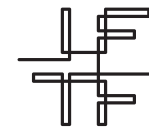




A Playbook for
**Ethical Technology
Governance**

tingari-silverton

foundation



INSTITUTE FOR THE FUTURE



About IFTF

Institute for the Future (IFTF) is the world's leading futures organization. For over 50 years, businesses, governments, and social impact organizations have depended upon IFTF global forecasts, custom research, and foresight training to navigate complex change and develop world-ready strategies. IFTF methodologies and toolsets yield coherent views of transformative possibilities across all sectors that together support a more sustainable future. Institute for the Future is a registered 501(c)(3) nonprofit organization based in Palo Alto, California.



About IFTF's Governance Futures Lab

The Governance Futures Lab's mission is to inspire and enable a generation of social inventors ready to design just and sustainable governing systems for the long term. The GFL has worked closely with the US Conference of Mayors and many other governments and civic organizations around the world.

tingari-silverton
foundation

About the Tingari-Silverton Foundation

The Tingari-Silverton Foundation is a private international foundation based in Austin, Texas, and Adelaide, Australia. Its mission is to invest in innovators who are addressing our world's most debilitating socioeconomic and geopolitical challenges, from the local to the global level. They are committed to more ethically responsible futures by applying an impact lens to all that they do.

About this Playbook

IFTF's Governance Futures Lab developed A Playbook for Ethical Technology Governance with support from the Tingari-Silverton Foundation. Its goal is to help those working in government and governance sectors make long-term decisions about emerging technologies that align with traditional democratic civil service values.

Authors:

Ilana Lipsett, Lane Becker, Jake Dunagan

Editor:

Mark Frauenfelder

Executive Producer:

Jean Hagan

Design:

Robin Bogott, Trent Kuhn, Karin Lubeck

Thank you to our expert collaborators, playtesters, and peer reviewers:

Amy Cohen

Director, Public Space Initiatives,
San Francisco Office of Economic
and Workforce Development

G. Nagesh Rao

Director of Business Technology Solutions
US Small Business Administration

George Stern

Office of the County Clerk and Recorder,
Jefferson County, CO

James Keene

Writer, Speaker, Guide @City Dharma

Jennifer Tress

Special Consultant, Talent and Operations
Lead for Office of Digital Innovation,
State of California

Judi Brown

Co-Founder & Chief Impact Officer,
CivicMakers

Kiran Jain

Founder, Civic Design Lab and
former Chief Resilience Officer
for the City of Oakland

Kevin Bankston

Facebook AI Policy Director
(in his personal capacity)

Kevin Williams

Chief Information Security Coordinator,
City of Austin

Rebecca Williams

Fellow, Technology & Public Purpose
Project, Belfer Center for Science
and International Affairs,
Harvard Kennedy School


Travis Moore

Founder and Director, TechCongress

Vanessa Mason

Research Director, Institute for the Future

Contents

Introduction	4
Leadership, Ethics, and Foresight	8
How to Use This Playbook	11
Risk Zones	18
 Scenarios: Law Enforcement	21
 Scenarios: Public Health	28
 Scenarios: Equity and Inclusion	35
 Scenarios: Artificial Intelligence	42
 Scenarios: Climate	49
Playbook: Origins and Futures	56
Further Reading	57



Introduction

Civil servants, public officials, and government bureaucrats swear an oath to serve in a democratic government, committing to acting in accordance with a set of values intended to uphold the public interest. While stated values may vary between governments, they all cohere around a core set of commitments:

INTEGRITY

Public servants should adhere to the highest standards of conduct to inspire public confidence and trust.

HONESTY

Public servants should be truthful and direct when interacting with each other and with their constituencies.

OBJECTIVITY

Public servants should ground their decisions in reasoned, evidence-based analysis, thoroughly considering the outcomes and consequences of these decisions beforehand.

LOYALTY

Public servants must promote the public's interests and must put service to the public above service to themselves.

STEWARDSHIP

Public servants are entrusted to care for public resources responsibly, over both the short and long term.

Introduction

Why an ethical playbook?

This playbook is designed to bring these civil service values into the practice of strategic foresight to focus and improve the conversations governments must have, internally and externally, regarding emerging technologies. Policymakers, technology companies, and watchdog groups alike need a framework through which to assess and evaluate ethical dilemmas, to anticipate and mitigate unintended consequences of their decisions, and to act to maximize positive outcomes for most people. That is why foresight and anticipation are critical and why the Governance Futures Lab at IFTF has taken on the mission of helping governments improve their foresight capabilities to create effective systemic change in how technology is designed, scaled, and regulated.

We need to better anticipate effective regulatory systems for innovations that don't yet exist, determining when to step in and steer the process and when to step to the side and simply provide the rails. Humanity, and the systems that sustain us, cannot afford to be continually blindsided by the unexpected consequences of poor technology governance. Imagining potential future scenarios and situations is essential for ethical governance of both current and future technologies.

This playbook can help those working in government, or those responsible for governing functions in other sectors, make better long-term decisions by increasing their foresight capacity, allowing them to develop future-facing regulatory structures that remain aligned with the values and ethics of traditional democratic civil service.

Introduction

Responsible governance

Addressing a fast-changing technological landscape with governing institutions born in a slower, less complex world is challenging. Examining new technologies' possible implications and impacts is both urgent and necessary. It takes time, however, and as a result, can leave constituents with the perception that government is too slow, timid, or behind the technological and innovation curve to be effective. This negative perception further contributes to public skepticism regarding the overall effectiveness of governing institutions.

In this narrative, governments are incapable of exercising their regulatory responsibilities, always playing catch-up to the massive changes technology both gifts and imposes on society. However, governance that lags behind technological advancement doesn't have to be a foregone conclusion. New technologies can be effectively regulated if the government relies on its core ethical principles while embedding foresight into its regulatory processes.

Governments have the responsibility and authority to regulate change, mitigate risk, encourage innovation, and protect people from both the intended and unintended consequences of technosocial shifts. While often portrayed as “over their heads” when it comes to digital technologies, governments regulate complex systems all the time: airlines, financial markets, petrochemicals, pharmaceuticals, and nuclear power, to name just a few. Governments can get ahead of the curve when it comes to regulating technology by utilizing methods that allow them to imagine, and act on, a vastly wider range of possible outcomes. This playbook is intended as a framework for doing just that.

Anticipatory governance

Governance is about understanding how broad systems dynamics, contours of emerging social values, and trajectories of long-term outcomes interact so that the rules of the game can be set appropriately. Good governance should ensure that “winning” in the short term does not destroy opportunity in the long term. Effective, ethical technology governance harmonizes the actions, priorities, and temporal horizons of individuals, groups, and larger systems.

This societal need for balancing priorities is not new. Consider for instance, how governments might have dealt with social media platforms differently in 2016 if they could have foreseen the poisonous effects they have had on democratic elections, and if those in government had been empowered to act to alter their impacts.

Starting in the late 1960s, futurist Alvin Toffler advocated for “anticipatory democracy,” a model of governance that actively looks ahead to prepare for and regulate emerging technologies and social changes. More recently, organizations like the OECD have integrated anticipatory governance frameworks into their offering. Anticipatory governance can therefore help us navigate away from danger and toward preferred futures.

In her book, *Democracy May Not Exist, But We’ll Miss it When it’s Gone*, Astra Taylor spells out the paradoxes that must coexist within democracy, which she argues is “rife with these sorts of occasionally discordant yet indivisible dualities.” These values that are balanced in a delicate tension with each other are:

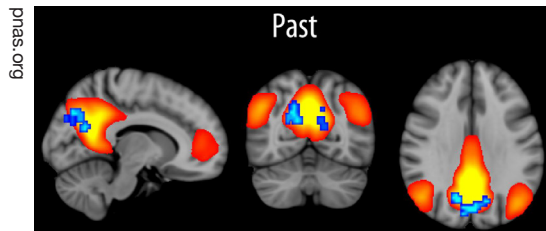
- Freedom / Equality
- Spontaneity / Structure
- Conflict / Consensus
- Expertise / Mass Opinion
- Inclusion / Exclusion
- Local / Global
- Coercion / Choice
- Present / Future

In an increasingly complex society that sometimes appears to be veering away from democracy, the policy choices governments will face will require walking the spectrum upon which these dualities exist. There are trade-offs inherent in every decision, where nuanced answers are not always immediately evident. By stepping back and accepting that ambiguities and trade-offs lie at every point along these spectrums, we can consider the consequences of our decisions within the context of a complex and interdependent system.

Leadership, Ethics, and Foresight

Foresight on the brain

Foresight is a capacity we are all born with, but it must be actively cultivated and improved. The default setting in our minds and our cultures favors near-term thinking and incentivizes immediate returns. Therefore, although we are always thinking about the future, we are often blind to novelty, non-linear changes, and the speed with which our assumptions are proven inadequate or inappropriate. We are always “fighting the last war, not the next one,” as the saying goes.



Our brains use the same neural pathways for thinking about the future as recalling the past. Therefore, we often see the future in terms of our prior experiences. We

are often blind to new and unexpected changes, unless we *pre-consider* or *pre-experience* possible futures.

Looking beyond our noses to a future over the horizon extends our temporal perspective and provides a longer-term lens to evaluate current regulations and strategies. A ten-year horizon through which to anticipate technological shifts gives governments the ability to see and comprehend potential technological

challenges before their societal impact is widely felt. It allows time to devise, test, and re-test potentially effective ways to mitigate negative consequences that might otherwise arise. Even though changes are coming fast, and in fact, because they’re coming fast, governments need a longer horizon to evaluate how to bring new technologies into harmony with existing structures.

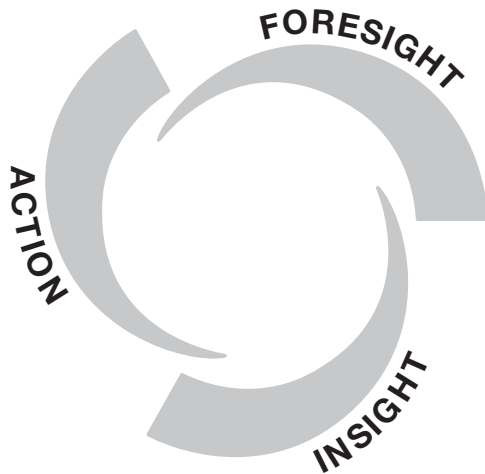
Foresight is a challenge for all humans, but the stakes are already high and rising for government leaders. We can’t afford to be blindsided by unexpected change, especially when people’s lives and livelihoods are at stake, and when the fabric of democracy requires effective and future-ready governance. This playbook is intended as a cognitive prosthetic for foresightful governance. In other words, it’s a tool to help you think more effectively and ethically about issues of today and tomorrow. It provides a framework for evaluating and responding to emerging ethical dilemmas and issues around technological innovation.

