



Transcript

The Ethics of Implementing New Technology

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Risks and Opportunities for New Tech

<https://www.youtube.com/watch?v=GpbT8Zi9qDA&list=PLTAvIPZGMUXOYGsBs5NBp6ydwSxrRwn1U&index=2>

[00:00:00.21] AMIE STEPANOVICH: The point in time at which technological growth becomes uncontrollable and irreversible, resulting in unforeseeable changes to human civilization. We're not there yet, but there's no question that we're experiencing a speeding up of technological innovation. We all remember, Mark Zuckerberg's now abandoned motto, move fast and break things.

[00:00:20.28] The industry has a long history and culture of rushing the gate, make no mistake that many good things have come out of the tech sector. But that's also meant that many times products have been released quickly, broadly, and without ample restrictions and have gone on to cause great harm.

[00:00:36.66] Not only in the context of individual lives and communities, but in terms of genocide, cutting off of critical services like health care to large populations, and undermining governments and systems of government as well as other impacts that have undoubtedly shifted the course of history.

[00:00:55.18] Are there ways to consider the development and implementation of these new technologies before they ever see the light of day before? The genie is out of the bottle. In order to prevent some of these major harms, what conversations do we need to be having? And is there ever a time to just say no? These are the questions that we're going to be considering over the next few hours with just an amazing lineup of expert speakers.

[00:01:19.45] And with that, I'm going to introduce our first moderator who will in turn introduce her panel. I first met Sally Hatcher in my early months living in Colorado, and she was not only immediately welcoming but had a keen eye for the tech community in and around the state and beyond.

[00:01:34.75] Sally is the senior director of venture development at Sue Boulder, providing educational and experiential resource for campus investors wanting to commercialize their work. Sally thank you so much for all you do, thanks for being here today and please take it away.

[00:01:48.77] SALLY HATCHER: Thank you Amie, I am so delighted to be here today with Silicon Flat Irons. I have enjoyed Silicon Flat Irons, its programming for many years because I think it's on point, and talks about some of the issues that we want to have conversations around and we think really build a greater understanding of where is technology going, and how do we address it, how do we be a part of the conversation, rather than just being either users or steamrolled by it.

[00:02:19.22] So thanks for being here today. So I want to start with introductions of three rock star panelists. Newton Campbell, Lisa Neal-Graves, and Victoria Espinel, are all absolute trendsetters in their area of expertise. Have thought about technology and ethical issues for a good while and really are going to make a very exciting panel.

[00:02:49.96] So instead of me introducing them we're just going to jump right in, and I'm going to ask each of the panelists to talk for about five minutes about just who they are, a little bit about their background, and then I'm going to start off with a very first question of just a definition.

[00:03:07.00] How do you define ethical technology or what is it you think about when you try to think about ethics and technology in the same sentence. So with that, let's kick it off. Lisa, could you please introduce yourself?

[00:03:25.06] LISA NEAL-GRAVES: Sally, good morning. Thanks so much Sally I appreciate it and it's always a pleasure to be with Silicon Flat Irons. My name is Lisa Neal-Graves. I have been a technologist and in new product introduction, most if not all of my career.

[00:03:43.99] I began my career as a computer scientist with an emphasis in applied math, and move to engineering management because I wanted to be able to market better the new solutions that we were introducing.

[00:03:59.32] I started in communications at a time when communications from a telecommunications perspective, and data were coming together. And then ultimately, found myself getting a law degree because I was having a hard time with our lawyers allowing me to get beyond the risk that they said that I was adding to the business.

[00:04:20.48] And so much of who I'm and what I have done in my career, has really been in that innovative space. And it's true that they say there's nothing new under the sun, but honestly, there are ways that you might use technology that wasn't necessarily contemplated at the point at which it was originally developed or ways that you might merge technology that allow you to use it differently than you had anticipated when it was originally developed and that has been the space that I've stood in.

[00:04:54.01] And I'm excited to talk about this from an ethics perspective, because much of a lot of that work really was tied to times when people weren't really thinking a lot about issues of privacy. When we talk about data use, or even being able to track someone when we talk about just device level information and insight.

[00:05:20.05] And so these are all things that have evolved and things that, when you have a group people that are working on it, it gives you an opportunity to sort of talk about all the elements of it coming from different vantage points and personalities. And so I'm excited about this particular talk in the number of people that will have a different vantage point or different perspective that can be added to the conversation.

[00:05:47.35] SALLY HATCHER: Wonderful. Thanks Lisa. Victoria, can you introduce yourself and add just a thought on ethics and tech?

[00:05:55.86] VICTORIA ESPINEL: Sure I'd be happy to. So thank you so much for having me. My name is Victoria Espinel, I'm the CEO of the business software alliance and the president of our foundation software at work. So just a little bit-- and we work on global technology policy around the world.

[00:06:12.99] A little bit on me and my background. So I'm a lawyer by training, my father immigrated to the United States from Colombia many years ago, and I went to law school with the intention of becoming an immigration lawyer, but through a series of happy accidents ended up becoming a technology policy lawyer and expert.

[00:06:33.15] And among the experiences in my background, I would highlight it was a trade negotiator for the United States, and started The Intellectual Property and Innovation Departments, that work on the trade negotiations with other countries, and through that opportunity negotiated with over 60, 70 countries for the United States.

[00:06:56.10] I also did a brief status as a law professor. And I had the enormous honor then of being asked by President Obama to come to the White House to start a new office in the White House that focused on Intellectual Property, and intersected with a number of the policy issues that we're going to be talking about today, and that I work on today in my current job as CEO of BSA.

