be set up in such a way that it liberates and empowers each of us, to be who we can and want to be, and to fulfill the potential of each of us. And it has to be set up to support the necessary ecological and democratic transformations of our societies.

15) That is only possible if we, as sovereign citizens, recapture the ability to make different choices, argue for different values and change the societal processes and powers that shape technologies. We can and shall develop technological citizenship in the 21st century, based on principles such as the commons, the ability of self-organisation and the development of counter-power held by citizens and democratic institutions.

16) Technology has become a central form of power in society. This power ultimately has to belong to the sovereign citizens of a technologized society.

0.3 Technology in DiEM25's Progressive Agenda for Europe

17) DiEM25 believes that, in a technologized world, Europe must occupy an important place of humane and responsible technological progress. Not in competition but in cooperation with others.

18) Europe must use its assets, such as its strong research and innovation landscape, its public traditions, the knowledge of its citizens and its NGOs, its humanistic culture, its diversity and its inventive capabilities. Europe must democratise technologies and innovation, put citizens before companies, sustainability before narrow profit and responsibility before technological feasibility. The alternative is to become overwhelmed by the undemocratic technologies and society models of, among others, Silicon Valley and China.

19) These models favour the few and exploit the many and the living world. They benefit huge corporations who exploit publicly funded technologies, which they aim to optimise, with global reach, for their private profit. In these models the values of a minority shape the technological futures for the vast majority. They are models with contempt for democracy.

20) DiEM25's Progressive Agenda for Europe demands a break with this model, and lays a claim to technological sovereignty. Our European Green New Deal demands green innovation and a common share in the benefits of technological progress. Our European constitutional process will create a new digital public sphere. Transparent government requires transparent technologies. A dignified future for labour demands responsible technologies and a collective share in the benefits of automation. An open society that welcomes refugees and migrants needs to welcome technologies that can take part in human development. A feminist society committed to equality calls for technical solutions by, and for, people of all genders and sexualities. An ecological transition has to stop and

prevent harmful technologies and foster sustainable alternatives. Culture shall be freely accessible, while cultural creation should be respected and rewarded.

21) Last but not least there is also a strong strategic case for Technological Sovereignty. It has recently been argued by avant-garde theorists like Nick Srnicek or Slavoj Žižek that no political movement will succeed without a strategy on how to deal with the changes that digitalisation has brought upon state, society and labour. The objective is to bring progressive movements up to speed to debates that already have been held in corporate think tanks for decades.

0.4 Three interlocking transformations to achieve Technological Sovereignty

22) Within DiEM25, by crowdsourcing our collective knowledge, we have identified at least the following three key ways to achieve Technological Sovereignty. They are set out in much more detail in the following chapters, used on a similar approach. We try to define the issues, and provide short, medium and long term solutions, based on two processes: Regulation and Renewal. Regulation means that, as a society, we take a collective responsibility to shape how technological actors should act or not act. We are not afraid to use the state (at all its levels, from the local authority to the EU) for its appropriate role of regulator, enabling and driving innovation and ensuring that not only costs, but also benefits, are shared across society. In addition, we also aim to include alternative ways of organizing aspects of society such as the principle of the commons.

Renewal means that we need to innovate in the way technology and society interact. And we need to establish and foster the conditions for the respective social innovations and societal transformations.

23) The first way is the establishment of a Digital Commonwealth in Europe. This includes:

- The strengthening of regulations on Data Protection (GDPR) and ePrivacy to limit involuntary data extraction;
- Create the following fundamental principles:
 - o mandatory Platform Interoperability
 - o Portability of Data
 - o Personal Data Storage
 - o a Data Commons;
- Ensuring stronger EU antitrust laws and better enforcement; and
- Introduce the concept of Data Unions.
- Open up and democratize algorithmic Automated Decision Making (formerly known as AI) processes.

24) The second way is for Europe to democratize innovation and ensure that knowledge is shared in such a way as to benefit as many as possible.

This includes:

- Reduce or abolish monopolistic approaches to innovation, in particular around Intellectual Property;

- Ensure that the benefits of investment in innovation are available to as many as possible, and reverse the trend of socializing costs while privatizing benefits of innovation.

25) Third, Europe must update its democracy and democratic processes by building new ways of public debate and decision-making, based on the capabilities offered by new technologies.

This includes:

- Open up and democratize the processes on how technological development and innovation is funded, prioritized and decided
- Use technology to enable democratization of decision-making processes at every level, especially to foster economic democracy.

26) The democratisation of technology is possible, and necessary. Technologies are never inevitable. They are always based on choices, values and societal processes and powers. We can make different choices, argue for different values and change the societal processes and powers that shape technologies. Technologies that, in return, shape society, and us.

Chapter 1: Data as part of the Digital Commonwealth in the 21st century

1.1 What are the issues?

1.1.1 Platform monopolies

27) Digital technologies are at the heart of the ongoing technological transformation our societies are living through. Since the spread of Internet technologies from the 1990ies onwards, our lives have been enriched with a growing amount of digital technologies and devices, our ways of communication have been changing and our modes of coordination have been subject to vast transformations.

28) The digital transformation entails many positive aspects and opportunities to improve people's lives. Our access to knowledge is growing, it is easier to communicate and connect with others, and novel creative spaces have opened up. The digital economy has created many new products and services and connected the world more strongly. However, this transformation also has ambivalent and negative effects. The communication revolution creates overwhelming complexity, the spread of misinformation and collective nervousness. The digital economy is automating jobs and consolidating monopolistic structures.

29) Many of these negative aspects, however, depend less on digital technologies as such, but rather more on the ways in which they are used and governed, i.e. the societal structures and contexts of these technologies. Neoliberal capitalism has created the surveillance capitalism and its platform monopolists that form technological empires with illegitimate power over the lives of billions of people. The underlying economic structures, worldviews and cultures – which have gone global – use their user's attention as the product to be sold to the highest bidders. The data that is extracted and privatised is used to constantly improve the technologies of manipulation to change individual and collective behaviour. These systems sell our freedom to destroy it. For Silicon Valley people are not citizens with rights, virtue and dignity but consumers to be manipulated by marketing and data points to be tracked and sold as commodities. Vast digital infrastructures and datasets have been built and privatised in the hands of a tiny and largely unaccountable economic elite. These very datasets are then used to shape and train automated systems that are being offered back to us „as-a-service“. Work that formerly has been executed by both experts and low-skilled-workers is now done by users and prosumers who create valuable data that is constantly fed back into the system.