“ It is better to be surprised by a scenario, rather than blindsided by reality.

-Jake Dunagan and Stuart Candy

Foresight-Insight-Action

Strategic Foresight (aka futures studies, futurism, futurology) is a field of study and practice that consists of three core elements: Foresight to Insight to Action (FIA). Institute for the Future has used FIA as the backbone of its work for many decades. **Foresight**, a holistic and systematic assessment of trends and emerging issues, leads to **insight**, an “a-ha” realization that changes how we see the world and our role in it. Insight should lead to **action**, new behaviors, and improved decisions that lead to better future outcomes. FIA is a cycle—a process of investigation, strategic insight, and informed action that is continually repeated and updated based on new information.



Leadership requires both strong ethics and clear foresight. Ethics without foresight is like chasing your shadow—it is unable to comprehend or deal with emerging changes. Foresight without ethics is diabolical. It is a speedboat without a rudder, plowing through everything in its path. This playbook is intended to forewarn government leaders and equip them with proactive skills and tools to resolve ethical dilemmas emerging from new technologies and new social and political dynamics.

Research methodology

We've presented the scenarios and ethical challenges below based on our research, scanning the environment for established trends, early signals of change, and unexpected wild cards in technology, society, economics, and politics. We also conducted interviews with leaders and experts in government and policy, technology, business, and foresight, looking for first-hand knowledge of emerging issues and the ethical conundrums that decision-makers and policy-makers face. These interviews confirmed our working premise that there is a severe lack of knowledge about identifying emerging ethical issues. Even for issues that have been identified, employees lack a clear and consistent way to address them. We consolidated our research into trends and emerging issues with insights from the interviews to develop scenarios. We've expressed these scenarios looking at current issues in a near-term horizon (the year 2022) and looking at situations that describe a speculative future in a longer-term horizon (the year 2032).



How to Use This Playbook

Who is this playbook for?

This playbook is for anyone who works in or with government. We recognize that you'll use this differently based on your position within your department or the level of autonomy your role carries. We also acknowledge that you won't have expertise or influence in all of the areas named in the scenarios. Our hope is that you'll find this a helpful guide for architecting decision-making around difficult situations, regardless of your position, your sector, or the issues you typically face. Our intention is that you will find the thought process behind ethical decision-making applicable, even if the specifics of each scenario are not directly relevant to you or your team.

The scenarios ask you to put yourself in the shoes of a school board president, a public liaison to the Departments of the Environment and Public Health, or an employee in an unnamed regulatory agency. We invite you to imagine yourself in this position for the purposes of addressing the challenges within the scenario. Use the questions to surface the underlying themes, questions, dilemmas, and choice points to discuss with your team. Ask yourself and your colleagues how and where you see connections between issues surfaced in the scenarios and those you face on a daily basis. This process will help junior employees understand the complexities of decision-making at higher levels. It will also help directors, appointees, and elected officials relate to the difficulties lower-level employees may experience when faced with a decision but not empowered with the authority to address it.

How to use this playbook

What's in this playbook?

The playbook is a decision-making process structured around five risk zones, each of which includes scenarios, a decision-making tool, and questions as follows:

5 Risk Zones, or topics where you will likely find both looming threats as well as areas rife for technological disruption. Decisions made within these zones will require deliberate consideration as you weigh and balance priorities: advancing government policies, adhering to your values, and choosing whether to integrate new technologies.

2 Scenarios for each risk zone, which represent ethical dilemmas you may be facing now or in the future. These are intended to spark conversation about how technology might impact—or be impacted by—the themes presented in these zones.

One Decision Tree for each scenario to scaffold the decision-making conversations and map out a thought process as you consider the best and worst-case outcomes of your choices. This should be thought of as an interpretive framework for thinking systematically about ethical trade-offs presented within each scenario so that you can plan and act with the future in mind.

3-5 Questions for each scenario to help guide your conversations.

How to use this playbook

Playbook in action

STEP 1: Read the scenario

In each risk zone, you will encounter one scenario from the present or near-term future (2022), and one from a further-out future (2032). For some risk zone scenarios, the specific issues discussed will feel urgently relevant; for others, the relevance might be in the process of applying a set of values to the decisions and trade-offs inherent in the dilemma. Don't get caught up in whether the details of a scenario are likely or even possible, or that the specific technology described is a foregone conclusion. Just go with it.

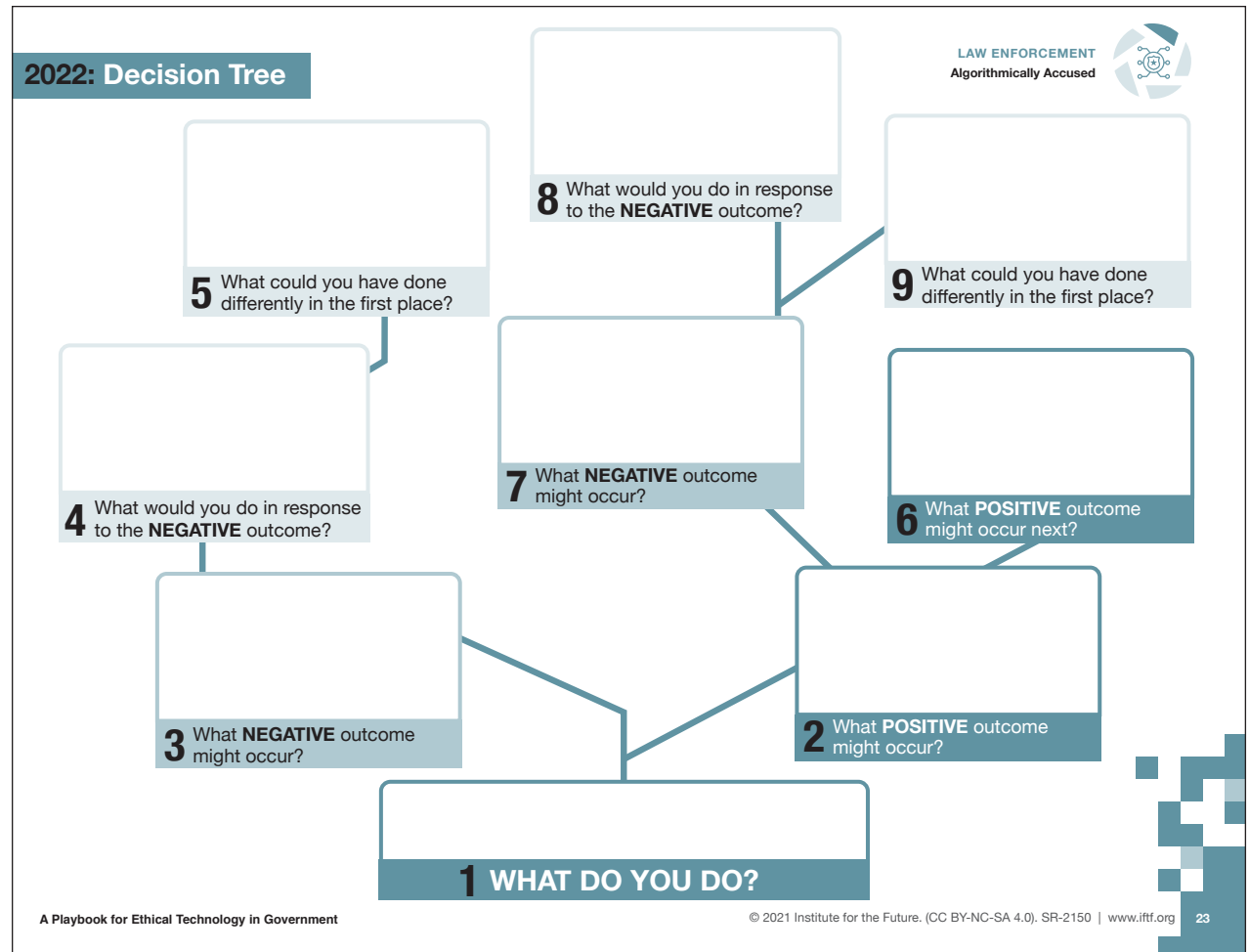


How to use this playbook

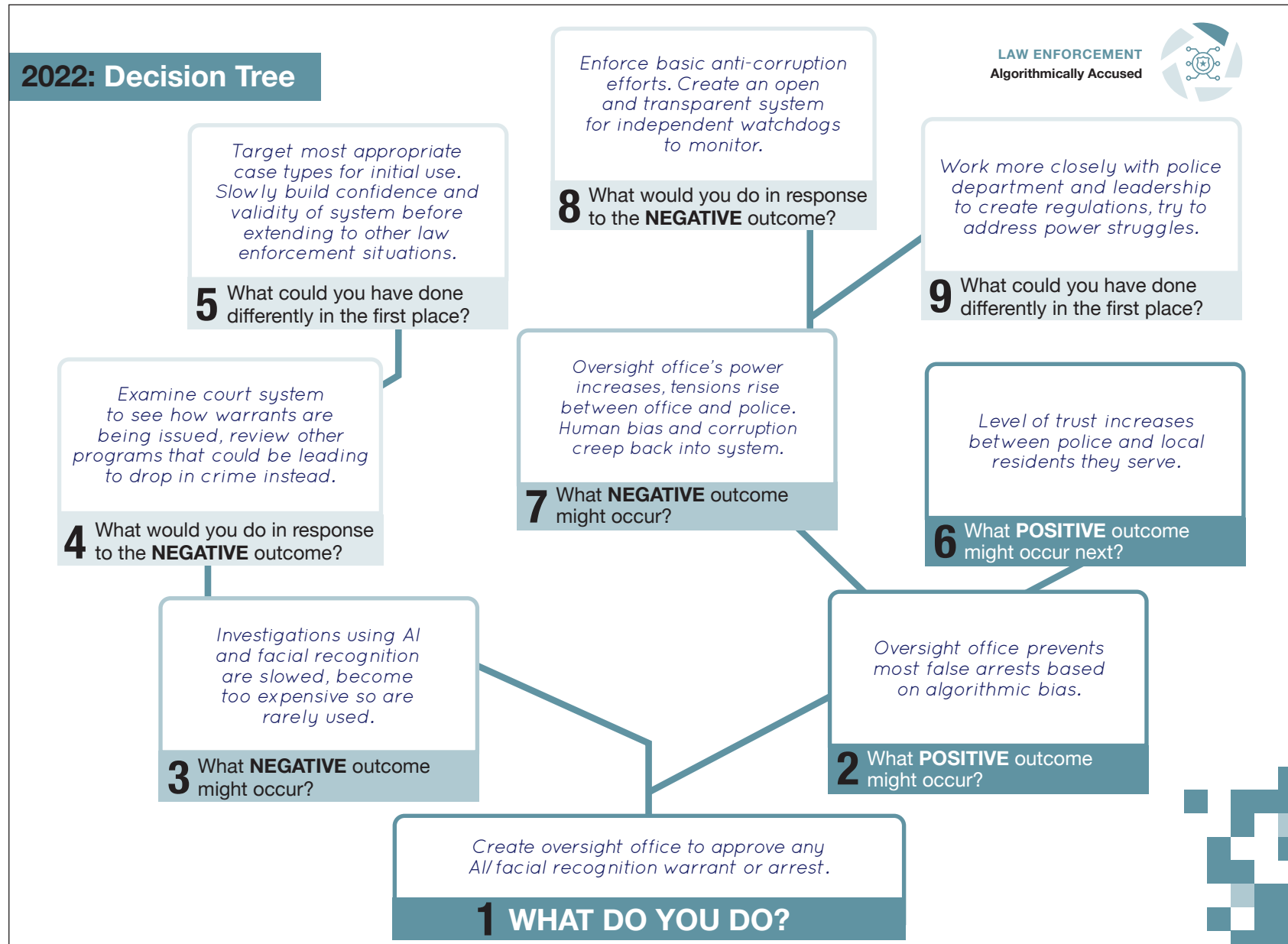
Playbook in action (cont.)

