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# Towards a European AI & Society Ecosystem

## Why we need it and how to empower it to shape Europe's way on AI

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# Executive Summary

Artificial Intelligence (AI) has emerged as a key technology that has gripped the attention of governments around the globe. The European Commission has made AI leadership a top priority. While seeking to strengthen research and commercial deployment of AI, Europe has also embraced the role of a global regulator of technology, and is currently the only region where a regulatory agenda on AI rooted in democratic values – as opposed than purely market or strategic terms – can be credibly formulated. And given the size of the EU's internal market, this can be done with a reasonable potential for global impact. However, there is a gap between Europe's lofty ambitions and its actual institutional capacity for research, analysis and policy development to define and shape the European way on AI guided by societal values and the public interest. Currently the debate is mostly driven by industry, where most resources and capacity for technical research are located. European civil society organizations that study and address the social, political and ethical challenges of AI are not sufficiently consulted and struggle to have an impact on the policy debate. Thus, the EU's regulatory ambition faces a serious problem: If Europe puts societal interests and values at the center of its approach towards AI, it requires robust engagement and relationships between governments and many diverse actors from civil society. Otherwise any claims regarding human-centric and trustworthy AI would come to nothing.

Therefore, EU policy-making capacity must be supported by a broader ecosystem of stakeholders and experts especially from civil society. This AI & Society Ecosystem, a subset of a broader AI Ecosystem that also includes industry actors, is essential in informing policy-making on AI, as well as holding the government to its self-proclaimed standard of promoting AI in the interest of society at large. We propose the ecosystem perspective, originating from biology and already applied in management and innovation studies (also with regard to AI). It captures the need for diversity of actors and expertise, directs the attention to synergies and connections, and puts the focus on the capacity to produce good outcomes over time. We argue that such a holistic perspective is urgently needed if the EU wants to fulfil its ambitions regarding trustworthy AI. The report aims to draw attention to the role of government actors and foundations in strengthening the AI & Society Ecosystem.

The report identifies ten core functions, or areas of expertise, that an AI & Society Ecosystem needs to be able to perform – ten areas of expertise where the ecosystem can contribute meaningfully to the policy debate: Policy, technology, investigation, and watchdog expertise; Expertise in strategic litigation, and in building public interest use cases of AI; Campaign and outreach, and research expertise; Expertise in promoting AI literacy and education; and sector-specific expertise. In a fully flourishing ecosystem these functions need to be connected in order to complement each other and benefit from each other.

The core ingredients needed for a strong AI & Society Ecosystem already exist: Europe can build on strengths like a strong tradition of civil society expertise and advocacy, and has a diverse field of digital rights organizations that are building AI expertise. It has strong public research institutions and academia, and a diverse media system that can engage a wider public in a debate around AI. Furthermore, policy-makers have started to acknowledge the role of civil society for the development of AI, and we see new funding opportunities from foundations and governments that prioritize the intersection of AI and society.

There are also clear weaknesses and challenges that the Ecosystem has to overcome: Many organizations lack the resources to build the necessary capacity, and there is little access to independent funding. Fragmentation across Europe lowers the visibility and impact of individual actors. We see a lack of coordination between civil society organizations weakening the the AI & Society Ecosystem as a whole. In policy-making there is a lack of real multi-stakeholder engagement and civil society actors often do not have sufficient access to the relevant processes. Furthermore, the lack of transparency on where and how AI systems are being used put additional burden on civil society actors engaging in independent research, policy and advocacy work.

Governments and foundations play a strong role for the development of a strong and impactful AI & Society Ecosystem in Europe. They provide not only important sources of funding on which AI & Society organizations depend. They are also themselves important actors within that ecosystem, and hence have other types of non-monetary support to offer. Policy-makers can, for example, lower barriers to participation and engagement for civil society. They can also create new resources for civil society, e.g. by encouraging NGOs to participate in government funded research or by designing grants especially with small organizations in mind. Foundations shape the ecosystem through broader support including aspects such as providing training and professional development. Furthermore, foundations are in the position

to act as convener and to build bridges between different actors that are necessary in a healthy ecosystem. They are also needed to fill funding gaps for functions within the ecosystem, especially where government funding is hard or impossible to obtain. Overall, in order to strengthen the ecosystem, two approaches come into focus: managing relationships and managing resources.

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# Introduction

Artificial Intelligence (AI) has gripped the attention of governments around the globe as a multi-purpose technology with strong societal implications. While there has been a lot of reporting on AI development and deployment in China and the United States, dozens of other countries around the globe have released national AI strategies.[1] Many more are in the process of developing strategic plans or have at least recognized the importance of AI to their national interests.

As a general purpose technology, AI can be used across many domains in very different contexts both in the public and the private sector. There is little doubt that the economic impact of AI will be substantial. The numbers estimated by global business consultancies regarding the impact of AI across different sectors of the industry are enormous – for example McKinsey estimates the potential contribution of AI to the global economy by 2030 at 13 trillion USD[2] – but should be taken with a grain of salt. But there is broad consensus that AI has huge economic potential. However, the impact of AI on society will be equally significant. There is great potential in using AI to improve transportation, health care or education. There is also potential for great harm. Human lives will be at risk if autonomous cars malfunction or AI driven medical assistants recommend the wrong treatment[3]. Examples of racial, ethnic or gender biases of AI systems – whether used to make decisions about hiring or predictions about creditworthiness – have already received a lot of public attention.

Thus, if AI is not just to be a good business case but also to serve society at large, its development and deployment needs to be decided with society in mind. The potential benefits of AI will only be realized if we can trust that AI systems function according to our broader societal interests, put human and public interests at the center, and follow our values and laws. Given what is at stake, we cannot leave the development and deployment of AI to tech companies and the marketplace alone. We need governments to promote

1 Dutton, Tim, 'An Overview of National AI Strategies', Medium, 28 June 2018, https://medium.com/politics-ai/an-overview-of-national-ai-strategies-2a70ec6edfd; Future of Life Institute, 'National and International AI Strategies', https://futureoflife.org/national-international-ai-strategies/?cn-reloaded=1.

2 Bughin, Jacques, Seong, Jeongmin, Manyika, James, Chui, Michael, and Raoul Joshi, 'Notes from the AI Frontiers. Modeling the Impact of AI on the World Economy', McKinsey&Company Discussion Paper, September 2018, https://mck.co/2vJtgo5.

3 Ross, Casey, and Ike Swetlitz, 'IBM's Watson supercomputer recommended 'unsafe and incorrect' cancer treatments, internal documents show', Statnews, 25 July 2018, https://www.statnews.com/2018/07/25/ibm-watson-recommended-unsafe-incorrect-treatments/.

the beneficial use of AI technology, identify real and potential harms, and develop rules and policies that strike the right balance between technological innovation and the obligation of governments to protect citizens against harm and discrimination.

**The EU needs to become a global leader for AI governance**

Governing AI is crucial to ensure that its development and deployment are aligned with our (European) values and societal interests. While many look to Silicon Valley or increasingly to China to catch the latest trends and technological advances, all eyes are on the European Union concerning the question of where global leadership on AI governance will appear.

The United States is widely seen as the global leader in AI – both in terms of academic output and commercial applications.[4] There are also strong NGOs and interdisciplinary research programs that study potential harms and social risks associated with the technology.[5] However, given the political tides in Washington D.C. and the policy priorities of the Trump administration, the United States is currently unable and unwilling to shape global norms and regulate AI.[6] China aspires to global leadership in AI but its use of AI for social control, surveillance and censorship clash with democratic principles. Simply copying and pasting one of these models into the European context would be incompatible with European culture, values, laws and social contexts.

This makes Europe currently the only region where a regulatory agenda on AI rooted in democratic values can be established and – given the size of the EU's internal market – and have a reasonable potential for global impact. Europe has generally embraced the role as a global regulator of technology.[7] For many EU policy makers, the GDPR serves as a model, demonstrating the EU's ability to set global standards in the tech sector. There is a strong

4 Castro, Daniel, McLaughlin, Michael, and Eline Chivot, 'Who is Winning the AI Race: China, the EU or the United States?', Center for Data Innovation, 19 August 2019, https://www.datainnovation.org/2019/08/who-is-winning-the-ai-race-china-the-eu-or-the-united-states/.

5 For example the AI Now Institute, Electronic Privacy Information Center (EPIC) or American Civil Liberties Union to name a few.

6 The Trump Administration favours a 'light-touch' approach on AI. See Kwan, Campbell, 'US government proposes a 'light-touch' to developing AI regulation', ZedNet, 9 January 2020, https://www.zdnet.com/article/us-government-proposes-a-light-touch-to-developing-ai-regulation/.

7 Scott, Mark, 'Want to regulate Big Tech? Sorry, Europe beat you to it', Politico, 4 November 2019, https://www.politico.eu/article/regulate-tech-europe-tax-competition-privacy/.

sentiment in Brussels that this success could be replicated in the AI debate. The new president of the EU Commission, Ursula von der Leyen, has named AI regulation a top priority.[8] In February 2020 the new European Commission presented its ideas on how AI could be regulated in the White Paper "On AI – A European Approach to Excellence in Trust". Though not legally binding, the paper forms the basis for legislative proposals to be expected towards the end of the year. Already in 2019 the European Commission's High-Level Expert Group on AI published its much-noticed "Ethics Guidelines on Trustworthy AI" and "Policy and Investment Recommendations on AI" to guide AI policy-making in Europe.

**The gap between ambition and capacity**

There is, however, a gap between Europe's lofty ambitions and its actual institutional capacity for research, analysis and policy development to define and shape the European way on AI guided by societal values and the public interest. Currently the debate is mostly driven by industry, where most resources and capacity for technical research sit.[9] Compared to industry and business consultancies, European civil society organizations struggle to have as strong an impact on the policy debate. In the US in contrast, there are numerous innovative and highly visible initiatives and research programs that seek to study and address the social, political and ethical challenges of AI in the US.