1.1.2 Data collection, algorithms and AI, or “Automated Decision Making”

30) The problem is not limited to the platform monopolists, but also by the state and other actors who collect and use data.

31) This includes all aspects of algorithmic automated decision making (often mislabeled as “Artificial Intelligence”). In order to be clear, this paper uses the term “Automated Decision Making” (ADM) instead of “Artificial Intelligence” (“AI”), because the use of this concept helps much better to clearly set out the issue: how are those automated decisions made? And who decides how they are made? We see today how the expansion of information technology has not been accompanied by expanded democratic control, resulting in a massive concentration of power and surveillance capabilities in a few hands, and little accountability or oversight by the public.

32) Artificial intelligence is, today, often neither artificial nor intelligent.

1.1.3 Need for a new paradigm

33) It is time for a new paradigm of the digital economy. A paradigm through which we establish new forms of ownership and governance of data and digital technologies, guided by democratic principles. A paradigm that unleashes the power of data and digital technologies for the common good and that helps to usher in an innovative, democratic, socially just and ecological transformation of our societies and economies. Moving towards such a digital commonwealth in which we will collectively benefit from the digital transformation will help us create a mixed and democratic economy. It will help us gain more democratic rights and to become free and sovereign in our technological choices, as individuals and societies.

34) The term Digital Capitalism can't be taken serious enough. Two-Sided Markets or the so-called Platform Economy are disrupting the working environment to an extent that may easily be greater than the vast changes that the industrial revolution brought to society. And we'll have to deal with the changes that automation will unleash: Self-driving trucks - to mention an often-cited example - may have the potential to render the work of millions of truck drivers - and employees related to trucking activity - useless. Automated decision systems are already handling service tasks such as basic medical advices, online help desks and automated journalism.

35) The value of data is increasing. In 2016 the European Commission estimated that by 2020 the value of European citizens' personal data will reach €1 trillion in the European market alone. This represents 8 per cent of the total union GDP. Data can be turned into any number of Artificial Intelligence/Automated Decision Making (AI/ADM) or cognitive services, some of which will generate new sources of revenue. Data contributes to the excessive market dominance of a handful of companies. The use of personal data as a commodity has amplified in scale and complexity, leaving regulators struggling to catch up.

36) Dealing with these phenomena requires progressive economic policies (taxation, anti-trust measures, universal citizens dividend) as well as an elaborate analysis on how big data is exploited as a raw material to facilitate these changes.

37) The market dominance of a handful of platform businesses relies on two core principles - the network effect and the lock-in effect.

The network effect is quite simple: the more people use a certain platform the more valuable it becomes for everyone. The lock-in effect is also well known to people using e.g. social network platforms: the more you integrate the service in your daily life the more dependent you become on the service.

38) One of the key concepts to achieve this huge market dominance is the extraction of big data from the growing user base. The data is being analysed, processed, re-packaged and sold. It is being used to train algorithms and to create a huge information asymmetry that reinforces the effects mentioned above. With every click and every interaction users are adding more raw material into the mix. Every person who uses digital services is creating a valuable economic and social resource in the form of personal data. Network and Lock-In effects and their precursors need to be moderated to enable a more and fair competition.

39) Data collection has always carried a dual risk: inclusion in certain datasets can render citizens in general, and members of marginalized groups in particular, vulnerable to being targeted for certain harms - but exclusion from datasets can lead to other harms in turn. As a non-technical example, consider the decision to identify oneself as a member of an ethnic minority on a government census. Not identifying one's ethnicity can lead to the risk of exclusion: perhaps if members of one's ethnic group in the relevant district are undercounted, crucial social services, such as linguistic and cultural support, will not be provided at sufficient levels to meet the community's needs. On the other hand, including data on one's ethnic identity brings with it the risk of being targeted by the state or an affiliated malicious actor, on which point history provides many tragic accounts of the possible consequences.

40) How does information technology change data collection today? Mostly by making it easier than ever to collect, store, and process data at unprecedented variety and scale, thus amplifying this dual risk in both directions. To illustrate this variety, here's a partial list of the different kinds of data whose collection is facilitated by digital technology:

- Personal data, e.g. what you might enter into a form (name, age, sex, race, address, nationality...)
- Biometric data, e.g. what you might use to unlock a smartphone (face, retinal scan, fingerprint...)
- Personally authored content, e.g. what you might post on social media or send to a friend (text, audio, video...)
- Behavioral data, e.g. how you interact with a device or website (GPS location, sites visited, time spent on news feeds, clicks on ads, grip on steering wheel...)
- Behavioral biometric data, e.g. device interactions that identify you personally (speed of typing, direction of mouse movements...)
- Second-order inferred data, namely predicting a data attribute you did not provide (e.g. age or race) based on other data about you (e.g. name or location).

41) As digital data collection extends to more and more arenas of life - our online communication and media consumption, "smart" devices in our homes and workplaces, CCTV cameras on our streets, automotive computer systems in our cars, and on and on - it becomes increasingly important that we, as citizens, know who collects what data about us for which purpose, and retain the choice to withhold our data at will; this transparency is needed to achieve meaningful accountability for automated decision making, and build public trust that our data will not be used to exploit us. In cases where this trust cannot be established, we must regulate data usage.

1.2 Proposed solutions

1.2.1 Short-term measures: Strengthen Data Protection and ePrivacy Regulation

42) The basic step to tackle the predominance of platform monopolists is to regulate the use of involuntary extracted data, the strengthening of user rights and the creation and empowerment of Data Protection Authorities to enforce these rights. The General Data Purpose Regulation (GDPR) and the upcoming ePrivacy Regulation are steps into the right direction but certainly not enough. The e-Privacy Regulation is supposed to protect confidentiality of communications and personal data (such as location data, browsing data, device usage patterns, mobile app use, search queries etc.) in the electronic communication sector by complementing matters covered in a general way by the General Data Protection Regulation (GDPR). The e-Privacy Regulation is meant to be the main framework to protect online communication and is currently being "watered down" by the European Council. The current text will need thorough work to ensure that the privacy, data protection and other fundamental rights in the EU are fully respected.