STEP 2: Consider unanticipated consequences

Use the decision tree worksheet to brainstorm positive and negative outcomes that might arise from your decisions. At each negative outcome, consider what you could have done to prevent that outcome, and what you might do to remedy the situation. Once you've played out at least three outcomes and choice points, consider these questions: What other choices might you make? Would you have changed your original decision and why?



Playbook in action (cont.)



How to use this playbook

Playbook in action (cont.)

STEP 3: Discuss with your team

As you read through each scenario and decide what you would do, use the questions to further your discussion with your team. Consider what actions you would need to take to safeguard privacy, truth, democracy, mental health, civic discourse, equality of opportunity, economic stability, and public safety, all while ensuring trust, accountability, and fairness in the process.

Reflect on core civil service values at each decision point. Do the intended and unintended consequences of the positive or negative outcomes challenge your values? Do they risk being

compromised? Is there something you can go back and fix in an earlier decision that will prevent an unintended ethical dilemma further down the road?

Recalling author Astra Taylor's paradoxical pairs that must coexist within democracy (see page 7), where do your decisions lie on the spectrums of each paradox? Do they amplify polarities? What might it look like to move more towards one end of the spectrum or the other?



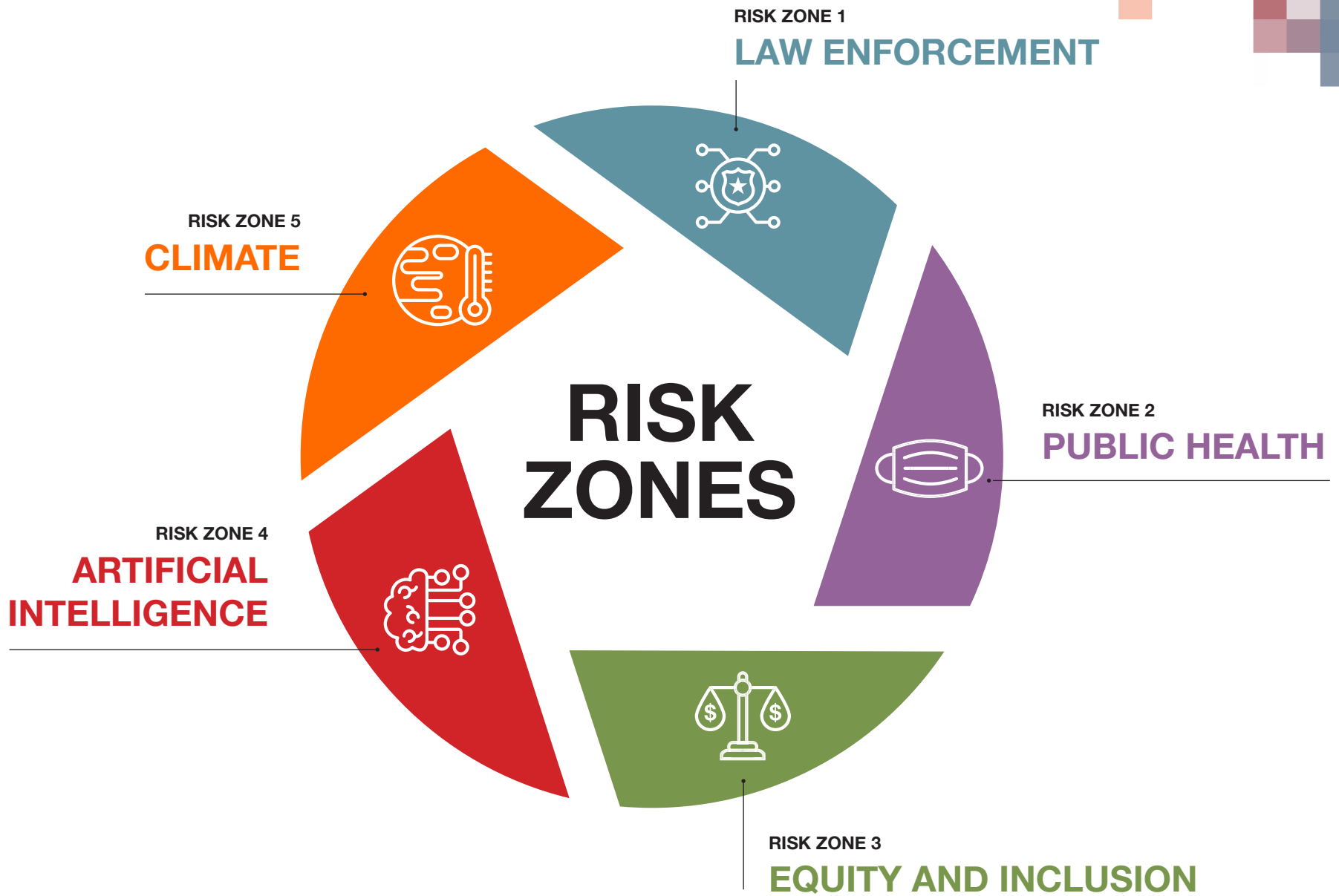
How to use this playbook

Final note

This playbook is designed not to be a prescriptive blueprint for making a choice about integrating AI into your operations, for example, or what technology to adopt to accelerate an energy transition. It will not forecast every possible threat or disruption, or every possible ethical angle of these challenges. It is intended to provide you with decision-making architecture that can act as a guide for thinking about the implications of your choices—intended and unintended, positive and detrimental—now and in the future.

The playbook will help you think systematically about the consequences of your actions (or inaction). We are confident that the habits of thought generated by ethical futures thinking will lead to better governance and reduce the pain and suffering of “learning the hard way” every time a new issue arises. We cannot afford that. At the nexus of governance, foresight, and ethics lies a better path forward.

How to use this playbook



Risk Zones



LAW ENFORCEMENT

Widespread support of the Black Lives Matter movement that grew during the summer of 2020, along with increased scrutiny of police tactics and surveillance technology, has brought the issue of ethics and fairness in law enforcement into an urgent public conversation. Recent reports highlight the dangers of predictive policing systems, including a controversial one in Pasco County, Florida by which an algorithm created a pool of “prolific offenders” who have subsequently reported continued harassment. Calls to defund the police, in part by rerouting emergency calls to social workers and others trained in de-escalation, have raised the question why there have been armed officers responding to non-violent situations in the first place. Accusations of systemic racism within law enforcement have been named as a reason for vastly unequal treatment of Black and Brown residents, and for the disproportionate killings of Black people at the hands of the police.



PUBLIC HEALTH

Public health will continue to emerge as a crucial focus area for governments over the next decade. It will touch and be touched by issues spanning multiple sectors, demographics, and geographies, with disparate outcomes among different populations. Governments will be accused of both overreach and inaction, and will be forced to dig deep to address the systemic root causes of public health inequities. Technological advances will exacerbate public health crises, such as social media’s impact on mental health and the amplification of misinformation. Policymakers will need to consider the long-term impacts of technology on the public’s ability to manage its physical, mental, and social health.

Risk Zones



EQUITY & INCLUSION

From the streets to the boardroom to the chambers of City Hall, a movement demanding equity has become mainstream. More and more departments will be tasked with implementing an equity lens across their programs and services, and they will be mandated to achieve equitable outcomes in everything from health to income to education to transportation. Equity can be hard to define because it is not just an outcome, rather it is a process: one of examining implicit biases and default designs in new technologies, as well as the ways they exist in legacy systems and structures. Equity is being embedded into every aspect of governance, seen in the creation of Oakland's Department of Race and Equity, Austin's Equity Office, and Portland's Office of Equity and Human Rights, to name a few. Governments will have to consider how each new program, service, or offering will move towards or away from an equitable future.



ARTIFICIAL INTELLIGENCE

As AI and machine learning get exponentially smarter and more ingrained into our lives, governments will shift resources to funding, regulating, and employing AI assistance in everything from law enforcement to health monitoring to food systems, such as a new USDA-funded institute focusing on using AI to optimize our food systems. More accurate predictive modeling can, in theory, lead to better governing outcomes across the board, but these new technologies are more often than not built with algorithmic biases that will need to be addressed. Concerns of privacy, security, and government overreach are also deeply embedded within AI-integrated governing technologies.



CLIMATE

Addressing climate change is the issue of our time. While growth in sustainable materials, emissions monitoring, and adaptation techniques are advancing, we cannot engineer our way out of climate change. Similar to equity, governments will need to take a climate lens to everything they do. Recent examples include President Biden's executive order to embed climate policy across nearly every Federal agency, or Birmingham, Alabama's comprehensive plan for sustainability policies written into every department. Departments and agencies that have not historically been part of the climate conversation will need to learn how to incorporate sustainability priorities into their operations. Whether at an individual, industrial, or institutional level, it will become everyone's responsibility to address the impacts of violent climate events and to collaborate on collective actions to reduce our carbon footprint on the earth.



