

ITEC

THE INSTITUTE FOR TECHNOLOGY,
ETHICS, AND CULTURE

ITEC Principles and How to Use Them: Anchoring, Guiding, Specifying, and Action



This is an excerpt from “Ethics in the Age of Disruptive Technologies: An Operational Roadmap,” produced by the Institute for Technology, Ethics, and Culture (ITEC). ITEC is an initiative at the Markkula Center for Applied Ethics at Santa Clara University, with the support from and collaboration with the Vatican’s Centre for Digital Culture at the Dicastery for Culture and Education. The Institute convenes leaders from business, civil society, academia, government, and all faith and belief traditions, to promote deeper thought on technology’s impact on humanity. We have additional resources including an [overview of the book](#)¹ and an [overview of the stages](#)² of the operational roadmap.

ITEC Principles

The principles described in detail here are principles that reflect the concerns of many stakeholders around the world and across time. There are many different principles, frameworks, codes, and other documents, but in our judgment, this is the most comprehensive, detailed, and relevant list for the contemporary context. It includes an anchoring principle, guiding principles, specifying principles and examples of action principles that can be developed from them. However, we also understand that organizations may wish to customize this list for their own context.

Principles for the Responsible Use of Technology

The Institute for Technology, Ethics, and Culture at the Markkula Center for Applied Ethics at Santa Clara University has an anchoring principle, a set of seven guiding principles, and forty-six specifying principles that offer a foundation for thinking ethically in technology and business. To

¹ ITEC, “Bridging the Gap between the Theory of Ethical Principles and the Practice of Technology Ethics in Organizations: The ITEC Primer,” *Markkula Center website*, June 2023, available at: <https://www.scu.edu/institute-for-technology-ethics-and-culture/itec-primer/>

² ITEC, “The ITEC Handbook: An Overview of the Five Stages of the ITEC Roadmap,” *Markkula Center website*, June 2023, available at <https://www.scu.edu/institute-for-technology-ethics-and-culture/itec-stages-overview/>

bring these specifying principles to life, action principles will need to be developed at the most ground-level layer, to say what to do in the most particular circumstances. However, principles are always abstract at some level and need to be made concrete and operational through the rest of the processes described in this roadmap. Even then, every particular situation is different and thus requires the good judgment of engineers, managers, lawyers, and others.

While we believe that this set of principles is comprehensive, we also understand that many organizations already have their own sets of principles, and emphases are likely to vary based on the specifics of the organization. By sharing these principles, ITEC aims to provide a roadmap for companies interested in upping their ethics game, not in mandating adoption of principles and practices.

Every principle here should be taken seriously because these are widely accepted and talked about in discussions of technology ethics. Any of them can come into play in conversations on technology ethics. In other words, when talking about technology ethics, today's business leaders should be prepared to discuss these principles even if their organization has developed its own customized set of principles. It is expected that each company will adapt what is offered here in a manner consistent with its purpose and values.

The anchoring principle is the foundation for ITEC, its reason for existence. The guiding principles come forth from the anchor, and we offer specifying principles help to provide details about the meaning of the guiding principles. These specifying principles are lettered and appear beneath each corresponding guiding principle. Near the end we give some examples of action principles, but with the understanding that this level of particularity will often vary between organizations (unless they are agreed upon industry standards, for example, like technical standards).

Anchoring Principle

Our actions are for the Common Good of Humanity and the Environment – We are committed to the responsible use of technology. We keep in mind the big picture and long term good for everyone and the environment.

To fulfill the anchoring principle's commitment to humanity and the environment, we adhere to these seven guiding principles and their specifications:



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Guiding Principles and Their Specifying Principles

1. **Respect for Human Dignity and Rights** – For the sake of the common good, all people deserve to be respected and treated as equals because of their fundamental nature as human beings.
 - A. **Autonomy and self-determination** – We believe in human autonomy and self-determination. Individuals should be able to lead their own lives freely and seek to become the people they desire to be.
 - B. **Empowerment of individuals** – Individuals should be empowered by technology rather than disempowered, overwhelmed, misled, or oppressed by it.
 - C. **Safety, security, & reliability** – Technology should be safe, secure and reliable. Technology should not intentionally or unintentionally harm people or facilitate the harming of others.
 - D. **Privacy and confidentiality** – Technologies should protect personal data, honoring privacy and maintaining confidentiality.
 - E. **Participation in governance** – Stakeholders should be consulted when subject to the decisions of others. Technologies are forms of power, and power can be oppressive. Technologies ought to be subject to governance that decreases the likelihood of their abuse.
 - F. **Right to appeal to a human** – In cases where automated decision-making is used, those subject to these decisions should be able to get an explanation of the automated decision from a person.
 - G. **Right to an explanation** – Everyone subject to decisions by automated systems or bureaucracies deserves to access an explanation in response to their inquiries.

