

Project Liberty Institute + Aspen Digital

Responsible technology: A path towards an ethical innovation ecosystem

Outcomes Report of the
Ethical Principles for
Responsible Technology
Multistakeholder Initiative



About

Project Liberty Institute

Project Liberty is an international impact organization mobilizing a global alliance of technologists, academics, policymakers and citizens to build a more responsible approach to technology development, including a more open internet infrastructure. Project Liberty Institute's academic founding partners are Stanford University, Sciences Po and Georgetown University. Project Liberty Institute's mission is to enhance ethical governance by supporting timely, actionable research on digital technology and responsible innovation. The Institute serves as an international meeting ground for technologists, policymakers, academia, civil society, entrepreneurs, and governance experts. Together, these interdisciplinary partners and leaders from the public and private sectors create frameworks for how we design, invest in, deploy, and govern new technologies. Project Liberty also stewards the public-interest infrastructure protocol DSNP for a fair personal data economy.

<https://www.projectliberty.io/institute>

Aspen Digital

Aspen Digital is a nonpartisan technology and information-focused organization that brings together thinkers and doers to uncover new ideas and spark policies, processes, and procedures that empower communities and strengthen democracy. This future-focused Aspen Institute program inspires collaboration among diverse voices from industry, government, and civil society to ensure our interconnected world is accessible, safe, and inclusive – both online and off. Across its initiatives, Aspen Digital develops methods for elevating promising solutions and turning thought into networked impact.

<https://www.aspendigital.org>

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I. Acknowledgements

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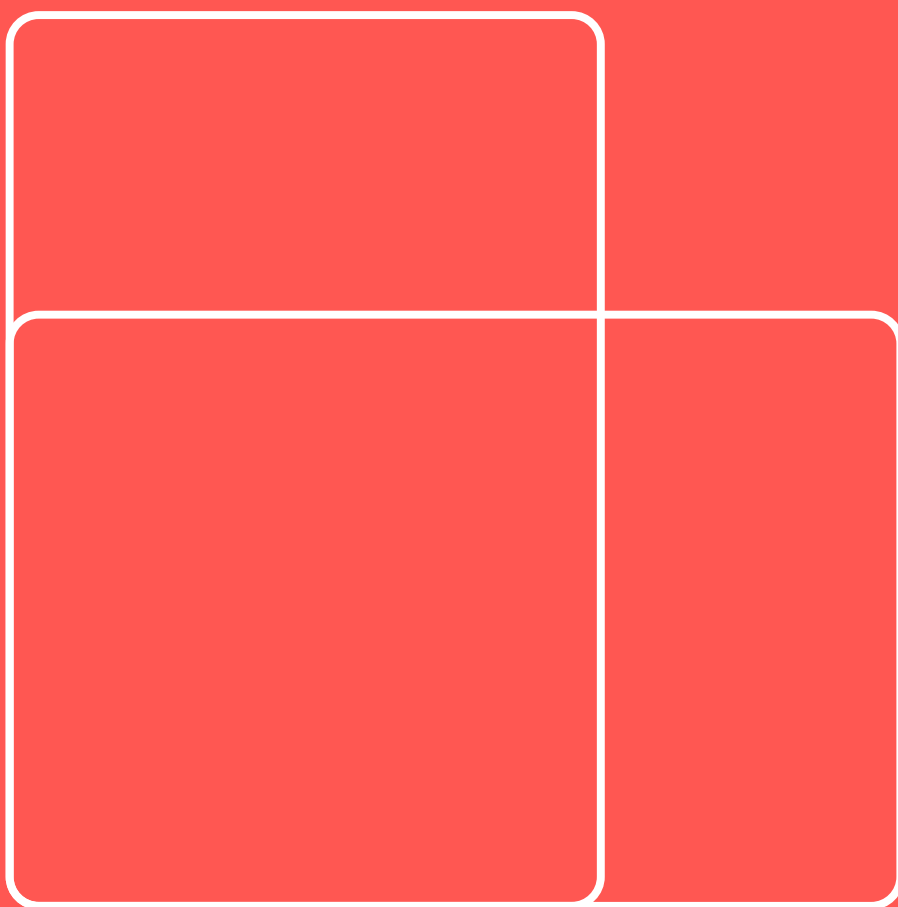
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II. Executive Summary



New technologies bring tremendous promise but also risks if not developed responsibly. To advance frameworks for the ethical development of emerging technologies, Project Liberty's Institute and Aspen Digital convened over 150 experts from all sectors and across five continents in extensive multistakeholder consultations throughout 2023.

Key insights distilled from these discussions underscore a primary insight: we must demand more from technology than merely minimizing harm. Participants envisioned positive futures where innovation advances human dignity and shared prosperity.

Moving from ideas to action requires articulating this vision in detail and establishing evidence-based metrics to guide its development. Established laws and norms provide a foundation to build upon; so too, new systems, processes, and tools are imperative for practical implementation, oversight, and enforcement.

We approached this work with humility. Despite all the commendable efforts that have come before in various sectors, no overarching ethical framework for responsible technology has achieved widespread adoption. Digital products and services today too often fall short of minimum ethical standards, and the debate of what is acceptable, who is responsible, and what should be done continues.

While much of the world's attention has shifted to Artificial Intelligence (AI), this work is not solely about AI — far from it, as we want to establish principles and approaches for all digital and data-driven technologies, including those we can not yet imagine. That said, we cannot ignore the way that new AI tools have created a kind of concurrent gold rush and arms race; a frenzied and relentless discourse that is exciting and terrifying at the same time. If anything, the consumer-facing release of ChatGPT 3.5 in Nov 2022 has amplified the attention to all technology issues and underscored the urgency. The overwhelming hype cycle has colored and distorted the public discussions, but it has also drawn in new participants who are not traditionally part of technology debates, and put the development and deployment of all new technologies — not only those powered by AI — into the mainstream.

In short: we have a panoply of principles, a paucity of implementation, and an urgent need to act as new mainstream technologies begin to disrupt every single part of society.

Our discussions revealed a series of possible interventions that could advance common efforts towards more ethical technology innovation, and a forward-looking vision for a positive future augmented by

technology. We preface them with a set of insights we developed through our discussions that influenced our recommendations, and a series of ongoing tensions that we identified, which continue to create challenges between priorities like safety, profitability, individual versus societal benefits, centralized versus decentralized architectures, transparency, and commercial versus public interest orientations. Rather than binaries, these require context-specific and adaptive balancing.