The lack of involvement of civil society poses a serious problem for the EU's regulatory ambition: Any claims of the EU Commission regarding human-centric and trustworthy AI would be for nought if the concept and underlying regulatory agenda are developed for but not with civil society. Any country can publish and publicly support high level ethical principles on AI. The differentiating characteristic of a European approach must be that AI policy making integrates the perspective and expertise of civil society. Developing a regulatory agenda around the development and deployment of AI cannot be achieved with a single law or regulation, and cannot be developed without input from diverse actors of society. It will require a long-term effort.

8 Von der Leyen, Ursula, 'A Union that strives for more. My Agenda for Europe', 2019, https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission_en.pdf

9 The HLEG on AI was for example strongly criticized for the group's industry dominance. See Metzinger, Thomas, 'Ethics washing made in EU', Der Tagesspiegel, 8 April 2019, https://www.tagesspiegel.de/politik/eu-guidelines-ethics-washing-made-in-europe/24195496.html.

This long-term effort must be driven by productive engagements between civil society organizations and policy makers.

Currently the policy debate around human-centric AI in the EU is focused around the work of the EU High Level Expert Group on AI and similar initiatives on the national level. Despite these efforts, the question concerning what kind of conditions must be in place for the EU to succeed with its regulatory ambitions remains unanswered. We put this question at the center of this report.

**The need for an ecosystem approach**

Government officials alone cannot address the complex challenges that the rollout of AI driven technologies will pose. Therefore, we argue that EU policy-making capacity should be supported by a broader ecosystem of stakeholders and experts from academia and especially from civil society.

Civil society can help put new and pressing issues on the agenda, provide the policy process with valuable expert input with diverse perspectives, and conduct independent and critical evaluations of policies in the development and deployment stages. Governments alone face difficult challenges such as: Where should governments draw the line between laissez faire and rule-making? What kinds of risks need to be considered? And what kind of problems in current and future AI technologies need to be factored in? The way these questions can be addressed depends on the level and nature of engagement between governments and such an ecosystem. This engagement can only be productive if governments appreciate the value of such an ecosystem and learn how to effectively integrate its perspectives into analysis, policy development and decision-making processes.

We want to draw particular attention to NGOs and civil society organizations within this policy-making ecosystem as their perspectives are particularly important for the European ambition of developing an AI policy agenda that is driven by ethical values and promoting technological innovation for the broader societal and public interest. That is also why this report does not cover the roles of industry and tech companies although they are, of course, also part of the broader AI policy making ecosystem. Instead we focus on what we call the AI & Society Ecosystem. This AI & Society Ecosystem is supposed to inform policy making on AI, as well as hold the government to its self-proclaimed standard of promoting AI in the interest of society at large. The ecosystem perspective puts the focus on the diversity of actors and expertise. As the development and use of AI can impact different parts of soci-

ety in different ways – both beneficial and harmful – a broad range of expertise is needed to advance policy for trustworthy AI. Additionally, thinking of capacity in terms of an ecosystem puts synergies and connections between actors and sectors in the foreground. In order to regulate for trustworthy AI it is necessary to establish networks of mutual understanding between different actors to share ideas, learn from each other, and in the end to strengthen a culture of AI that serves the public interest.

Pursuing an ecosystem approach means setting priorities such as long-term capacity above simply individual policies. The current debate is too focused on individual initiatives and not enough on asking whether we have the breadth, depth, collaboration and diversity of expertise to be in a position to shape smart policies in the long term. To get to a position to lead on AI, Europe needs to focus on developing the necessary capacity first, including networks of actors that can give meaningful and diverse input to shape not just individual policies, but the whole policy-making process over the long run.
The ecosystem approach also puts a special emphasis on the role of political actors. We cannot afford to have the political level disconnected from relevant research and policy development in academia and civil society. Without the active commitment of national governments and EU institutions to engage more with civil society in this space, the ecosystem approach falls short. Such a commitment requires governments to enable and encourage the engagement between societal actors and policy makers, to support the building of networks between relevant actors, and to provide funding not only for technical research and development and industry initiatives but also for policy work and research on social implications.

Finally, ecosystems do not develop overnight. Building and strengthening an ecosystem requires a long-term strategy. This requires a deeper understanding of the AI & Society Ecosystem, a strong commitment towards engagement as well as the mobilization of funding needed to support a variety of different actors and functions within the ecosystem. Thus, for an ecosystem approach to have a meaningful shot at success, governments and foundations – as important sources of funding and support for civil society actors – need to commit to long-term engagement.

**A note on our use of the term "artificial intelligence" in the context of this report**

AI as a field of research is many decades old.[10] The current debate around AI is based on recent breakthroughs in a specific subfield within AI: machine learning. Availability of huge data sets and advances in computing power have enabled great progress in fields such as image recognition or machine-generated texts. Alongside with the availability of data and computing power, the potency of machine learning – especially deep learning and neural networks – is projected to continue to grow.

There is controversy in the research community on how far specific approaches within AI such as deep learning can take us.[11] We do not intend to take a position in this debate. We also do not want to wade into the debate how artificial (or natural) intelligence should be defined and what does and what does not count as an AI technology. The fact is that the hype around AI has drawn attention to a broad field of intelligent machines – those capable of running symbolic reasoning and automating the decision-making process, but also those capable of running highly sophisticated learning algorithms.Use cases can be quite mundane, like a recommender system behind an e-commerce website trying to predict what kind of products a customer would be interested in buying, or highly consequential, such as prediction of creditworthiness or crime rates in certain geographic areas. Use cases can be both simple decision-trees, or they can be highly complex and arcane. In the debate around AI, highly complex and novel machine learning algorithms get thrown together with simple software solutions that calculate outputs based on clearly defined and programmable rules. But what is beyond question, however, is that – whether an AI is based on an old fashioned expert system or the latest deep learning approach – automated decision making (ADM) is going to further proliferate in our societies, and technological advancement will only accelerate this. This raises the question of how we as a society will deal with the proliferation of ADM systems and their growing technical complexity.

10 Posey, Luke, 'History of AI Research. Essential Papers and Developments in AI', Towards Data Science, 24 October 2019, https://towardsdatascience.com/history-of-ai-research-90a6cc8adc9c.

11 Hao, Karen, 'We analyzed 16.625 papers to figure out where AI is headed next', MIT Technology Review, 25 January 2019, https://www.technologyreview.com/s/612768/we-analyzed-16625-papers-to-figure-out-where-ai-is-headed-next/.

Given that the broader public debate is centered around the term AI, we will use this term in this report as well. However, we are aware of the fuzziness of the term and acknowledge that in the broader debate, AI and ADM often get used interchangeably. For the purposes of this report, we'll do the same. Similarly, various adjectives pop up in the debate of AI and society, like trustworthy, human-centric, responsible, ethical. Again, for the purposes of this report, and we use these principles interchangeably to describe AI that functions according not just to legal requirements but also to our broader societal benefit.

**What we seek to accomplish with this report**

1. **Initiate a conversation about the need for AI capacity in civil society**
   With this report, we argue that in order to develop a European approach to AI and AI governance we need to move beyond individual organizations and instead look at the overall capacity for informing and developing AI policy and governance approaches.
2. **Make the case for an ecosystem perspective**
   The way we propose to get to this big picture perspective is to introduce the ecosystem perspective to Europe's approach to AI. We argue that in order to generate the capacity for shaping AI policy and governance in the long run, we need to focus on strengthening the European AI & Society ecosystem.
3. **Reflect on the role governments and foundations**
   Specifically, we reflect on the critical role that governments and foundations play in strengthening that ecosystem. This role goes beyond funding, and includes aspects like providing training and professional development to civil society actors and amplifying their voices in the policy-making process.
4. **Contribute to a broader discussion on how to position Europe on AI**
   Finally, we aim to contribute to the broader discussion on how Europe should position itself on AI (incl. AI development, AI policy, AI governance) in the global context and how Europe can distinguish itself from China or the United States by committing to the development of and engagement with a rich and diverse AI & Society Ecosystem.

## The Ecosystem Perspective

Though the term originates from biology, the concept of an ecosystem has been gaining relevance in other fields, such as business and innovation management. We believe it is a helpful concept for thinking about Europe's approach to AI as well.[12]

In its original meaning in biological research, an ecosystem encompasses the complexity of living organisms, their physical environment, and all their interrelationships and interactions between sub-systems. They also benefit from diversity - ecosystems with higher diversity tend to be more stable with greater resilience in the face of disruptive events.

It is these two core elements of an ecosystem – the complex interdependencies and interactions on the one hand and the diversity of actors on the other hand – that make the concept very useful for our analysis.

While individual actors in an ecosystem may thrive or wither, as long as the ecosystem is healthy it tends to

- be robust, meaning it retains the capacity to produce outcomes;
- be resilient, in the sense that any actor who might lose importance will be replaced by another;
- be able to adapt to pressures, through means like collaborations and by filling any newly vacated niche by better suited actors.

It is no surprise then, that concept of ecosystems has been widely adopted in business and innovation management research[13], which also recognizes the value of complex, emerging and resilient structures, especially when faced with an emerging set of challenges and opportunities. An ecosystem differs from value- or supply-chain constructs by including multi-dimensional relationships between actors and by focusing on "the evolution of networks of interconnected actors towards new states, rather than emphasizing optimization of the output potential of the current network configuration."[14]

12 Moore, James F., 'Predators and Prey: A New Ecology of Competition', Harvard Business Review, May-June 1993, https://hbr.org/1993/05/predators-and-prey-a-new-ecology-of-competition.

13 For a brief overview, see Autio, Erkko, and Llewellyn D W Thomas, 'Innovation Ecosystems: Implications for Innovation Management', in: Dodgson, Mark, Gann, David M, and Nelson Phillips (eds.), The Oxford Handbook of Innovation Management, Edition 1, Oxford: Oxford University Press, 2014, pp. 204-228, https://www.researchgate.net/publication/282122544_Innovation_Ecosystems_Implications_for_Innovation_Management/link/5603a91f08ae460e2704f055/download.