Risk Zone 1:

LAW ENFORCEMENT

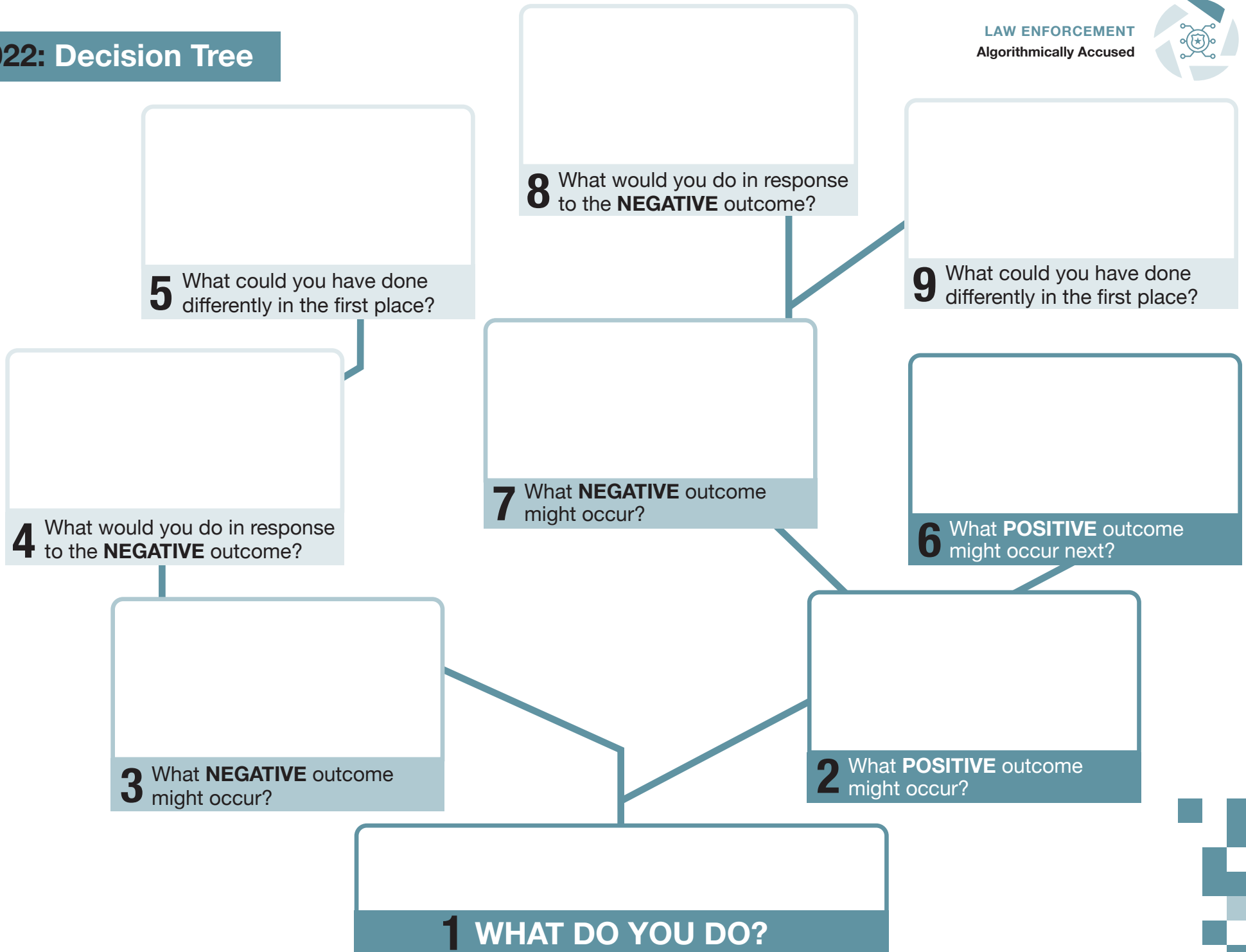


2022: Algorithmically Accused

Your county recently began using a facial recognition system to identify individuals caught on surveillance cameras. Recently, on the recommendation of this system, your department arrested a Black resident at his place of work, drove him to a detention center, and interrogated him for several hours before determining the system had misidentified him.

Activist groups are calling for the county to cease using the software immediately, claiming the system violates resident privacy and is inherently biased against non-white populations. These groups are lobbying to ban every police force in the state from using any facial recognition technology.

To counter the movement to ban this technology, you have been tasked with proposing publicly available, legally enforceable guidelines on the acquisition, implementation, and oversight of the algorithms that facial recognition systems use when making criminal justice decisions in your county.





? What can be done by the county or the state to determine the fairness of an AI algorithm sold to them by a private firm?

? How would you go about building a team to evaluate risks and implementation of algorithm-based technologies?

? Under what conditions should AI models that identify potential suspects be banned in civil and criminal investigations?

? If information about potential suspects is gleaned from these AI models, does it need context and caveats to be considered by a jury or judge?

? Should the government take a more active role in structuring and/or regulating the AI algorithm that makes these determinations, and if so, how might this be done?

? Where do you see similarities to your own work where you've had to make decisions that balance fairness and safety? Does using the Decision Tree change how you might have done things or how you will going forward?





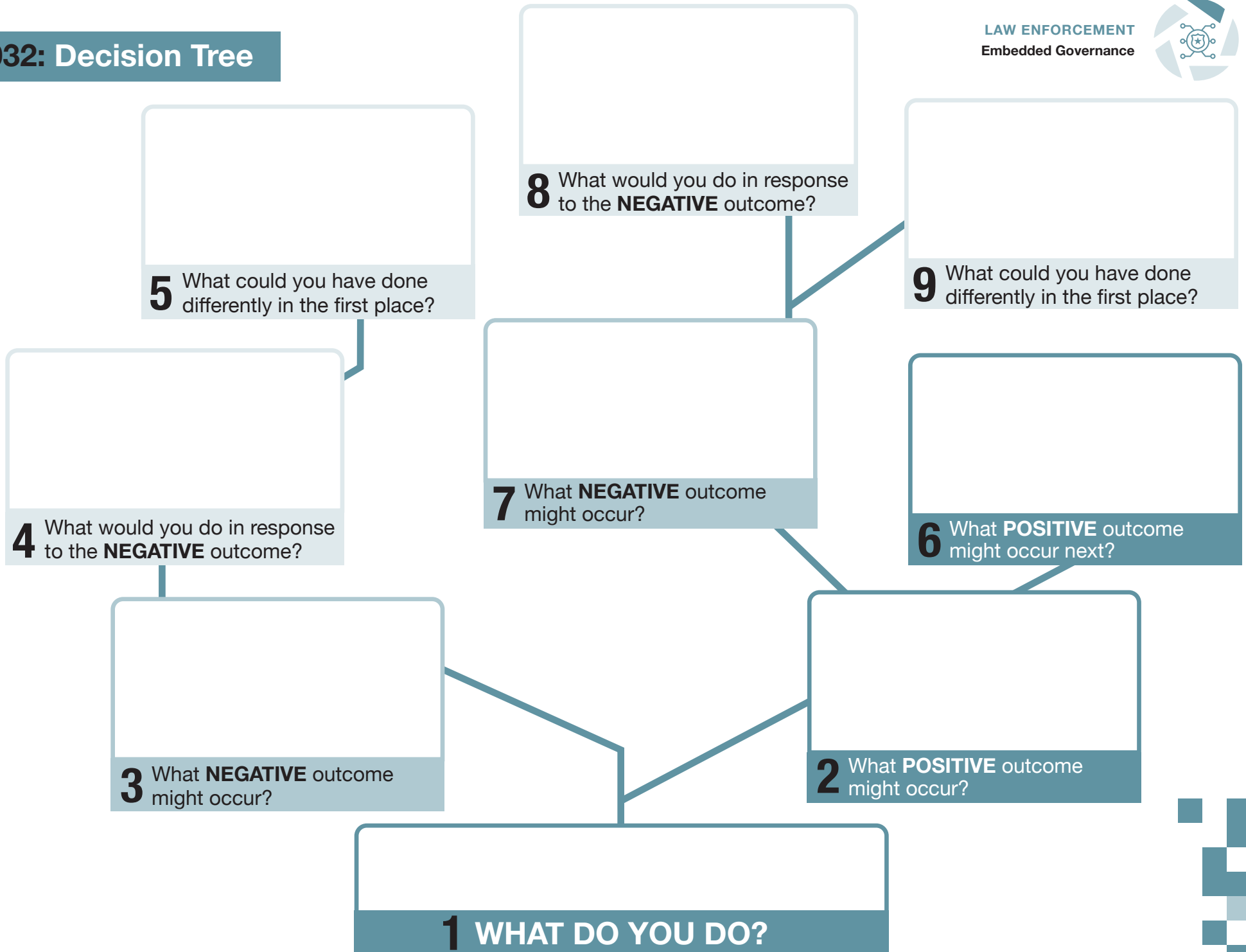
2032: Embedded Governance

Embedding penal codes into public spaces through networked sensors has transformed law enforcement. Cities can download laws directly into the built environment. Automated inspections issue and collect payments for taxes and fines, reducing corruption and mismanagement. Roads issue speeding tickets, reducing officer-involved shootings ten-fold.

A new technology has appeared that tracks physical movements, analyzes written and spoken public expressions, and follows purchasing patterns to determine if someone is a threat to themselves or others. For residents flagged as threats, a series of interventions are deployed: disabling their car remotely, locking them out of registered biometric firearms, and sending capture drones to any school, church, or large gathering they enter.

You are considering implementing this technology, which was used to thwart a potential mass killing in Vancouver last Christmas, even over the objections of privacy groups.

2032: Decision Tree



2032: Questions for Consideration



? How would you go about involving the public in a conversation about these issues and your decision-making process?

? If you are offered a technology that has the potential to thwart most mass killings, how would you balance the benefits of security with impacts on individual privacy? If you had a technology that could have prevented the Parkland or Sandy Hook shootings, and you didn't use it, how would you explain that to your constituents?

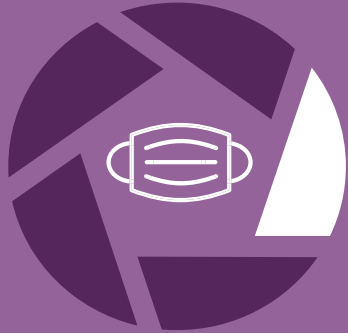
? Would you use a privacy-invading surveillance technology before you limited gun rights?

? What are the benefits of embedding governance directly into our physical and digital worlds? What are the downsides and unintended consequences?

? Is data tracked from publicly available sources and combined into meaningful patterns an invasion of privacy? How might monitoring and the search for patterns alter public behavior and participation in public spaces?

? How can you ensure that the technology will not produce false positives and target specific groups of people more than others?