Accordingly, three key recommendations for policy, technology, and business leaders emerged from our consolidated discussions:

1. **Create a shared vision and common metrics:** Jointly develop a shared vision and measurable indicators of impact that go beyond economic growth, through an evidence-based Global Panel for Responsible Technology Innovation.
2. **Create market incentives that spur a digital economy in the common interest:** Create market incentives through responsible investment frameworks for digital and data-driven technologies.
3. **Advance public interest technology and infrastructure to foster a healthier digital economy:** Embed ethical standards into the design of technologies by identifying and supporting the adoption, growth, and sustainability, of public interest technologies and infrastructure.

Through our extensive multistakeholder consultations, it is clear that advancing responsible technology innovation demands collaboration across policymakers, industry leaders, civil society groups, and beyond. No single sector or organization can address systemic gaps or transform

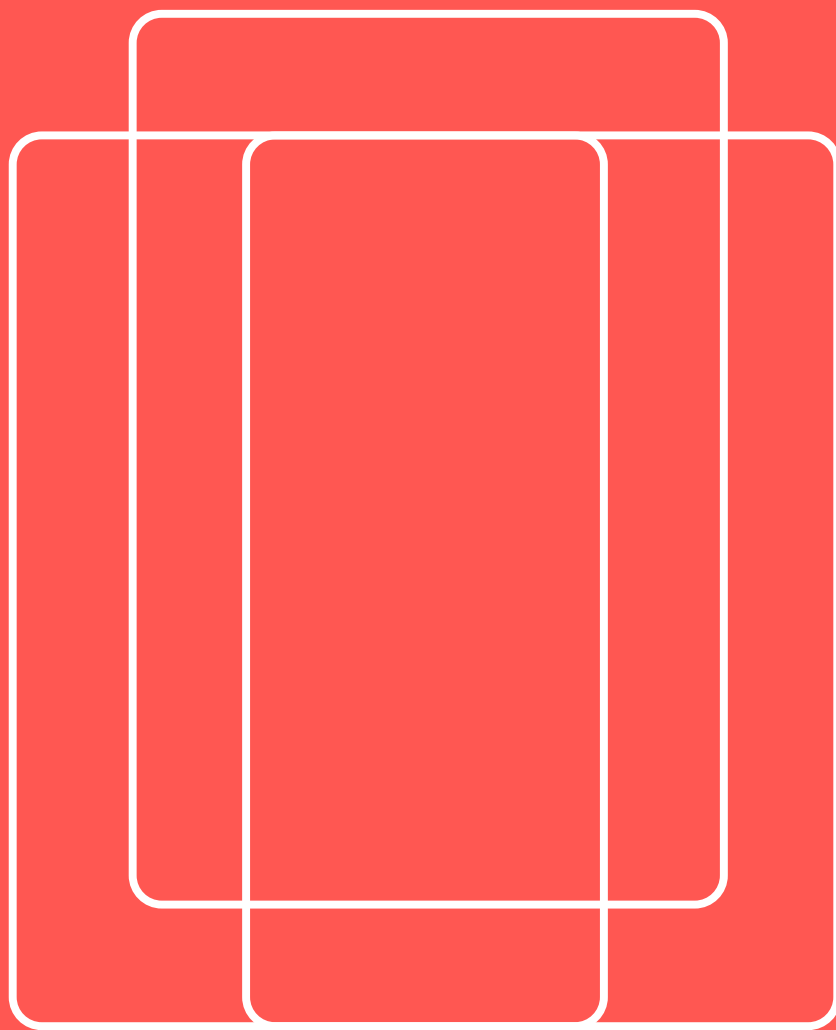
entrenched incentives alone. We must collectively commit to making responsible innovation not just an add-on or afterthought, but a recognized global priority integral to how technologies are envisioned, designed, and deployed worldwide.

Only through coordinated efforts can rapid digital transformations, breakthrough innovations, and societal priorities progress together. All stakeholders have roles in making this shift happen — whether through governance, investment, research insights, user feedback, or technical creativity. By working in concert across traditional policy and stakeholder silos, we can work together towards technologies that enhance inclusion, data agency, human dignity and global shared prosperity. But progress requires deliberate initiatives to drive change processes — the incentives will not transform on their own.

We invite leaders across communities and sectors to join in driving this vital collective agenda toward responsible technology through a new paradigm for creating a more ethical innovation ecosystem.

¹ Hundreds of national, regional, international, as well as civil-society-led, and industrial-led ethical frameworks and recommendations for ethical technologies and innovation have been mentioned to us during our consultations across the five continents. We want readers and those we consulted to know that we considered and engaged with this wide range of documents. However, given their eclectic and broad-reaching nature in scope and diversity, and the sheer volume of overlapping frameworks, we will not attempt to include all of them in this brief outcome report. Additional research is needed to compile a complete list of the hundreds of documents that impact responsible technology. Documents frequently mentioned during our consultations included, for example, global frameworks, such as the Universal Declaration of Human Rights, UN Guiding principles on business and human rights, the UNESCO Recommendation on the Ethics of Artificial Intelligence; or multilateral instruments such as the OECD Recommendation on Responsible Innovation in Neurotechnology; or regional initiatives such as the EU European Citizens' Panel on Virtual Worlds' 23 recommendations; or national frameworks spanning from the the Brazilian Civil Rights Framework for the Internet, over the Japan's Society 5.0, Governance Innovation - A guide to Designing and Implementing Agile Governance, to the Kenyan constitution; or civil-society-led frameworks such as Omidyar Network & Institute for the Future - Ethical Operating System: A Guide to Anticipating the Future Impact of Today's Technology or The Mozilla Manifesto Addendum Pledge for a Healthy Internet; or industry-led initiatives such as Microsoft Responsible AI Standard v2, or sector-specific community codes of conduct, and historic frameworks such as the Hippocratic Oath, etc.