[00:07:17.01] So very excited to be here. I will say my background has led me to think about a number of these issues part, one of those are sort of the example that the United States is or can be, and by that I mean not just the United States in the US government, but also the US industry, the enormous impact that we have sometimes intentional, sometimes unintentional around the world, and the consequences of that.

[00:07:40.71] And then second, we building on what Lisa was talking about, the intentional and unintentional consequences of technology and the impact that it has on people's lives and how to be as thoughtful as possible about maximizing the benefit there, and being aware of the challenges.

[00:07:59.69] SALLY HATCHER: Thanks Victoria. That's super interesting, and I definitely want to come back to this question of intentionality, I think that that's going to be a big, big, big, cornerstone I guess you'd say in a conversation around ethics in tech. Newton, welcome and can you please introduce yourself.

[00:08:18.67] NEWTON CAMPBELL: Sure. Thanks and thank you to our panelists. So I'm lucky to be online with this great and awesome panelists. So my name is Newton Campbell, through SAIC I serve on the data science team under the Office of the Chief Information Officer at NASA's Langley Research Center. I kind of served between NASA's Langley and NASA's Goddard Space Flight Center up here in Washington DC.

[00:08:43.10] There, we combine our digital transformation thrust at NASA with artificial intelligence and machine learning. We by doing this, we help scientists, engineers, as well as people in the enterprise take on new technologies that are rooted in artificial intelligence.

[00:09:01.58] Our work ranges from using AI for intelligent urban air aviation, to detecting cancer causing space radiation to developing intelligent dashboards that help the enterprise with decision making, strategy budget, et cetera, et cetera.

[00:09:17.82] And as our group lead, is helping to frame the AI ethics strategy for the entire agency, we really have the ability to be out front with establishing a number of processes and methods for advancing understanding of concrete ethical use of technology, and implementation of technology on ongoing projects.

[00:09:41.99] That's something that the government sits in a unique position to do. Particularly organizations like NASA, where it's not just about the end product that we develop, it's about how we go about developing that product because at the end of the day, our charter is to inform the public.

[00:10:00.21] And so if we can do some technology development, if we can do science and engineering while informing the public, the better. So with respect to that ethical AI has been on our mind.

[00:10:14.45] In April of 2021, we actually put out a NASA AI ethical framework, basically stating what our qualitative principles are, knowing that it's a living document much like other organizations. Knowing that it is something that may change over time but at least putting a stake in the ground to say, hey, these are the principles that we're moving towards and here's the reasoning behind it.

[00:10:39.11] Now how do I define ethical tech? So when thinking about this, my instinctive response is always to say that you can't develop ethical tech. There's no such thing, and that it's depending on how it's used, and that I can only do so much and that in my consulting business we can only do so much. And if I'm working with the government to develop AI on a mission, they can only do so much.

[00:11:02.57] Now let me say, that's my instinctive response, I said that very deliberately. And I think an acknowledgment that response is flawed, and that those flaws come from a classical training in computer science, and experiences in and around those in the field, is at the root of the overall problem that we have in the field of ethical technology and particularly ethical AI.

[00:11:26.09] And at some point I do want to touch on a bit later, is that the training, the background, all of the stuff behind this, that culture, was not a culture that was necessarily amenable to considering ethics, it was a culture that was more amenable to considering function and what you can do. Now we are

shifting into a world where we have to consider more of ethics that really needs to be a fundamental part of the training.

[00:11:53.18] So with that said, I do look at saying that a technology is ethical. It gives me the same feeling as saying that a technology is secure. You're never going to have something that's perfectly secure. Much like you'll never have something that has a perfect consideration of ethics.

[00:12:12.56] Nonetheless, you can have a secure technology, and all that usually means is that you've given appropriate consideration of security at every step of the process. You didn't just bolt it on at the end, it's a fundamental piece of the process. And we can use both qualitative and quantitative measurements to evaluate the technology at every step of the process.

[00:12:33.11] So keen to that, ethical tech is technology where ethical considerations and measurement of those considerations are infused into every step of the technology process. And that's a broad definition, but we can get to some examples down the line.

[00:12:50.44] SALLY HATCHER: Oh wow, what a great place to start. So just to back up for a second, it's super interesting who's in the room. Three of us do have a law degree, Newton has a PhD in computer science, all four of us have worked for the government, either state or federal.

[00:13:06.76] At least two of us have been entrepreneurs, all of us have had really entrepreneurial thinking about getting technology into use that was formerly in a lab or new ideas. So kind of a real broad basis here.

[00:13:21.82] And I want to jump right back into that Newton, on ethical technology is bringing the appropriate consideration to the technology and then measuring that.

[00:13:34.66] I think that's super interesting, but I'm maybe even more interested in the fact that you don't intuitively think that you can have ethical tech. So let's just start there, why can't you-- what's grabbing you to say this isn't a go?

[00:13:47.95] NEWTON CAMPBELL: Well, like I said that, but my point was that, that is the instinctive response due to the training. I think that you can have ethical technology, I just want to make that clear.

[00:13:58.55] You can have it but the instinctive response and one that is a part of the culture of computer science is akin to the culture, something that I've seen that's a part of the culture of science in general, which is passing the burden of responsibility.

[00:14:14.56] Largely when you ask scientists, chemists, physicists, and I'm not going to name explicit names, none of them will recognize. of course-- but usually when you ask scientists and engineers as well, have you considered how this technology can be misused, or have you considered how the results of your science can be misused.