14 Ibidem, p. 4

In other words, an ecosystem doesn't optimize for a specific output necessarily, but has, in aggregate, a way of evolving as it is a complex system of actors that arrange and rearrange themselves on the way to newer and more optimal configurations.

This evolution towards new states is the premise for the emergence of innovation – the development of novel ideas and approaches to solve new (and old) problems. In plain language this means that innovative ideas develop out of interactions between different types of actors who look at common problems from diverse perspectives – even and especially if the exact nature of these common problems is not yet fully clear.

## Applying the Ecosystem Perspective to AI & Society

In this chapter we apply the ecosystem concept concretely to our thinking about a European approach to AI & Society.

The ecosystem perspective is a powerful lens for thinking about and addressing pressing challenges regarding AI since it allows taking into account the necessary level of complexities. The development, application and governance of AI is embedded in complex economic and social structures. This diversity of actors and their interdependence and interconnectedness are captured most effectively by the concept of ecosystem. We understand the AI & Society Ecosystem as a subset of the broader AI Ecosystem. Our understanding of the AI & Society Ecosystem focuses on non-governmental and not-for-profit organizations (civil society) who analyze the potentials and risks of AI, and are seeking to inform government policies and the broader public discourse. The broader AI Ecosystem, on the other hand, also includes industry. Governments have touchpoints and a role to play across both.

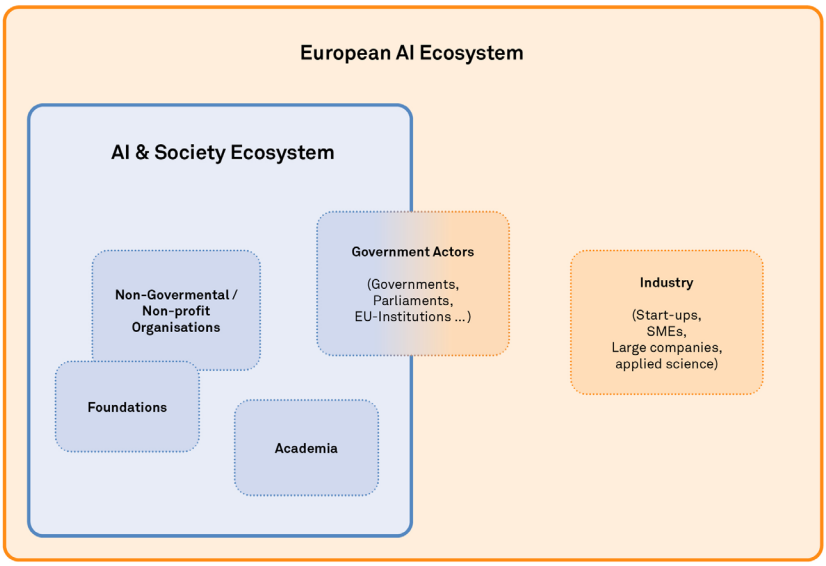


Figure 1: The european AI Ecosystem

**The ecosystem focuses on the capacity to produce outcomes**

Thus, by putting the ecosystem at the center of analysis we put the question of *how a diverse field of interconnected actors can produce innovative solutions to challenges that affect them all* at the center of analysis. Rather than focusing on any single outcome, the ecosystem perspective is holistic in nature and focuses on the capacity to produce good outcomes over time.

We argue that such a holistic perspective, which focuses on the richness and diversity of the ecosystem and its capacity to tackle challenges and to produce good outcomes, is urgently needed if the EU wants to fulfil its ambitions regarding global leadership on AI governance.

Part of the obstacle remains that the exact outlines of the challenges AI will bring about are not yet known. However, this is also precisely why the ecosystem concept is the most promising:[15] "While centralized ecosystem strategies depend on having specific, well-defined problems and solutions (...), adaptive ecosystem strategies are suited for situations where the problem and the solution are uncertain or still being sorted out." Adaptive ecosystems thrive on collaboration and structurally "encourage cross-fertilization." To summarize, we use the metaphor to highlight the combination of the characteristics outlined above as requirements to successfully shape a landscape of actors that has the capacity to deliver better outcomes for a society

15 European Commission, 'Policy and investment recommendations for trustworthy Artificial Intelligence', 26 June 2019, https://ec.europa.eu/digital-single-market/en/news/policy-and-investment-recommendations-trustworthy-artificial-intelligence.

increasingly impacted by AI: An ecosystem that is highly diverse, complex, adaptable and unplannable but one that can be influenced and that offers a foundation of capacity for producing outputs.

**Political will is not enough**

The EU's political ambition to shape the development and application of AI in accordance with democratic values and societal interests can only succeed if the policy agenda is developed in close consultation with relevant stakeholders from civil society and academia.

Without an ecosystem that has the capacity to produce outputs and adapt to fit emerging needs, it does not matter how much political will there is – a European alternative of ethical and responsible AI cannot simply be summoned out of thin air. Government officials can't do it by themselves, and mainly drawing on input from industry is not enough. Developing an approach to a European model of AI that is ethical, responsible and trustworthy requires inputs from a broad range of actors from civil society and academia – in other words, from the AI & Society Ecosystem.

In adaptive ecosystems, it can be difficult to predict all of the required areas of expertise and capabilities. We identified a set of what we call "functions" that the AI & Society Ecosystem needs to be able to perform today. Given that this ecosystem is still nascent, the system and its functions is likely to evolve over the coming years.

Governments, and to a lesser degree foundations, will likely find themselves taking an orchestrating role, helping to identify opportunities, and supporting the various actors in pursuing opportunities together.

## Functions of an AI & Society Ecosystem

We identified a range of *functions* or areas of expertise that the AI & Society Ecosystem needs to be able to perform, and is able to contribute to the policy debate. In a fully flourishing ecosystem these functions need to be connected in order to complement each other and benefit from each other.

These functions serve as analytical categories. They do not refer to specific organizations. Some organizations might be specialized in just one function but most organizations will cover two or more functions that we describe below. A strong ecosystem ideally covers all functions. Organizations that reach across several functions naturally serve as important nodes in the

ecosystem because they connect different communities through a single organization and are thus well positioned to take on the role of interconnectors within the ecosystem.

As the impact of AI will play out differently across various parts of society, a broad range of expertise and perspectives is needed. We have identified the following (non-exhaustive) core functions below as being crucial to a strong AI & Society Ecosystem:

- Policy expertise
- Technical expertise
- Investigative expertise
- Watchdog expertise
- Strategic litigation expertise
- Expertise in building public interest use cases of AI
- Campaign and outreach expertise
- Research expertise
- Expertise in promoting AI literacy & education
- Sector expertise


Figure 2 – Functions of the AI & Society Ecosystem

The following section explores each of these functions and their role in the AI & Society Ecosystem, and gives an example of an organization operating in this function.

### Policy expertise

The way in which the government works is very complex and often quite opaque to outsiders. Policy expertise at its core is about understanding the processes and mechanisms through which policies, laws, and regulations get made, and how to influence these processes. This expertise is particularly difficult to obtain for younger civil society organizations. Commercial interests often hire former government officials in order to have policy expertise and access to government contacts. In contrast, non-profit organizations usually have to build this expertise and the relationships from the ground up. This is particularly challenging for new organizations that have emerged in the AI & Society Ecosystem. Collaboration with organizations that have strong capacity in this field, such as unions or some environmental advocacy groups, can help to transfer this expertise into the ecosystem more broadly.

Besides general policy expertise there is a need to understand specifically how policies, laws and regulations governing AI are made. First, this requires a thorough understanding of AI technology and the contexts in which it is developed and used in order to understand and address potential risks or negative externalities. Second, the field of AI is highly dynamic and its use cases span across all sectors, some more sensitive than others. This might require new approaches and institutions that can adapt and quickly react to new developments. Answering the question *how might existing regulatory mechanisms and frameworks need to evolve to be effective in this fast-moving and complex cross-sector environment* requires that policy expertise is closely linked to technical expertise as well as an understanding of the use cases which drive AI adoption in the market.

An example is European Digital Rights (EDRi), an advocacy group based in Brussels that has an association of civil and human rights organizations from across Europe. They bundle digital rights expertise and focus on issues around policy and digital rights, where they offer policy analysis and seek to influence policy making.[16] Another example is BEUC (Bureau Européen des Unions de Consommateurs), the European Consumer Organization, which acts as an umbrella group for 45 national consumer organizations. BEUC advocates for prioritizing consumer interests in the digital rights field among other themes on the European level, trying to make the European decision-making process more representative.[17]

16 European Digital Rights, https://edri.org/.

17 Bureau Européen des Unions de Consommateurs, http://www.beuc.eu/general/artificial-intelligence.

### Technical expertise

Without a functional understanding of how AI systems work, and what the strengths and limitations of the underlying technologies are, it is inherently impossible to identify and mitigate potential shortcomings and risks. This institutional capacity for understanding how AI applications work, what their limits are, and the ways in which they're likely to fail, is currently lacking across the board, and is a necessary requirement for finding appropriate responses.

A lot of technical expertise is currently located in industry as well as academia. Technical expertise is crucial to understand and develop AI, as well as meaningful AI policy. Hence it is crucial that the AI & Society Ecosystem has access to technical expertise.

A key to a successful European AI & Society Ecosystem is connecting that technical expertise – especially from academia – to non-profit interests and organizations, for example regarding research on building and designing transparency and accountability into AI systems, and on how to explain AI systems and their components. This goes far beyond what the commercial sector does today, and needs a broader input of perspectives as we figure out how and to what degree algorithmic decision making must be made transparent or explainable, as well as how to evaluate and mitigate risks of AI systems while embracing the opportunities they offer.

An example is The Engine Room, which supports organizations with technical expertise around data-driven systems, and especially understanding their potential social impacts.[18] Another prominent example is the Chaos Computer Club (CCC). As Europe's biggest hacker association, the CCC has become the go-to organization in civil society when it comes to technical knowledge and communicating societal implications of tech to a wider audience [19]

### Investigative expertise

The challenge of finding out how AI systems are used, how they are designed, how they function is highly specific to this area as it requires a deep understanding of how AI works combined with a particular toolkit of methodologies for research and investigative approaches.