III. Methodology



In early 2023, Project Liberty Foundation engaged Aspen Digital, a program of the Aspen Institute, to collaborate on new approaches to the ethical development of responsible technologies. We took on this work together with appreciation for the significant thought, organizing, collaboration, writing, negotiation, and advocacy that has come before us — from national and intergovernmental processes to industry groups, to multistakeholder initiatives, to civil society movements, to academia. All that has been learned, published, agreed to, enshrined in law, and even failed to achieve, has deeply informed this work

For Aspen Digital and Project Liberty Foundation, we began our process by listening and learning. Over the course of six months, we convened a series of in-person facilitated group discussions, led by Project Liberty Foundation and the Aspen Digital team, engaging over 150 experts on five continents spanning:

- / International organizations
- / Governments
- / Businesses
- / Investors
- / Academia
- / Technical communities
- / Civil society

Our consultations took place between June and November 2023, in:

- / Latin America: San Jose, Costa Rica, June 5-6, 2023
- / Africa: Nairobi, Kenya, July 11-12, 2023
- / Europe: Paris, France, September 18, 2023
- / Asia: Kyoto, Japan, October 8-9, 2023
- / North America: Palo Alto, USA, November 3, 2023

We delved into a wide array of critical topics during our discussions. We invited our participants to go deep into local and regional dynamics and ideas, highlight their own good practices, and share approaches that were specific to their interests and areas of focus — seeking new ideas we could elevate, and lessons we could learn

about what hasn't worked (or what hasn't worked yet). This report is a distillation and sense-making exercise that combines our team's research and thinking with the inspiring, novel, creative, and critical ideas and insights we gathered from those we consulted. It also offers a series of immediate recommendations for policy and industry leaders interested in embedding ethics into the future of technology.

Project Liberty Institute and Aspen Digital would like to thank the following participants in the multistakeholder consultations in Latin America, Africa, Europe, Asia, and North America between June and November 2023

All consultations were held under Chatham House Rule and participants served in their individual capacity. Their participation in this process is not an endorsement of this report. The insights and recommendations contained in this report have been edited to the best of the authors' abilities, but are their sole responsibility and do not necessarily represent the views of all stakeholders, nor their organizations.

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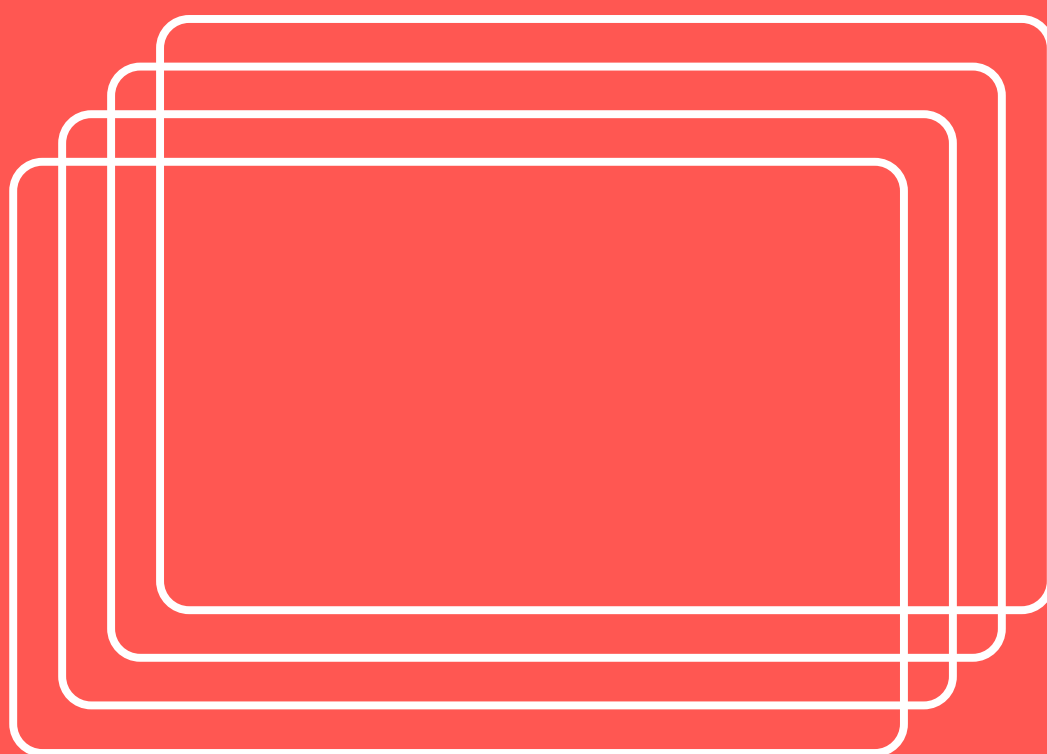
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IV.
Eleven ecosystems
insights



Our multistakeholder consultations yielded 11 key insights — which we define as “actionable information or analysis that can influence or constrain the desired outcome, goal, or change of state.” No single insight provides a transformative statement about the challenges we face, but taken together, they frame the considerations and constraints that guide our recommendations.

1. We should demand more of technology; minimizing harm is not enough. Much of the discussion around the development of technology focuses on the assessment of risk, and the subsequent avoidance of harm. Stakeholders across regions demanded that we should aspire to something greater than that; participants in the consultations shared their hopes for a positive vision of technology that could help humans to thrive, to build lasting connections, to augment and support discourse, to build more sustainable futures, and to advance human data agency and dignity online. Inherent in this vision is a different kind of relationship between those who create technology, and those who use it, and are impacted by it. It imagines that technologists and the communities they serve are working towards a shared vision of the markets, communities, and ecosystems we want to create. We need a new sustainable, responsible innovation paradigm that reconciles these ethical aspirations with cutting-edge breakthrough technology, public interest technology, entrepreneurship, and business models.

2. New technology is still subject to old laws. The fact that a technology is new does not exempt it from established laws, standards, treaties, multilateral agreements, and international norms, despite the disruptive models promoted by some companies, who mean to test the boundaries of what is permitted. Ethical principles for the development of new technology should build upon, not replace, the hard-fought standards we already have in areas like civil rights law, human rights, medical and institutional ethics, scientific methods, safety and consumer protection, and freedom of speech.

3. Even with existing laws, we’re going to need new systems and tools. While these laws and standards are already in place, many of the bodies responsible for oversight, evaluation, audit, compliance, and enforcement lack the capacity, understanding, and skills, tools and mechanisms, and access to the necessary information required, to have the desired and intended impact. High-level principles and abstract laws can make it hard for both regulators and innovators to understand what to do in practice with new technologies. Likewise, companies of all sizes, from start-ups to multinational companies, struggle with risk and compliance obligations and navigating high levels of legal uncertainty.