[00:14:33.31] A lot of the answers that you hear, are passing the burden of responsibility onto the people that take it on, or passing the burden of responsibility onto the users in the case of technology.

[00:14:48.13] And one thing that has to shift, particularly due to artificial intelligence, where you have the things that you created, in some cases operating on their own, is that, that burden of responsibility needs to be on the developers, and the designers, and the people that are actually creating the technology itself.

[00:15:14.30] So the reason that the instinctive response is Oh, you can have ethical tech because, there's no perfect code of ethics out there, is because most people are considering well, users can do whatever they want with it, other stakeholders can do whatever they want with it, and it's a misreading or a misunderstanding of what folks are looking for when you're talking about ethical tech.

[00:15:46.33] People would just want to know that you've actually considered these things and are actually taking measurements that are aligned with either common values or the values of your organization.

[00:15:59.71] SALLY HATCHER: Interesting. OK, so you're defining ethical tech as technology designed by people who have ethics in mind, and maybe have been trained to think about the ethics of their technology as they're designing.

[00:16:13.11] NEWTON CAMPBELL: Correct.

[00:16:13.33] SALLY HATCHER: Interesting. Let me turn that around. Lisa, would you agree? Is that the standard for ethical technology or is there something different around accountability?

[00:16:25.99] LISA NEAL-GRAVES: Yeah, so it's interesting because I work for an organization that is really focused on right now, being able to figure out use of space, utilizing sensor technology, which also means that there is a potential for them to grab information that potentially could expose private information potentially.

[00:16:48.94] But they designed the solution is Zazu sensors but they designed their solution intentionally, not to capture the details of the individual or even particular personal information, but really to be able to look at sort of what's happening in a space and make inferences, and provide analytics based on those inferences.

[00:17:11.74] I don't believe intentionally driven by sort of this logic or ethical thinking per say, but there was something to be said about consideration for the specifics of privacy, just knowing how people are today about privacy security.

[00:17:28.97] All right, and I think the one question that I ask and Newton, you're spot on when you were talking about the computer science sort of thought and process, it really is, does it work? All right, can I get it to work all right? It is really about can I make it functional so that it does what I say it does? And then you worry about what the other issues are.

[00:17:51.82] All right, the first things first. But I think that the engineers that I'm talking about that have been working on this, have focused less. If I had asked them, did they have in mind right up front ethics, they would have probably said no.

[00:18:08.47] All right, but now they can look back on it and say, yeah, that was very ethically responsible way to design this thing but they were looking more at some of the specifics of the issues at hand today. And I do think that sort of drives people's consideration all right, so privacy is an issue, so they thought about issues but not necessarily privacy specifically but not necessarily in the context of ethical privacy that makes sense.

[00:18:33.87] All right, and so I do think, when we talk about how people go about doing things, one of the core and I know you'll get to this later, but one of the core considerations that we really need to have that gets you to sort of the ethics of technology, is who's on the team, and what are the perspectives of those individuals on the team, and what are they bringing to the table, that allows them to sort of think about all of the potential implications of that technology. And that in and of itself will start to give you sort of the underpinnings of ethics but it wouldn't necessarily.

[00:19:11.81] I just, I keep coming back to-- I just don't know that technologists generally think in terms of ethics, unless they are a part of a multi discipline team where you've got somebody on the team specifically, that is focused on ethics.

[00:19:29.29] But generally speaking, if you've got an engineering team, they're really focused on the functionality and what problem they're trying to solve and can they get it to work, and what's the best

way that they can get it to work. And if there are issues like privacy, they're going to definitely think about privacy but they're not going to think about it in the grand scheme of ethics that's my take on it.

[00:19:49.15] SALLY HATCHER: Interesting. yeah, yeah, yeah, and certainly around, I mean functionality. That is everyone's goal. So I really like your point. We'll come back to this on ways to ensure ethics, and team would be an automatic place to start. Victoria, do you have anything to add to that?

[00:20:14.24] VICTORIA ESPINEL: Yeah. So I'll talk about an area we've been thinking about a lot. Where we're trying to bring together, how to think about one particular issue, so in this case, it's artificial intelligence and trying to avoid skewed outcomes because of bias, and how to build that into the design process, the design development and deployment process, to address exactly what needs at least I've been talking about.

[00:20:36.52] So artificial intelligence, been around for a long time and the sort of widespread commercial use of it is still relatively new. All right, so I think in that sense it's still nascent, I think in terms of widespread use and certainly in terms of policy, we're all aware that it can be used in many ways.

[00:20:56.89] Newton already talked about some of the highlights there. It can be used I think to help reduce discrimination. Some banks, for example, if they're using AI in the right way, is a data driven approach focused on humans and it can help reduce some of the risk of discrimination.

[00:21:15.04] But we also, we all know, that there are real risks of exacerbating social inequities that exist today, through artificial intelligence. If it's not being designed, developed, or deployed in the right way.

[00:21:29.98] And I'll focus on those three, because we thought a lot about this for a number of years and we launched earlier this year in May, a framework that is focused specifically on the design, development, and deployment of artificial intelligence, and doing it in a way that will help mitigate the risk of bias and I'd be delighted to share that with anyone that is interested.

[00:21:55.54] In the framework, one of the things that we focus on, is a tool called impact assessments. And we believe that impacts assessments can be very beneficial in terms of reducing the risk. They have a couple of the things that they can do in particular.