2. **Promote Human Well-Being** – Respecting human dignity means helping others pursue their well-being so they may achieve their potential. The products and services we offer also follow this principle.
 - A. **Do good & do no harm (beneficence & non-maleficence)** – We believe in providing benefit for the common good and avoiding harm.
 - B. **Health & well-being** – We act in ways that support human health and well-being, and create products which do the same.
 - C. **Safe and respectful working conditions** – We have safe and respectful working conditions.



- D. Access to education – Everyone deserves access to education and we will work with society to encourage and enable this access.
 - E. Conflict resolution – We will support efforts to resolve conflicts from the smallest to the largest scales.
 - F. Care for the vulnerable – We will prioritize care for the vulnerable because their need is most urgent.
 - G. Financial Security – We will support efforts for the common good by supporting access to financial security for all people.
 - H. Emotional Well-being – We will consider the emotional well-being of those we directly and indirectly affect, whether through our direct actions or our products.
 - I. Purpose and Meaning – We will enable, or at least not obstruct, people in their need to seek purpose and meaning in their lives.
3. **Invest in Humanity** – We act in ways that invest in humanity. Respecting dignity means investing in the sorts of institutions and processes that help human well-being and the common good.
- A. Good institutions – We will build sound, trustworthy, sustainable institutions that work to protect human dignity and the common good, and protect against efforts to undermine institutions and people’s trust in them.
 - B. Long-term thinking – We will engage in and support long-term thinking for creating a better world rather than short-term thinking which may lead to long-term harms.
 - C. Civility & community building – We will promote civility and civil dialogue with the goal of creating stronger communities.
 - D. Building good character – We will support efforts towards cultivating good individual character along with community dispositions to facilitate good character.
 - E. Creating healthy, inclusive cultures – We will work towards creating healthy cultures that are supportive and inclusive of all people.
4. **Promote Justice, Access, Diversity, Equity, and Inclusion** – We act in ways that are just and fair. Injustice violates human dignity and the common good; therefore, we will promote justice, access, diversity, equity, and inclusion with respect to the resources necessary for human and environmental well-being and sustaining peace.
- A. Truth for the Sake of Justice – We believe in supporting truth and facts as a foundation for justice. Justice is impossible without first knowing the facts of the case.



- B. Inclusion and Non-Discrimination – We do not discriminate; we include all people and the products/services we create anticipate use by all types of people.
Organizations and individuals should strive for inclusion and nondiscrimination.
 - C. Fair Economic Conditions – We support fair economic conditions; economic inequity should not be too extreme or it can harm the common good. Economies should serve people and not the reverse.
 - D. Peace through Justice – We believe justice is the foundation of a peaceful society. Injustice damages the fabric of society by sowing distrust and enmity, while justice holds wrongdoers accountable, promotes equality and rewards those who provide benefit to society.
 - E. Governance as generative dialogue – We believe that governance is a generative dialogue, where new ideas, guidelines and commitments flow from exchanges between stakeholders.
 - F. Co-creation when working with the poor and marginalized – We believe in promoting the human dignity of the disadvantaged through the co-creation of value.
Disadvantaged and vulnerable people deserve respect, which includes listening to their ideas for what they need rather than imposing external notions upon them.
 - G. Subsidiarity – We believe in subsidiarity, which is the idea of making decisions at the governance level closest to those affected and only going to higher levels if the common good and human dignity and well-being requires it.
5. **Recognize that Earth is for All Life** – We share this earth with all living things. Earth’s resources exist for all. In the Earth’s biosphere all life forms are integrally connected and do best when the other life forms in the ecosystem are also flourishing – therefore we should share with other lifeforms to make sure that their needs are also provided for, both for their own sake and because our own flourishing also requires it.
- A. Environmental sustainability – We believe in using resources at a sustainable rate.
Humankind often uses resources at a faster than nature can renew them, thus damaging the environment. We will act to change our behaviors and technologies so that we can live within the limits of the environment. We will promote regenerative and restorative changes to help the environment recover to the condition before humans damaged it.
 - B. Biodiversity – We will work to protect biodiversity. Just as human diversity is precious, so is biological diversity. There are millions of kinds of lifeforms on Earth,