18 The Engine Room, https://www.theengineroom.org/.

19 Chaos Computer Club, https://www.ccc.de/en/.

Analogous to the complementary roles of investigative journalism and non-governmental watchdogs in other areas like privacy and data protection, here the investigators uncover potential wrongdoings, and thus offer an additional foundation for watchdogs to do their job. As an example from the area of privacy and data protection, consider the recent journalistic exposure[20] of Clearview AI's invasive data collection to train their facial recognition algorithms which can serve as a starting point for further investigations and legal action.

Investigating and exposing misuses, malfunctions, and potential unintended consequences of AI systems, as well as violations of European AI principles in the design and implementation of AI , takes specialized expertise as well as a rigorous understanding of data, technology and regulatory framework. AI systems are part of larger social and organizational contexts. So beyond technical understanding, it is important to understand potential societal impacts of AI and how to identify them in the first place.

Given that most of these systems come from the private sector and their working mechanisms are often obfuscated by legal means (like intellectual property laws), it often takes serious investigative efforts to uncover potential problems. Access to necessary expertise requires a network of experts – often from within those companies – willing to share their knowledge, and it can require whistleblowers sharing critical information about abuse.

Whereas the most prominent examples for investigative tech journalism come from the US, as for instance ProPublica or The Markup, a well-known example for a collaborative effort in algorithmic transparency reporting is the OpenSchufa project from Germany carried out by the Open Knowledge Foundation, AlgorithmWatch, Spiegel Online and a data journalism team of the Bayerischer Rundfunk.[21] In 2019 the Bureau of Investigative Journalism from the UK started the Decision Machines project to shed light on the use of AI in government's decision-making.[22]

20 Hill, Kashmir, 'The Secretive Company That Might End Privacy as We Know It', The New York Times, 10 February 2020, https://www.nytimes.com/2020/01/18/technology/clearview-privacy-facial-recognition.html.

21 OpenSCHUFA, https://openschufa.de/english/.

22 Black, Crofton, and Cansu Safak, 'How is government using big data? The Bureau wants to find out', The Bureau of Investigative Journalism, 8 May 2019, https://www.thebureauinvestigates.com/stories/2019-05-08/algorithms-government-it-systems.

**Watchdog expertise**

Complementary to the investigators as well as governmental oversight bodies, independent (non-governmental) watchdog organizations are needed to research and expose problematic developments and/or deployments of AI systems.

Concretely, these watchdogs should be organizations that monitor the development, deployment or use of AI systems (imagine functional equivalents to the Sunlight Foundation), and be ready to cooperate with governmental organizations and regulatory bodies (equivalent to privacy commissioners, or anti-trust bodies). Building on investigative organizations, media reports, academic research, incoming complaints and proactive monitoring or audits, watchdogs ensure compliance with the current regulatory framework, and identify possible negative societal impacts. This requires both institutional capacity to understand the challenges at hand and the ability to act promptly.

For example, AlgorithmWatch evaluates algorithmic decision making processes that have a social relevance, and seeks to illuminate how they work. By creating inventories of ADM systems and collecting stories of the use of these systems, they help shed light onto the role of ADM systems in society. Journalists, policy makers, and researchers build on their work, giving them agenda setting power as well. Another example is the Polish Panoptykon Foundation, a digital rights organization, engaging in monitoring and research to uncover problematic use of algorithms and to hold government actors accountable, as for instance with the case of a profiling system run by the public employment service for efficient distribution of labour market programs.[23]

**Strategic litigation expertise**

Laws do not mean much unless they are enforced, tested in court, and updated to match changing realities. Court rulings clarify the boundaries of laws and regulations, and force governments to adjust when policy advocacy fails.

As the impacts of emerging technologies transform society, existing laws are often challenged – and need to be challenged. The growing influence of AI systems is no different: In many cases it is simply unclear how rights are

23 Niklas, Jędrzej, Sztandar-Sztanderska, Karolina, and Katarzyna Szymielewicz, 'Profiling the Unemployed in Poland: Social and Political Implications of Algorithmic Decision Making', Fundacja Panoptykon, Warsaw, 2015, https://panoptykon.org/sites/default/files/leadimage-biblioteka/panoptykon_profiling_report_final.pdf.

affected by the use of AI, and what the relationship between the use of AI and citizens' rights looks like. This is where strategic litigation comes in. It is an essential tool in the toolbox of renegotiating and updating our understanding of rights. By testing problematic use cases in court, strategic litigation can help create awareness and develop legal precedents that help us move the debate forward while preserving essential rights.

To challenge infringements of fundamental rights in cases involving AI systems, strategic litigation expertise is needed. There is likely lots of ground to be broken as we move into – and further develop - relatively unexplored areas of law and regulation.

An example is Gesellschaft für Freiheitsrechte (GFF, Society for Civil Rights), a Berlin-based non-profit strategic litigation organization with a focus on protecting privacy and freedom of information. Another example is the Digital Freedom Fund (DFF) that supports other organizations and individuals with their strategic litigation through grants and facilitating skill building and collaboration in the digital rights field.

**Expertise in building public interest use cases of AI**

To operationalize abstract principles and guidelines and make them actionable, concrete public interest use cases for the application of AI are essential. Civil society is in the best and most credible position to help build those public interest use cases, offering alternative narratives to those coming from the private sector..

Consultations around stakeholder and community needs, and developing ideas and prototypes demonstrating how AI can be deployed to advance the common good are part of the toolkit for building public interest use cases. This requires employing a hybrid approach incorporating both top-down and bottom-up perspectives, as well as in-depth experience with participatory processes.

Concretely, this expertise is essential for linking an understanding of technological potential with sector-specific expertise from not primarily a commercial but a public interest perspective. By building (real or plausible hypothetical) use cases, the thinking and debate can be anchored in concrete proposals rather than hype. The more concrete the use cases, the better. This includes a broad range of formats from prototypes to scenario building, from impact assessments and analysis to documentation.

For example, the responsible tech think tank Doteveryone aims at helping business to build technology that supports the public interest, for instance by providing narratives and toolkits to help integrate that public interest perspective into strategic deliberations by both private sector and governments.

**Campaign and outreach expertise**

Significant societal decisions require a broad and well-informed public debate. This needs diverse input from all societal stakeholders so the debate can grow beyond expert circles. This will allow the public to pressure policy makers to make informed decisions about the role of AI in society. A proven way to raise public awareness of opportunities and risks of AI systems and to broaden the conversation beyond expert circles is through campaigns and media reporting.

This requires organizations to be able to bring important questions regarding risks and opportunities of AI systems to the attention of the broader public in an accessible way, and to employ a hybrid approach of top-down and bottom-up initiatives. This campaign and outreach expertise is necessary to bridge between different areas of society and different levels of AI expertise. It requires the skills to explain the complexity of AI systems and their potential impacts, as well as the capability to campaign for support on specific issues that will arise over time.

As an example of a civil society organization with deep campaigning expertise, consider Amnesty International (who we would otherwise list under "sector expertise"). We aren't aware of any AI-specific civil society organization with a similar campaigning and outreach power, but this shows the scale and professionalism necessary to really campaign around AI-specific issues.

**Research expertise**

As AI systems have horizontal effects across all areas of society, we need research and education to reflect this broad impact. Research needs to cover not just technological challenges (see technical expertise) but also how AI systems interact with society at large. Thus, research into AI systems needs to grow way beyond the domains of computer science and engineering, and include much more interdisciplinary approaches involving humanities, social sciences, legal studies, political sciences, and more.

Without this broad understanding, policy makers and the rest of society necessarily will lack the foundational knowledge and understanding to envision appropriate responses. This requires developing a better understanding and practices for the type of research, methodologies and teaching needed to analyze and shape societal impact of AI systems – including and especially their unintended consequences.

Universities are increasingly rolling out education and research programs that put the focus on societal implications of the use of AI. An example is the research group Responsible AI at Umeå University in Sweden, which was established in 2019 with support from the Wallenberg Foundation to study ethical and social aspects of AI.[24] Already in 2013 the Department for Computer Science at the University of Kaiserslautern introduced a degree in Socioinformatics, a program at the intersection of computer science and society.[25]

**Expertise in promoting AI literacy & education**

Related but adjacent to research campaigning and outreach, a thriving AI & Society Ecosystem requires expertise in promoting AI literacy to raise the level of general understanding of AI. A higher level of literacy in this space is an important building block for informed public discourse as well as individual decision making. In other words, AI literacy is a precondition to empowering individuals as well as policy makers and other actors to actively and meaningfully participate in AI & Society debates. As long as the chances and risks associated with AI systems are poorly understood by the broader public, any public debate as well as policy reactions to this debate are inherently problematic.

There are many pathways to increasing AI literacy, but general criteria that need to be met include: disseminating and translating information across disciplinary and organizational boundaries; adjusting curricula at schools and universities; as well as collaborations with campaign & outreach organizations. A promising example is Finland's freely available introductory online class to AI[26], which is being translated into all EU languages with support from the Finnish EU Council Presidency.

24 Umeå University, 'Responsible Artificial Intelligence', https://www.umu.se/en/research/groups/responsible-artificial-intelligence/.

25 Technische Universität Kaiserslautern, Courses of Studies Socioinformatics (B.Sc./M.Sc.), https://www.cs.uni-kl.de/en/studium/studiengaenge/bm-si/.

26 Elements of AI, https://www.elementsofai.com/.

Another example is the Ada Lovelace Institute, which promotes the informed public understanding of the impact of AI and data-driven technologies on different groups in society, analyzes potential impacts, promotes best practices among practitioners, and provides independent expert commentary to inform and support other institutions in their work. In Germany, the Gesellschaft für Informatik together with the Open Knowledge Foundation organized the "Turing-Bus", a mobile educational project to promote knowledge and awareness for questions around AI.[27]

**Sector expertise**

What does AI mean for any specific context in which it might be deployed? Figuring this out requires deep sector-specific expertise.

