

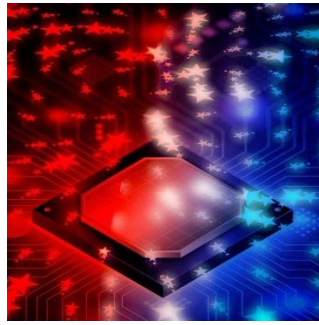


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Assessing Ethical Innovation

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Technological innovation shapes society at unprecedented speed and scale. Organizations face mounting pressure to ensure their innovations create value not just for shareholders, but for all stakeholders. Recent corporate scandals, regulatory scrutiny, and shifting consumer expectations have made ethical innovation a strategic imperative rather than a compliance afterthought. Placed in today's context of rapid-fire innovations in artificial intelligence, a gauge on an organization's ethics culture and practices should be a high priority on the CEO agenda.

Yet most firms lack systematic approaches to evaluate and enhance their ethical innovation capabilities. This assessment framework provides senior executives with a comprehensive diagnostic tool to measure their organization's current ethical innovation maturity, identify critical gaps, and develop targeted improvement strategies. While the framework presented here offers a means for self-assessment, organizations seeking to accelerate their ethical innovation journey may benefit from expert guidance in implementing and customizing these approaches to their specific industry contexts and strategic objectives.

Why Have an Ethical Innovation Assessment?

Organizations should apply the Ethical Innovation Assessment to systematically evaluate their current ethical practices, identify gaps in their innovation processes, and develop targeted improvement strategies. The assessment serves as both a diagnostic tool to understand ethical strengths and weaknesses and a strategic planning instrument to prioritize initiatives that will enhance the organization's ethical innovation capabilities. By generating a quantifiable Ethical Innovation Score, organizations can establish baselines, track progress over time, and benchmark their ethical performance against industry standards or organizational goals.

Who Does It?

The assessment should be conducted by a cross-functional team that includes senior leadership, innovation managers, product development teams, ethics officers, legal counsel, and customer experience representatives. Senior executives must actively participate to ensure accurate scoring and provide the necessary authority for executive decision-making on initiative prioritization. External stakeholders such

as customers, community representatives, academics, or ethics consultants may also be included to provide objective perspectives on the organization's ethical practices. The assessment team should have diverse backgrounds and expertise to capture the full spectrum of ethical considerations across five dimensions, which are discussed below.

When to Do It?

The Ethical Innovation Assessment should be conducted at three critical junctures: at the beginning of major innovation initiatives to establish baseline ethical practices, at the midpoint of projects to monitor progress and make course corrections, and at the completion of initiatives to evaluate outcomes and capture lessons learned. Organizations should also conduct annual assessments as part of their strategic planning process to ensure continuous improvement in ethical innovation practices. Additionally, the assessment should be triggered when significant organizational changes occur, such as mergers, leadership transitions, or entry into new markets that may impact ethical considerations.

A 25-Point Diagnostic

An ethical innovation assessment aligns with the five dimensions of ethical innovation. The dimensions incorporate both tangible and intangible attributes. The dimensions and each's five attributes, a total of twenty-five attributes, comprise an ethical innovation diagnostic tool generating an Ethical Innovation Score (EIS). A firm's EIS informs leadership of ethical strengths on which to build for competitive advantage and shortcomings to be addressed. With the EIS in hand, organizations can devise strategies and implement initiatives to execute those strategies. The dimensions and their attributes are listed below.

Detailed definitions for the attributes appear in the Appendix of this paper as Exhibit 1.

The Five Dimensions

- A. Human-centered ethical design
- B. Embedding ethics within innovative technologies
- C. Ethical use of innovations
- D. Change in attitudes and mindsets
- E. Motivation for ethical behavior

And Their Attributes

Dimension A: Human-Centered Ethical Design

- A1: Ethical selection of customer segments and needs
- A2: Unbiased end-user research
- A3: Divergent thinking
- A4: Unbiased convergent thinking
- A5: Ethical strategic decision-making

Dimension B: Ethics Embedded within Innovative Technologies

- B1: Society, industry, and corporate ethics reconciliation
- B2: Ethics-guided product management choices
- B3: Design-for-ethics (DFE) for all ecosystem stakeholders
- B4: Rapid prototyping in an ethics context
- B5: Fairness of product value proposition

Dimension C: Ethical Use of Innovation

- C1: Beneficence principle
- C2: Ethics-based end-user choices
- C3: Transparency
- C4: Accountability and responsibility
- C5: Recourse

Dimension D: Changes in Attitude and Mindset

- D1: Moral consistency across value chain
- D2: Awareness and continuous education
- D3: Cross-functional collaboration
- D4: Linkage to customer ethics
- D5: Ethical leadership

Dimension E: Motivation for Ethical Behavior

- E1: Profit
- E2: Power
- E3: Emotion
- E4: Altruism
- E5: Conscience

The Ethical Innovation Scorecard

With the theoretical framework and attribute definitions established, organizations can now turn to the practical implementation of the Ethical Innovation Assessment. The following process provides a systematic approach to conducting the evaluation and translating insights into actionable improvement strategies.