4. If we could intervene earlier, we might have to intervene less later. Unless ethical principles are part of the entire lifecycle process, backed by practical and easy-to-implement guidelines and approaches, we will always be relying on post-release regulation and enforcement to get the outcomes we want. A more holistic view on the innovation cycle begins as technology is designed, invested in, commercially deployed,

and regulated. In the current post-release regulatory environment, interventions are often imposed too late, which triggers tensions with established companies, or undermines widely adopted technological services, potentially with large user bases and paying customers.

5. Incentives eat principles for breakfast. “Culture eats strategy for breakfast” is a well-known quote from management consultant and author Peter Drucker. Whether a new technology is developed by a privately held company, a publicly traded company, an academic, a government agency, or a collaborative community online, its development and sustainability will rely on a set of incentives, like the need for growth, market capitalization, geopolitical advantage, etc. Those who develop and promote new technologies will always be driven by the incentives (and disincentives) inherent in their purpose.

6. Funding can eat principles for lunch. The majority of technologies developed and brought to market today are from for-profit companies. On top of that, while venture funding is just one model of technology development, it is a significant driver of early-stage innovation and also shapes a substantial portion of the narrative around new and emerging technologies. VCs not only invest in companies at early stages, but they set goals and targets that their portfolio companies will need to meet to unlock future rounds of funding. Once a company goes public, its accountability to its shareholders similarly influences nearly every business decision. The principles we advance will never supersede these fundamental obligations to funders, which translate into core business drivers, so we need strategies and approaches to introduce incentives for investors to integrate principles into responsible funding approaches.

7. Whoever is at the table determines what gets built, and who is impacted. Throughout the consultations we heard three strong appeals for reshaping the faces

behind product development: build more diverse product teams and organizational leadership, enhance training in ethics, and engage more deeply with those who are (or who will be) impacted by technology. These same diversity goals would also be well-served in regulatory bodies that oversee new digital technologies and services. The rooms where technologies are developed will benefit from a better understanding of the communities they benefit (or harm), and they are less likely to make decisions that create negative outcomes when those very communities are part of the creation and decision-making of new innovation.

8. There is no north star; we’re going to need a constellation of metrics. There’s no singular definition of what is good, or what is harmful. And even if there was, what’s good for one group can be harmful to another. We need better ways of measuring both harms and benefits, but it’s not going to be a simple or linear process. Every new technology, product, and service requires balancing a matrix of tradeoffs, and often those tradeoffs will change over time, or even in real-time as the world changes around us. A north star — a single metric that we can sail towards, and measure new technologies against — is a compelling concept, but we will likely need a constellation of metrics and benchmarks. We will need adaptive approaches to find guidelines that work in every community at global, transnational, national, and sub-national levels and reflect their reality. This will require a concerted effort to develop, and continuously re-evaluate, and update, corresponding measurable metrics based on ongoing evidence. In some instances it may also require localized approaches that follow shared values, but are implemented to meet local realities.

9. It is hard to focus when the hype generates so much smoke. The hype cycle around new technology can make it impossible to discern fact from fiction, and distract from systemic factors that impact and shape the responsible use of technologies. As emerging

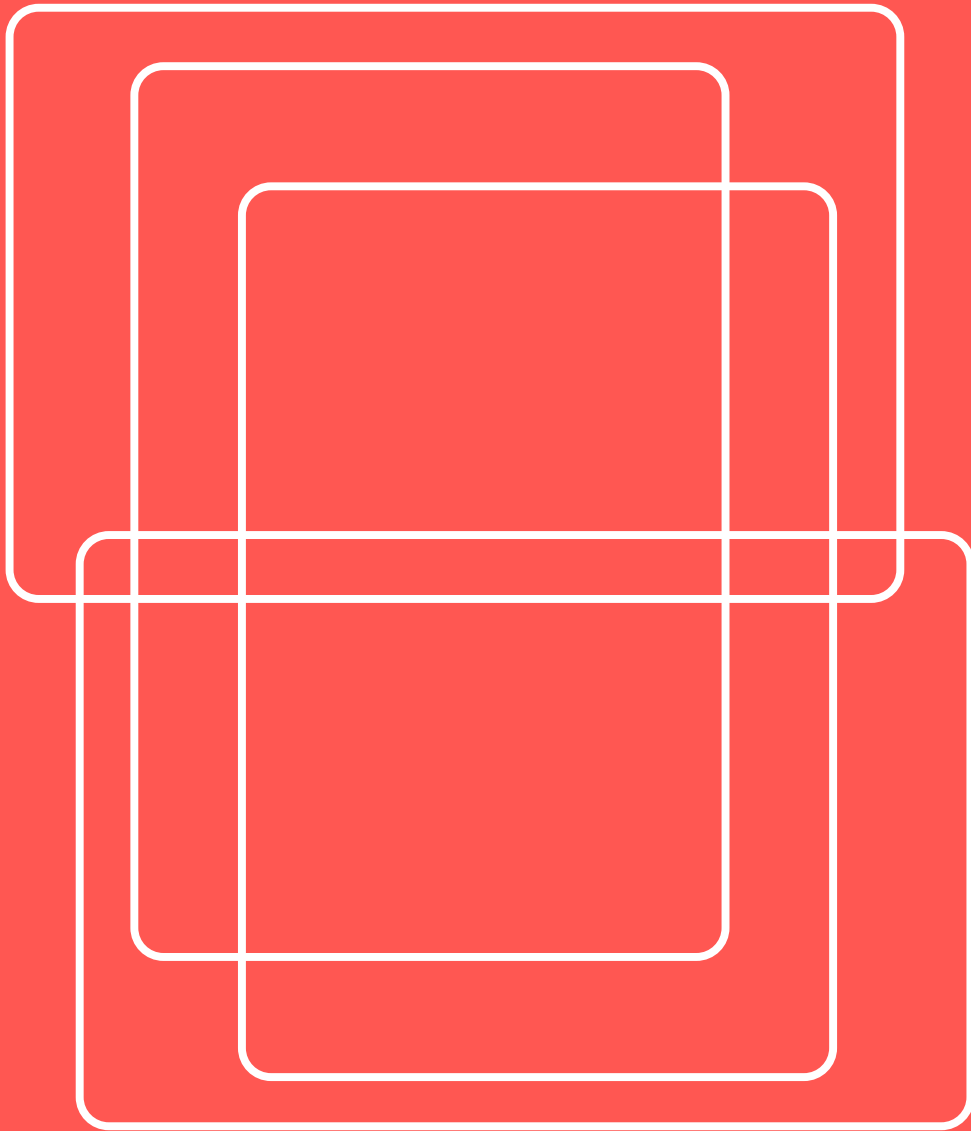
technologies enter the zeitgeist, they can captivate the attention of the media, politicians, and the public, leading to quick conclusions that are not necessarily rooted in evidence and often distracting us from what is most important or urgent. One participant said, “Part of this feels like nuclear proliferation; and part of it feels like a gold rush.” We need ways to avoid panic and hype cycles that are attached to new technologies. We need to increase our strategic forecasting capacities together with a deep understanding of incentives and funding models and build rational approaches based on agreed-upon values and shared goals.

