



## Visualizing Trustworthy & Ethical Technology

Upholding timeless standards in an age  
of advanced technology

Authored by Beena Ammanath

Technology, trust, and ethics are all woven into what is often called *the common good*. We see the changes all around us, and they demand new approaches.



# Contents

- 01 **Introduction**  
4
- 02 **Defining the challenge**  
7
- 03 **Deloitte's commitment**  
9
- 04 **Visualizing the promise**  
10
- 05 **A shared quest**  
11

# Introduction

**In a modern smart home, a day might start like this: Your alarm wakes you to your favorite song, the temperature was adjusted while you slept, and the window shades have been opening gradually in alignment with your sleep cycles. Perfectly rested and ready to attack the day, you find your coffee has been brewed and your home assistant has ordered your ride to the airport.**

On the way, you download your boarding pass to your phone. At the terminal, you accept the terms of the airport WiFi and tap your phone to buy a magazine at a kiosk. You make sure your meeting documents (and a movie) are safely downloaded to your tablet before you board, and just before the cabin door closes, you text your family to let them know you're okay.

That vision shows only one glimpse of the potential that technology has to enrich our lives by penetrating our routines, sometimes past the point where we're aware of it. Earlier generations had technology, but they largely experienced it in discrete "doses"—using it, then putting it down. Today, technology is ubiquitous: You don't ever "put it down" because it informs and affects almost everything we do. That makes technology a greater power for potential good, but it also makes technology harder to control, and its effects harder to predict.



When people have no choice but to trust technology, the people who make and deploy it should make it trustworthy. When people's livelihoods, health, and reputations are at the mercy of technology, it should uphold well-founded ethical principles. But technology does not have inherent values—it is up to the people who create and use the technology to consciously embed those qualities in it. Calling attention to that responsibility is a global purpose with mounting implications.

Recent events have hastened this reckoning. The COVID-19 pandemic showed how much we depend on technology, not only to combat the virus but to carry on daily life and commerce. Enterprises are responding to a growing expectation that they pursue goals other than profit. Technology, trust, and ethics are all woven into what is often called “the common good.”

We see the changes all around us, and many demand new approaches. Deloitte is taking a new approach of its own: the creation of a new internal structure dedicated to promoting standards and practices of trustworthy and ethical technology across society and industry.

Three trends have propelled this development. First, the core technologies themselves are still on a trajectory of refinement and are not yet fully mature. Artificial Intelligence (AI), Machine Learning (ML) augmented and virtual reality (AR/VR), cloud computing, and blockchain are all emerging technologies that are still progressing toward their fully realized states.

“Technology holds incredible promise and potential to solve some of the world's, toughest problems—driving value in today's rapidly changing world. In order to see that tech enabled future, we must do so on the basis of trust at the outset, and reinforced with rigorous consideration of privacy, security, and the ethical implications of the technology we design, build, and operate.”

—**Dave Couture**  
Managing Partner  
Technology Strategy & Partnerships  
Deloitte Consulting LLP



01

02

03

04

05

## Introduction

Second, in a parallel process, these technologies are being applied in the real world to drive tangible business value across industries and across functions globally—even as the core technologies are progressing.

The third parallel process involves understanding: What are the consequences of using emerging technology in the real world without first understanding the full implications of the short- and long-term impacts of using that technology—or being aware of those impacts in the first place? This is the part of the process in which society should confront and consider the risks, policies, regulations and ethical aspects of these technologies.

As these three streams course together—the growing power and presence of technology and our growing sense that we need to be more cognizant of its effects—it becomes incumbent upon us to be more proactive and thoughtful about the ways each industry applies technology to its needs. That means getting ahead of the curve, because while it's natural to be reactive in the face of consequences, the only way to earn trust is before the fact, by establishing processes and structures that can mitigate negative outcomes and promote intended ones.