1. Assemble an evaluation team. Include people outside your organization.
2. Review the definitions of all 25 attributes to ensure common understanding.
3. Assign a score of either "1" (currently exists) or "0" (does not currently exist) based on objective evidence and team consensus.
4. Tally the raw score and express it as a percentage of a perfect EIS of 25.
5. Consider organizational priorities, resource constraints, and strategic objectives.
6. Determine whether an initiative is required ("Y") or not required ("N") to improve deficiencies.
7. Make final decisions on which initiatives will be implemented and in what order.
8. Develop initiative plans to build on ethical strengths and address ethical deficiencies.
9. Launch and manage the ethical innovation initiatives.
10. Communicate and celebrate ethical innovation successes, mostly customer-centric.
11. Measure EIS periodically in order to reward successes and to course correct setbacks.

To illustrate how the assessment process works in practice, consider the following completed diagnostic for a mid-sized technology company that recently underwent the Ethical Innovation Assessment.

Example Completed Diagnostic (for a mid-sized U.S.-based software firm)

Ethical Innovation Attribute	Ethical Innovation Score 0 or 1	Initiative Required? Y or N
Dimension A: Human-Centered Ethical Design		
A1: Ethical selection of customer segments and needs	1	N
A2: Unbiased end-user research	0	Y
A3: Divergent thinking	0	Y
A4: Unbiased convergent thinking	0	Y
A5: Ethical strategic decision-making	1	N
Dimension B: Ethics Embedded within Innovative Technologies		
B1: Society, industry, and corporate ethics reconciliation	1	N
B2: Ethics-guided product management choices	0	Y
B3: Design-for-ethics for all ecosystem stakeholders	1	N
B4: Rapid prototyping in an ethics context	0	Y
B5: Fairness of product value proposition	1	N
Dimension C: Ethical Use of Innovation		
C1: Beneficence principle	0	Y
C2: Ethics-based end-user choices	0	Y
C3: Transparency	1	N
C4: Accountability and responsibility	1	N
C5: Recourse	1	N
Dimension D: Changes in Attitude and Mindset		
D1: Moral consistency across value chain	0	Y
D2: Awareness and continuous education	0	Y
D3: Cross-functional collaboration	1	N
D4: Linkage to customer ethics	0	Y
D5: Ethical leadership	1	N
Dimension E: Motivation for Ethical Behavior		
E1: Profit	1	N
E2: Power	1	N
E3: Emotion	0	Y
E4: Altruism	0	Y
E5: Conscience	1	N
Total Score (out of a maximum of 25)	13/25	12 Y's

Findings and Implications from the Example

The example assessment revealed a concerning ethical innovation profile, with the organization scoring only 13 out of 25 possible points (Ethical Innovation Score of 52%). While this score fell below the 60% threshold that would indicate basic ethical maturity, it did reveal some foundational strengths distributed across the five dimensions. Notable capabilities included ethical customer segment selection (A1), stakeholder-inclusive design (B3), transparency practices (C3), accountability mechanisms (C4), and

effective recourse systems (C5). These established practices suggested the organization had some ethical infrastructure in place and demonstrated awareness of responsible innovation principles.

On the other hand, the assessment identified pervasive and critical gaps that significantly undermined the organization's ethical innovation capabilities. The most concerning deficiencies spanned multiple dimensions and exposed the company to substantial risks. In Dimension A (Human-Centered Ethical Design), the organization lacked systematic approaches to unbiased end-user research (A2) and divergent thinking (A3), while also failing to implement unbiased convergent thinking processes (A4). These fundamental research and ideation weaknesses led to products that misunderstand user needs and failed to explore ethical alternatives.