43) In practice it is of utmost importance to maintain and strengthen the following data protection / regulation measures:

- 44) Higher level of Privacy Protection By Design and By Default instead of „Privacy By Option“. This explicitly includes the obligation for hardware and software providers to implement default settings that protect end users' devices against any unauthorised access to or storage of information on their devices.
- 45) Strong requirements for user consent. The request for user consent should be as user-friendly as possible and only for permissions that are crucial to perform the main task(s) of a software/app/smart device. Instead of being asked for general consent upon installation the user shall be asked to Opt-In for every task that the software/app/smart device wishes to perform on their device. Forced consent mechanisms and „All-Or-Nothing“-Consent (like e.g. Cookie Walls) shall be prohibited.
- 46) No „legitimate interest“ exception to use communication data (email, voice mail, chat, videoconference, VoIP) without explicit user consent.

- 47) Protect users against third party tracking.
- 48) All Types of Location Data should be given a high level of protection as they carry a high privacy risk. Technical solutions based on local computation in the end-user's device should always be preferred over centralised tracking.
- 49) Metadata processed for security and Quality of Service (QoS) purposes shall be anonymised as soon as possible and the storage of metadata shall be limited to what is strictly necessary for the purpose.
- 50) Data Protection Authorities will be in charge of monitoring the application of the proposed regulations.
- 51) Restrict state-enabled corporate surveillance of the public.

52) The designated goal here is to create an environment in which potential costs of non-compliance with EU regulations start to outweigh the monetisation value of the involuntary extracted data itself. In such an environment companies would focus more on how they can use people's data only when required, rather than hoarding and monopolising it in the hope of future use.

1.2.2 Mid-term measures

53) Enforce Platform Interoperability

A huge amount of data is extracted on social media platforms that exploit the lock-in effect to obtain an „all-or-nothing“-consent from their users. To re-open the monopolised social network ecosystem for competition we demand to legally enforceable cross-platform-interoperability for communication across different platforms. The task here is to level the playing field for competition. As long as it is more efficient to make user surrender their data and give them very limited control over it, the strong market concentration will always led to a handful of digital platforms being able to gather, aggregate and analyse large amount of data. Mandatory Cross-Platform-Interoperability can be e.g. achieved by standard basic services with end-to-end-encryption where different services may attach to.

54) We largely embrace the concept of „social media as a public utility“. This includes a large public funding for the development of open and decentralised alternatives that embrace:

- Interoperability
- Data Portability as described in Article 20 of the GDPR (the right to convert and transfer user data/media to a secure location or to import it to another service)
- Mandatory anonymised, authenticated and end-to-end encrypted digital communication
- privacy-preserving identity authentication tools

Again: Cross-platform-interoperability needs to be a legal requirement to enable fair competition.

55) Enforcement of Regulation.

To ensure a strong and effective enforcement of data protection, privacy regulation and consumer protection we demand more personnel for National Data Protection Authorities and the creation of a European Data Protection Authority.

56) Stronger Antitrust/Cartel Laws

To enable fair competition in the realm of Platform Capitalism and the Digital Single Market we need stronger EU Competition Laws. Regulative bodies like antitrust divisions and cartel authorities shall ask for strong data protection compliance upon corporate mergers. Also they are in need of additional criteria to evaluate the abuse/violation of market power such as:

- network effects and lock-in effects
- access to data relevant for competition

An effective valuation of market power has to keep the whole economic ecosystem in check.

57) Key regulative measures of these agencies will include to:

- Split up platform monopolies and other businesses that have become too large
- Share (anonymised) datasets of big player with public entities - to create public/municipal data commons.
- Collect fines to fund/facilitate alternative developments
- Collect fines to strengthen Data Protection Authorities
- Use fines to fuel a Universal Basic Dividend

58) (Digital) Taxation

To further limit the negative impact of platform monopolies and automatisations it is necessary to close the tax gap. We have to fight the tax evasion of platform companies and create a digital tax on the collection/processing of personal data.

59) With regard to the use of algorithms in everyday life, we demand that the following rights be recognized:

- 60) Right of interaction: Citizens have the right to know when they are or aren't interacting with an algorithm.
- 61) When an individual receives an outcome from a service that is based wholly or partially on algorithmic computation, this should be clearly and transparently communicated.
- 62) Automated decision making systems are not allowed to "conceal" themselves in interactions with unknowing citizens.
- 63) On the other side, businesses are not allowed to "conceal" human data processing to users who believe themselves to be interacting with an algorithm
- 64) Right of equal treatment: Citizens have the right to be free from algorithmic discrimination.
- 65) If algorithmic services provide outputs of consistently lower value or quality to or about users coming from historically marginalized backgrounds, this constitutes discrimination.

- 66) Users should be able to compare outputs based on different demographic profiles (e.g. "would this search result be the same if I were to change the gender or age the algorithm has inferred for me?").

67) Introduce Data Unions

A key characteristic of platform monopolies is the structural power imbalance between the platform and its users. This is very clearly illustrated in the bargaining power of its users in respect of the terms and conditions: there is no such bargaining power. A user must simply accept, or be banned from a platform that may be essential for certain aspects of their lives (in which such platforms resemble public utilities). The proposed solution is the collectivization of users through the creation and legal recognition of Data Unions: representative organizations of users of digital platforms, who will be granted power to do such things like negotiation of terms and conditions (and, why not, a system of monetary or other compensation for users for the contributions they make to the platform), collective legal action on behalf of users, and other ways to structurally redress the balance between a monopoly platform and its users.