- in uncountable populations and individuals. This diversity helps to protect the balance of nature and prevent ecosystems from degrading.
- C. Climate action – Because climate change is already causing catastrophic damage to human civilization and the natural environment, to preserve the common good, we will take actions to stop and reverse climate change.
 - D. Earth is shared by all life – Earth’s resources do not exist for the sake of exploitation by humankind. The resources, non-living and living, exist without us, in their own right and are meant to be shared. An expansive sense of the common good includes the environment.
- 6. Maintain Accountability** – We believe in accountability for individuals and enterprises in every sector: corporations, governments, nonprofits, or community groups. Accountability means that people and organizations need to be able to give account of their actions for the sake of explanation and responsibility for successes and failures. We accept responsibility for the technology we make and ask our users to accept responsibility for how they use it. We will invest resources to secure accountability.
- A. Individuals are responsible for their actions, even those taken in organizational settings. To create safe conditions for individual responsibility, organizations should refrain from shaming people for making honest mistakes or who bring forward concerns, even if those concerns do not bear out upon investigation
 - B. User accountability –Users of technology need to be accountable for the ways in which they use products and should incentivize the development and use of technology in order to facilitate the common good; product designers should be mindful of and responsive to these concerns.
 - C. Corporate accountability – Decision-makers in business need to be accountable for their actions and incentivized to promote the common good. Corporate leaders should accept responsibility and remedy harms caused by the negative consequences of products and service even if these consequences were not intended.
 - D. Government accountability – Decision-makers in government need to be accountable for their actions and incentivized to promote the common good. Additionally, they should promote accountability in all other sectors of society through policies, regulations, and laws.
 - E. Risk disclosure – Organizations should invest resources in identifying and responding to risks, including the communication of material risks to appropriate audiences to inform stakeholder decision making.

- F. Compliance mechanisms—Means for enforcing individual and organizational compliance with regulations and standards are developed and resources are provided to support them.
7. **Promote Transparency and Explainability** – Accountability relies on being able to understand who and what made particular ethically significant choices and how and why those choices were made. Process – the way things are done – matters, and so the transparency and explainability of those processes matter too.
- A. Transparency & trustworthiness – We commit to transparency with an aim to be considered a trustworthy enterprise. Trust comes from trustworthiness, and trustworthiness comes from a history of making the right choices for the right reasons. Without transparency it is unclear *why* choices are made, so for the sake of trust, these processes and reasons should be made clear.
- B. Simplicity – products and services should be designed in the simplest way possible to reduce complexity, make clear the value proposition being provided to consumers, and improve sustainability for products requiring frequent updates.
- C. Fact-based decision-making – We commit to using facts. Decision making ought to be accountable to facts, not merely opinions or ideologies, and these facts should be open and explainable.
- D. Openness on process and decision-making – We believe in openness in process and decision making. Closedness and secrecy harm trust. As much as possible, decision making ought to be open so that reasoning is visible and results are interpretable and accountable.
- E. Human oversight – We value human oversight. All machine systems ought to have humans overseeing them so that there are people to appeal to for explanations, to prevent machine systems from going astray and causing harm, and to maintain accountability.
- F. Interpretability – We believe our products/services should be interpretable and understandable as well as the decisions from any human or machine system.
- G. Reporting Status and Progress – We will report progress against a set of goals and identify the audiences they are serving in their decision making in a way that stakeholders can easily find and understand.
- H. Feedback channels for explanations – We offer feedback channels for input and to provide explanations.

Action Principles

Action principles are ones that directly help to guide those who are immediately faced with ethical decisions. They are extremely specific, in fact, so specific that they are hard to talk about in the abstract – examples are often most helpful, and some will be listed below.

Throughout the history of ethics, humans have noted that the abstract rules of ethics are constantly faced with the changing reality in which we live. Fitting the universal abstract principles of ethics to the particular concrete cases that we face can require more than just an anchoring principle, more than just guiding principles, and more than just specifying principles; they require Action Principles: principles that tell you *exactly* what to do in a given circumstance.

The only problem is that the more specific and action-oriented a principle is, the more principles you need in total. Above are listed *one* anchoring principle, *seven* guiding principles, and *forty-six* specifying principles. This reflects a movement from the abstract and universal and towards the concrete and particular. The more specific principles become, the more of them you need to have, until it eventually becomes such a large number that it is impractical. Following the pattern, eventually you end up with an *infinite* number of ethical rules: one for every single case anyone ever has encountered, or ever will encounter. Needless to say, creating such a list is impossible (though it certainly has been tried, and analogous situations have happened in computer science during certain periods of the development of AI).

Additionally, and as noted above, the multiplication of principles can lead to more conflicts between principles, as well as potentials for misapplication. This is why good human judgment should never be removed from ethics – and it's the same reason a legal system does not consist merely of laws, but has judges and juries. Rules are always in a sense brittle, which is why people need to be there to lend flexibility and also know when it is okay to prioritize one principle over another.

Given these restrictions, then, here we will only try to give a smattering of possible action principles for technology ethics, covering an assortment of situations correlated with a few of the above guiding and specifying principles. By no means should each specifying principle be considered to have only one action principle; far from it, each will likely have numerous action principles.