This is an area where traditional NGOs are particularly well placed to contribute as they begin to articulate what AI might mean for their area of expertise. What might AI mean for international development cooperation? What might it mean for human rights, or sustainability or the workplace? This sector-specific expertise is essential to inform the overall debate, and explain the potentials and frictions that may arise from AI deployment. This expertise will play a key role in shaping AI as it spreads across all areas of society. This is of particular importance in order to further study how different sectors and issue areas are affected by AI, and especially to get traditional sector expertise to understand not only AI's potentially disruptive effects, but also to understand how these sectors can contribute to the overall ecosystem.

Many expert organizations have been developing guidelines around artificial intelligence based on sector-specific expertise and needs, and this unique perspective helps inform the broader debate. The work done by unions from different industries can serve as an example here as they engage on different levels in the debate about how the use of AI will impact their constituencies.[28] But also organizations rooted in social and humanitarian work are starting to contribute to the discussion as for example the European Social Network, the European Disability Forum or the International Committee of the Red Cross.[29]

27 Open Knowledge Foundation Deutschland, 'Turing Bus', https://okfn.de/en/projekte/turing-bus/.

28 See for example the collaboration between the Spanish Workers' Commissions (Comisiones Obreras), European Trade Union Institute for Research and Eticas Foundation (only in spanish), https://perspectiva.ccoo.cat/ccoo-etui-y-fundacion-eticas-colaboran-para-abordar-el-papel-de-los-sindicatos-ante-los-retos-tecnologicos/.

29 European Social Network, 'Working Group on the Digitalisation of Social Services', https://www.esn-eu.org/events/working-group-digitalisation-social-services; European Disability Forum, 'EDF launches the report "Plug and Pray?', 15 May 2019, http://www.edf-feph.org/newsroom/news/edf-launches-report-plug-and-pray.

## Collaboration and competition within the ecosystem

The ecosystem functions we identified are closely interconnected. Effectiveness in one function often draws on expertise and input from another. For any organization in the larger AI & Society Ecosystem, it is a strategic question how they position themselves - especially regarding levels of specialization and the ability to work across functions. Specialization is usually rewarded by existing funding structures. Here we see opportunities for funders to better incentivize bridge-building. It's worth stressing that many organizations in this space do not work strictly within just one of the functional dimensions we identified in the ecosystem, but work across multiple.

For the ecosystem to reach its full potential, we will need 1) all functions to be served by organizations with sufficient capacity; 2) enough organizations to build bridges between different functional dimensions; 3) sufficient cross-country collaborations.

It is important to note that an ecosystem thrives on both collaboration and friendly competition. We see collaboration as crucial, and close collaboration between civil society and policy makers is at the core of our argument. Nonetheless, civil society organizations frequently compete for both attention (of the public and of policy makers) and funding.

Collaborations between organizations and functional dimensions can take many shapes. Obvious types of collaborations, along the lines outlined above, include: watchdogs leaning on investigators in their work; campaigners drawing from researchers; and policy makers building on public interest use cases. It is from these cross-cutting collaborations that we expect significant potential for innovation and impact.

For example, the fellowship model that a number of foundation-funders (Shuttleworth, Mozilla, etc.) have been pursuing seems promising as it creates and strengthens networks across functions, networks, and areas of expertise. Similarly, informal collaborations like the artistic mapping exercise by Kate Crawford (AI Now Institute) and Vladan Joler (University of Novi Sad), The Anatomy of AI[30], offer good starting points to initiate policy debates, and through placement in museums also for engagement with the public. Through museum collaborations it reaches entirely new, non-expert audiences and simultaneously raises the level of awareness of what goes into making an AI system.

30 Joler, Vladan, and Kate Crawford, 'The Anatomy of AI', 2018. https://anatomyof.ai/img/ai-anatomy-map.pdf.

# Strengths and Weaknesses of the AI & Society Ecosystem in Europe

What is the current state of the AI & Society Ecosystem in Europe? We would like to offer a broad analysis of general strengths and weaknesses of the current landscape. This analysis is needed for a better understanding of the state of play and as a basis for the development of recommendations aimed at further growing and strengthening the AI & Society Ecosystem.

## Strengths of the AI & Society Ecosystem in Europe

The AI & Society Ecosystem has a solid foundation on which to build. The core ingredients needed for a strong AI & Society Ecosystem already exist:

**A strong tradition of civil society expertise and advocacy**
First, Europe has a tradition of strong civil society organizations having impact on public discourse and policy making. In many European countries we see a long history of civil society engagement around major societal issues like environment, education, human rights or social inequality. Civil society actors act as advocates for the wider public interest, and there is deep expertise in this tradition of civil society-government interaction that can be built upon. But it needs to be further developed, expanded beyond traditional issue areas and adjusted to the specific challenges of AI.

**A diverse field of digital rights organizations that are building AI expertise**
Besides the important work of organizations in traditional issue areas, there is also a strong group of digital rights groups to build on and expand in Europe. As more and more digital rights organizations are also focusing on how new AI-supported technologies might impact fundamental rights in the EU, they develop extensive expertise relevant to the greater AI discourse. Moreover, a broad range of public interest groups from different thematic backgrounds (e.g. unions, consumer protection organizations) increasingly engage with questions around the impact of AI.

**Strength of public research institutions and the academic field**
There is a lot of expertise located in academia and university research centers all over Europe. In addition to the deep technical expertise among European researchers and research institutes, many in the field increasingly take a strong interest in the wider political and social implications of AI. This is also reflected in a growing field of dedicated professorships with an explicit focus on ethical and societal implications of AI as well as a new wave of research

institutes that specifically explore the impact of AI on society (e.g. WASP Research Group Social and Ethical Artificial Intelligence, TU Kaiserslautern Algorithm Accountability Lab)

**A diverse media system that can engage a wider public in AI debate**
The media has an important role to play when it comes to shaping the AI discourse in the European society. Mainstream media coverage of AI-related topics can raise broader awareness and allow for a more informed public debate, particularly among audiences who wouldn't otherwise interact with digital themes. In Europe, we can rely on strong independent media outlets that have been taking a keen interest in the AI debate, thus making an important contribution in raising broader public awareness of AI and its societal implications.[31]

**Policy makers start to acknowledge the role of civil society in AI**
In light of the broad impact AI will have on society, governments recognize the need to discuss social, ethical and regulatory implications of developing and using AI.[32] The Policy and Investment Recommendations for Trustworthy AI by the European Commission's High-Level Expert Group[33] explicitly acknowledge the role of civil society and call for more funding for assessing social impacts of AI. The emphasis that policy makers put on ethical AI and the need for a distinctive European approach provides a good basis for the deepening of engagement between government and the AI & Society Ecosystem. It is now our challenge to make sure that policy makers actually live up to their ambitious rhetoric.

**New funding opportunities from foundations and governments that prioritize the intersection of AI and society**
Even if there are not many instances yet, we see promising funding opportunities in the field of AI & Society that can serve as an example. Funding initiatives like Volkswagen Stiftung's 'Artificial Intelligence and the Society of the Future' for instance show a targeted effort to support interdisciplinary academic research into the role of AI in society and have provided opportunities for the involvement of civil society actors.[34]

31 See for example Pilkington, Ed, 'Digital dystopia: how algorithms punish the poor', The Guardian, 14 October 2019, https://www.theguardian.com/technology/2019/oct/14/automating-poverty-algorithms-punish-poor.

32 See for example French AI Strategy and German AI Strategy.

33 European Commission, 'Policy and Investment Recommendations for Trustworthy Artificial Intelligence', 26 June 2019, https://ec.europa.eu/digital-single-market/en/news/policy-and-investment-recommendations-trustworthy-artificial-intelligence.

34 AlgorithmWatch, 'Volkswagen Foundation funds new AlgorithmWatch project with planning grant', 1 May 2019, https://algorithmwatch.org/en/planning-grant-volkswagen-stiftung/.

## Weaknesses of the AI & Society Ecosystem

Apart from the important strengths we are also confronted with serious weaknesses of the ecosystem and obstacles to its future development.

**Lack of resources to build capacity**
We see many different organizations active across the AI & Society Ecosystem, but there are serious questions regarding the adequacy of their resources and their capacity. Apart from financial support, many organizations lack resources and skills for professional communications (story telling) and agenda setting, the capacity for effective outreach to policy makers (advocacy), the ability to carry out research and develop innovative solutions (R&D), and frequently even such basic resources such as a travel budget. There is also often a technical skills gap where organizations lack staff with the necessary technical understanding and the ability to translate technical issues into a more accessible language. Finally, it is unclear to what extent the existing organizations can secure sustainable funding to ensure sustainable engagement. We see a significant gap between the ambition organizations have to steer the public debate and policy development on one hand, and their capacities and resources on the other.

**Access to independent funding**
It is not just pure access to resources or funding that matters. Equally important is the question of where the resources come from. Organizations in this space might be supported by vastly different types of funding including charitable foundations, government grants, or industry partnerships. Finding the right model for the right context is essential. Industry partnerships are widely considered more problematic than other types of funding.[35] As long as civil society cannot rely on stable, independent funding, there is a real risk of civil society being co-opted and of civil society organizations damaging their reputations. If the majority of critical research and capacity building came from industry, it would undermine the whole ecosystem's credibility.

**Fragmentation across Europe lowers visibility and impact**
Fragmentation across member states poses an inherent challenge for the AI & Society Ecosystem. Many organizations within the AI & Society field are oriented towards developments in their home country and engage first and foremost on the national level. Barriers for collaboration include language, different backgrounds and experiences with the use of digital technologies

35 Williams, Oscar, 'How Big Tech funds the debate on AI ethics', New Statesman, 6 June 2019, https://www.newstatesman.com/science-tech/technology/2019/06/how-big-tech-funds-debate-ai-ethics.

and AI in particular, and a focus on different issues. While civil society engagement on the country level is absolutely essential to ensure that AI is developed and deployed in a socially desirable way, many organizations are not well established beyond national boundaries, lack international visibility and hence do not collaborate much across national boundaries. In contrast, some US institutions like AI Now have high visibility even across Europe. Without pan-European actors it remains difficult to drive the European discourse and have visibility and impact on the EU level.