10. A flexible and adaptive technology innovation ecosystem needs governance approaches to match.

Technology is constantly evolving and we have to learn to deal with uncertainty regarding its impacts on our societies, economies, and planet. In order to keep up with accelerating changes, we need approaches that are more agile — flexible and adaptive approaches that prioritize objectives-driven regulation, iterative decision-making, collaboration, and responsiveness to rapidly changing technological landscapes. These types of governance frameworks and processes can help policymakers, companies, developers, investors, legislators, civil society, and others better anticipate technology innovation on the horizon, and develop corresponding agile governance approaches that allow for iteration and experimentation that balance oversight and innovation.

11. We are really competing against speed. For developers of new technology, the primary opponent is time. The ability to unlock the next round of funding. Pressure to release new products and new features. Regulatory approvals. More ethical approaches might come at the cost of time, and reduce the speed of development and commercial deployment of products and services. Future governance approaches and frameworks will need to take these market pressures and added costs of time into account.

V.
Seven key tradeoffs



As part of every consultation, we invited participants to share the principles that were most important to them. Many themes came up repeatedly, including transparency, accountability, privacy and security, human rights, and inclusion. Within those themes, we heard many valuable ideas and principles worth exploring. We also felt the tensions and tradeoffs that reveal themselves as these principles come into contact with the practical realities of product development and market forces. We hope that by naming and discussing these tensions and tradeoffs, we can move closer to resolving them where possible, or at a minimum, being intentional about our choices.

A summary of the principles we captured from our discussions, grouped thematically, is included in the Appendix of this report. Below are the seven identified trade-offs, though we note that in no case are they true binaries, but rather indicate a dynamic and interconnected spectrum of issues.

Speed vs. Safety

The drive towards rapid innovation and competition, and a focus on reducing the time-to-market often creates tension with thorough assessments of potential risks and harms, along with deeper engagement with potentially impacted users and communities. Some argue that processes for detailed review and assessment, or deep stakeholder engagement, would slow the pace of innovation and put those innovators at a competitive disadvantage.

Profit vs. Ethics

Maximizing financial returns and shareholder value form the core incentive behind many innovations, but those same obligations can put company leadership at odds with their responsibilities to ethical considerations like transparency, equity, and human rights. Some digital technologies play such a fundamental socio-economic role that some infrastructures and applications should be built in the public interest. An ethical approach might require that developers disclose to the technology, scientific, political, or regulatory community, any concerns or potential issues they identify, or even worse issues that have occurred, but that can be challenging to do in a manner where they will not be punished by management, and in a way that the commercial interests of their employer would not be at risk.

Individual vs. Society

Technological advances benefiting individuals or companies can, and often do, impose externalities and costs on broader society. Many innovative ideas push up against, or even break, existing laws and regulations. Often this is part of the strategy — to create public demand for a service or product that would otherwise not be permitted and force legal change. In the meantime, there can be economic, social, or even physical harms that result.

Centralized vs. Decentralized Systems

Centralized systems are manageable and cost-effective, efficient, tightly secured, and nimble, but they often lack accountability, and interoperability, and are expensive to scale. Decentralized systems, on the other hand, are accountable and auditable, open to permissive use, promote competition and user agency, increase fairness, and improve access. However, their governance can be more distributed and therefore complex.

Transparency vs. Privacy

Transparency and access to data, including personal identifiable data, increases accountability and can be a tool for holding bad actors liable for their actions, but anonymity is also a valuable tool for whistleblowers, and activists, and a defense for those who are oppressed and targeted. Corporations can also use available data to build better products and services, but that same data can also be used to discriminate against particular individuals or groups.

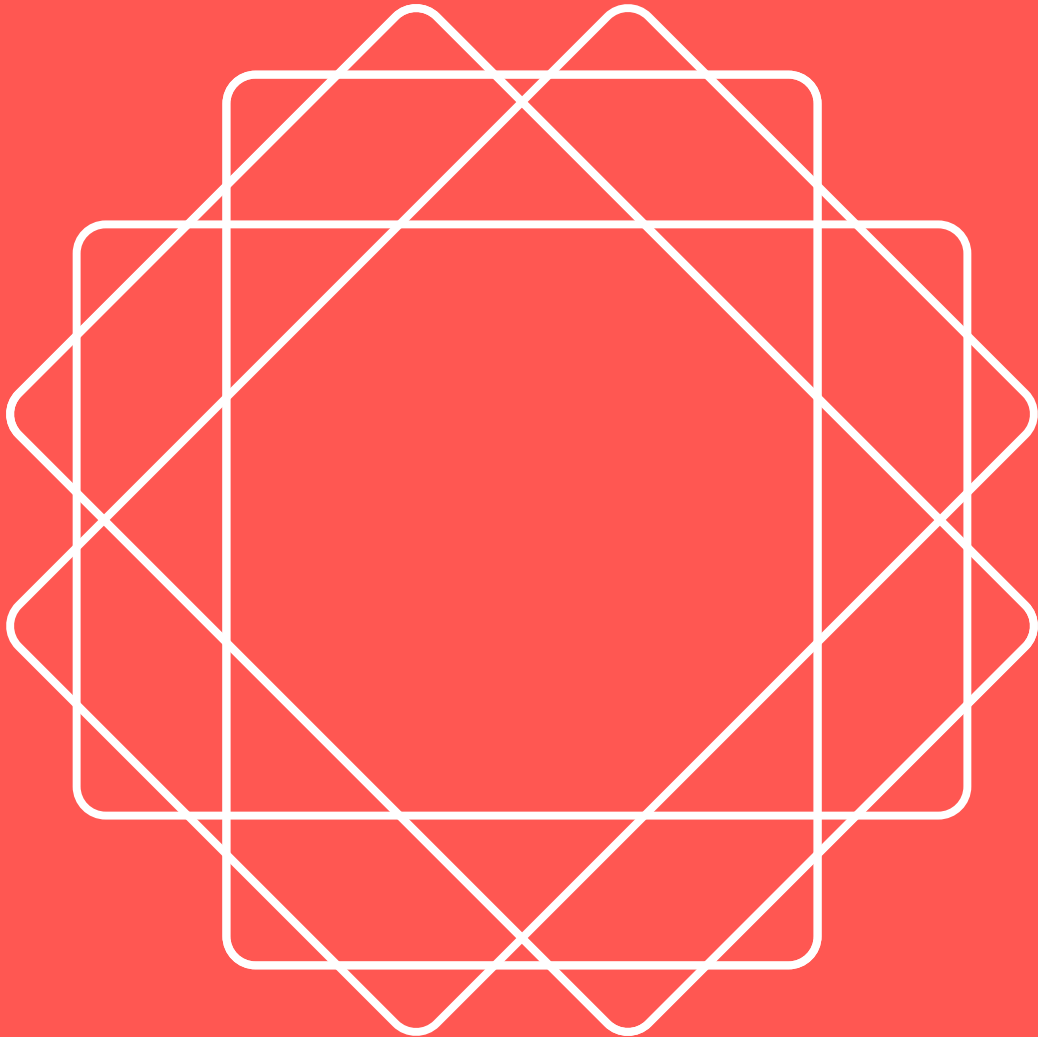
Early Intervention vs. Post-Release Regulation

