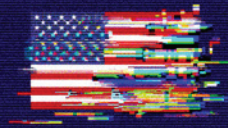


DISCUSSION GUIDE

SYSTEM ERROR



WHERE BIG TECH
WENT WRONG
AND HOW WE CAN
REBOOT

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DISCUSSION NOTE

System Error is about the future of technology. Rather than seeing technology as an external force that acts upon us, or a wave that crashes over us, the book argues that technology is something that we can control. We all have a role to play in shaping technology to help humans and societies flourish.

The book opens by identifying the root of the problems we now see with Big Tech—from the optimization mindset, to the tech industry’s obsession with scaling products to reach millions, to the deliberate indifference of U.S. politicians to tech’s growing impacts in the formative years of the creation of the information superhighway—the Internet—in the 1990s. The book then examines a set of frontier issues in technology, where the trade-offs between what technology delivers and what we say we want as a democratic society are most apparent. These include issues of algorithmic decision-making and fairness, the tension between data privacy and personal safety or national security, the consequences of automation for the human workforce, and the challenges of freedom of expression in the digital information ecosystem.

Looking to the future, the authors argue that democratic institutions should create guardrails through wise public policy that minimize the harms of new technologies and strike a balance between competing values that reflect the well-being of our society. The book is a call to action for everyone—creators and users of technology, industry, civil society organizations, public agencies, and citizens alike—to ensure that technology delivers the outcomes we want.

This discussion guide is meant to stimulate conversation about *System Error* at your book club, in your student group, among your peers at work, or with your friends. It is a resource that we have created for discussion, but it by no means exhausts the conversational possibilities. The guide has questions for each chapter of *System Error*. Some of these questions allow the reader to connect the ideas discussed in *System Error* to their own lives. Others ask the reader to engage with the ideas in the book on a more philosophical level. In short, the discussion guide emphasizes deep engagement with ethics and technology as well as reflection upon the role of technology in your life.

Part I: Decoding the Technologists

CHAPTER 1: THE IMPERFECTIONS OF THE OPTIMIZATION MINDSET

1. Where do you encounter the optimization mindset in your own life?
2. Can you measure everything that is meaningful? Where have you seen the tension between meaning and measurability before, either in your professional or personal life?
3. How do you typically handle a situation when you have to choose between two things you want if you can’t have both? How do you make your choice?
4. What culture or mindset should take the place of the optimization mindset?

CHAPTER 2: THE PROBLEMATIC MARRIAGE OF HACKERS AND VENTURE CAPITALISTS

1. Why is the venture capitalist’s obsession with scale causing problems?
2. Can we build safe things quickly? How should a company ensure that they’re achieving both safety and timeliness?
3. Do you think it’s possible for corporations to look beyond their profit motivation and to consider the benefits/harms of their activities on society? Should they?

CHAPTER 3: THE WINNER-TAKE-ALL RACE BETWEEN DISRUPTION AND DEMOCRACY

1. Does the long-standing race between disruption and democracy make you more or less confident that democracies will be able to manage the harmful effects of new technologies? Why?
2. In an age with fast-changing technologies, would it make more sense to rely on technical experts to make the tough policy decisions? Why or why not?
3. What's the value of democratic institutions when it comes to managing the consequences of technology? What's democracy good for, especially at a time of polarization and institutional dysfunction?

Part II: Disaggregating the Technologies

CHAPTER 4: CAN ALGORITHMIC DECISION-MAKING EVER BE FAIR?

1. How would you define "fairness"? Do you think there is a definition of "fair" that can consistently be applied, or is it contextual?
2. Why are people inclined to trust the decisions of algorithms more than human decisions? Are they right to do so?
3. In a world in which critical decisions are made by computers, how important is it that people are able to understand *why* the decision was made?
4. Does the use of algorithms in the criminal justice system make it fairer or does it exacerbate injustice?
5. Do you think the plan for auditing algorithms suggested by James Vacca would work? Why or why not?
6. Why was New York City unable to arrive at a robust plan for auditing algorithms? What stands in the way of government taking a more active role in ensuring that algorithms are auditable and accountable?

CHAPTER 5: WHAT'S YOUR PRIVACY WORTH?