**Lack of coordination between organizations**
Although there are already a lot of different civil society actors active in the field, working on the same issues and pursuing similar goals, organizations often remain in silos. The lack of communication and collaboration carries the risk of overlapping or duplicated activities. Also, incentivized by the attention to and funding for AI, too many organizations attach themselves to AI as a topic without necessarily addressing what the added value of their activities could be. More coordination would help organizations to not constantly reinvent the wheel and hence to work more effectively. However, cooperation remains difficult especially in the light of limited funds and the constant competition for resources. As organizations need to attract funders, self-marketing is often important to get attention but at the same time it may pose an obstacle to collaboration.

**Lack of interaction between digital rights groups and traditional civil society organizations**
To date, only limited interaction exists especially between digital rights groups and more traditional civil society organizations in the field of AI, though cooperation between these two worlds could create important synergies. While digital rights groups are best positioned to understand the technology, sector-specific organizations have not only well-established policy impact channels but also broader grassroots ties and strong sector expertise.

**Lack of real multi-stakeholder engagement among policy makers**
There is a severe lack of diversity and multi-stakeholder engagement in policy-making circles. The political debate, especially in Brussels, is dominated by big tech companies as, for instance, the case of the EU High Level Expert Group has shown. The HLEG consists mostly of industry actors. For civil society actors in turn, it is extremely challenging to participate in this part of the policy process. It is the current working mechanisms in particular that favour private sector actors who have the necessary in-house staff and expertise available to participate in the working groups, committees, etc. and who of-

ten have direct access to decision makers at top levels. As a result, they are in the position to steer the discussions and push their agenda. Currently, the most powerful industry actors can influence the policy debate disproportionately. Without a level playing field, civil society actors will continue to lack access and any meaningful policy impact.

**Lack of transparency about the use of AI systems**
The AI & Society Ecosystem is confronted with a disproportionate burden due to a lack of transparency around the use of AI. Civil society actors first have to spend time and resources to investigate and to uncover where and how AI is used, even in the public sector. As there is no adequate publicly available information about the use of AI, civil society actors are essentially unable to effectively accomplish their watchdog function and to analyze societal implications of the use of AI. While civil society actors regularly have to grapple with too little information in this regard, they have to fight with an abundance of information to fact-check in other areas: Companies, industrial associations and consulting firms frequently misrepresent the capacities and limitations of AI-powered technologies. Hence, as an additional burden civil society organizations have to cut through the hype and engage in AI myth busting in order to establish a sound and "down to earth" discussion on AI.

**US examples of AI (mis)use dominate the debate**
The European discourse on AI is often distracted by a number of prevailing high-profile US-centric examples for the risks and misuse of AI that do not necessarily apply as well to the European regulatory and cultural context.[36] But they still influence the debate, steer it away from European reality and hamper the development of ideas and adequate policy proposals for the use of AI in Europe. Much more analysis of what is going on at the local, national and EU levels is needed to balance the US-dominated discourse and to anchor policy debates in regionally relevant real-world evidence.

The analysis of strengths and weaknesses shows that important conditions for the development of a strong AI & Society Ecosystem are already in place. Most notably a long tradition of civil society engagement with government and the acknowledgement by government officials that AI development – in order to gain the trust of people – needs to be anchored in broader societal interests and values. The current ecosystem, however, is not strong enough to deliver on these ambitious goals. The AI & Society Ecosystem in Europe

36 The report 'Automating Society. Taking Stock of Automated-Decision Making' by AlgorithmWatch in cooperation with the Bertelsmann Stiftung (January 2019) constitutes a valuable exception here, see https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/001-148_AW_EU-ADMreport_2801_2.pdf.

lacks resources, capacity, space for collaboration, and access to decision-making processes. Both governments and foundations, however, are well placed to address these challenges as we argue further below.

## The Role of Governments and Foundations

Both governments and foundations play a strong role for the development, strength, and impact of the AI & Society Ecosystem in Europe. Governments and foundations provide important sources of funding on which AI & Society organizations depend. But besides providing funding, both governments and foundations are also themselves important actors within the AI & Society Ecosystem, and hence have other types of non-monetary support to offer.

Governments shape the development, deployment, and regulation of AI on many different levels ranging from publicly funded research programs to the drafting and enforcement of regulatory frameworks. Thus the impact and influence of the AI & Society Ecosystem on how we use AI greatly depends on its relationship with government.

Foundations are especially needed to fill funding gaps for functions within the ecosystem, especially where government funding is hard or impossible to obtain, such as strategic litigation. However, foundations shape the ecosystem not only through their financial investments but also through broader support and non-financial resources they can provide to their grantees. One crucial role for foundations is to build connections between different actors in the ecosystem that they might fund, and to lend additional legitimacy to their grantees' work.

Below, we discuss the role of governments and foundations in the AI & Society Ecosystem in more detail. As identified above, ecosystems are characterized by collaboration and coordination between a diverse set of actors. An ecosystem's effectiveness is therefore closely linked to the quality of those interactions and the capacities of the actors involved. Thus, in order to strengthen the ecosystem, two approaches come into focus: managing relationships and managing resources. To summarize the analysis, we organize our recommendations for governments and foundations aiming to support the AI & Society Ecosystem into these two broad categories.

## Role of Governments

In many ways governments are central to the AI & Society Ecosystem. Only governments can make enforceable rules regarding the implementation and the limitations of deployment of AI technologies. Governments also provide significant sources for funding – especially related to research on AI. The German government alone has committed to spending 3,5 billion Euro on AI in the next five years.

The technical expertise function within the ecosystem is largely funded by public resources through general support for public universities and academic research programs. In addition, governments also provide funding for specific research projects with large grant programs. The Horizon 2020 program of the EU Commission has a volume of about 80 billion Euro to support research and science in the EU.[37] Regarding AI the EU Commission has announced that it plans to spend at least 7 billion Euro on AI related research and innovation programs for the period of 2021 to 2027.[38]

A significant amount of funding for policy expertise also comes from government sources, for example through research support for academic work on legal, regulatory or policy implications linked to AI, or funding for specific reports on these questions commissioned by ministries or public agencies.

Governments shape the research agenda and the development of new initiatives and priorities through general financial support. Government research programs and funding policies can have a huge impact on the AI & Society Ecosystem – but relevance for commercial and industrial applications is usually the top priority.

Governments play an important role in supporting general education and public awareness building around AI. Governments have the ability to reach people at a large scale, especially through the public education system. But the development of new curricula, whether in schools or at universities, tends to require immense effort and often takes lots of time to catch up. This leaves a lot of space for organizations that can act more quickly. Small initiatives by NGOs or foundations can be very useful to test educational ma-

37 European Commission, 'Factsheet: Horizon 2020 budget', 25 November 2013, https://ec.europa.eu/research/horizon2020/pdf/press/fact_sheet_on_horizon2020_budget.pdf.

38 European Commission, 'Artificial Intelligence', 7 December 2018, https://ec.europa.eu/commission/news/artificial-intelligence-2018-dec-07_en.

terials and to develop new innovative approaches on how to promote deeper understanding of AI among the broader public.[39]

Finally, governments shape the development and deployment of AI through their own use of the technology. Governments are among the largest and most important customers for AI driven solutions. They can set standards and promote technological innovation through their procurement policies. And the use of AI by governments raises important social and ethical questions. This makes procurement another important area of engagement between governments and the AI & Society Ecosystem.

In the following section we explore more deeply the relationship between government and the AI & Society Ecosystem in these three areas:

- research funding and strategic investment;
- policy making and regulation;
- public procurement.

We organize the discussion around these three domains for analytical clarity, but in practice they are, and should be considered, closely linked and should follow an overarching agenda. As we argued above, this agenda needs to include investments into the strengthening of the AI & Society Ecosystem in order to build the capacity necessary for the development of trustworthy and human-centric AI. It is this overarching goal that guides our analysis of these three areas of government activities regarding AI.

**Research funding and strategic investments**

Government has always played a central role in the development and deployment of new technologies. Acknowledging the important role of governments in driving technological innovation, economist Mariana Mazzucato has drafted recommendations on mission-oriented research and innovation for the EU Commission.[40] Mazzucato argues that such missions should be guided by societal relevance and she emphasizes the importance of engaging with civil society in the process of designing and executing missions. Implementation of Mazzucato's recommendations in the field of AI would highlight the relevance of a strong AI & Society Ecosystem. Mazzucato's mission-oriented research and innovation approach both depends on such an

39 For example the free online course Elements of AI, developed by the University of Helsinki, https://course.elementsofai.com/.

40 European Commission, Mazzucato, Mariana, 'Mission-Oriented Research & Innovation in the European Union', 2018, https://ec.europa.eu/info/sites/info/files/mazzucato_report_2018.pdf.

ecosystem and – through opening the development of the research agenda beyond government agencies – puts in place the conditions for the further development and growth of such an ecosystem. Thus, it could serve as a catalyst to better integrate the AI & Society Ecosystem with the development and implementation of the EU's research agenda.

Many NGOs engage in research. For instance, they identify and analyze problematic AI projects. They study the broad risks and challenges associated with the technology as well as question how AI could be used to serve the public good. A great deal of this research is directly relevant to policy making. Many NGOs have developed capacity to analyze regulatory frameworks for AI and to develop solutions for regulatory gaps or shortcomings. In many cases NGOs collaborate with academics on their research. However, formal criteria make it often very difficult for NGOs to apply. Thus governments should think about opening up their research programs for non-academic applicants or design specific grant programs for collaborations between academic researchers and NGOs. This would also foster the transfer of expertise from academia into organizations more engaged in public awareness and policy functions within the ecosystem.