Risk Zone 2:

PUBLIC HEALTH

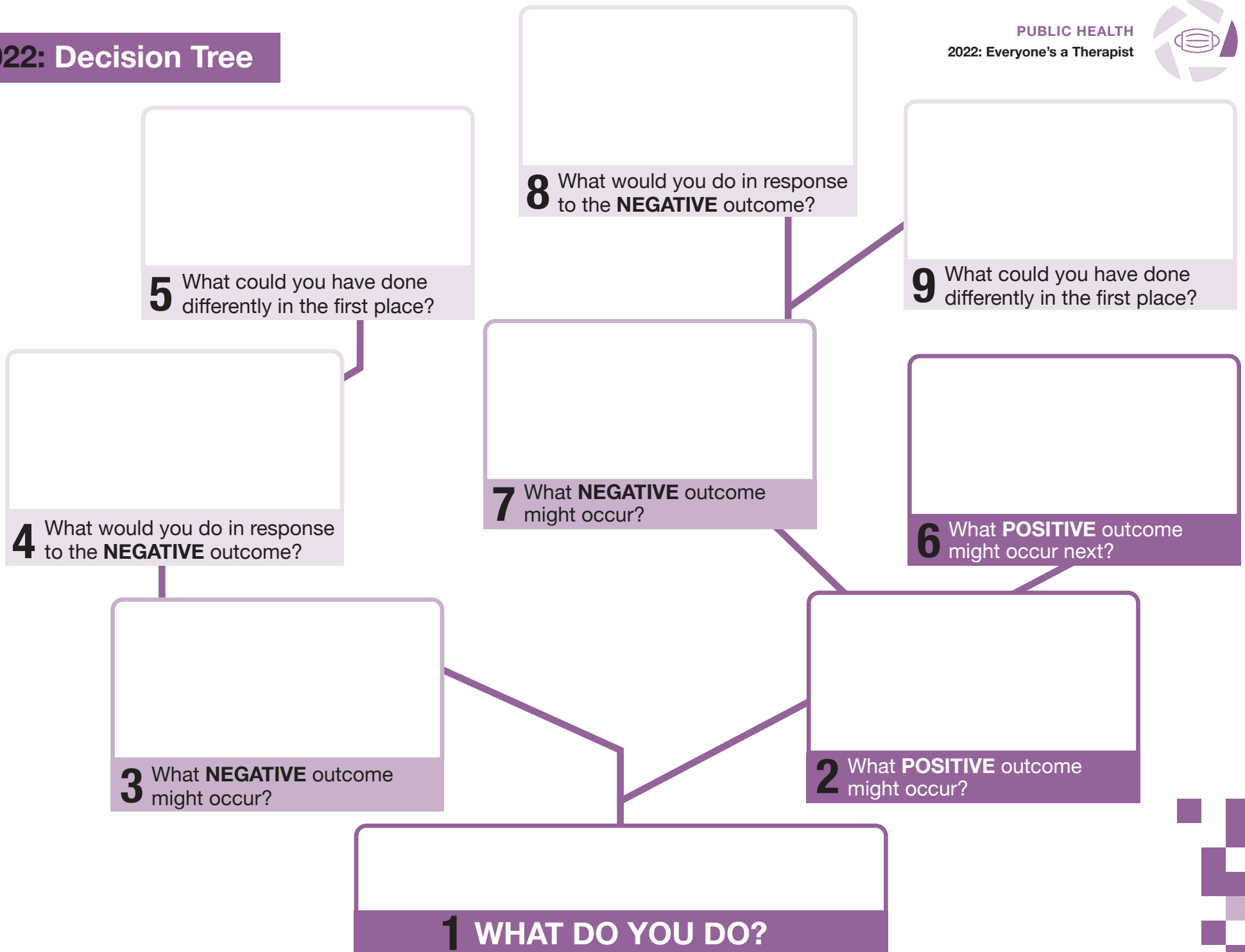


2022: Everyone's a Therapist

Exacerbated by an unending pandemic, social unrest, and high unemployment, mental health has deteriorated across the city. Drug overdoses are increasing. Depression rates are rising, even in kids as young as 10 years old.

All departments and city employees are being asked to prioritize mental health, regardless of their role or ability, reminiscent of when each department was asked to determine how it could best contribute to the city's climate goals. However, the historical stigma associated with mental health means people are reluctant to discuss the issue.

Your department has been given a list of technology interventions to implement—from wearables for city employees to sensors in schools that can identify pre-aggressive and depressive behavior—to address the growing mental health crisis. They're costly, and your staff has raised privacy concerns, worried that information collected might hurt their career advancement, but you aren't given much choice. You've also been asked to create guidelines for any job roles and responsibilities that might pose a risk to city employees' mental health.





? How can you respond to mass crises or challenges that require cross-department response? What do you need to design and implement a cross-departmental strategy?

? How can you empower employees to spot signs of an issue without compromising their interactions with a city's residents? Does every employee receive *carte blanche* to make a judgment call about mental health?

? When dealing with an issue that touches all aspects of life and needs multiple approaches, how do you craft a high-profile response to reassure people that it is a priority while ensuring its efforts are not just box-checking?

? What is being lost when you reallocate funds to focus on this urgent issue?





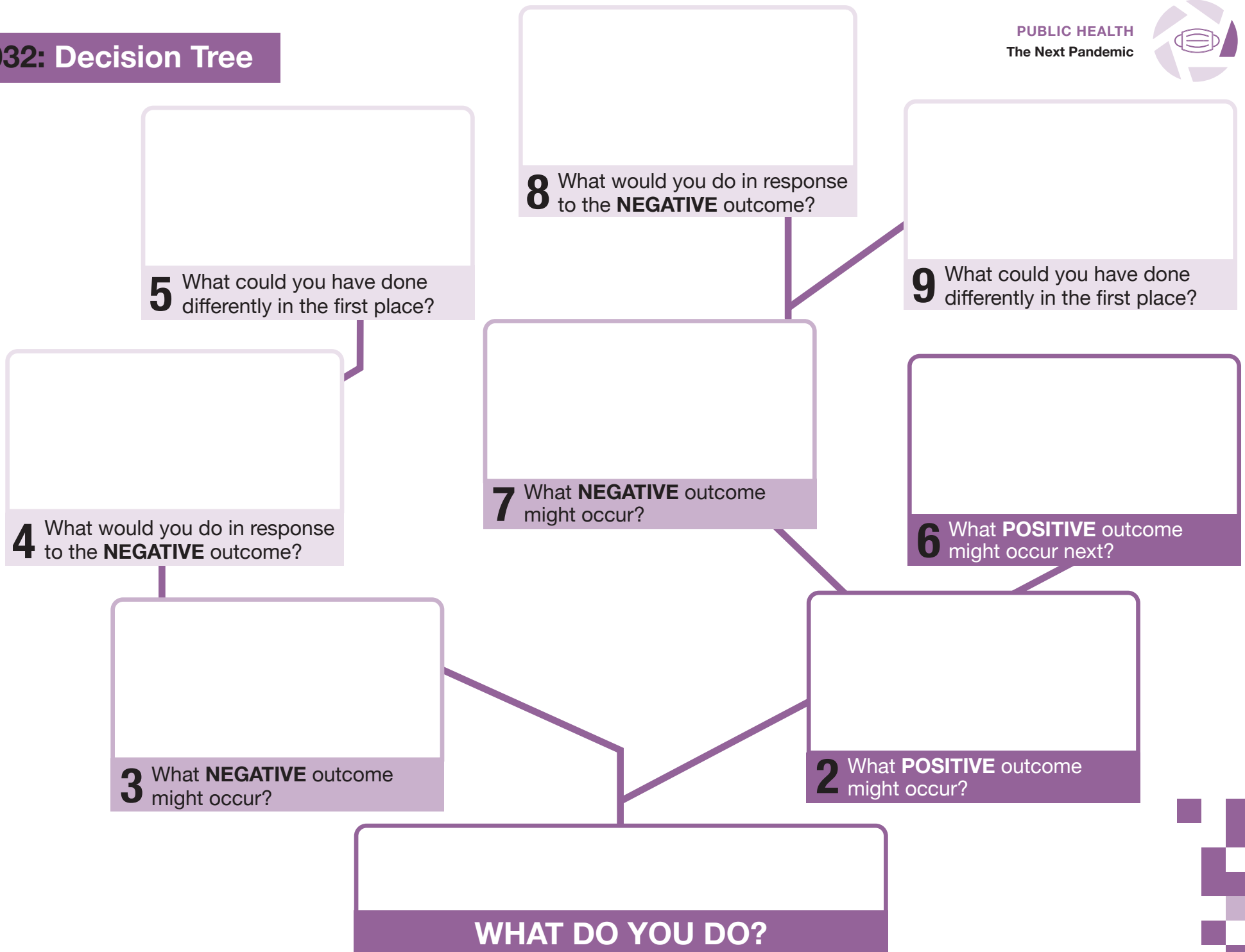
2032: The Next Pandemic

When the Pandemic Early Warning System alerted the world that COVID-32 was on its way, your team quickly activated the state government's predictive monitoring systems, embedded in all phones, cars, buildings, and public transit.

Just as quickly, anti-science factions mobilized a campaign to discredit all public health messaging. They deployed surveillance scrambling technology, hampering your ability to set up tracking and treatment infrastructure, and filed a lawsuit claiming you'd violated the state's Freedom From Technology statute.

A large social media company has offered to help work around these groups by disseminating public health information, cracking down on misinformation, and sharing tracking, purchase, and movement data with you. In exchange, they want to be the state's primary health care service provider.

Their solution seems to be the best option, but you're concerned they're taking advantage of the emergency to collect information from residents who won't be able to opt out.





? How do you justify allowing private companies to collect information about your residents who, for public health reasons, do not have the ability to opt out of this data collection? Who is liable if this data gets hacked?

? How can you use technology proactively to fight misinformation and build up social cognitive immunity and trust between residents and the government? How can you build a team of experts and community members to do the same?

? Absent trust between residents and government, how can you engage with private companies to become trusted brokers of vital information?

? How do you conduct targeted surveillance and tracing (for virus prevention or other relevant issues) without violating other personal privacy considerations?

? How can you improve the information ecosystem as a key part of the city's public health efforts?





Risk Zone 3:

EQUITY AND INCLUSION



2022: Universal Basic Reparations

Your county has committed a monthly payment to individuals negatively affected by racial injustice. You've set up a website for people to register themselves to receive this payment and have sent workers to canvass city neighborhoods to ensure everyone who is eligible signs up.

50% of people who sign up do so via direct deposit, and their payments are sent without hassle. But five months into the program, the unbanked population has yet to receive a single payment. Advocates have been urging you to allow a direct cash transfer or mail a pre-paid card instead of a check to avoid high check-cashing fees, but county regulations don't allow it.