1.2.3 Long-term measures

68) Alternative Business Models: Leveling the playing field for platform co-operatives

Effective taxation and regulation will pave the way for the development of platform co-operatives - models of economic exchange which have social and ethical objectives. Platform co-operatives offer a feasible model to encourage the sharing of data, embedding co-ownership, transparency and democratic participation over how data is managed and used. Models could include the sharing of accommodation, transport or the exchange of labour and self-generated energy.

69) A way for platform co-operatives to compete with the vast datasets of huge corporations is to participate in publicly available data commons.

70) Alternative Digital Infrastructure: towards Personal Data Storages and Data Commons

The value of data relies on their aggregation. Data becomes more valuable when they are shared. Data, as a common good, can become more helpful for co-operation and collective use than it would be as a private commodity with very little value when isolated. Data Commons are a way to aggregate citizens data in a safe, anonymised, transparent and democratically controlled way. Data Commons includes a combination of personal data, city open data, public research data and private data (e.g. obtained through enhanced antitrust measures proposed above).

71) The main challenge for Data Commons is to create a legal and economic framework in which people want to share their data - and its potential economic value - in a controlled way for the common good. This needs to be backed up by technological solutions that enable the enforcement of rules for data sharing and prevent the misuse of data.

72) The long-term vision here is the concept of shared personal data as a common resource for innovation. Users would host their private data on a Personal Data Storage - a secure location of their choice - and have full control on how to share data and interact with online services. A Personal Data Storage may be - for instance - a decentralised, anonymous and encrypted peer-to-peer-network that takes user data and splits it up into encrypted chunks, which get processed by hundreds of other computers across the network. The crucial task here is that no raw data is being revealed to third parties.

73) Users could then choose amongst a vast variety of high-level as well as granular data sharing presets ("Smart Rules"). Smart Rules will enable users to express certain conditions under which their data may or may not be used - e.g. an event/issue related use of data (e.g. health condition data is only revealed in case of emergency) or licensed based sharing of data for public benefits (only the city / a platform co-operative may use anonymised datasets). There are already promising approaches on how to perform safe queries on such a Personal Data Storage without revealing data but rather to perform code in a safe environment and returning the desired information.

74) The following measures will allow us to build an intelligent, accountable future, based on algorithmic emancipation:

- 75) Public audits: the EU shall develop an independent public institution to conduct algorithmic audits in a transparent manner, with resources allocated proportional to estimated scope of a) affected citizens and b) potential harms. One of the possible applications should be specifically aimed at labor intelligence, with the following mandate : It shall explore and prototype intelligent systems with various axes of worker control (i.e. ranging from 'being designed along worker-friendly principles' to 'responsive to real-time worker input' to 'explicitly includes cooperative decision mechanisms for key decisions').
 - It shall partner with existing organizations, in particular cooperatives (platform and otherwise), to apply and test systems under real-world conditions.
 - It shall assess outcomes with particular attention to humanistic goals, quality of life, and worker-centered perspectives, emphasizing the dignity and autonomy of workers.
- It shall require particular attention to barriers faced by marginalized workers and workers from traditionally excluded backgrounds
- 76) Opt-Out. An "algorithmic opt-out" rule shall be established: for any algorithmic service, a user can choose to receive an outcome with a "default" profile (i.e. with the user's personal/demographic attributes removed from calculation).

77) Public Funding will be key for the development of new technological solutions and appropriate licensing models but regulation shall pave the way for private capital to flow in that direction as well.

78) Initially such technical options may only be used by a small group of frontrunners – people who care about privacy and a more social digital economy - but once the technology becomes more user-friendly their usage will increase. Regulations - as outlined above - will make personal data hoarding far more expensive than the creation and development of new privacy compliant technology.

Chapter 2. Free knowledge for democratic innovation - the role of Intellectual Property and education

2.1. What are the issues?

79) Intellectual Property (IP) is a system of government-created and enforced exclusive rights (legally created monopolies) on certain aspects of creativity and innovation. They include e.g. patents, copyright, trademarks, trade secrets, database rights, and other similar rights.

80) There are two standard justifications for IP. Recognition and reward. The reward justification for IP consists of the argument that it protects the creator or innovator, by providing them a monopoly that is limited in time and scope, so they can benefit from the ability to recover their investment. After a time, the monopoly lapses, and the invention or creation becomes part of the public domain - i.e. the classical freedom of enterprise, where everything that is not forbidden is allowed, regains its normal place in the market. The recognition justification consists of the argument that IP recognizes creators and inventors, and their contribution to society.

81) There are a number of problems with IP today.

82) First, there is the continued expansion of the monopoly rights. Copyrights, originally 18 years long, now last at least until 70 years after the death of the last contributing author (and for Disney a bit longer). Patents used to be for narrow, technical applications ("downstream" aspects of technology), but now apply ever more to "upstream" aspects of technology methods (i.e. ideas), protocols, discoveries (e.g. in the field of biology), software, and many other aspects that used to be non-patentable. In addition, the standards for "novelty" are sometimes laughable. To give a classic example, in Australia, after a patent law reform, someone managed to obtain a patent on the novel invention of the "wheel". Furthermore, new IP rights are invented on a continuous basis: examples are database rights, trade secrets, performers rights and the new secondary copyright for publishers in the draft Copyright Directive.

83) The public domain is under continuous attack from privateers.

84) Second, the link between the creator/innovator and the IP right is no longer functional. The full transferability of IP rights has the practical effect of allowing hoarding of monopoly rights to the place in the economic value chain where they produce the least benefit: with marketers and distributors. The actual creators/innovators typically get little to no benefit from or recognition for their contributions.

85) The consequences are seriously problematic. For example, while public money provides for most R&D in developing new drugs, we see that the R&D budget of large pharmaceutical companies is a fraction of their marketing budgets, and most of their R&D budget is spent on research to "me-too" patents:

patents on slightly different versions of drugs that already exist, in order to artificially extend their monopoly position (and pricing). It is a classical example of socializing the cost and risk of developing new drugs, while privatizing the benefits. The same is true for other innovations and research at universities and other research centres funded with public money. Far too often, the results of such publicly funded research is privatized, often in opaque and non-transparent ways, through the creation and transfer of IP rights to privately held spin-offs.