# Defining the challenge

**People and institutions that create and use technology usually do so with positive intentions. The exceptions, of course, are worth extra attention. But even without malice or dishonest intent, the “normal” uses of technology bear watching as well.**

We are most aware of ethical implications when new technologies present us with novel situations. But the fact is there is an ethical dimension to nearly every use of technology, whether new or old. It is crucial that we evaluate

these ethical implications before a lack of trust in institutions limits our ability to. For example, in a recent survey, 66 percent of people say they worry technology will make it impossible to know if what people are seeing, or hearing is real.<sup>1</sup>

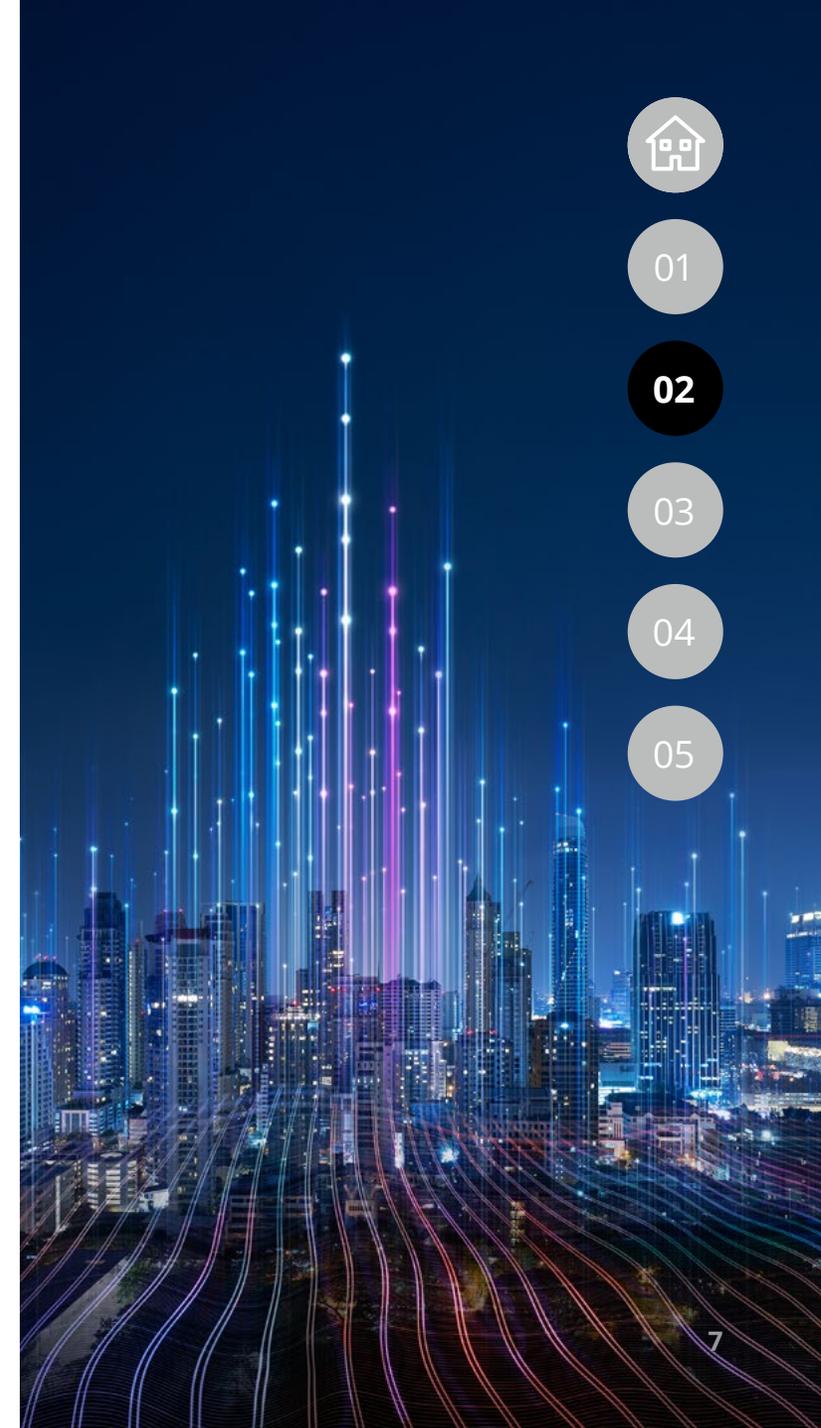
What do the terms we’re using mean?