Governing new technologies means governing in the face of uncertainty. The Collingridge Dilemma defines a problem faced by many technologies today: We cannot know all the harms and risks of a product until it is deployed broadly. Traditional regulatory approaches therefore focus on ex-post regulation of new technologies once they are mainstream adapted, while more agile approaches to technology governance stipulate integrating ethics by design ex-ante in new technologies and adopting more iterative approaches to technology governance.

Innovation vs. Sustainability

The pursuit of cutting-edge innovation often clashes with the imperative of sustainability. Emerging technologies, while promising groundbreaking solutions, often come with a significant negative carbon cost due to the required data processing or data power. While some argue that prioritizing sustainability could stifle progress and hinder economic development others highlight the urgency of incorporating environmental considerations into the innovation process. The need to balance technological advancement with environmental considerations is crucial to mitigate the effects of climate change.

VI.
Roles and
responsibilities
throughout the entire
innovation cycle



Roles and responsibilities throughout the entire innovation cycle

Across all regions, participants in the consultations stressed the vital importance of incorporating ethics earlier in the innovation process and deeper into the technological stack. To build a more ethical innovation ecosystem for the digital economy, we need to adopt a 360-degree view of the entire innovation cycle that spans the design, investment, deployment, and regulation of new technologies.



Innovation Cycle Graphic - Project Liberty Foundation, Aspen Digital

For each of these four stages, the roles and responsibilities of governing bodies, technology developers, small and medium-sized enterprises, large multinational corporations, investors, civil society actors, academic actors and end-users should be clarified and defined more clearly to guide the responsible development of technology at every stage of the innovation cycle.

Participants repeatedly highlighted that it is vital that this 360-degree approach to responsible technology innovation is firmly based on feedback loops that are grounded in stakeholder engagement, research, evidence-based evaluation, and iterations. Participants in our consultations further emphasized that this approach will be required to better bridge the silos of the innovation and policy worlds. We need to create and strengthen necessary relevant fora where different stakeholders can deliberate their respective roles and responsibilities along the innovation cycle at national and global levels.



International organizations



Investors



States



Civil Society



Technology developers



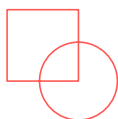
Academia



**Small and Medium-Sized
Companies**



End-users



Multinational Corporations

Stakeholder Categories Having a Role in the Innovation Cycle

VII. Recommendations and proposed actions



1. Create a shared vision and common metrics

We are putting forward three recommendations that, together, offer for a pragmatic and sustainable long-term pathway towards responsible technology innovation. They are aimed at leaders from both the public and private sectors. These recommendations offer both a holistic perspective of the ecosystem and also specifically address the varying levers impacting innovation capacity, governance processes, roles and responsibilities, business models, incentives and technical architectures. Each recommendation is supported by, but not limited to, one chosen proposed action.

They were derived from our consultations with over 150 key stakeholders across five continents and our studies of prior efforts to advance the governance of responsible innovation.

We cannot demand something better if we can't articulate what "better" is. To that end, we need a common commitment that clearly articulates a shared set of values and goals, and establishes a set of agreed-upon benchmarks and methods for both achieving and measuring them.

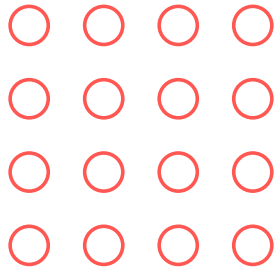
We must ask more of the technologies that permeate our lives and societies. While a focus on assessing risks, and reducing harms is an essential baseline, it should not be our only goal. We need to go beyond "do no harm" towards a shared vision for the digital economy we want – one that creates social and financial prosperity for all.

In every consultation, participants imagine a world where technology makes our lives better, instead of a constant cycle of mitigating risk and harms. That is an exciting future to build, shared across consumers, policy-makers, entrepreneurs, investors, developers, or community members. This vision requires new ways to measure outcomes that indicate progress towards societal and global benefits, and not just economic growth.

Participants offered a variety of elements for consideration: from advancing human dignity, creating social prosperity and wellbeing, promoting inclusion, economic fairness, environmental sustainability, accessibility, interoperability, data agency or security, to supporting human thriving. Our collective challenge is to develop measurable metrics based on scientific evidence. Those do not exist today.

Based on our consultations, we recommend a shared vision and attendant benchmarks be jointly developed with stakeholders from

across communities, including governments, international organizations, multinational corporations, SMEs, investors, civil society, academics and other experts, including impacted communities and consumers.