86) Third, IP rights have a number of negative effects on the economy and society. The rent they extract generates huge transfers of money to a limited number of corporate monopoly holders and their shareholders. This leads to a very regressive income distribution and significantly adds to economic inequality.

People who work pay rent to people who hold government-created monopolies on the proceeds of that work and get rent as unearned income purely as unproductive rights holders.

87) IP rights, today, seem to significantly slow down innovation. They allow large established businesses to use evergrowing monopoly rights to block access to their market to newcomers or competitors. Initiatives like the draft Copyright Directive allow copyright to be used as a way to censor content, reducing ever more the freedoms that the Internet was supposed to give us.

88) In the discussion on the draft EU Copyright Directive, the monopoly holders of content (the entertainment industry) are fighting with the monopoly holders of the tech industry. But who defends the interests of consumers, citizens and creative people?

89) In addition, in many countries IP monopolies actually benefit from tax exemptions or preferential treatment, allowing large multinationals to shift their profits, and benefit from tax forum shopping.

2.2 Short-term measures

90) Reversing the tax treatment of IP is the easiest immediate step to take. This means that any preferential tax treatment of royalties or other income (rent) deriving from IP, such as lower tax rates or higher exemptions on such income, must immediately be withdrawn. They should be replaced by the opposite: income from IP (rent) must be taxed preferably at higher rates, and more progressively, than income from selling actual goods or services.

91) In addition, the draft EU Copyright Directive must be fundamentally reviewed, in order to obtain much more balanced rights of users, re-users, creators and innovators. A European "fair use" concept must be created, with broad applications, and based on the fundamental freedom of speech.

92) With immediate effect, public authorities must switch, where possible, to using Free and Open Source software.

93) Any patent on software functionality may only be awarded subject to full disclosure of all source code related thereto.

94) Public funding of Free and Open Source software development programmes can be envisaged.

95) Introduce a general principle that any IP that belongs to a legal entity that goes bankrupt, is liquidated or otherwise ceases to function, is released into the public domain. Equally, any IP ceases to be valid on the death of the inventor/creator.

2.3 Mid- and long-term measures

2.3.1 Break the cycle of "socializing costs, privatizing benefits"

96) Knowledge, R&D and innovation that are funded by public money should remain "common".

97) In practical terms, this means that content created by public funds, such as scientific research, should be, by default, available under systems like the most permissive creative commons licenses.

98) Any technical development, including software code, that is funded by public money should be made available under Free and Open Software licenses. (note : DiEM25 does not have any a priori preference for any category or set of licenses. We are aware that there is a whole ecosystem of software and creative commons licenses, and, depending on context and the area, the choice of the appropriate license will have to be made. We do not believe in a "one size fits all" approach in this context.)

99) This has several benefits: it provides for independence from non-EU based suppliers, it increases the security and stability of the software and it breaks the de fact monopoly of many technical platform providers.

100) While exceptions can be possible under strict circumstances, any such exceptions must be accompanied by a practical way for the public investment to share in the proceeds of any monopoly granted. An example could be that any spin-off created to monetize the result of publicly funded research, has to grant, on incorporation, 20% of its shares as non-voting shares to the authorities that funded the research.

2.3.2 Break the cycle of IP monopolies encroaching on the public good

101) Introduce a fundamental "Right to Repair": the buyer of a product or service has the right to repair any aspect thereof (or have it repaired for them) and IP rights cannot be used as a means to block such Right to Repair. The Right to Repair includes the right to alter the technical standard in which something is made or captured. This means that if you buy something in one technical standard, you have the automatic right to convert it into another technical standard.

102) Introduce the principle of Open Standards. Technical standards must be documented so that interoperability is ensured, and they may not be subject to IP monopolies.

103) Reduce maximalist copyright tendencies: harmonize exceptions to copyright, introduce a "fair use" concept with broad application, based on freedom of speech. Force collecting societies to provide full transparency on the rights they claim to represent, the cost they charge, and how much they pay to the right holders.

104) Reverse the burden of proof in copyright: unless something can be shown to be clearly under copyright, it must be in the public domain.

105) Reform the Berne Convention, and make copyright subject to registration, and payment of a fee that increases with time.

106) Ban the concept of IP rights on anything invented or created by machines.

107) Open a debate on the patent system: should it be abolished, or should it be reformed so that it can fulfill its original ambition: reward inventors, and share the knowledge of their inventions throughout society.

108) Declare any information "found in nature" to be in the public domain. Biological information carriers such as DNA or RNA must be classified as "Open Content" languages, and not subject to any IP right.

2.3.3 Break the cycle of hoarding monopoly rights by distributors and marketers

109) Limit the enforcement of IP rights so that it benefits the actual inventor/creator, not their assignees/licencees when they do not contribute economic value. This will increase the inventor/creator's recognition, and ensure that they actually benefit from the IP monopoly that government creates for them.

110) Abolish any tax incentives to create, transfer or collect IP rights.

111) Create a special tax on the rental income of existing IP rights as a contributory funding for the Universal Basic Dividend as proposed in the European New Deal.

112) Make it much easier and cheaper to disable a patent when it does not cover something that is actually novel.

2.4 Education and Technology

2.4.1 What are the issues?

113) Knowledge is power. If we want to democratize technology, and start the debate around how society determines which technologies are developed, which

are supported, how they are regulated and whether some should be banned, we need to ensure that informed debate is a priori possible.

114) Leaving everything to the experts is not a solution. Their expertise always comes with opinions and values attached to it, with a view on society and how it should function, in other words with a political view. Even if they deny it (especially if they deny it), the political views of technical experts should be viewed with normal, democratic skepticism.

115) Decisions are never without value. But in order to be able to judge the values that are applied in decisions on technology, it is often necessary to understand, at least to a certain extent, the technology concerned.

116) Democratic debate assumes "Mündigkeit", and this is where education plays a key role.

117) Education, not just of the young. Also of the elderly, who sometimes are lost with all those new technologies popping up all around them. And of the civil servants who have to devise the administrative framing of the political discussions around technology. How a problem is presented, often within a certain bureaucratic system, is often key to the solutions that are deemed "possible".