A technology is trustworthy when it operates as intended and protects against today’s threats.

A technology or its use is ethical when principled thinking has guided its technological design, delivery, and innovation.

66 percent of people say they worry technology will make it impossible to know if what people are seeing, or hearing is real.

1. Edelman Trust Barometer, 2020



Even when people try to adhere to these standards, unintended consequences and baked-in biases can create outcomes the designers, makers, and users of technology may never have anticipated. Examples of these potential negative effects can be attributed to well-established technologies as well as emerging ones:

- **Racial and gender biases** built into AI that influence facial recognition, credit decisions, human resources or real estate outcomes
- **The carbon footprints and noise pollution** associated with server farms and similar large installations

- **Misrepresentations and behaviors** in digital reality, deepfakes, and other uses of manipulated imagery
- **News feed algorithms** that use persuasive design techniques to maximize a user's screen time
- **Social implications** of geolocation technology that identifies areas as "dangerous" or undesirable based on inadvertent bias
- **Engagement with digital technologies** that runs so deep people lose a taste for non-digital activities such as talking with family or spending time outdoors
- **Poor posture** caused by the "down and forward" device orientation associated with frequent laptop and mobile phone use

In these and other cases, applying an ethical mindset to the design, development, and deployment of technology can shape the influence it has. At every step during the creation and use of technology, there is a pivot at which principles such as autonomy, fairness, respect, privacy, inclusion and environmental stewardship can either advance or suffer. The cost is measured in risk, relationships, potential sanctions, and trust.

"We can't address the implications of rapid technological advances until we consider the intricate relationships that link diversity, technology, and human values."



01

02

03

04

05

# Deloitte's commitment

**At Deloitte, we believe technology can foster a more productive and prosperous society when people can trust it—and when people and institutions apply it in ethical ways. Technology has outcomes that can harm people and erode shared values if decision makers aren't intentional in identifying, understanding, and optimizing its effects.**

To answer this need, Deloitte has established a dedicated structure within its own organization—the Trustworthy and Ethical Technology practice. This is the focal point of our commitment to champion leading ethical technology techniques, in part by applying a standard of intentionality to our own technologies, processes, and people, but also by helping those efforts take root across society.

We are advancing this issue as a broadly realized social and institutional priority so that more people can enjoy the equitable benefits of a tech-savvy world. Having identified trustworthy and ethical technology as a challenge the world needs to address, Deloitte is embracing it as a central pillar of its own purpose-based mission.

This commitment includes supporting our clients, but that is only part of the mandate. This is a society-wide challenge, and Deloitte is working to convene specialists from across many industries and sectors to advance a broad consensus.

The social and technical implications of this topic are closely meshed, so the ways we address it should be based on a multi-disciplinary understanding of human nature and human values that harnesses the power of differing perspectives.

“There isn't a simple answer for building trust and ethics into the use of technology. The task begins with awareness of other people's experiences, desires, and perspectives.”



01

02

03

04

05

# Visualizing the promise

## **When society recognizes and adheres to ethical standards, what long-term benefits can result?**

Within a technology-enabled organization, adherence to trustworthy and ethical technology practices can help direct actions that more effectively reflect a diverse set of values and priorities. These practices can also help build teams and workforces in which people are better informed about the technologies they use and the outcomes they drive.