Your higher-ups are considering other approaches such as loan forgiveness, college investment funds, or other benefits in lieu of cash payments to ensure funds are used "wisely and appropriately." But you're convinced that people can be trusted to use unrestricted funds in a way that would be most in service of their needs.

2022: Decision Tree



2022: Questions for Consideration



? How might you approach building a team to help with this decision-making? Whom would you involve and why?

? How can you ensure that all eligible recipients receive the benefits from this program in the way they are intended to?

? How do you know who is affected by racial injustice? How is that decided? What would you do if it were discovered that a significant number of people fraudulently enrolled in the program?

? Should the government decide what a “wise” or “appropriate” use of funds is? If so, why?





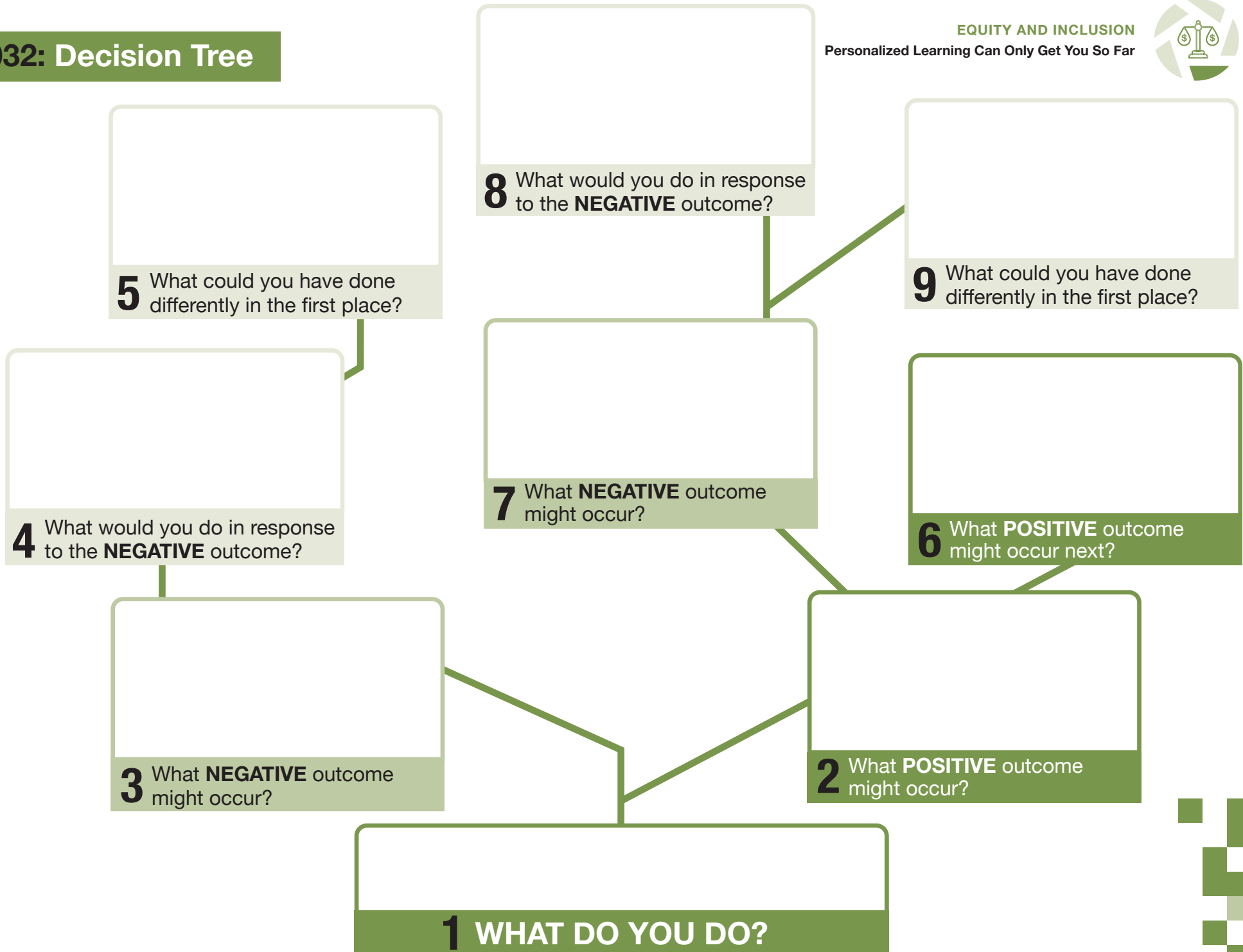
2032: Personalized Learning Can Only Get You So Far

Given tight budgets, your state approved a blended on- and off-line curriculum to accommodate a rapidly-increasing student population. As president of your local school board, you've opened a wifi lounge with tablets that can be used by students who need online access but lack a fast internet connection or advanced hardware at home.

Your district's software has AI that uses performance data to personalize the learning experience. The AI offers educational counseling and suggests job opportunities, colleges, vocational training, and even financial advice. Two years of data show significant academic improvements.

However, you recently determined that most students who have been exclusively using the wifi lounge are being directed away from high-growth careers and towards lower-paying opportunities. To remedy this, the board will vote on hiring in-person counselors for these students, but at a cost: you'll have to close 30% of the wifi lounges or cut their hours in half.

2032: Decision Tree



2032: Questions for Consideration



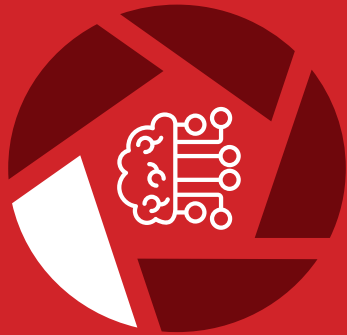
? Is there a middle ground between employing predictive software with proven positive outcomes and eliminating its use because of adverse outcomes in another arena? What liability does the district bear, if any, for unintended future harms?

? As a school district, is it your responsibility to ensure a more stable career path (future) at the expense of academic performance (present)?

? How do you balance society's needs (jobs needed to be done) with individual preferences and capabilities? Is that your responsibility?

? At what point might you consider including outside experts in making a decision that affects your constituency?





Risk Zone 4:

ARTIFICIAL INTELLIGENCE

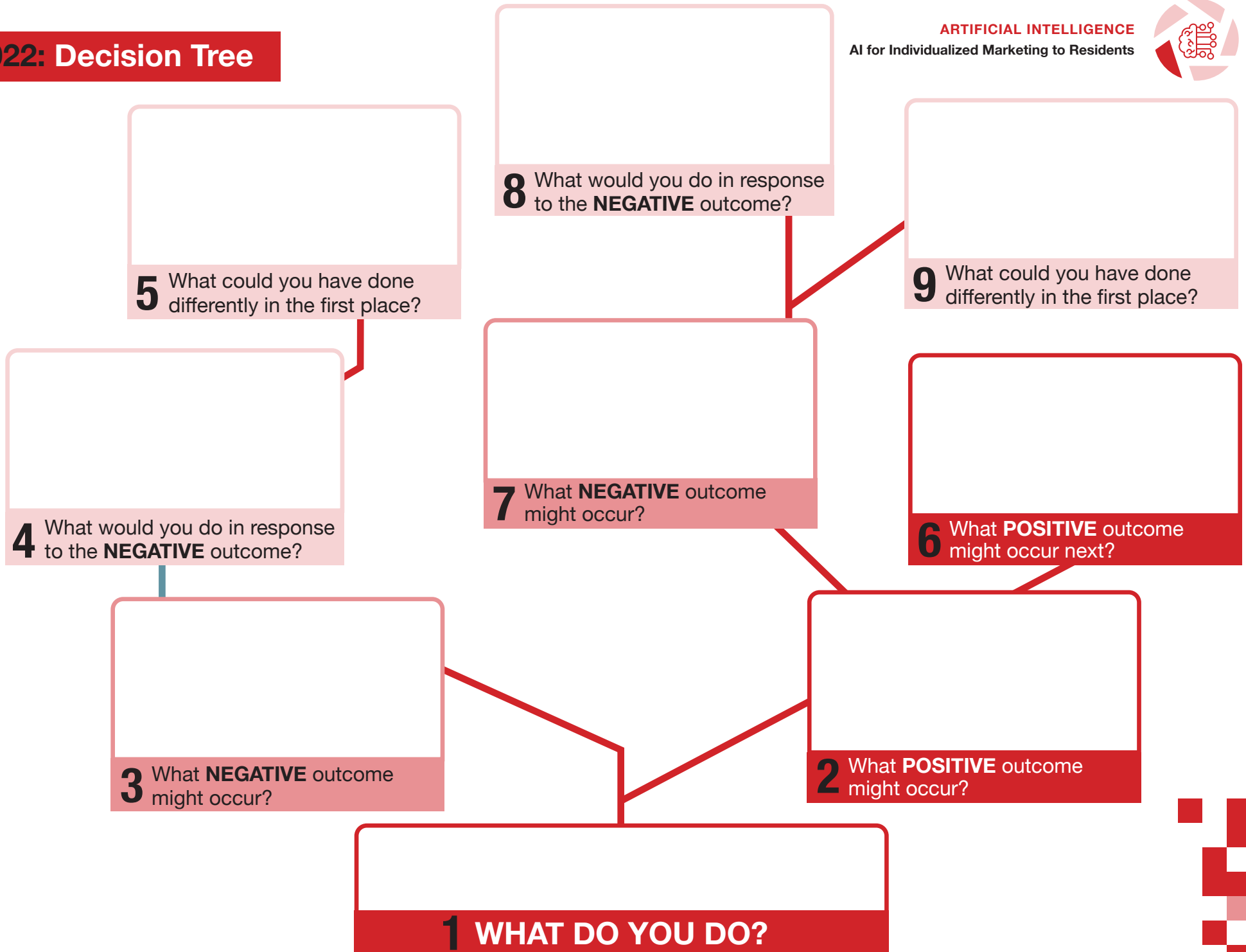


2022: AI for Individualized Marketing to Residents

The new mayor of your city recently overhauled your communications department to use an AI analysis of individual resident preferences, resulting in highly targeted, individualized messaging designed to achieve a wide range of policy outcomes. The utility company sends ads about electrical vehicle rebates to households they think will be in the market for a new car. The health department blocks “Restaurant Week” announcements from post-pandemic anti-mask advocates.

Many city departments have begun experimenting with new ways to use this system to encourage (and restrict) resident activities. However, a small but growing number of people are becoming increasingly concerned the city has crossed a line from policing criminal behavior to trying to control all behavior. It’s a fine line, they say, between the government pushing values and pushing products.