Dimension B (Ethics Embedded within Innovative Technologies) showed equally troubling gaps, particularly in ethics-guided product management choices (B2) and rapid prototyping in an ethics context (B4). Without these critical checkpoints, the organization risked launching products that inadvertently harm users or society. The absence of the beneficence principle (C1) and ethics-based end-user choices (C2) in Dimension C further compounded these concerns, suggesting products may not prioritize positive outcomes or empower users to make informed decisions.

Perhaps most critically, Dimension D (Changes in Attitude and Mindset) revealed systemic cultural deficiencies including lack of moral consistency across the value chain (D1), absence of continuous ethics education (D2), and missing linkage to customer ethics (D4). These gaps suggested the organization's ethical practices were fragmented and vulnerable to erosion. Finally, the underdeveloped emotional motivation (E3) and altruistic motivation (E4) in Dimension E indicated that ethical behavior may not be deeply embedded in the organizational culture.

With 12 initiatives required across nearly half of all attributes, this organization faced a comprehensive ethical transformation challenge that required significant leadership commitment, cultural change, and systematic implementation to achieve meaningful improvement in ethical innovation capabilities.

The firm's leadership decided to focus on a single initiative that had tentacles into other attributes. The single initiative was the design and implementation of Ethics-Guided Product Management, attribute B2 of the assessment.

Example Initiative to Address Deficiency in Attribute B2: Ethics-Guided Product Management

An Ethics-Guided Product Management initiative is a systematic approach that embeds ethical considerations and moral frameworks directly into product development lifecycles and decision-making processes. It establishes protocols for evaluating potential social impacts, user welfare, and broader societal consequences at each stage of product planning, design, and deployment. This initiative typically includes ethics training for product teams, stakeholder consultation processes, and regular ethical audits to ensure products align with organizational values and social responsibility standards.

Details of the initiative undertaken by the software company appear below. The one-page charter used to quickly communicate specifics of the initiative (initiative-at-a-glance) appears as Exhibit 2 in the Appendix.

Problem Statement of the Initiative

The company's Ethical Innovation Assessment revealed a critical gap in attribute B2: Ethics-guided product management choices (scored 0/1). The organization's product development decisions prioritized

technical feasibility and market viability without systematically integrating ethical considerations throughout the product lifecycle.

This deficiency posed significant risks including potential user harm, regulatory violations, reputational damage, and misalignment with stakeholder values. Without embedded ethical checkpoints in product management processes, the company remained vulnerable to launching innovations that inadvertently exploited users, violated privacy, perpetuated bias, and created negative societal impacts. These risks undermined long-term business sustainability and stakeholder trust.

Objectives of the Ethics-Guided Product Management Initiative

Primary Objective

- Establish systematic integration of ethical considerations into all product management decisions across the entire product lifecycle, from conception through retirement.

Enabling Objectives:

- Develop standardized ethical evaluation criteria and decision-making frameworks for product managers
- Train 100% of product management staff on ethics-integrated decision-making methodologies within 6 months
- Implement ethical checkpoints at each stage of the product development process
- Create measurable ethical impact metrics that complement traditional business KPIs
- Establish cross-functional ethics review boards for product decisions with high ethical stakes
- Document and institutionalize ethical best practices for product management across the organization

Critical Success Factors

- **Leadership Commitment:** Senior executives must visibly champion the initiative through resource allocation, policy enforcement, and personal participation in ethical decision-making processes.
- **Cultural Integration:** The initiative must be positioned as enhancing rather than constraining innovation, with ethical considerations viewed as competitive advantages rather than compliance burdens.
- **Practical Implementation:** Ethical frameworks must be actionable, time-efficient, and seamlessly integrated into existing product management workflows to ensure adoption rather than circumvention.
- **Cross-Functional Collaboration:** Success requires active participation from legal, engineering, design, marketing, and customer service teams to provide comprehensive ethical perspectives.
- **Measurement and Accountability:** Establish clear metrics for ethical performance and link them to performance evaluations and advancement opportunities for product managers.

- **Continuous Learning:** Create feedback loops from customers, employees, and external stakeholders to refine and improve ethical decision-making processes over time.
- **Strategic Business Case:** Companies with strong ethical reputations enhances customers' experiences, enhances the firm's brand, command premium pricing, experience lower regulatory costs, and enjoy reduced legal exposure.
- **Competitive Advantage:** As customer awareness of ethical issues increases, ethics-guided product management becomes a key differentiator and strengthens new markets entry, top talent attraction, and customer loyalty.
- **Risk Mitigation:** Systematic ethical evaluation reduces exposure to regulatory penalties, class-action lawsuits, boycotts, and talent flight.
- **Market Access:** Many enterprise customers and government contracts now require demonstrated ethical practices.