118) Finally, we know there are serious issues of gender equality and representation in science and technology, and in the many government, quasi-government and private bodies that take key decisions in this area.

119) So the key issue is: how do we, as a society, promote and ensure the knowledge necessary for a proper democratic debate around technology?

2.4.2 Short-term measures

120) Open up the debate on technological regulation
Introduce a general principle that any EU regulatory process (legislative, administrative or otherwise) that relates to how technology affects society should be fully transparent, not only in relation to the content of what is decided, but also in respect of the process (e.g. meetings with lobbyists, etc).

121) Start a process on how democratic debate on technology can be strengthened. From a "right to understand" a specific technology to understanding how both existing and developing technology is due to affect our society, there is a serious lack of democratized knowledge allowing people to form opinions and engage in democratic debate.

122) Technocracy, as a principle, must be countered by the legitimate demand of technological sovereignty in a democratic system.

123) DiEM25 proposes that we start taking the necessary steps to enable this essential correction of our current technocratic, black-box approach to technology.

2.4.3 Mid- and long-term measures

2.4.3.1 Modify education curricula to include principles of knowledge towards technological sovereignty

124) Education systems and curricula should be updated to ensure that education allows for students to obtain "Mündigkeit" on technology matters.

125) This means not only teaching about the basic principles underpinning technology as such (a minimum of STEM for every student), but also explaining the relationship between technology and society, e.g. by pointing out alternative systems such as the commons and other economic models of technological development and management.

126) It is clear, in this respect, that our education systems should reflect, and educate, much more on the crucial role of technology in society, and the concept of Technological Sovereignty. Approaches such as MOOCs (Massive Open Online Courses) can play a crucial role in this respect, providing a publicly available repository of knowledge and understanding.

2.4.3.2 From open standards to technology that can be understood

127) The principles of open standards and the Right to Repair lead us to a possible "right to understand". It should be investigated whether it can be made mandatory for owners of technology to provide sufficient information to the public so that the general principles of how their technology works can be understood by people with sufficient training in the relevant area.

128) Of course, there would be justified concerns around safety and security, but, as we know from the real life experience of open source software, it is typically proprietary (and secret) technology that presents the highest risks to security, vulnerability to hacking and abuse of its flaws.

2.4.3.3 Technology for everyone

129) The democratic debate around technology should not be limited to the initiated. Use of technology and its consequences on society should not be the prerogative of technocrats, and the debate around technology should be open to all.

130) Public authorities should invest in order to ensure that the debate on how technology is regulated is not done in backrooms full of lobbyists of the interested industry, but by all stakeholders, and provide sufficient information and transparency on the process to ensure that proper debate is possible.

Initiatives for technology assessment and public participation in science and technology need to be strengthened and in some cases made mandatory.

131) In addition, it should be reviewed whether other stakeholders (consumers, the public at large, public authorities) should have observation functions or guaranteed representation in the decision making bodies (board of management) of companies that make technological decisions with a significant impact on society (just like in some countries, governments are entitled to appoint observers to the boards of financial institutions under certain conditions).

132) There is a growing sphere of organisations that foster public and open uses of technology. Europe has hundreds of maker spaces, FabLabs, museums and educational institutions that experiment with technology and knowledge oriented towards commons and society. New ways to support such projects should be found.

Chapter 3. Democratising innovation and the economy

3.1 What are the issues?

133) Every technological development is the result of choices. Choices made by governments, researchers, investors, consumers, manufacturers, distributors, users and many others. No technology is god-given or given by the "invisible hand of the market", and no technology is neutral: it is always value-laden. The way we fund, adopt, use and regulate technology, or not, reflects society's choice of its values and priorities. However, decisions in research and innovation currently reflect the worldviews and interests of technocratic researchers, policy-makers and above all venture capitalists that want to take research "to the market", i.e. want to maximise their profits.

134) To every technological option there are always alternatives – including non-technological forms of change and problem solving. We must establish the necessary democratic instruments and institutions capable of addressing the complexities of inclusive 21st century technologies. How do we define the problems that technologies should solve? How do we govern the risks and ambivalences of technologies? How do we make sure that their benefits are shared amongst the many?

135) An agenda to democratise technologies must address the fundamental structures that shape and govern technologies. To democratise Europe we need to also transform the societal, political and economic systems that innovate, shape, regulate and make use of technologies. How can these become more democratic and inclusive? How can we democratise the innovation processes that shape decisions about our future?

3.2 First approach : Democratise Innovation Funding

136) DiEM25's European Green New Deal proposes a Green Investment - led Recovery and setting up a new agency for managing and funding Europe's Green Transition and Green Energy Union. These measures make use of the risk-taking, mission-oriented funding powers of public institutions and put idle financial wealth to socially useful purpose by boosting a transition into a greener economy that works for the many.

137) The European Union is already a major funder and decision-making body that shapes the research and innovations that affect our lives. In the ongoing program "Horizon 2020" the EU has been spending 80 billion € to fund research and innovation in the years 2014 to 2020. The following program "Horizon Europe" entails 100 billion € for research and innovation funding in the years 2021 to 2027.

138) While the programs are proposed by the European Commission and debated in the European Council and the European Parliament, the individual funding decisions are taken in a technocratic manner by Brussels bureaucrats, lobbyists and scientific experts. It gets even worse when we take the investment

decisions by venture capitalists into account. They have a vast grip over the start-ups and entrepreneurs that make creative use of new technology and they are a narrow group in society, shaping investments based on the narrow pursuit of maximum profit.

139) We need to build alternative and democratic forms of funding research and innovation. Shaping the future of technologies right from the start in a democratic manner. We have to put citizens in charge of the decisions that shape technology: research and innovation need to become accountable to citizens and their needs and expectations.

3.2.1 Short-term measure: Open up the EU's innovation funding to increase public value

140) The EU's research and innovation funding has a major deficit: It is premised on a "high-tech for growth" strategy, directly playing the melody of big industry and a "technology first, society second" symphony.