In response, you’ve been asked to develop a set of public guidelines for departments as they make use of this new communications tool.





? Does targeted messaging divide your constituency in ways that can do harm? Does this approach breed divisiveness or distrust, rather than cohesion, by creating separation amongst different groups?

? Might this allow groups to claim that the government is biased or engaged in manipulation?

? What values or outcomes inherent in not targeting messages get lost when these messages are individualized? What is the value of treating everyone equally?

? Are you driving people's choices rather than asking them for their choices?

? Just giving people what they want is not necessarily good governance. How does this square with asking people what they need?





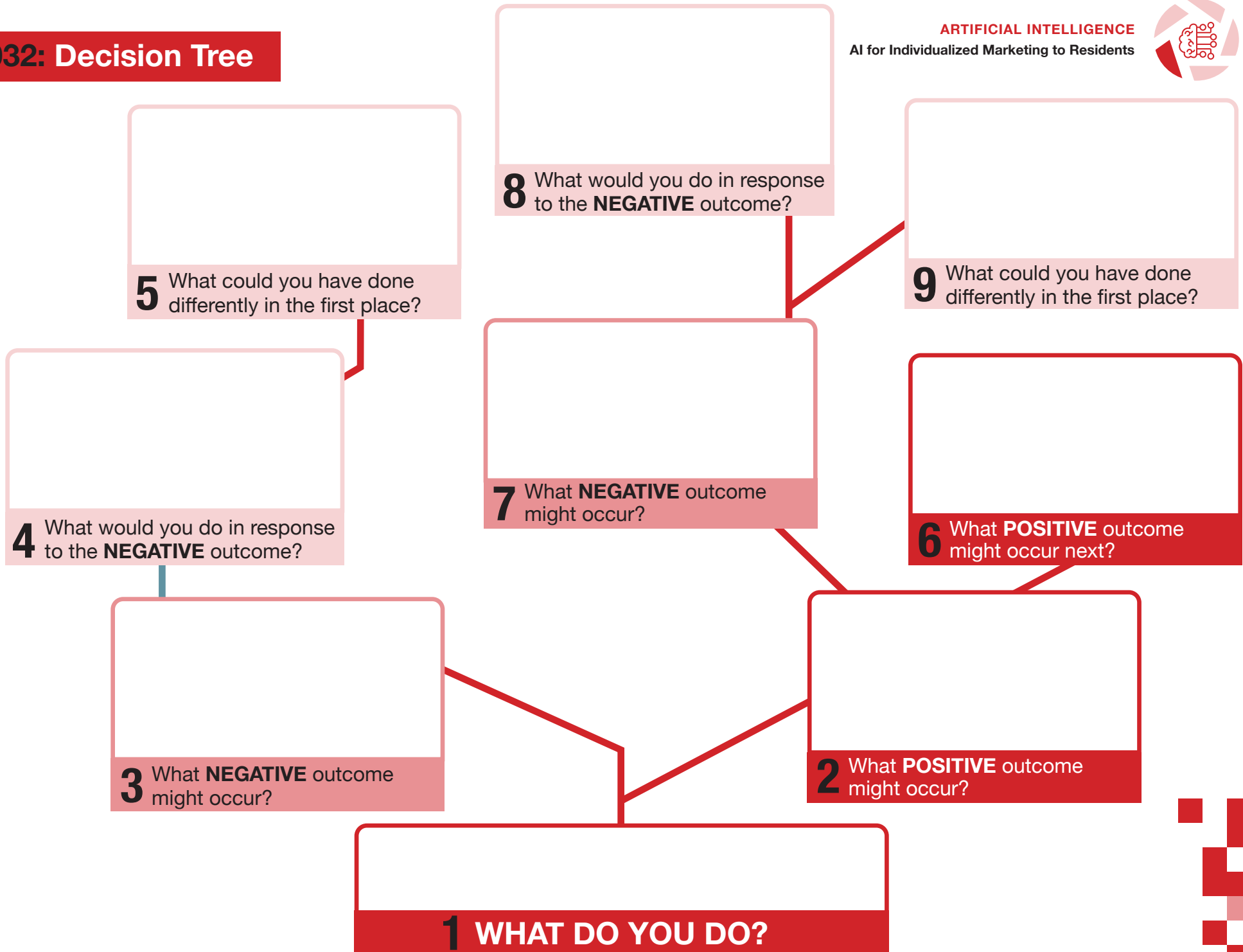
2032: Traffic Best by Government Test

In recent years, urban transportation has been transformed by combining travel pattern data gathered from people's phones, sensor data from roads and signs, and a sophisticated artificial intelligence system.

At the beginning of every week, a predictive AI algorithm informs city residents how or when they will be allowed to be on the roads during the week. One group is allowed full road access, a second group is only allowed to take self-driving carpool ride shares, and a third must remain completely off the roads, except for emergencies. Banning 1% of commuters each day has reduced traffic congestion and commute times by 40%.

People love the reduced traffic but hate when their "off-road" number comes up. You are tasked with improving public acceptance of the program. You're considering options such as improving the AI's algorithm to provide a full month's notice, or offering paid dispensations to allow those in the prohibited group drive for a fee.

2032: Decision Tree



2032: Questions for Consideration

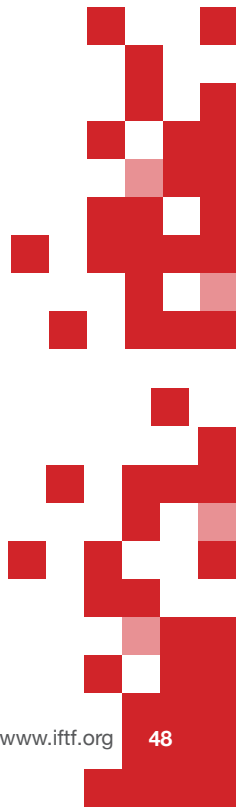


? Is occasionally prohibiting people from commuting by car during certain hours an infringement of basic rights? How might AI change the current “analog” practices of transportation policy and planning?

? With an enforced reduction of cars on the roads and in city centers, revenues for traffic fines, parking fees, and other traffic-related incomes have plummeted. How would you replace those revenues, knowing that fines and fees cause greater hardship for lower-income people. How would you replace those revenues more equitably?

? What benefits could result from allowing paid dispensations? What drawbacks exist? Would it create an unfair advantage for the privileged or backlash from those who can't afford it?

? How might the traffic data collected impact development decisions, investment, gentrification, etc.? What other city systems would it impact?





Risk Zone 5:

CLIMATE

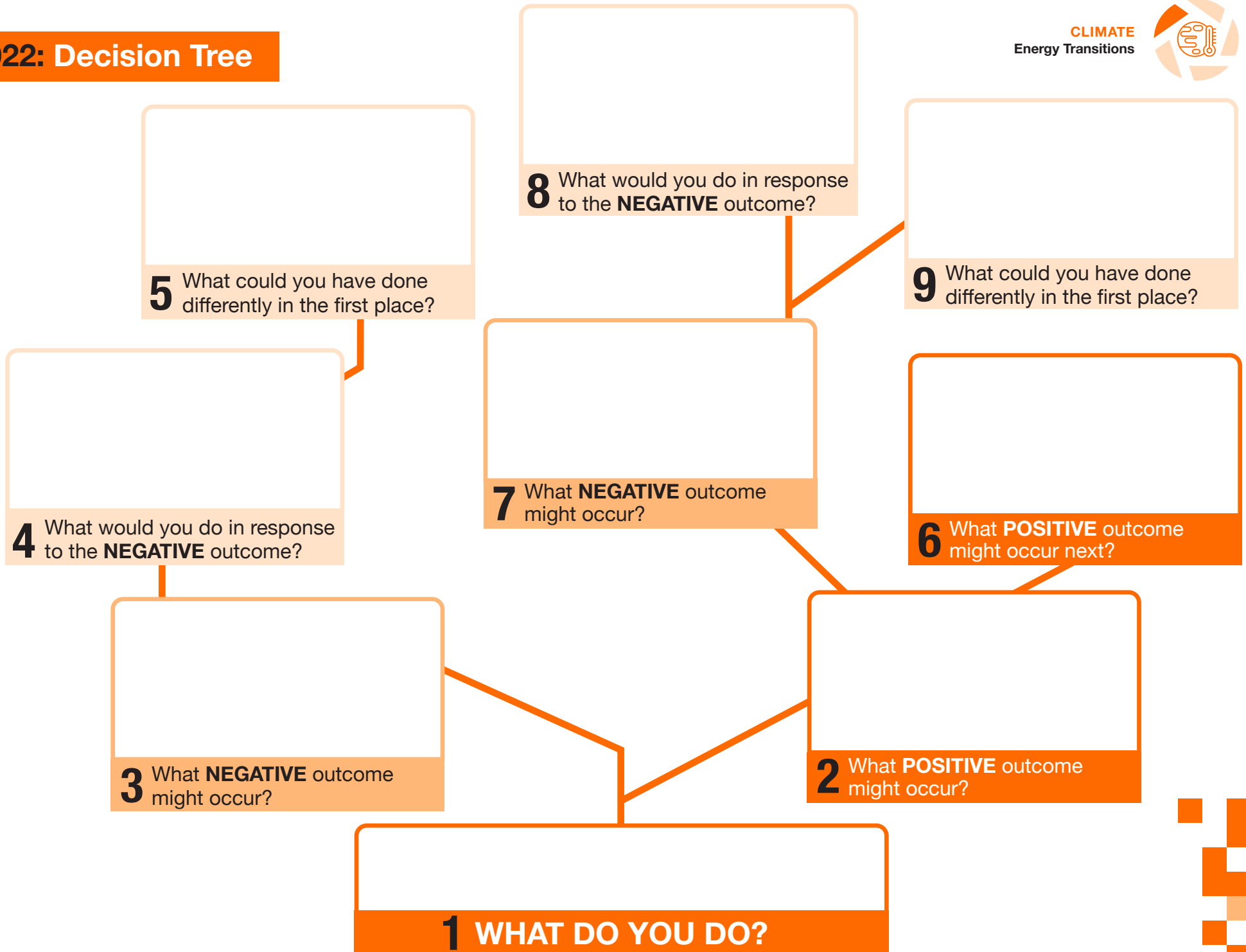


2022: Energy Transitions

Your department recently offered a significant subsidy to encourage residential installation of micro-grids, localized energy supply systems disconnected from the main municipal power supply. In exchange, residents agreed to share their energy usage data with the public utility company who supplied the grids—and therefore with the city’s energy department—to allow better management of energy use in service of achieving the city’s carbon neutrality goals.