Another way for governments to support the important research done by NGOs would be to set up specific research grants designed for NGOs. Such research grants need to be designed in a way that makes it possible for small organizations with few administrative resources to apply for and manage such grants.[41]

Another way to provide funding opportunities to develop and grow the expertise in the AI & Society Ecosystem is through the establishment of an organization with this exact purpose. Some governments have established social innovation funds or organizations tasked with identifying and supporting social innovation such as Sitra in Finland or Nesta in the UK. Such funds could develop programs designed to tap the expertise of organizations within the AI & Society Ecosystem and to provide them with funding for innovative projects.

41 An example from the adjacent field of civic tech is Prototype Fund, a funding program of the Federal Ministry of Education and Research (BMBF) managed by Open Knowledge Foundation Germany.

### Policy Making and Regulation

Policy making and regulatory processes are often arcane to outsiders. This is especially the case if there is little fluctuation of personnel between government and outside organizations that seek to lobby or engage governments: While there is quite some crossover between senior government positions and industry, policy expertise is much harder to obtain for NGOs as they usually cannot compete with private sector salaries.[42]

At the same time, many government officials have little experience engaging NGOs and often do not fully understand and appreciate the resource constraints under which NGOs have to operate. Thus, productive engagement with the AI & Society Ecosystem can only occur if government officials do not only see general value in engaging with a broader and more diverse set of stakeholders and experts beyond industry, but also lower barriers to participation and engagement. This ranges from proactively seeking out input from different stakeholders of the AI & Society Ecosystem to accommodating their resource constraints, for example with support to cover travel costs for participation in workshops or stakeholder consultations.

A bolder approach would be to make grants available for civil society organizations to participate in policy consultations and other forms of stakeholder engagements organized by government actors. As an example of a promising framework to lower the barriers for participation, consider the regulation governing standardization practices at the EU level[43], which includes articles allowing civil society organizations to receive financing to take part, specifically to avoid the process being too industry dominated. While it is far from perfect (it does too little, and still works best for bigger, well-established groups), it is an example of an effort by government to better involve civil society.

There needs to be more awareness inside and outside government regarding the discrepancy in access to and engagement in policy-making processes

42 The recent ACM FAT 2020 conference offered a tutorial: Adams, Stan, and Natasha Duarte, 'Policy 101: An Introduction to Participating in the Policymaking Process', 20 December 2019, https://grailnetwork.org/2019/12/20/fat-2020-policymaking-tutorial/.

43 European Parliament, Council of the European Union, 'Regulation (EU) No 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council Text with EEA relevance', 25 October 2012, Annex III, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012R1025.

between industry as compared to civil society. Requiring more transparency around lobbying activities such as meetings with government officials can help to track the (un)balanced levels of input from different stakeholders. Public scrutiny may create incentives for government officials to seek more balance in the first place. A lobbying register will also serve as a useful tool for the watchdog function within the ecosystem, providing information on what kind of organizations and companies are seeking to influence government policies.

Effectively integrating perspectives of experts from the NGO/non-profit sector into the policy making process requires that government officials make an extra effort. Given the workload of government officials and the pressure to quickly get things done, it requires serious efforts to address this problem. Political leadership can provide the resources that such an effort requires and also communicate priorities to effectively integrate diverse perspectives from the AI & Society Ecosystem into their staff. Specifically for so-called "high-risk applications" of AI as defined in the European Commission's White Paper on AI, establishing a structured process to systematically involve civil society seems an obvious step.

There should be internal guidelines and policies that require more diverse and broad consultations, and successful records to meet such requirements should play an important role in internal evaluations and considerations for promotion. Government officials should also be trained on AI issues so they can communicate with the larger ecosystem more effectively, and are better placed to translate insights into policy. Building up this capacity to supplement and exchange ideas with civil society allows for more productive engagement and will increase the quality of policies.

Many governments and the EU require evaluations (backward looking) and/or impact assessments (forward looking) of laws and regulations.[44] Both are important, and for both the European Commission, for example, frequently relies on external expertise.The AI & Society Ecosystem should become more involved in conducting these evaluations and impact assessments concerning AI since many organizations in the ecosystem have highly relevant expertise.

Authorities often have funding available to bring in outside expertise to carry out (parts) of the evaluations and impact analysis, so they can also serve as

44 European Commission, 'Impact assessments', 7 December 2018, https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/impact-assessments_en.

a source of funding and help build capacity within the AI & Society Ecosystem. The impact assessments could be at the core of a much broader effort to develop projects that connect the AI & Society Ecosystem with regulators.

**Public Procurement**

There are many use cases for AI technology in the public sector. When governments decide to adopt AI for their own work, they have to address important strategic questions. What kind of use cases will governments identify for AI implementation? What kind of benchmarks will governments use to assess the effectiveness and quality of AI-driven applications? How will governments internally regulate the use of AI, and how transparent will governments make their work with AI technologies? The way governments answer these fundamental questions will have ramifications far beyond the public sector. Just on the basis of its purchasing power, governments define important standards for industry. And AI adoption within governments also has a strong impact on the regulatory debate.

The AI & Society Ecosystem can play an important role in shaping government use of AI so that it serves the public interest and puts societal interests first. AI companies have a tendency to oversell the capabilities of their products and to downplay shortcomings and risks. Since most actors in the AI & Society Ecosystem do not have any commercial interests related to AI deployment, they can serve as important counterweights in the debate over government adoption of AI. Government officials can seek the ecosystem's expertise to help separate fact from fiction and to develop effective policy and regulatory frameworks that make sure that government uses of AI actually deliver on their promises.

The ecosystem should not have to entirely rely on government officials to reach out and integrate its perspectives and expertise into the development, implementation and evaluation of public sector AI projects. The AI & Society Ecosystem can only effectively fulfill its independent watchdog function if information about AI public sector projects is publicly available. Thus governments should publish a procurement transparency register which lists all public sector AI projects in a comprehensive database. This will provide the ecosystem with an up-to-date overview of all AI public sector uses cases that are being developed or deployed. This makes it possible for actors within the ecosystem to proactively identify potential risks and problems, raise public awareness around them and reach out to government officials to address them.

We need better guidelines and frameworks to help governments think about using AI in the public sector. The AI & Society Ecosystem should be invited to participate in the development, implementation and evaluation of such guidelines. Many organizations within the AI & Society Ecosystem represent or have particular expertise about groups that could be harmed by poorly designed and implemented deployments of AI use cases, which can make the policy-making process even more representative. Integrating this perspective from the beginning of the process can help prevent problematic designs before the technology actually gets deployed.

More generally, the public procurement process should be opened up. There needs to be a robust public debate about government adoption of AI driven technologies. Governments should proactively reach out to the AI & Society Ecosystem to discuss good practices and use cases for AI deployments in the public sector, and to ensure that those best practices guide the development of procurement guidelines. Procurement agencies could also commission studies and impact assessments of public sector AI usages to organization within the AI & Society Ecosystem.

### Recommendations for Governments – Summary

There are three important areas of engagement between governments and the AI & Society Ecosystem, all of them particularly relevant when governments want to strengthen the AI & Society Ecosystem: research funding and strategic investments, policy-making and public procurement.

Across these domains, the options for governments to support civil society and the ecosystem can be broken down into the two categories resources and relationships as summarized in the chart below:

**Table 1**

| | |
|---|---|
| RESOURCES | Opening up research programs for non-academic applicants. |
| | Designing grants specifically with small organizations in mind (e.g. easy to apply for, and with light-weight grant reporting structures). |
| | Providing broader funding across different ecosystem functions. |
| | Providing resources for civil society to take part in policy making processes (e.g. travel grants). |
| | Establishing organizations specifically for the purpose of funding the AI & Society Ecosystem similar to social innovation funds such as Sitra in Finland or Nesta in the UK. |
| | Involving civil society organizations in conducting impact assessments, and provide more funding to support this. |
| RELATIONSHIPS | Develop a deeper understanding of how civil society adds value, and explore the different ways civil society actors can realistically contribute. |
| | Lower barriers to participation and engagement of civil society by proactively reaching out and seeking input from different stakeholders (e.g. develop specific guidelines requiring broad consultations). |
| | Enabling civil society actors to keep up with the demanding working methods of traditional policy-making. |
| | Increasing transparency regarding the use of AI in society, public procurement and lobbying to create a level playing field for non-governmental watchdogs and to better track balance between input from different stakeholders. |
| | Train officials on AI issues so they can better interact with the ecosystem and translate insights into policy. |

## Role of Foundations

Given the impact and relevance AI already has for our society, philanthropy has a crucial role to play when it comes to fostering the AI & Society Ecosystem in Europe and to overcome its multifaceted challenges – both in terms of funding and also in terms of nonfinancial resources such as professional development, development of networks, and amplification of innovators. In the following section we discuss the role of foundations in the AI & Society Ecosystem and analyze different avenues for funding organizations to support the ecosystem. Our analysis is organized in three broader themes:

- Funding strategies and processes;
- Convening and bridge-building
- Reflection on funders' roles and responsibilities.

### Funding Strategies and Processes

For every civil society organization to effectively fulfill its function in the ecosystem, it is a requirement and usually a challenge to secure adequate financial support. The provision of funding therefore has a major influence on the well-being of the ecosystem. Thus, foundations are called upon to scrutinize their funding strategies in light of the challenges in the ecosystem that have to be addressed: To what extent are funding strategies and processes fit for this purpose and context?

AI and its societal implications are a complex and fast developing issue area. Securing flexible funding for a longer time span is essential to allow organizations to build up the capacity to run effectively, and to quickly react to developments at the intersection of AI and society. Funding should enable civil society actors to become expertise-driven organizations which can effectively drive the AI discourse or develop concrete ideas for the European way on AI. That requires that organizations are able to spend as much time as possible on their thematic priorities instead of constantly chasing after short-term grants.

There are many ways in which foundations can contribute and empower organizations in this area. Some measures include : Simple and flexible funding applications; Designing reporting formats that fit well with the organization's strategy and procedures, and possibly are synchronized with other funders' reporting formats to reduce redundant reporting work for grantees; Honest and timely communications and transparency in case the foundation's strategic priorities evolve in ways that might impact the current and future funding relationship.