So What?

The successful execution of the Ethics-Guided Product Management initiative delivered both tangible and intangible results across multiple dimensions:

Immediate Results (6-12 months)

Process Integration: All product managers have standardized ethical evaluation frameworks embedded in their daily workflows, with ethical checkpoints seamlessly integrated at each stage of product development.

Capability Building: 100% of product management staff were trained and became competent in ethics-integrated decision-making, creating a foundation of ethical expertise across the organization.

Risk Reduction: Early identification and mitigation of potential ethical issues before they reach market, preventing costly post-launch problems.

Medium-term Results (1 year)

Assessment Score Improvement: The organization's Ethical Innovation Score improved from 15/25 (60%) to 18/25 (72%), with the B2 attribute moving from 0 to 1.

Cultural Shift: Product teams naturally considered ethical implications as part of innovation rather than seeing ethics as an external constraint.

Competitive Positioning: The company positioned itself ahead of competitors on ethical practices, opening new market opportunities with customers requiring ethical standards.

Long-term Results (1+ years)

Market Differentiation: Products were recognized for their ethical design and responsible innovation, enabling premium pricing and stronger customer loyalty and retention.

Talent Attraction: The company attracted top-tier talent who value purpose-driven work, improving overall innovation capacity.

Regulatory Readiness: The organization was prepared to proactively comply with evolving ethical regulations rather than scrambling to comply reactively.

Stakeholder Trust: The firm enhanced its reputation with customers, investors, partners, and regulators, creating a sustainable competitive advantage.

Foundation for Expansion: This initiative created the infrastructure and culture needed to address the other 11 identified gaps in the Ethical Innovation Assessment, accelerating the organization's overall ethical maturity.

The ultimate result was the transformation from a company that innovates first and considers ethics later, to one that innovates ethically from the start, a competitive advantage in an increasingly ethics-conscious market.

Next Steps for Continuing the Journey Towards Ethical Innovation

Organizations must recognize that ethical innovation is not a destination but an ongoing journey requiring sustained commitment and continuous refinement. To successfully navigate this transformation, leadership should focus on three critical areas:

Prioritize High-Impact Initiatives

- Sequence identified initiatives based on organizational readiness, resource availability, and potential impacts
- Focus first on changes in the innovation process like bias-resistant research methodologies (A2) and ethics-guided product management processes (B2)
- Recognize that these core improvements create positive cascading effects throughout the innovation pipeline

Drive Cultural Transformation

- Develop internal ethics champions across all departments and levels
- Establish ethics-focused career development paths and advancement opportunities
- Create incentive structures that reward ethical decision-making alongside business performance
- Invest in external partnerships with ethics researchers, community representatives, and industry peers
- Stay current with evolving ethical standards and emerging sector challenges

Balance Urgency with Thoughtful Implementation

- Resist the temptation to rush implementation despite competitive pressures
- Plan iteratively, allowing for refinement as the organization learns and grows
- Ensure senior leaders visibly champion the transformation through resource allocation and personal commitment
- Celebrate ethical achievements to reinforce the importance of moral decision-making

Immediate Action Steps

- Achieve leadership alignment on the strategic importance of ethical innovation
- Launch your organization's first Ethical Innovation Assessment.
- Assemble a cross-functional ethical innovation teams with clear charters
- Execute ethical innovation initiatives
- Establish regular review cycles to ensure continuous progress and accountability.
- Seek outside help to lend a hand in what could prove to be the most important transformation in the life of your company.

To contact the author with questions, comments, and requests, email Rowland Chen at rchen@thesvlab.com.

About the Author

Rowland Chen is Chief Executive Officer of The Silicon Valley Laboratory™, a management consulting and entrepreneur advisory firm committed to clients' leadership success through innovation and strategic guidance. He is also a business Professor at De Anza College in Cupertino, California. From 2019 to 2021, Rowland was a Visiting Scientist at Carnegie Mellon University School of Computer Science exploring the realm of artificial creative intelligence. In 2024, he founded the Center for Ethical Innovation to promote and implement ethical practices in industry with a particular focus on the ethics of artificial intelligence.

About The Silicon Valley Laboratory

Located in the heart of innovation, The Silicon Valley Laboratory™ (TSVL) is a business, technology, and innovation consulting firm. Its predecessor, 3 to the 3rd Consulting was founded in 2001. TSVL works with senior leaders to devise and execute strategies for organic and inorganic growth, improved cash flow, transformation, and the competitive use of artificial intelligence.