141) This needs to change. The EU's funding needs to be opened up to different purposes. We need to fund social and cultural innovation in concert with technological innovation. Different forms of creativity and transformation need to be combined to move into a brighter future. Furthermore, the possible group of recipients of funding needs to be enlarged. EU funding for research and innovation must be more easily attainable for civil society organisations, non-profit technology projects, cooperatives and others with a clear mission of green and social change. We need to fund purpose before profit from public money.

142) Furthermore, the returns to research and innovation funding should value their dependence on public life and public institutions, e.g. universities, and the collaboration and collective creativity that made them possible. Ten per cent of the ownership of marketised products that were innovated with EU funding should contribute to the fund for the universal basic dividend. Thus giving back to society and balancing in the returns on new technology.

3.2.2 Mid-term proposal: Participatory budgeting platform for research and innovation

143) This digital platform will be a 21st century institution that democratises the funding of research and innovation, giving citizens and civil society a stronger say through participatory budgeting on a transnational level. It democratises the public research and innovation funding mission of the European Union.

144) Democratise funding: citizens crowd funding

The platform needs to contain a crowd funding system that allows European citizens to allocate public money, e.g. from the EU's "Horizon Europe", through their decisions on the platform. The projects apply with their proposals and a sum of money that would allow them to start the work. As in crowdfunding, if enough citizens allocate public money to a proposed project it is successful and gets money from the fund. A significant proportion of public funds for research and innovation needs to be put into this platform to give citizens a voice.

145) Democratise agenda setting: citizens' needs crowdsourcing
Innovation starts with problems that should be solved. Who defines the problems is a major issue in every innovation journey. In a democratic society citizens should define the problems that innovations should help to solve. Therefore, the platform should also enable citizens to identify problems to be addressed through research and innovation. Problems would be freely submitted, then democratically ranked on the platform. Researchers and innovators can then apply with proposals targeting specific problems. The mission-oriented research and innovation funding by the EU needs to be defined at its core by citizens.

3.2 Second approach: Economic Democracy

146) The problem of decision-making in research and innovation extends beyond funding agencies and scientists. Most of the decisions on innovations are taken within the economic sphere by capitalists. The Big Tech companies of the world are commanding the largest planned economies in history – not only their monopolies but also their use of digital technologies to organise their economic processes work outside of a market as we know it. This certainly is a grave threat to democracy and fair competition.

147) To democratise research and innovation we also need to find ways to democratise the economy and to foster more decentralised economic arrangements, collective decision-making and structures for shared responsibilities. In short, we need to democratise economic decision making. DiEM25's labour pillar addresses the need for workers participation in companies.

148) With the help of digital systems, new ways of organising businesses, innovation processes and collaboration, and collective ownership become possible. We need to tap into these and help more a more democratic economy and more democratic technologies to emerge.

Digital technologies can help to create new and more democratic organisational forms for economic activity and for governing infrastructures. Very promising ideas and developments are ongoing in the movement for platform cooperativism where the aim is to make workers, users and other stakeholders the owners of platforms that coordinate economic activities, e.g. taxi drivers owning and operating their own digital platform instead of working under dire conditions for a monopolistic digital platform.

149) Digital technologies are already being used to coordinate and to govern economic processes. This hints at a big opportunity to shape economic systems in the 21st century. What if we take these technological capabilities and use them radically differently than their current masters: to shape economies that foster social justice and help to keep our production and consumption within planetary boundaries? What if with the technologies of an Internet of things and Automated Decision Making processes ("Artificial Intelligence") we could also build coordination mechanisms that are democratically controlled (see also the

proposal on “labor intelligence” in chapter 1) and move certain economic activities and uses of infrastructures beyond the market? How could ideas such as that of an “economy for the common good” be implemented in such systems?

Chapter 4. Next steps and open issues

4.1 Open issues - other technologies

150) This Pillar focuses very heavily on information technology, data, digitization, algorithms. Yet, there are many other technologies that affect our daily lives. To mention just a couple:

- Pharmaceuticals
- Medicine (from hardware to knowledge)
- Biotechnology (a vast area of technology with potentially enormous impact on daily lives)
- New materials
- Energy, from generation to distribution to storage
- Space and aviation
- Defense & military (drones, killer machines)
- CRISPR
- Recycling
- Internet of Things
- VR/AR
- Cybersecurity and encryption
- ...

151) The editors of this paper are painfully aware of this. While our crowdsourcing methodology has great benefits, we also noticed that the input and feedback we have received has been primarily focused on the digital realm and its implications.

152) This partly reflects the preferences of the members of DiEM25 who have provided us with their contributions, but also the fact that a) digital technologies seem to be at the forefront of the public debate today; and b) “everything becomes software” – we see that even in the area’s not covered, the impact of information technology is prevalent: it could be argued for example, that the principles we discuss could also apply to the information aspect of biotechnology, thereby providing useful insights into how policy should be shaped in these areas.

153) Generally speaking however, we believe that chapters 2 and 3 do provide a first answer to the justified criticism that we omit large parts of technology in detail.

154) In addition, we provide in Annex 1 a first attempt at defining more general principles that could be the basis of any policy towards any technology. In that respect, more feedback from our members would be very welcome.

4.2 Open issues – details of policy

155) We have received feedback on v1 that it was a) not detailed enough, and b) too detailed. It is, at this point in time, an insolvable conundrum. We have decided to try and strike the right balance between general principles and

specific proposals. We assume that, depending on the viewpoint of the DiEM25 readership, we have gotten that balance not quite perfect. To be as transparent as possible: our goal has been to write a paper that would withstand a reasonable test of time – it should still be relevant in 5 years time. Given the speed of technological development, that is not an easy thing to do. Please provide us feedback on how we are doing in trying to achieve that balance.

4.3 Next steps - process

156) This is the second version of the paper. It will be submitted to all DiEM25 members, with an invitation to provide feedback and comments. The proposed end date for that is currently 31 December 2018. After that, a third, and finally revised version, will be edited and proposed for an all member vote to be adopted as part of the Progressive Agenda for Europe.