[00:22:08.81] One is they can help identify risks, and in identifying them help mitigate the risks of those skewed outcomes. A second thing that's really important for you to know is increasing transparency in the process. And going to Lisa's point about stakeholders done right, there are a number of stakeholders that need to be involved in the design, development, and deployment of artificial intelligence.

[00:22:33.16] One of the things the impact assessment tool can help with is making sure that those stakeholders are communicating with each other, and making sure that there is a clear understanding of who is responsible for what.

[00:22:46.10] So as Newton said, there is no perfect solution to anything, but we feel at BSA that impact assessments in the fairly detailed framework that we've laid out, can be a very important part and really successful in helping to reduce the risk of bias or reducing the risk of skewed outcomes. And one of the things that it does is infuse it, into the engineering and the design process every step of the way.

[00:23:14.24] The last thing that I will say, and I say this again as someone who spent quite an amount of time in public service, I think there's a very important role for government to play here. Obviously, the industry needs to step up, but I think there's a big role for government to play here.

[00:23:28.36] And in fact, we at BSA have called for governments to regulate in this area and require companies to do impact assessments as they are designing, developing, or using, or deploying artificial intelligence tools, we feel that they're sufficiently important that government should step in and make sure that their requirements.

[00:23:49.53] SALLY HATCHER: Wow. OK, so I'm going to lob that right back to Newton to build on that. Newton, when we last talked, you were actually lecturing on the framework that you've built at NASA to talk about ethics and tech. Can you talk a little bit more about your framework?

[00:24:07.95] NEWTON CAMPBELL: Sure, sure. So NASA's AI ethics framework, really reviewed a number of other frameworks. I saw quite a bit of the work behind this one of the leads of our data science team, really helped generate this report.

[00:24:23.19] And it largely came from an industry review of academia, industry, other government organizations like DNI and other groups that produce frameworks, as well as international frameworks such as e-regulatory frameworks.

[00:24:39.69] And the idea here, is to come up with a set of qualitative themes, much, much like the ones that Victoria was just talking about, which development teams as individuals can measure their technology progress against.

[00:24:57.96] So things like fairness, things like bias, things to be considered that even if you don't necessarily have people that are specialists in that area in the room can be considered.

[00:25:11.55] One of the important parts of that framework is, actually having people of diverse backgrounds in the room. Diverse both in terms of demographic and background trains of thought et cetera, et cetera.

[00:25:25.20] One of the pitfalls that I see in a lot of documents like that and you've got to start somewhere, is that all of those criteria tend to be qualitative. The criteria that something must be fair.

[00:25:42.03] Yes that is a very high level criteria, but what does that actually mean concretely for as far as what technologists need to measure. The criteria that your processes must be accountable and transparent, also really good what is that what does that actually mean in terms of measurement.

[00:26:02.61] So what we are researching right now and we're not unique in researching, there are several other government agencies DARPA comes to mind with their assured autonomy program that are looking at metrics for AI, such that you can validate and evaluate your programs against these qualitative measures.

[00:26:23.70] The issue here, and NASA is not a regulatory agency, but going back to Victoria's point about regulation is that there is no uniform sort of standard for what those quantitative measures have to be. There isn't something that allows you or Congress to check the box to say that your company is doing X Y or Z appropriately.

[00:26:48.75] And much like AI itself congressional oversight of AI activities, have to be more flexible and adaptive than traditional approaches to oversight. Just to include how Congress measures success.

[00:27:04.45] And so with that, one of the things that I really like Victoria that you discussed was infusing certain metrics into the DevOps and software engineering process overall.

[00:27:17.49] And that's one of the things that we're looking at, doing right now in a number of different programs at NASA, is figuring out all right, how do I take these measurements, that there must be some societal good that things need to be accountable and transparent, that things have to be fair and unbiased. How do I take those things and infuse those into existing software engineering processes to inform the public.

[00:27:43.02] So that's one of the major things that we're researching right now. There's a particular technology that is under development that deliberately has several AI components for us to sort of-- in a

scoped environment, really look at how we can do this mapping from concrete project to qualitative attributes and we're going to be publishing some reports on that in the spring.

[00:28:09.99] SALLY HATCHER: Well, OK. So we've talked twice now, about who's on the team, so put a pin in that as something that becomes very important with the ethics question. Second thing we've talked twice about is quantitative metrics, as a way to help identify where you are and what's the outcome.

[00:28:28.49] I want to take that and turn it toward this biased question which is coming up some. And to me the question there is, really around, where does bias come in? So is it in the design phase? Is it in the implementation? Is it in that AI where it's repetitively learning? Is it in the user interface? Is it the way that the user uses it?

[00:28:56.21] But where does bias come in to the technology, and are there best practices or way to think about how to mitigate the outcomes of some of these technology innovation that have an implication that goes far beyond what the intended consequence was? Neal want to jump in?

[00:29:22.29] VICTORIA ESPINEL: No go on Lisa.

[00:29:24.12] LISA NEAL-GRAVES: No, I was just going to say that for all intents and purposes, technology is designed from the experiences of those who are designing it. All right, and so to the extent that bias creeps in, it's not like intent all right, it's not intentional, it really is just those are the folks, and, that is their perspective that is their exposure, that is their experience.

[00:29:47.08] And so to the extent that you can't find or create a team that has a variety of experiences in a variety of sort of backgrounds, because even with experiences, if your background still doesn't have sort of a perspective that allows you to see it from a bunch of different vantage points, you're still going to see it the way you were categorically taught in school all right.