Proposed action:
Establish and support a Global Panel on Responsible Technology Innovation

Launch a process to establish and support a Global Panel on Responsible Technology Innovation. Composed of leading international interdisciplinary experts, the Panel will review state-of-the-art scientific interdisciplinary literature and evidence on innovation, technology governance, trends forecasting, and socio-economic impact assessments to develop common qualitative and quantitative metrics and indicators. The Panel will identify areas of scientific agreement and indicate where further research is needed, but will not conduct its own primary research. Building on the learnings from our worldwide consultation, the Global Panel on Responsible Technology Innovation should be designed to be deliberative with a robust governance framework that ensures inclusivity and avoids centralisation. It should therefore have five multistakeholder review committees: policy, business and investors, civil society, technical community, and academia. The committees will provide ongoing feedback on the work of the Panel through open and transparent processes. An inaugural Assessment Report of the Global Panel on Responsible Technology “Assessment of the State of Responsible Technology” should be published in 2025.

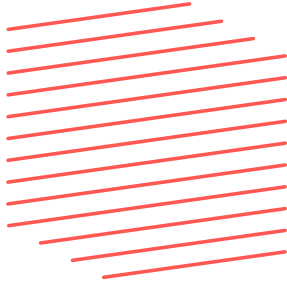
The established metrics, updated annually to integrate new insights and developments, will help inform and motivate better design, investment, development, and regulation for responsible technology innovations, and allow us to measure if we are on the right path towards a sustainable and healthy digital economy, similar to metrics on temperature variations, CO2 concentrations or sea levels that have been established by the International Panel on Climate Change to help tackle global climate challenges. Such evidence-based metrics should feed into the work of the United Nations - including the Pact for the Future, the Global Digital Compact, and the Internet Governance Forum (IGF) , as well as into the Group of Seven (G7); Group of Twenty (G20); Organisation for Economic Co-operation and Development (OECD); African Union (AU); Asia-Pacific (APAC); European Union (EU); Council of Europe; Economic Commission for Latin America and the Caribbean (ECLAC), as well as into other relevant public or private governance processes. Such efforts should be complemented by a large-scale global multistakeholder and citizens’ survey on the digital economy we want

2. Create market incentives that spur a digital economy in the common interest

For responsible technology to become mainstream, we need economic models that are driven by incentives that inspire and motivate developers, entrepreneurs, and investors to build and market more ethical technology innovations. Conversely, we need to ensure that negative externalities accrue to their original drivers, to serve as a disincentive to those undesirable impacts. Like the environmental crisis which for some was a catalyst to invent new technology such as carbon capture or fusion reactors, this shift will require billions of dollars invested into more ethical digital technology and stimulating entrepreneurial solutions and research and development innovation ecosystems to build the best possible technology, infrastructure, products, and services in the common interest. Venture Capital and early-stage investment plays a crucial role in determining what technologies and services will become mainstream. At the same time, many stakeholders highlighted that current models of venture capital financing force companies into a counterproductive high-growth path. Participants wondered how capital allocation can be improved to incentivize more responsible innovation that appropriately reconciles the speed of startups with ethical due diligence and impact assessment.

Throughout our global consultations, participants made clear that existing incentives that drive how technologies are developed and deployed trump other ethical concerns in the absence of regulation or other frameworks that bind the entire market. As daunting as it seems, we must aim to transform the market. Otherwise, it will continue to bend towards incentives that put speed over ethics; companies that behave more ethically risk being outperformed.

Governments have a crucial role to play in creating market conditions that level the playing field or even create positive incentives for responsible technology innovation through mechanisms that financially penalize the negative externalities and outcomes of certain technologies. But the public sector alone is not enough. Ultimately, all stakeholders spanning international organizations, governments, businesses, investors, technologists, civil society, academic experts, and citizens must come together to discuss how to reshape our digital economy so that building responsible technology is more profitable than building detrimental technology products with negative externalities, disproportionate data concentration or business models that come with adverse mental health impacts. For renewable energy to progressively become more cost-efficient than fossil fuels, market incentives had to be adjusted based on evidence, research, and international deliberation. This included mechanisms such as carbon markets, major public investment programs, and private risk capital allocation. Stakeholders should compare playbooks and explore similar strategies, learning from the energy transition, to create economic market incentives for responsible technology.



3. Advance public interest technology and infrastructure to foster a healthier digital economy

Proposed action:

Create frameworks for responsible investment in digital and data-driven technologies

Create an international task force composed of major limited partners in VC and private equity funds, including asset holders such as public investment banks, pension funds or university endowments. In close collaboration with existing efforts on responsible investment, academic experts, policymakers, civil society, and business leaders, including from SMEs, this task force is charged with developing evidence-based guidelines for responsible investment in new digital and data-driven technologies such as artificial intelligence, data agency, virtual worlds, neurotechnology or quantum computing. This could include ethical impact assessment requirements from large asset holders such as public investment banks or pension funds, so-called limited partners, to venture capitalists, as well as corporate governance due diligence priorities for companies receiving investment, such as early hiring of policy and ethics leaders. The role and responsibilities of investors in enhancing responsible innovation practices via their role in governance should be discussed. Metrics developed by a Global Panel on Responsible Technology (see Recommendation 1) could serve as a guide for such new investment criteria that should naturally integrate in existing instruments such as ESG practice frameworks. Governments should explore how to complement such frameworks with new market instruments that incentivize capital allocation to responsible technology in the common interest.

Throughout our consultations, participants expressed a desire for ethical principles to be integrated into the fabric of digital technologies — embedded in their development, and enshrined within their architecture. This is largely not the case today as most breakthrough innovations in the digital economy are primarily optimized by commercial considerations. While this promotes speed to market, it has proven to lead at times to unintended consequences or negative externalities for both end-users and markets.

Public interest technology can provide solutions to such unintended consequences by optimizing for public interest outcomes and socio-economic goods. It encompasses open infrastructure, protocols, data,

tools, and services designed to prioritize broad societal benefits, such as equity, access, inclusion, data agency, accountability, or other public interest goals.

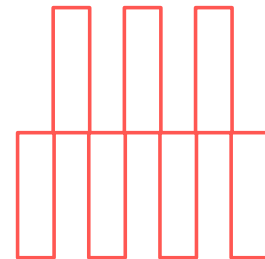
Crucially, public-interest technology is not the enemy of commercial success. Both high-performance commercial and non-commercial applications can be built atop an ethically designed infrastructure, not dissimilar to the internet and World Wide Web protocols that enable online connectivity.