157) When you give us your feedback on any of the paragraphs and ideas in this paper, please provide the paragraph number to make it easy on us. Please also provide us with further ideas where necessary. Don't hesitate to point out gaps or omissions. When you provide us with policy proposals, please also try to strike the balance between general and detail – philosophical statements tend to be less usable (unless you can spot a huge philosophical mistake or omission), but we also won't put in specific details of draft legislation on a topic. That is for a later stage in DiEM25's development as a movement.

Annex 1: DiEM25 guiding principles on Technology Policy

1. Technology serves humanity, not the other way around.

What does that mean?

Technological development is not a goal in itself. Technology exists to serve human progress. When technology harms humanity, it should be regulated, restricted, or even banned. And all aspects of humanity, such as welfare, health, ease of use, values, and social relationships of all humans have to be taken into account.

DiEM25 firmly supports human rights in the face of technology – humans, all humans, come first, and technology second.

2. Technology can be awesome.

What does that mean?

Technological development can be a formidable force for good. Technology is a key contributor to our civilization's ability to provide health, welfare, social interaction, freedom, safety and happiness. Technology allows for the increases in productivity enabling human progress.

DiEM25 firmly supports sound and positive technological development that benefits mankind, and rejects Luddite anti-technological thinking.

3. There is always a choice.

What does that mean?

Every technological development is the result of choices. Choices made by governments, investors, consumers, manufacturers, distributors and many others.

No technology is god-given or invisible hand-given. No technology is unavoidable or un-opposable.

DiEM25 believes that, as a society, we have the duty to be aware of the fact that we make choices on technology. Choices on technical standards. On interoperability. On ownership and use of technology. On control and regulation of technology.

Those choices, and the debate around them, must become visible to the public eye, and exposed on the public platform.

DiEM25 firmly supports democracy and rejects technocracy.

4. There is no such thing as a free lunch

What does that mean?

Everything comes at a cost. Also technology. There are at least three inherent costs of technology.

The first cost is that every technology requires initial investment. When that investment comes from the state or another collective, it must be recognized and rewarded.

The second cost is that, by selecting or benefiting one technology over another, someone always loses out. It is a hidden cost, paid by the beneficiaries of the technology we choose not to develop.

The third is the cost related to creating and using a technology. From pollution to traffic victims, many people pay a heavy price for technology.

DiEM25 wants society to recognize the costs of technology to society, in addition to its benefits. Then, both costs and benefits need to be properly allocated and/or compensated.

5. Value is in sharing

What does that mean?

Technology is the result of value creation, and, in turn, enables the creation of more value. But value does not stand by itself. Value exists in relation to other things, and to people. Artificial boundaries that block or slow down the creative sharing of technology damage society.

The more value and technology are shared; the more they can create value in return. By sharing technology and knowledge, society ensures that much more value is created than by “protecting” it.

DiEM25 firmly supports sharing technology, and rejects monopolies or rent seeking.

6. There is no natural distribution of the proceeds of technology

What does that mean?

The “invisible hand” is a dogma, and it does not actually exist. The proceeds of technology originate from the whole of society – no inventor is an island.

Sharing the proceeds of technology across society is a matter of essential fairness. This is because non-regulated systems are structurally not capable to provide a fair and just distribution of the proceeds of technology.

Therefore, we must establish rules on how the proceeds of technological process benefit all different parts of society. That is a quintessential democratic process: the clash of different interest groups must be done openly, through debate, with enforceable rules of engagement.

DiEM25 strongly believes that the decision on allocation of the proceeds of technological development must be openly and democratically discussed.

DiEM25 firmly rejects the dogma of the invisible hand.

7. We stand on the shoulders of giants

What does that mean?

Technology does not fall from the sky. For tens of thousands of years, humans have made incremental progress in developing technology. It is the result of collaboration and co-operation between many. The knowledge handed down from our ancestors is absolutely necessary for us to build on it.

And just like we borrowed that knowledge from our ancestors, we need to pass it on to the next generations.

DiEM25 rejects artificial boundaries around knowledge, and wants to ensure that continued progress remains possible through the sharing of both old and new knowledge.

8. No Frankenstein - principle

What does that mean?

Our society is becoming ever more complex, as is our technology. 50 years ago, a well-trained engineer could understand, and repair, a lot of technology. That is no longer the case. With hyper-specialization comes hyper-mutual dependency. Sometimes we don't understand fully the technology we create.

Therefore, the myth of the sole genius solving a fundamental problem in his (never, by the way, "her") basement is no longer useful – quite the opposite.

The ever increased specialization and complexity of technology makes it necessary for our society to open up as much information as possible about how things work – so we are able to understand what goes wrong when something goes wrong. As it inevitably will.

DiEM25 rejects the Frankenstein myth as a workable basis for developing and maintaining knowledge and innovation. An ever more complex and specialized society and technology demands as much open knowledge and communication as possible.

9. Technology reflects our values

What does that mean?

Technology is never value-free. The way we fund, adopt, use and regulate technology, or not, reflects society's choice of its values and priorities. E.g. we currently accept that thousands of children are killed every year through society's incoherent approach to the use of transportation technology. That is a reflection of our society's priorities and values.

We must be more aware of how choices around technology must be rooted in values, and openly discuss and decide on them in a democratic way. The agenda setting of the debate around technology and values should be open, and not set by the technology industry itself.

DiEM25 strongly supports open and healthy discussions on the values that are reflected through our choices around technology, and firmly rejects the notion of value-free technology. Negative values such as corruption, fraud or privilege are not acceptable, and technology may not be used to defend or strengthen them.

10. Technology solves technical problems, not human ones

What does that mean?

Technological messianism is not the right approach. Technology is a tool that can help to solve technical problems. But it is humans who must direct how technology is used, and its purpose must be to solve human problems.

Justice, equality, fairness, or the lack thereof, will not be solved by technology alone. Without human and moral guidance technology has as much opportunity to make problems worse rather than better. Already, we see how prejudice and bias can be strengthened through technology, making technology part of the problem, rather than the solution.

In the end, technology is and remains a tool. And we must choose how to use it.

DiEM25 believes that technology must be used as a tool to address problems of human society, and firmly rejects technological messianism.