Initially, this effort saw widespread support, as both developers and anti-gentrification advocates saw its value. Your team had just begun planning to offer additional subsidies to encourage other smart energy tools, including digital breakers, smart batteries, and adaptive energy systems, when the utility company’s data center was hacked. For two days, people could not control their heating and cooling systems, electrical availability fluctuated wildly, and people’s account and usage data was stolen.

Now, a consortium of four private energy companies has approached you, offering to take responsibility for building out this new residential infrastructure while also guaranteeing its security, but for twice the previous cost. You worry about the data ownership rights and cost but see the benefits of the private companies’ efficiency and security systems.





? In decentralized energy systems, who is responsible for ensuring security to prevent systemic failures?

? Who should be responsible for the security of data and reliability of programming when run by a third party?

? How do you balance the flexibility of decentralized energy solutions with the need to manage use and emissions?

? Energy disruptions and instability can have life-altering consequences. What safeguards and cautionary principles need to be in place to ensure the preservation of life and livelihood?





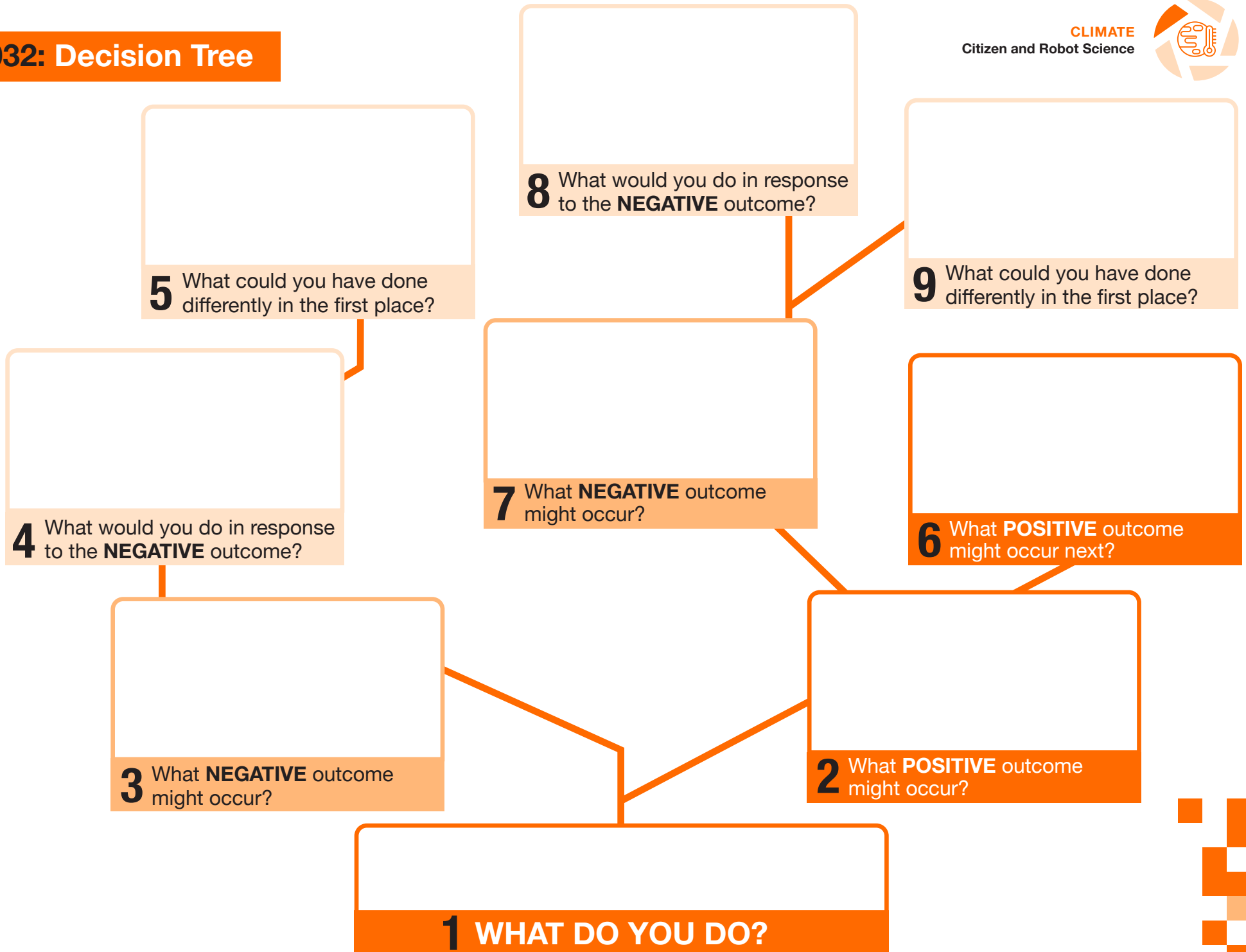
2032: Citizen and Robot Science

Using specimen collection bots and machine-learning drones, a citizen scientist organization recently open-sourced a pollution map of your city, displaying pollution levels alongside other data like traffic levels, building construction, and health outbreaks.

This group also created an early warning system, sending drones to swarm neighborhoods to alert residents to stay inside when pollution levels rise, based on real-time analyses of collected data.

Last week, the drones swarmed a neighborhood whose residents had been required to sign a document acknowledging an increased risk of environmental exposure prior to moving there. This contract included a provision guaranteeing residents would be continually updated by the city about elevated risk levels.

Since the drone alerted them before the city did, residents are angry at the city for failing to meet its commitment to inform residents of potential exposure. The Department of Public Health is now proposing a lengthy regulatory process to operate the drones, but the organic system is very popular among the public. As a public liaison, you worry regulating them will further decrease the public's already fading trust.



2032: Questions for Consideration

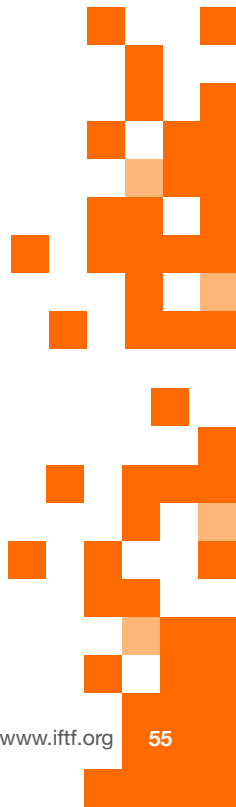


? As a government agent, how would you work with citizen scientists to rebuild trust in your agency?

? How might you approach going above your superiors to warn residents of environmental risk?

? If the wisdom of the crowd is trustworthy—and accurate—is it your place to regulate how it spreads its information?

? Can you work with the citizen scientists and machines to compile data that you can access exclusively? Before it is shared openly with the public?





Playbook: Origins and Futures

The Digital Intelligence Lab designed IFTF's original Ethical OS to help technologists and product developers envision the potential risks and worst-case scenarios of how their creations could be used and misused in the future. It was a tool to help anticipate long-term consequences and to design and implement ethical solutions with those insights in mind.

Since its creation in 2018, the Ethical OS has been used by nearly 20 major tech companies, start-up incubators, and universities, including Mozilla, Google, Intel, Techstars, and Stanford University Design School. The toolkit provides technologists and policymakers with information about the new risks they should be paying attention to as well as choices they can make to safeguard users, communities, society, and their own companies. In 2020, the TAPP Project Tech Spotlight recognized the Ethical OS toolkit at Harvard's Kennedy School Belfer Center.

The Ethical OS has also been used by organizations across the civic sector, including the California state legislature, the United States Conference of Mayors, and other local governments, to bring more foresight and long-term thinking to policy decisions about new technologies. After using the original toolkit in these civic workshops, IFTF was asked to adapt this toolkit and tailor it specifically to the government sector to help elected leaders and bureaucrats alike better prepare for the challenge of regulating an increasingly technological world.

A Playbook for Ethical Technology Governance stands as an updated and government-focused complement to the Ethical OS. We envision this Playbook being used by agencies, officials, and others in the civic sector (and related partners) to improve and extend future-ready planning and policy initiatives. The Playbook was designed to work as a stand-alone, self-facilitated tool, but is also a process that could be done in partnership with IFTF facilitators as a workshop, series of workshops, or a multi-faceted, longer-term project or program.

Please contact sness@iftf.org or jdunagan@iftf.org if you want to explore these further offerings with your organization.

Further Reading



LAW ENFORCEMENT SCENARIO

[Wrongfully accused by an algorithm](#)

[New Zealand claims world first in setting standards for government use of algorithms](#)

[Growth of AI adoption in law enforcement](#)

[Face recognition vendor tests: Demographic effects](#)

[Facial recognition identifies Lafayette Square protestor](#)



PUBLIC HEALTH SCENARIO

[Virus anxiety strains supplies](#)

[California law is model for mental health care reform](#)

[YouTube moderators forced to sign a waiver against suing for PTSD](#)

[Amazon tracking opioid abuse](#)

[Connecticut city using drone to detect fevers and cough](#)

[Drones used to slow COVID-19 spread](#)

[Tech and policing amidst pandemic and protests](#)

[Disinformation campaigns shift to vaccines](#)

[New tool aims to help government fight COVID misinformation](#)



EQUITY AND INCLUSION SCENARIO

[CA considers slavery reparations](#)

[Automation and the future of the welfare state: basic income as a response to technological change?](#)

[AI is coming to schools, and if we're not careful, so will its biases](#)

[Artificial Intelligence in Education: Benefits, Challenges, and Use Cases](#)

[Artificial intelligence in Education: Challenges and opportunities for Sustainable Development](#)

[How should we design cash transfer programs?](#)

Further Reading



ARTIFICIAL INTELLIGENCE SCENARIO

[The global landscape of AI ethics guidelines](#)

[Personalized marketing with AI](#)

[Animating transitland](#)

[Gridlock traced to just a few commuters](#)

[Optimizing urban traffic patterns](#)

[The new public](#)

[The panopticon is already here](#)

[Can you make AI fairer than a judge?](#)

[How will AI change outcomes for citizens?](#)

[Why fairness cannot be automated](#)



CLIMATE SCENARIO

[Safecast](#)

[Turns out Democrats and Republicans agree on something: Microgrids](#)

[How power grid hacks work, and when you should panic](#)

[The rise of citizen science: can the public help solve our biggest problems?](#)

[Ethical dilemmas when using citizen science for early detection of invasive tree pests and diseases](#)

[Two-thirds of Americans think government should do more on climate](#)

[The ethics and governance of artificial intelligence in the power sector](#)

[Governance of data and information management in smart distribution grids: Increase efficiency by balancing coordination and competition](#)

[Climate Neutral Cities Alliance](#)

[Making Sense of Purple Air vs. AirNow, and a New Map to Rule Them All](#)