[00:30:16.02] So I grew up building computers from the time that I was in the sixth grade. All right, and I learned how to do that. Literally, if we think about it grossly as a White male, because there wasn't really a perspective of a Black woman designing computers.

[00:30:34.56] And so much of my early experiences, were taught to me based on rigor and rudimentary stuff all right. I didn't really start to think about, well, how do I want to design this, until literally you get to college and you start to have different courses that are taught by different people, that give you different perspectives and vantage points, and then you build teams.

[00:30:58.63] And those teams have folks on it that come from-- it wasn't until you go to college that you start to get people from international areas and so you now have perspectives that are beyond the US, that are working on these projects.

[00:31:12.91] And so bias in and of itself, is inherent. And so when we talk about removing bias, I would love to live in a time when that is possible. But the truth of the matter is that I don't know that, that is ever going to be possible, and it certainly won't necessarily be possible in technology because the people who hold the power within technology are the folks who have the money to do the investment to develop.

[00:31:40.33] And so if those folks aren't really interested in getting, whether you build a team of engineers that build it, or you build an access point to people who would be your target audience that is diverse and all over the map, somehow you have to fold into that development cycle access to a variety of different people who think very differently than those who developed it.

[00:32:10.18] SALLY HATCHER: Victoria.

[00:32:11.17] VICTORIA ESPINEL: So I just wanted to jump in and say, I think at least as well it may not be possible to remove it, but I think we should strive to try to reduce bias as much as we can. And I think to your question Sally, in our opinion it comes in at all three stages.

[00:32:28.88] So its bias can come in during the design process, and again not necessarily intentionally exactly as you said, but nonetheless in the design process, in the development process, and in what we call a deployment, which is essentially the use of AI.

[00:32:43.75] So in all three of those, design development and use, biasing come in which is why the framework that we have focuses on each of them individually and separately, and sets out very specific best practices in each one of those stages.

[00:33:00.73] I also want to note that while all three of the stages are important, there is still a relatively small number of companies, many of them quite big but a relatively small number of companies that are designing and development AI. There are multiples of that are using artificial intelligence which is why it was very important to me and to our companies to have all three stages.

[00:33:22.93] The design is incredibly important, but I think there's been less conversation about how AI is used in making sure that in addition to being design and development, is also being used in a way that doesn't exacerbate bias and attempts to reduce bias as much as possible.

[00:33:38.87] So in the framework with AI dropped into the chat, we have specific best practices for each of those three stages, would be delighted to get feedback on this. I mean we worked pretty intensely for a couple of years on this, but we know that it's something that's going to need to evolve.

[00:33:58.21] So for anyone who's listening to this, we are always open to feedback on the framework and we think it's a good contribution, but always looking for ways to make it better.

[00:34:12.00] SALLY HATCHER: That's so interesting. And Victoria, can you give us an example, of just a concrete example to help us on using AI, as opposed to designing AI. What are you talking about in the user space, where you can see the bias issue?

[00:34:27.09] VICTORIA ESPINEL: So I think if you are-- so there's so many industry sectors that are using it, I mean now with digital transformation like every sector is using artificial intelligence. So I want to focus on one in particular, but I think there are a couple of things to the companies to be aware.

[00:34:46.32] One is, I think they need to think about the overall outcome that they're trying to achieve.

[00:34:50.21] SALLY HATCHER: OK.

[00:34:50.52] VICTORIA ESPINEL: So they need to use the artificial tool for a specific use purpose, evaluating loans because now I am focusing on particularly the sector or employment decisions.

[00:35:00.74] But I think they need to think very carefully about the fact that their use of that tool is not just about creating efficiencies in their process their use of that tool, in my opinion, has to take into account a deliberate, intent to try to not exacerbate bias.

[00:35:19.58] And then in terms of how they specific best practices for how they can do that in their use of artificial intelligence, I think part of that goes back to making those expectations clear.

[00:35:30.02] So they are either developing in-house or they are purchasing AI tools from other companies. So making that sort of a clear part of the expectation of what they want out of tools, I think is very important. I don't know how widespread that practice is at the moment, others on the panel might have a sense, but I think that is a very important tool.

[00:35:49.67] But there also, when there are a lot of artificial intelligence tools when they're being used by companies in-house, they are then adjusting them in various ways or asking for adjustments in various ways to tailor them, to the specific purposes they have and making sure as they go through that sort of end design process, that they are using again, continue to use tools like impact assessments or the best practices that we have in our document to make sure as that happens bias doesn't skewed data doesn't come into the process at that point that will then lead to skewed outcomes.

[00:36:27.50] SALLY HATCHER: Interesting. OK, and we are-- I can't believe how we're blowing through the hour, so I'm going to push this forward Newton as I come back to you.

[00:36:35.21] We've been talking about bias, Lisa throw out there that it's the money that really has the accountability, I want to just think about that for a second. So who is accountable for the ethical implementation of technology? Is it the designer? Is it the funder? Is it the company whose name whose brand is on it? And how do we define accountability of technology?

[00:37:04.53] NEWTON CAMPBELL: So that's interesting because I mean my there's two approaches to that I would take. The one is more of the emotional approach which is, I'm accountable for the things that I develop, and I want to make sure that ethics is ingrained in everything that I develop.

[00:37:25.10] But I'm inherently limited, my programs are inherently limited by money absolutely, but also by money and experience. I think accountability has to happen across the board.