For more about TSVL, email info@thesvlab.com

Appendix

Exhibit 1: Definitions of Attributes

The definitions of each dimension's attributes follow. These form the basis for the ethical innovation assessment, which generates the EIS. For firms undertaking ethical innovation initiatives to improve their scores, the EIS can be found at the beginning, middle, and end of initiatives to gauge strategy executive initiatives.

Dimension A: Human-Centered Ethical Design

A1: Ethical selection of customer segments and needs

The organization prioritizes serving customer segments and addressing needs that contribute positively to society while avoiding harmful or exploitative market targeting.

A2: Unbiased end-user research

The organization uses research approaches that minimize bias and ensure accurate understanding of what customers actually need and how they behave.

A3: Divergent thinking

The organization encourages creative exploration of multiple ethical solutions and alternatives during the innovation process without prematurely constraining possibilities.

A4: Unbiased convergent thinking

Leadership uses structured decision-making processes that prevent bias and ensure all options are fairly evaluated against ethical standards.

A5: Ethical strategic decision-making

Strategic choices throughout the innovation process explicitly consider moral implications and stakeholder impacts rather than focusing solely on business outcomes.

Dimension B: Ethics Embedded within Innovative Technologies

B1: Society, industry, and corporate ethics reconciliation

The organization actively aligns its ethical standards with broader societal values and industry norms while maintaining its own moral principles.

B2: Ethics-guided product management choices

Product development decisions consistently prioritize ethical considerations alongside technical feasibility and market viability throughout the product lifecycle.

B3: Design-for-ethics for all ecosystem stakeholders

Product design considers the impact on all stakeholders—customers, suppliers, communities, and society—not just immediate users.

B4: Rapid prototyping in an ethics context

The organization builds ethical checkpoints into product development to catch and fix potential problems before launch.

B5: Fairness of product value proposition

The benefits, costs, and risks of the innovation are distributed equitably among stakeholders without disproportionately advantaging some groups over others.

Dimension C: Ethical Use of Innovation

C1: Beneficence principle

The innovation is designed and deployed with the primary intention of creating positive outcomes and minimizing potential harm to individuals and society.

C2: Ethics-based end-user choices

Users are empowered with clear information and meaningful options that enable them to make informed decisions aligned with their own ethical values.

C3: Transparency

The organization provides clear, accessible, and honest communication about how the innovation works, its limitations, and its potential impacts on users and society.

C4: Accountability and responsibility

Clear mechanisms exist for identifying who is responsible for innovation outcomes and ensuring that responsible parties can be held accountable for negative consequences.

C5: Recourse

Affected parties have accessible and effective means to seek remedy when they experience harm or unfair treatment from the innovation.

Dimension D: Changes in Attitude and Mindset

D1: Moral consistency across value chain

Ethical standards and practices are uniformly applied and maintained across all partners, suppliers, distributors, and other value chain participants.

D2: Awareness and continuous education

The organization invests in ongoing ethics training and maintains awareness of evolving ethical challenges and best practices in innovation.

D3: Cross-functional collaboration

Teams from different disciplines and departments work together to integrate ethical considerations into all aspects of the innovation process.

D4: Linkage to customer ethics

The organization understands and aligns its ethical practices with the moral values and expectations of its customer base.

D5: Ethical leadership

Leaders at all levels demonstrate, communicate, and enforce ethical behavior while creating organizational cultures that prioritize moral decision-making.

Dimension E: Motivation for Ethical Behavior

E1: Profit

Ethical behavior is motivated by the understanding that moral practices can enhance long-term financial performance and business sustainability.

E2: Power

Ethical behavior is driven by the recognition that moral authority and stakeholder trust enhance the organization's influence and competitive position.

E3: Emotion

Ethical behavior stems from emotional connections to stakeholders and genuine care for the wellbeing of those affected by the organization's innovations.

E4: Altruism

Ethical behavior is motivated by a selfless desire to contribute to the greater good and improve outcomes for society beyond organizational benefits.

E5: Conscience

Ethical behavior arises from internal moral convictions and the intrinsic belief that doing the right thing is valuable regardless of external rewards or consequences.

Appendix

Exhibit 2: Example of an Ethical Innovation Initiative Charter. An initiative-at-a-glance.