1. What, if anything, makes you uncomfortable about Bentham's vision of a panopticon? Why isn't this simply the most efficient way to organize a prison?
2. Do you feel like you live in a digital panopticon? Are you comfortable with the amount of information about you that is visible to others?
3. How have you seen the privacy paradox play out in your own life? Do you encounter inconsistencies between what you say you value in terms of privacy and how you actually behave?
4. What's potentially lost if we leave it to individuals to make their own decisions about how much personal data they want to share with others?
5. If companies were to be required to obtain *meaningful, informed* consent from tech users, how might you make that idea operational?
6. Should individuals be able to give up all their privacy for money? If not, what kind of privacy should they be able to give up?

CHAPTER 6: CAN HUMANS FLOURISH IN A WORLD OF SMART MACHINES?

1. Who is most at risk of losing their economic livelihood as a consequence of automation?
2. What are we owed when we are harmed by automation? Who owes us something? Corporations? Government?
3. Should we institute a “Robot Tax” as a way to disincentivize the replacement of human workers or to make up for payroll taxes when workers are displaced?
4. Are there any aspects of our lives that should never be automated? What are they? What criteria do you use to make that judgment?
5. Do you think that government needs to intervene in some way to ensure that automation doesn’t undermine human well-being? What should government do?

CHAPTER 7: WILL FREE SPEECH SURVIVE THE INTERNET?

1. What is a platform?
2. What, if anything, is at risk in a world in which we embrace and protect free speech in the age of the digital public sphere?
3. Renee DiResta argues that freedom of speech is not the same as freedom of reach. What is the justification for denying someone the right to have their voice amplified on a social media platform?
4. How would you define misinformation?
5. What guidelines should a platform like Facebook adopt for deciding whether to ban a user or delete a post?
6. Does the Facebook Oversight Board go far enough to address the concern that Facebook (and Mark Zuckerberg) should not be making decisions on their own about who can say what on the platform?
7. Have the social media platforms been right to resist efforts by government to regulate the community standards they set for their own users?

Part III: Recoding the Future

CHAPTER 8: CAN DEMOCRACIES RISE TO THE CHALLENGE?

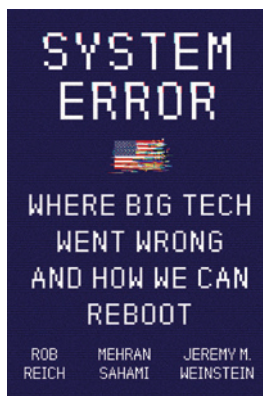
1. What things would you do to mitigate the harms of technology in your own life?
2. If you wanted to teach young technologists to take ethics seriously in their work, how would you do it? What changes would you set in place in a company to ensure greater reflection on the potential harms of new products?
3. Do we need substantial changes to the structure of market capitalism to address the harms identified in the book? What needs to change?
4. Can democracy rise to the challenge of governing technology? What’s needed to make it happen?
5. How can you take action at your own institution or company to promote more ethical technology?
6. Do you think that government regulation will slow innovation by necessity?

ABOUT THE AUTHORS

Rob Reich is a philosopher who directs Stanford University's Center for Ethics in Society and is associate director of its Institute for Human-Centered Artificial Intelligence. He is a leading thinker at the intersection of ethics and technology, a prize-winning author, and has won multiple teaching awards. He helped create the global movement #GivingTuesday and serves as chair of its board.

Mehran Sahami was recruited to Google in its start-up days by Sergey Brin and was one of the inventors of email spam-filtering technology. With a background in machine learning and artificial intelligence, he returned to Stanford as a computer science professor in 2007 and helped redesign the undergraduate computer science curriculum. He is one of the instructors of Stanford's massive computer programming course taken by nearly 1,500 students per year. Mehran is a limited partner in several V.C. funds and serves as an adviser to high-tech start-ups.

Jeremy W. Weinstein went to Washington with President Obama in 2009. A key staffer in the White House, he foresaw how new technologies might remake the relationship between governments and citizens, and he launched Obama's Open Government Partnership. When Samantha Power was appointed U.S. Ambassador to the United Nations, she brought Jeremy to New York, first as her chief of staff and then as her deputy. He returned to Stanford in 2015 as a professor of political science, where he now leads Stanford Impact Labs.



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Where Big Tech Went Wrong and How We Can Reboot
By Rob Reich, Mehran Sahami, and Jeremy M. Weinstein

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This guide was prepared by the authors of *System Error*.

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