[00:37:35.85] One thing that I like that Victoria really touched on, was these notions of transparency and expectation management. If I can sum up what you just talked about, understanding what the AI is doing and having each of the stakeholders get an understanding of what the AI is doing can guide how you define accountability.

[00:38:01.94] All right, if stakeholders have an understanding that these are the impacts in our case, these are the impacts that AI will have on a mission, and they go forward, knowing that we've defined those as acceptable, OK, they share some accountability in those cases.

[00:38:21.51] But as far as accountability when it comes to, for instance, your average industry group, that's building an artificial intelligence or using an artificial intelligence.

[00:38:35.96] That's really where having people on staff that can actually help you parse that, can actually help you parse the use of AI come in. And that's difficult because again it is guided by money. A small business that just wants to leverage AI to be competitive. They're not going to have an entire data science team on staff that can help them to parse Oh, these are the actual implications of some AI capability.

[00:39:08.93] That's really where it, at least on our side of the fence on the science side on the technology development side, we have to continue to come up with ways of defining and communicating that to the public. And historically, that's been the biggest gap for not just computer scientists, but scientists in general.

[00:39:28.58] I often find that computer scientists talking about AI, it's even a well seasoned practitioner that they have trouble communicating. Even if there's a valid application of how AI can actually be applied to someone else's use case.

[00:39:44.27] And that needs to come again, I know people want quick solutions but that needs to come through training, this needs to happen from a University curriculum standpoint. And should also very much happen at the standpoint of job training. But computer scientists should take some targeted instruction and practice in communicating the results of their technology to make things transparent to everyone up and down that supply chain.

[00:40:12.86] SALLY HATCHER: Well Lisa, Victoria any other thoughts on accountability?

[00:40:16.88] LISA NEAL-GRAVES: Yeah, that I love the point that Newton was making about infusing it into the education process. All right, we think about doctors and they are required to take the Hippocratic oath all right, and that is built into how they learn, what they do, and all of that.

[00:40:33.50] And I have never really fully understood why that wouldn't be something from any of the sciences, really any discipline, that you wouldn't somehow infuse responsible all right, being responsible to Newton's point, I'm responsible for what I build. Yeah.

[00:40:54.08] You can be responsible for what you build, but there are consequences if you don't align with who you've been hired by to develop that. But if there was some tie back, and there was some onus on some sort of ethical requirement obligation et cetera, that is mutually owned between those who are building and those who are actually paying for the thing to be built. Those who are developing the products generally, I think that you find you will find that the adoption of some of the ideology that BSA is doing.

[00:41:29.71] All right, you'd find that there might be an easier process to align with some of the guidelines and the guidance that they are putting out for general consumption but one of the things that I also realized that technology that was one of the reasons why I was so thrilled to go into tech and specifically computer science, was because it is always evolving.

[00:41:52.76] There is the point at which you write it down, you put it down on paper, it is already exhausted, right there, there's already another way to view the same thing, all right, there's always already another way to do something even more I would say creative, than that which you've already created.

[00:42:15.68] Once you've come up with an algorithm, somebody can always create another way to do that same thing that is probably a little bit more taxing potentially, on some of the ethics that you might or might not adopt.

[00:42:31.28] All right, I believe that there has to be some way of tying some sort of ethics obligation to various disciplines. So that there is the mindset that says we owe it to society as we build, to build ethically and to make that a part of how people get trained.

[00:42:53.27] NEWTON CAMPBELL: I mean it's what we did with security. 25, 30 years ago computers security was rare, it was a specialization in the computer science curriculum.

[00:43:03.38] Now it's a fundamental part of the curriculum, I won't say it's perfect OK, maybe our security and privacy are not perfect in the computer science curriculum but you look across the space and it's at least fundamental to software engineering courses, things like that, why can't ethics in communication be the fundamental to the curriculum in that same way.

[00:43:26.34] VICTORIA ESPINEL: Just a couple of things there I think there's two parts of it, I think one is, in the industry having companies make clear that that's a priority for the company as a whole and I think that only works, if it's coming from the very top of the company from the CEO sort of impressing down the line that this is a priority for the company.

[00:43:46.59] And then going specifically to the education point, I just want to point out that Natalie Garrett, put in the chat something that she has been working on as part of the Mozilla responsibility challenge.

[00:43:56.67] I know my friend Daniel Weitzner, he was at the White House, we had a lot of conversations actually, about this specific issue about engineers and have an awareness on policy issues which often come down to ethics and privacy bias.

[00:44:11.85] And so he has started a program at MIT, which is designed for engineering students to learn more about the policy implications which is often the ethical implications of the technology that they're building. And so anything that can be done I think to make that more widespread to make that sort of a standard part of the curriculum to me, that seems it would be enormously beneficial. And I think interesting, but also enormously beneficial.

[00:44:38.97] NEWTON CAMPBELL: Yeah, it's interesting and you directed us towards the chat to that point, to some of the points in the chat, there are aspects that are touched on particularly in the computer science curriculum, but in curricula in general.

[00:44:53.37] For instance, I had a quality assurance course during my during my masters, and that course quality assurance is focused on OK, are you delivering a product that does what it says, that it does what it says that it can do, no more no less, how will it be verified and tested this thing.

[00:45:10.77] But in that wrapped up in that course, we had a lot of conversations about ethics. We read nightmarish stories about unintended consequences of software that folks had developed because they hadn't made the appropriate considerations. Things like that going wrong.