Public interest technologies cover a range of models being operated by non-profit actors, for-profit, and even public actors. They can be a complement to regulation as a means to enshrine ethical and public benefit requirements in the design of the very infrastructures that can underpin the digital economy.

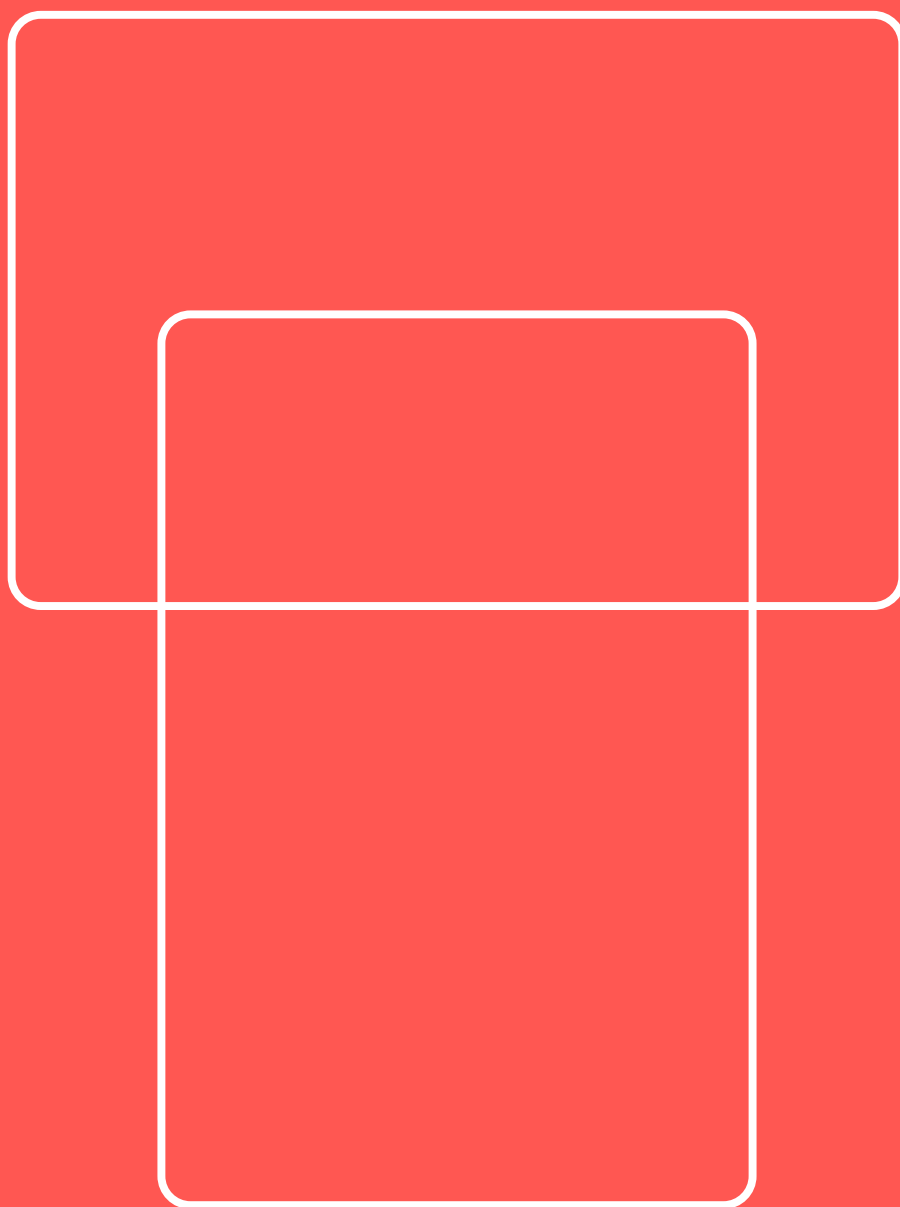
Proposed action:

Understand needs and create conditions for public interest technology and infrastructure to scale competitively

Given that public interest technology optimizes for socio-economic goods rather than financial returns, it cannot be expected to necessarily compete with traditional commercial technologies, and stakeholders should discuss how to create appropriate conditions to allow for public interest technology and infrastructure to scale competitively in the digital economy: Their quality, robustness, reliability, acceleration, governance and funding mechanisms need to be performant and reliable enable both non-commercial and commercial products or services built on top of them. We call for additional research on business models and scaling of public interest technology and infrastructure and invite all stakeholders to collaborate on innovative approaches to support and sustain them through adequate private market or alternative investment mechanisms, as well as, public or philanthropic financing. This should include social media, artificial intelligence, virtual and augmented reality, neurotechnology, and quantum computing. Governments and international organizations are invited to discuss how to recognize public interest technologies at the global level and in national jurisdictions through a special status that can protect them and accelerate their adoption by businesses and end-users through accreditation procedures.



VIII. Principles from the consultations



At the end of each of our consultations across five continents, we asked participating stakeholders to list the ethical principles for responsible technology they perceive as most crucial. The following non-exhaustive list is a best effort to curate and cluster the hundreds of principles participants submitted to Project Liberty Foundation and Aspen Digital during the consultations.

Human Rights And Dignity

- / Respect human rights laws and norms
- / Advance human dignity and human-centered technology
- / Honor freedom of expression
- / Foster data agency of users
- / Enhance digital self-determination
- / Ensure equality and non-discrimination
- / Safeguard mental health and bodily integrity

Socio-Economic Benefits

- / Foster social prosperity and flourishing
- / Promote inclusive economic participation of users
- / Strengthen social connections and democracy
- / Pursue responsible commercial models
- / Incentivize ethical technology development
- / Account for negative socio-economic externalities

Processes and Governance

- / Assess and mitigate risk proactively
- / Ensure accountability and oversight
- / Enact agile and iterative governance
- / Build understanding across communities and policy silos
- / Foster multistakeholder collaboration
- / Enhance the role of users in public and private governance processes
- / Enable independent evaluation through transparency

Technological Design

- / Ensure human-centered technology design
- / Embed ethics and values by design
- / Develop open and interoperable systems
- / Collect and use data ethically and with consent
- / Foster interoperability and decentralization
- / Prioritize environmental sustainability across technology lifecycles

Evidence and Assessment

- / Establish measurable indicators of progress
- / Support multidisciplinary research
- / Make audit processes transparent

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