This is the basis of trust, and trust is increasingly indispensable as a credential for doing business in almost any field. One Deloitte study found that even after a data breach, surveyed customers were 2.8 times more likely to continue purchasing from an organization if they know that organization follows identifiable hallmarks of trust.<sup>2</sup> Other research has shown that 79 percent of employees surveyed who highly trust their employers feel more motivated to work.<sup>3</sup> Of course an organization that fosters trustworthy and ethical behavior is also less likely to suffer liability or regulatory effects as the result of its actions.

But the promise of this movement extends beyond the organizations that directly create and use technology. We began by observing that modern life seldom includes a break from using technology; it may have positive impacts or negative ones, but it will have effects. From education to employment to our personal lives, from interacting with the commercial world to interacting with the legal and criminal justice systems, the degree to which technology upholds our trust can have a large and growing effect our quality of life we share. A future in which people can approach technology with more confidence and ethical intent is one that will have fewer barriers to achievement, prosperity, and peace of mind.

Research has shown that 79 percent of employees who highly trust their employers feel more motivated to work.

2. Deloitte HX TrustID survey, May 2020

3. Deloitte HX TrustID survey, May 2020



# A shared quest

**These technology concerns are too complex to present as a single problem, and there is no single solution to the challenges they contain. The call to action that the moment requires is for shared recognition and shared exploration.**

Every contact with technology involves an exchange—whether the people involved realize it or not. People provide personal details, financial data, locations, and keys to their identities in exchange for some advantage and utility that technology provides. That makes it increasingly important to know who sets the terms of these exchanges, and how. It puts a premium on standards that keep our interactions transparent and fair.

That doesn't mean we should pursue a unitary ethical standard for technology. Rather, the challenge is for each organization to understand the ethical implications of its own work, to set standards, and to apply them in a way that is consistent, sustainable, and visible. Ethics is more

than compliance; ethics is debate, conversation, and informed decision-making.

When that awareness takes hold and those conversations bear fruit, people will be able to enjoy the benefits of technology with greater confidence. That can speed the cycle of innovation by removing the “braking effects” of doubt, hesitation, and mistrust.

Deloitte is committed to leading the charge toward a new morality for technological advancement. We eagerly invite others who want to join us in this shared purpose, and we hope we can take the next steps together by sharing each other's perspectives and insights.

Ethics is not compliance; ethics is debate, conversation, and informed decision-making.



01

02

03

04

05

# Acknowledgements

## About the author

---



**Beena Ammanath**

**Director, Trustworthy and Ethical Tech**

Deloitte

Tel: +1 415 783 4562

Email: bammanath@deloitte.com

 @beena\_ammanath

 bammanath

Beena is Executive Director of Deloitte AI Institute and leads Trustworthy and Ethical Tech for Deloitte. She is an award-winning senior executive with extensive global experience in AI and digital transformation, spanning across e-commerce, finance, marketing, telecom, retail, software products, services and industrial domains with companies such as HPE, GE, Thomson Reuters, British Telecom, Bank of America, e\*trade and a number of Silicon Valley startups. She is also the Founder of non-profit, Humans For AI.

A well-recognized thought leader in the industry, she also serves on the Advisory Board at Cal Poly College of Engineering and has been a Board Member and Advisor to several startups. Beena thrives on envisioning and architecting how data, artificial intelligence and technology in general, can make our world a better, easier place to live for all humans.

[www.deloitte.com/us/trustworthy-tech](http://www.deloitte.com/us/trustworthy-tech)



01

02

03

04

**05**



### **About Deloitte**

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee (“DTTL”), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as “Deloitte Global”) does not provide services to clients. Please see [www.deloitte.com/about](http://www.deloitte.com/about) for a detailed description of DTTL and its member firms. Please see [www.deloitte.com/us/about](http://www.deloitte.com/us/about) for a detailed description of the legal structure of Deloitte LLP and its subsidiaries. Certain services may not be available to attest clients under the rules and regulations of public accounting.

This publication contains general information only and Deloitte is not, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor.

Deloitte shall not be responsible for any loss sustained by any person who relies on this publication.

Copyright © 2021 Deloitte Development LLC. All rights reserved.