[00:45:26.55] So it's not that it doesn't necessarily exist right now in the curriculum, but it does need to be a little bit more deliberately identified, and focused on much like again, security has become over the last 10 or 15 years.

[00:45:45.20] SALLY HATCHER: Well--

[00:45:45.46] LISA NEAL-GRAVES: One thing, I know we're going to go into the students, but one thing I really do want us to make sure that we talk about that we haven't really yet talked about.

[00:45:53.35] And early, the earlier technologies, were very closed networks so you could control both ends of the spectrum and control what happens in between. But because we live in a world now where everything is sort of these modular blocks that you can build across technologies, it now becomes even harder to really figure out, how do you ensure sort of ethics in all of the components and all along the way, all right.

[00:46:21.79] So some of those things we have to think about it, sort of universally now whereas, if you think about Apple, Apple really didn't worry about what was happening in the windows space because they had a closed network and they could control what went on their infrastructure versus not.

[00:46:40.39] That is probably not as true anymore as it had been, and as that becomes more and more sort of the norm, which is definitely the trend, it's going to be even more complicated. So these issues of ethics become even more important for us to really think about what's the right process to ensure that all along the way we've got those considerations.

[00:47:09.40] SALLY HATCHER: Well, OK. So this is such a stimulating conversation. We've been talking so much about training, and about needing to expose people to these concepts before and as they're doing the job of creating and implementing technology and then using the feedback they get.

[00:47:29.56] Let's pause here and bring in some questions. And Phil Weiser always said that we should start with a student, I think that's perfect we're talking about education. So can we get a first question from the student audience please.

[00:47:46.90] Hi Alexis?

[00:47:49.58] ALEXIS OPPER: Hi, I think that's me. Thank you all for being here, this is has been so wonderful. My question was, a few of you mentioned government regulation, and I'm interested in

hearing what your guidance would be for creating regulations for technology that are able to keep up with technologies advancements.

[00:48:09.94] Because as Lisa mentioned, as soon as you put it down, it's changing again so how do you create policies that are going to be able to keep up with the evolution.

[00:48:21.80] LISA NEAL-GRAVES: Yeah I struggle I know, I know, I know. Victoria, I have absolutely no issue with what you're saying theoretically I like the idea. But I struggle with how you create regulations, because what it does is it creates a safe harbor.

[00:48:38.81] All right, and once you have a safe harbor, once they meet the criteria for that safe harbor then they feel like they've done what they were supposed to do, versus if you create this culture of ethical behavior somehow infuse it, said that it becomes part of our DNA as opposed to this strict regulation or rule that we have to follow.

[00:49:02.36] I think we get better outcomes, and I think that the work that you do at BSA would be great in terms of providing ongoing and continuously improving guidelines, and principles and those kinds of things. But I struggle with regulation, I do, and I can tell a lot more about my background that would indicate what?

[00:49:25.01] But I do, I struggle with regulation because there are some things I think that should be regulated and there are other things that I just I struggle with how you do it effectively.

[00:49:36.64] VICTORIA ESPINEL: So as someone who spent most of her career in public service, I'm happy to jump in on that one I think most people in government struggle, Alexis with exactly what you're talking about. How does the government get involved? How they get involved in an appropriate way? How did they get involved in a way that doesn't stifle innovation, but also protects their citizens which is the main job of a good Government.

[00:49:57.64] In my opinion, I guess I would say a couple of things. One is, I think it is helpful as a general matter for regulation not to be overly prescriptive, not to be overly detailed, because then if it, is you're just going to be, you're going to be on a hamster wheel of constantly updating. So as a general approach I think that is one.

[00:50:19.09] We talked about the impact assessments and BSA taking a position that we think government should require impact assessments, but if you-- one of the reasons that we're in favor of that, is because what should be an impact assessment we believe is something that will continue to evolve.

[00:50:33.31] So we put out this framework again, we'd love to get thoughts from people on it. But it is deliberately flexible, it's detailed enough so it gives companies a sense of what they-- we at least believe is appropriate, but is also flexible enough that it can change.

[00:50:49.51] And so if government said you have to require an impact assessment and the impact is sort of baked into that idea, is that, that will continue to evolve. So they will continue to be flexible, as the best practices for impact assessments continue to be flexible and to the extent it's possible for governments to do that I think that is helpful.

[00:51:10.28] The last thing I would say, is that, notwithstanding my background in public service definitely, do not think that governments can do it all nor should they do at all. So I think someone in the chat I think his name is David made the point about firm culture, that's incredibly important.

[00:51:26.29] We're never going to have successful outcomes if it's not coming from the industries, for example, if they're not coming inherently from them, in my opinion, it can't just be something that they're doing solely in reaction to government pressure, it needs to come from the top of the company.

[00:51:43.30] So David raised things like incentives management training, those are all tools that the leadership of companies can use internally to make sure that it is clear that this is a priority for them.

[00:51:57.44] So I could talk at lengths, I'm going to stop. But Alexis it's a great question and it's going to be, it's an ongoing balance there all right?

[00:52:10.22] NEWTON CAMPBELL: Yeah, I absolutely agree with the two panelists here. Like we said NASA isn't necessarily a regulatory organization, we do missions and research. But I have talked at length with Gordon Stone one of the deputy directors of D&I about this through another fellowship that I work with.

[00:52:29.06] There are a number of recommendations that I think that, that could be put in that I think Congress should at least consider in terms of doing oversight of AI and related technologies.