However, the ecosystem does not only benefit from sustainable funding. It requires some financial stability so that organizations can invest in and develop strong teams with broad expertise and networks. Foundations should invest in training and skill development within civil society organizations to help professionalize work flows, management capacities, fundraising, and strategic communication capacities. This kind of capacity building is crucial for making grantees effective and resilient, and also helps with becoming respected and recognized as serious stakeholders by counterparts in policy making or industry.

During the funding process it is also important to allow and encourage a culture of failure. By establishing an atmosphere of long-term learning and mutual trust, foundations are in the position to overcome the self-marketing

trajectory that all too often is a main stumbling block for cooperation and coordination in the ecosystem.

Foundations and government should complement one another. Instead of replicating what the government is doing, foundations should think about the gaps that governments and private sector leave unaddressed. Foundations are desperately needed to fill gaps in funding for functions within the ecosystem for which government funding is hard or impossible to obtain, such as strategic litigation and independent policy analysis.

A healthy and strong ecosystem that is able to advance the European way on trustworthy AI needs different actors with diverse expertise – we see that as the main rationale behind the ecosystem approach. In order to increase the diversity and to make sure that every function in the ecosystem is fulfilled, foundations should develop ideas and look for opportunities that could help broaden the network of organizations they fund. One way of achieving diversity instead of just funding existing contacts and familiar faces is to set up a diverse board to minimize blind spots in funding decisions.

To increase diversity, funding also needs to be made more accessible for new entrants. This can be achieved through a simplification of the research process, and through grants designed to include support for further grant applications. Foundations could also consider explicitly seeking out emerging organizations in different European countries on different levels (national, local). Receiving funding from a well-known, reliable funder can boost their reputation and legitimize them as new actors, which can in turn help to secure more funding in the future.

**Convening and Bridge-Building**

Currently there is a severe lack of communication and collaboration in the AI & Society Ecosystem, which leads to overlaps and inefficiencies weakening the Ecosystem as a whole. For foundations to strengthen the AI & Society ecosystem, it is therefore important to invest more in network-building and cooperation between organizations in the ecosystem and beyond. After all, foundations usually have a vast partner network that extends well outside of the AI & Society Ecosystem. They hold close ties to stakeholders from civil society and are well connected with actors from policy-making. In that sense they are in a unique position to identify potential synergies and to support fruitful alliances between different actors who would otherwise remain in silos.

Regarding the current state of the ecosystem, more cooperation is needed especially between sector-specific or more traditional civil-society organizations on one side, and digital rights/AI-specific organizations on the other. For example, trade unions or consumer unions often have a lot of expertise in how to best impact the policy process. Close cooperation can help open up sector specific knowledge for the AI discourse and also help better integrate the AI & Society expertise in the policy process. Cooperation that includes allied stakeholders from industry can further strengthen the ecosystem. At this point, foundations can act as convener and connector in the ecosystem. By leveraging their network and building connections between diverse actors, foundations can amplify their grantees' work.

For funders it is important to be aware of the competitive dynamic between potential grantees. By explicitly encouraging collaborations between different actors, funders can defuse potential competition between organizations in the ecosystem. Apart from raising awareness for opportunities to cooperate, foundations should also consider providing resources or access where necessary in order to realize those synergies and to increase impact.

**Reflection on Funders' Roles and Responsibilities**

For foundations to do good and avoid doing harm – in the AI & Society Ecosystem it is necessary to recognize their position of power within the ecosystem, and in relation to individual grantees. Power dynamics are often inherent in a funder-grantee-relationship, but this can impact that relationship in terms of trust or performance of the grantee.[45] Being aware and addressing these dynamics is a requirement to create a thriving funding environment. This is especially true if foundations wear multiple hats, for example when they simultaneously act as a funding organization and also engage in advocacy, potentially even in competition with their grantees. Thus, foundations should reflect their own position in the ecosystem to better communicate with grantees, and to understand their role as important "nodes" in their networks who can make or break the ecosystem by either increasing or decreasing the number and strength of connections.

In order to make careful investment decisions it is key that funding organizations have at least a minimum of in-house expertise in the area they want to fund. This is essential to evaluate the quality of funding proposals, to decide on strategic focus areas of the whole funding portfolio, and to effectively set funding priorities. As for every other issue area in the portfolio, this also

45 Luminate, and Simply Secure, 'On Trust and Transparency', June 2019, https://simplysecure.org/resources/ott/On_Trust_and_Transparency.pdf.

holds true for the field of AI. In the case of AI, it does not necessarily take deep technical expertise but requires a solid understanding of the AI discourse and the societal implications that future developments in AI research might have.

Instead of funding cooperation and collaboration only among grantees in the AI & Society Ecosystem specifically, foundations should seek collaboration and coordination by building strong networks among funders, too.[46] Only in close cooperation will foundations succeed in changing the ecosystem for the better. Therefore they should consider working together and bundling efforts across foundations to strategically shape the ecosystem, to set appropriate priorities, and to prevent overlaps.

Taking an ecosystem approach as a compass for funding strategies and investments can help foundations keep a long-term strategic perspective, and to aim at building the capacity that is needed to develop and deploy AI that reflects European values and goals. Foundations should therefore reflect their own role in the ecosystem and what they need to fulfill it effectively, even and especially if that requires willingness to experiment with new ways of doing philanthropic work.

### Recommendations for Foundations – Summary

We see three avenues for foundations to strengthen the ecosystem: by reviewing funding strategies and processes informed by the needs of the ecosystem, by acting as bridge-builders, and by reflecting their role inside the ecosystem. As in the government section, our recommendations for foundations are summarized in two categories: resources and relationships.

46 Network of European Foundations, https://www.nef-europe.org/.

**Table 2**

| | |
|---|---|
| RESOURCES | Appreciate the importance of long-term and institutional funding to strengthen the institutional backbone of the ecosystem and to enable actors to become expertise-driven organizations. |
| | Engage in capacity building and invest in skill development within civil society organizations to help professionalize work flows (fundraising, communication skills, management capacities, etc.). |
| | Provide resources for collaborations between different actors and network-building. |
| | Fill in the funding gaps within the ecosystem where government funding may be especially hard to obtain. |
| RELATIONSHIPS | Leverage the foundation's network to promote synergies and to support alliances across different functions and between actors who would otherwise remain in silos (e.g. digital rights organizations vs traditional civil society). |
| | Reflect on and recognize the foundation's powerful position in the ecosystem and the ways foundations can impact the ecosystem (e.g. power dynamics in grantee-relationships, provider of legitimacy, access point to a vast network). |
| | Take into consideration the competitive dynamic between potential grantees, and try to diffuse those tensions by funding collaborative work. |
| | Allow and encourage a culture of learning (incl. a tolerance to fail) by establishing an atmosphere of long-term shared learning and mutual trust. |
| | Engange in honest communication and foster transparency (e.g. regarding evolving strategic priorities and funding strategies). |
| | Increase diversity across grantee organizations, for example by funding emerging organizations instead of the ones that are best-known. |
| | Strengthen the foundation's own expertise in the field of AI to better navigate funding strategies and develop a good working relationship with actors from the AI & Society ecosystem. |
| | Bundle efforts across foundation to improve coordination and to avoid redundancies, i.e. around application and reporting processes. |

## Conclusions

AI is seen as a key technology for the 21st century. The EU and its member states have made the development and deployment of AI a top priority. But unlike the US or China, the EU has built its AI strategy around an ethical approach that seeks to make AI trustworthy and human-centric. For the EU, AI is not only about research and investment but also about balanced regulation that allows for innovation while protecting citizens from harm. That is why those who believe that ethical AI requires an appropriate regulatory framework currently look to Europe for guidance and leadership.

We argue that the EU can only fulfill its ambitions and assume global leadership on AI governance if it has the capacity and networks in place to help it turn lofty goals into effective policy.

The ecosystem perspective helps us frame this debate. Currently we focus too much on individual policies and proposals. Instead, we need to make sure that the right conditions are in place so that policy making on AI can succeed in the long run.

With this report we aim to initiate a discussion on how European AI policy-making should be anchored within a greater ecosystem. We believe that if the EU is serious about its ethical ambitions, this ecosystem needs to include strong civil society and non-governmental organizations: What we call an AI & Society Ecosystem.

With this report we hope to make two contributions that spur further debate. First, we presented our thinking and analysis of how to conceptualize an AI & Society Ecosystem and what we see as core functions that it must be able to perform. Second, we have developed recommendations for what governments and foundations could and should do to productively engage with such an ecosystem and support its growth.

We hope that this report can help to spark further debate and shift some attention on long-term capabilities. Only if we succeed in building a strong AI & Society Ecosystem can the EU become the global leader on AI governance it aspires to be.

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## About Stiftung Neue Verantwortung

SNV is an independent, non-profit think tank working at the intersection of technology and society. The core method of SNV is collaborative policy development, involving experts from government, tech companies, civil society and academia to test and develop analyses with the aim of generating ideas on how governments can positively shape the technological transformation. In order to guarantee the independence of its work, the organization adopted a concept of mixed funding sources that include foundations, public funds and corporate donations.

## About the Authors

**Leonie Beining** is project director at Stiftung Neue Verantwortung. She leads the project Algorithmic Decision Making for the Common Good, assessing the societal implications of automated decision-making in fields like healthcare, recruiting or public security.

**Peter Bihr** is the founder of ThingsCon, a global initiative to explore and promote the development of fair, responsible, and human-centric technologies for the IoT and beyond.

**Stefan Heumann** is member of the management board of Stiftung Neue Verantwortung. He is also part of the German Parliament's Expert Commission on Artificial Intelligence.

## Contact

Leonie Beining
lbeining@stiftung-nv.de
+49 (0)30 81 45 03 78 81

# Imprint

Stiftung Neue Verantwortung e. V.

Beisheim Center
Berliner Freiheit 2
10785 Berlin

T: +49 (0) 30 81 45 03 78 80
F: +49 (0) 30 81 45 03 78 97

www.stiftung-nv.de
info@stiftung-nv.de

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Make Studio
www.make-studio.net

Layout:
Johanna Famulok