Ethical Innovation Initiative Charter
Ethics-Guided Product Management (EIS Attribute B2)
 Start Date: January 2024
 Executive Sponsor: Client's Chief Executive Officer

Problem Statement Current product development decisions prioritize technical feasibility and market viability without systematically integrating ethical considerations, creating risks of user harm, regulatory violations, and reputational damage.	Governance Executive Steering Committee (CEO, CPO, CTO) with monthly reviews; Ethics Review Board for high-stakes decisions; Product Management Director as initiative owner with direct CEO reporting line.	Deliverables - Ethical decision-making framework and toolkit - Comprehensive training program for all product staff - Integrated ethical checkpoints in development process - Performance metrics and dashboard - Best practices documentation	Key Metrics - Ethical Innovation Score improvement (target: 0→1 for B2 attribute) - Product manager training completion (100% target) - Ethical checkpoint utilization rate (>90% target) - Customer ethical satisfaction scores - Regulatory compliance incidents (target: zero)
Objectives of Initiative Establish systematic integration of ethical considerations into all product management decisions across the entire product lifecycle, training 100% of product staff within 6 months and implementing ethical checkpoints at each development stage.	Team Responsibilities Initiative Lead: Overall program management and stakeholder coordination Product Managers: Implement ethical frameworks in daily decisions Ethics Officer: Develop training and evaluation criteria Legal/Compliance: Ensure regulatory alignment	Major Tasks and Activities - Develop ethical evaluation criteria and frameworks - Design and deliver training programs - Implement decision checkpoints in product lifecycle - Establish Ethics Review Board processes - Create measurement systems and reporting	Communications - Monthly executive updates to Steering Committee - Quarterly all-hands progress presentations - Bi-annual stakeholder impact reports - Continuous feedback collection from product teams - External thought leadership sharing
Critical Success Factors - Visible senior leadership commitment and resource allocation - Cultural positioning of ethics as competitive advantage, not constraint - Seamless integration into existing workflows - Cross-functional collaboration from all departments - Clear metrics linked to performance evaluations	In Scope, Out of Scope In Scope: Product management processes, decision frameworks, training, metrics, review boards Out of Scope: Engineering practices, sales processes, HR policies, vendor management (addressed in separate initiatives)	Timeline of Major Milestones Month 1: Framework development and team assembly Month 3: Training program launch Month 6: Full staff training completion and checkpoint implementation Month 9: First quarterly ethics assessment Month 12: Program evaluation and optimization	Risks & Mitigation Cultural resistance to process changes (mitigation: position as competitive advantage) Resource constraints during implementation (mitigation: phased rollout) Inconsistent application across teams (mitigation: clear accountability metrics) Regulatory changes during implementation (mitigation: flexible framework design)
Strategic Business Case Proactive ethical practices reduce regulatory costs, enable premium pricing, and provide competitive differentiation.	Expected Financial Impact Investment: \$500K Year 1, \$200K ongoing annually Benefits: Risk mitigation (\$100M+ potential loss avoidance), premium pricing (2-5% revenue uplift), market access to ethical-requirement customers	Functions Product Management (primary), Engineering, Design, Legal/Compliance, Customer Success, Marketing, Executive Leadership, External Ethics Advisory Board	Comments This initiative addresses the critical B2 attribute gap identified in the Ethical Innovation Assessment and serves as a foundation for broader organizational ethical transformation. Success will create positive cascading effects across all innovation processes.

Appendix

Exhibit 3: Further Reading

Burton, Emanuelle, Judy Goldsmith, Nicholas Mattei, Cory Siler, and Sara-Jo Swiatek. *Computing and Technology Ethics*. Cambridge, MA: MIT Press, 2023.

Costanza-Chock, Sasha. *Design Justice: Community-Led Practices to Build the Worlds We Need*. Cambridge, MA: MIT Press, 2020.

Ernst, Luis-Eduardo, and Matter, Philipp. *The ethical innovator: bridging the gap for integrating ethics into digital innovation practice*. Taylor and Francis Online, March 18, 2025.

Kearns, Michael, and Aaron Roth. *The Ethical Algorithm: The Science of Socially Aware Algorithm Design*. New York: Oxford University Press, 2019.

O'Neil, Cathy. *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*. New York: Crown Publishers, 2016.

Steen, Marc. *Ethics for People Who Work in Tech*. London: Routledge, 2022.

Umbrello, Steven. *Technology Ethics: Responsible Innovation and Design Strategies*. Cambridge: Polity Press, 2024.

Wallach, Wendell, and Colin Allen. *Moral Machines: Teaching Robots Right from Wrong*. New York: Oxford University Press, 2009.

Zuboff, Shoshana. *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. New York: PublicAffairs, 2019.