1. Respect for Human Dignity and Rights...

C. Safety, security, & reliability...

- Action principle: we will store data securely, in proportion to the harm that might occur if it were to be inappropriately released.



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- For example: in W case, X security measures should be taken, and in in Y case, Z security measures should be taken.

D. Privacy and confidentiality...

- Action principle: we will not collect more data than necessary, and collected data should be stored in a manner that optimizes the protection of privacy and confidentiality.
 - For example: healthcare data should be stored in accord with relevant legal regulations, and financial data should be stored in accord with relevant legal regulations. In neither case should extraneous data be collected with the necessary data. Above and beyond the legal requirements, organizations might also consider what ethical responsibilities they have to their customers and, were it their data at stake, consider how protected they would like their data to be; and thus add an extra layer of protection in accordance with ethical notions of reciprocity.

2. Promote Human Well-Being...

A. Do good & do no harm (beneficence & non-maleficence)...

- Action principle: we will not addict or otherwise harm our users by creating overly enticing or distracting products. If a product has addictive qualities, we will determine ways to reduce the addiction or otherwise give users breaks in order to maintain their life balance, thus keeping user best interests in mind.
 - For example: the product will suggest a break or become “boring” after a certain period of time. Obviously, these specifications are only possible in the very specific circumstances of the product itself.

3. Invest in Humanity...

B. Long-term thinking...

- Action principle: we will not develop products faster than we can consider their ethical impacts and mitigate their ethical problems.
 - For example: this might include slowing the pace of development when necessary, if a product is likely to have short-term financial benefits to an organization while causing long-term harm to society. The goal here is to enhance benefits over the long term because harming society will eventually harm one’s own organization as the sociotechnical context degrades (current examples of this might include social media). To be very concrete, if a product is expected to have W effect, then



X mitigation might be appropriate, while another with Y effect might need Z mitigation.

4. Promote Justice, Access, Diversity, Equity, and Inclusion...

B. Inclusion and Non-Discrimination...

- Action principle: we will examine our usage data for signs of inequitable access to our products and if/when discovered consider ways to make access more equitable.
 - For example: if certain groups of people who could benefit from a product are unable to use it, the specific causes might be investigated and remedies implemented.

5. Recognize that Earth is for All Life...

C. Climate action...

- Action principle: we will carefully monitor the organization's energy use and determine ways to reduce that energy use. Insofar as usage cannot be reduced we will consider ways to use sustainable energy sources.
 - For example: heating and cooling systems could be set to more energy efficient thresholds, and solar panels might be installed to provide sustainable energy.
- Action principle: since business becomes more difficult in a world full of climate disasters, we will consider ways to take reasonable steps towards environmental restoration and regeneration.
 - For example: land owned by the organization might be planted with more vegetation, such as living roofs, thus partially ameliorating habitat destruction due to urban growth

6. Maintain Accountability...

F. Compliance mechanisms...

- Action principle: if regulations are violated, we will act to stop the violation and hold those responsible for it accountable, including preventing them from making similar violations in the future. The severity of reactions will be proportionate to the severity of the violations.
 - For example: while freedom of speech is highly prized, it is recognized to have limits – making threats, promoting terrorism, and certain forms of abuse are illegal in many jurisdictions, and therefore any companies that deal with the



freedom of speech also need specific policies concerning their response to illegal speech.

7. Promote Transparency and Explainability...

H. Feedback channels for explanations...

- Action principle: respect for users includes giving them explanations for why and how decisions are made that concern them. We will provide a reasonable level of explanation to users if requested.
 - For example: if a loan application is denied and the applicant requests to know why they were rejected, a reasonable amount of information should be given to them to explain why this decision came about and exactly what contributed to the denial.

The above are just a tiny fraction of the action principles associated with the above guiding and specifying principles. Every organization likely already has many of these action guiding principles in use, but just does not call them by this name, calling them instead policies, regulations, rules, cultural norms, and so on. But when pursuing the creation of an ethical culture, it often makes sense to be as explicit as possible so that norms can be actively encouraged and not ignored or forgotten.

As a last point – the above principles, at all levels, can come into tension and even conflict with one another. Privacy and safety can conflict. Privacy and transparency can conflict. Autonomy can conflict with many (if not all) of the above principles, including itself. Because there are multiple goods to pursue in life, no single rule can account for everything, and as long as there is more than one rule, then conflict becomes inevitable. Therefore, none of these principles can be absolute; all must be applied with prudential judgment and care. This does not mean that the principles are weak or should be broken without cause, far from it. What it means is that under certain circumstances some of these principles might need to take second place to others of these principles in order to best protect the common good of all people and the environment.

Committing to these principles by using them in enterprise decision making will change the culture of business writ large and small. At industry and sector levels, work is underway to define standards and develop regulatory means to capture ESG goals and performance of companies.