[00:52:44.93] And I agree with the points that you don't want to overprescribe, but it's very clear that Congress could be smarter about this, all right? That's one thing education, in this scenario is going to need to go both ways, we as technologists need to learn how to communicate, Congress needs to learn how to understand that communication, so that they can appropriately regulate, because there is room for regulation.

[00:53:08.06] I 100% agree that we should not overregulate the problem, because not all AI is built the same, not all applications are built the same, and you don't want to stagnate your economy based on arbitrary regulations that are defined by arbitrary congressional understanding.

[00:53:24.33] But with that said, I think one thing that would be extremely helpful, is for us to bring back something like The Office of Technology Assessment within Congress. Where Congress has the ability to have a dialogue with technical experts with a deep background in artificial intelligence and related technologies.

[00:53:46.25] That's one key thing that I think is significantly missing from Congress right now, most of Congress is informed by their staff and effectively lobbying in special interest organizations.

[00:54:00.32] I think bringing back an office of technology assessment to at least generate a common understanding, and to some extent, and I think we'll need this down the line to be referees when it comes to how oversight happens, will be absolutely necessary.

[00:54:15.60] And then I think that, there should be some additional alignments at least for across government organizations when it comes to actual funding of artificial intelligence. Right now in a number of government organizations, there's no explicit year or multi-year funding for artificial intelligence.

[00:54:35.88] So it doesn't necessarily necessitate across all organizations, a review of AI spending and what are the outcomes of that. That's another key area that I think that if we actually establish some focus on that for organizations as large as the government.

[00:54:53.00] I think that would be extremely helpful and hopefully some of that would trickle out into the private sector, because many of the things that we're spending money on are to foster innovation in the private sector.

[00:55:04.43] We push out our technology, DARPA pushes out its technology, a lot of those innovations, a lot of the innovations you've seen in AI in general, are owed to a lot of funding. But not necessarily funding that was tracked specifically for AI.

[00:55:17.03] So understanding that, and how that affects the artificial intelligence environment, and the best practices and ethics that were a part of that, can be used to establish metrics down the line, I think that's another key area that the government needs to look into.

[00:55:34.21] SALLY HATCHER: What a great point on also how to track and follow the money. Really, really interesting. So Alexis thanks, thanks, obviously a very thoughtful question that stimulated the panel, so much more to be said there.

[00:55:47.23] So we have time for one more question, Natalie Garrett I think you're on deck would you like to ask your question?

[00:55:54.85] NATALIE GARRETT: Absolutely, yeah. And I think what Newton was just talking about is a really good transition. Oh, yeah, Casey Fowler and I have implemented some ethics assignments with an intro computer science classes.

[00:56:08.03] And I think one of my options is and something that we come up against a lot is, what those courses promote is individual responsibility All right, because we're saying you're an individual person, creating code, but my question for all of you and I think you're the perfect panel to ask this question is, how do we reconcile that individual responsibility with sort of a collectivist responsibility amongst everyone.

[00:56:34.42] Because those of us who have worked in industry understand that unless you're the top level CEO, you're not the one making the big decisions you're just you're writing the code. And so to put that on an individual shoulder is often inappropriate.

[00:56:54.56] SALLY HATCHER: Anybody want to tackle that?

[00:56:57.75] VICTORIA ESPINEL: I'll jump in just very quickly. So Natalie I completely agree with you. I think that was the point a couple of times I think it has to come from the top of the company. I think that's incredibly important.

[00:57:11.74] That said, I will also say, and the employees have a lot of power, and you've seen employees using their voice more and more in the industry. So while I cannot emphasize, how important is that, I think it is for it to come from the top down.

[00:57:27.75] I also would-- employees shouldn't discount the voice that they have and I think making it known that ethical use of technology is something that's important to them, is something that we've already seen employees and various stakeholders doing, and I think that's really important.

[00:57:48.38] NEWTON CAMPBELL: That's yeah, yeah, I absolutely agree Victoria. So this goes back to something that Lisa alluded to it's based off of one of my answers which is this notion of not necessarily a Hippocratic oath, but something that's at a slightly higher bar than do no harm for technology development.

[00:58:09.72] And what we need going back to another earlier point is some form of protection for the employee in that space, all right. There is an understanding in doctors' offices for doctors that don't own their own practice, that there is a Hippocratic oath. All right, and that the things that have to come from the top down can't violate that. And there's a significant understanding there.

[00:58:35.22] So if we could develop something that identified, that there is a bar which computer scientists have to operate in terms of ethics, maybe you could put some more of the onus on us in that space, and that would be a little helpful as well.

[00:58:55.32] LISA NEAL-GRAVES: Yeah, and I guess I would just close out Natalie, I certainly agree with both Victoria and Newton, but I would also say that the top of a company rarely is involved in detail

product decisions. All right much of that is going to come from sort of those tiers of management and reasonable minds can disagree or have various perspectives on how something should be designed or not designed.

[00:59:26.43] If you can get the core of those folks at least aligned on as Victoria had indicated some of the guidelines, and some of the processes that she had put forth as part of BSA, if you can get those folks to align on some key principles around how decision making is made, then I think you have the ability to really come to the best possible decision at the time.

[00:59:54.54] Now you look back on it you're going to see that there are always other options that you could have taken, but the best possible decision at the time is the best that you can do.

[01:00:03.66] All right, and I do fundamentally believe that if you can get everybody sort of understanding, here's our obligation. All right, here's the problem we're trying to solve, but here's our obligation while solving that problem you come very close to what I think is the most ethical solution that you can possibly have.

[01:00:22.83] At the time as long as you've got people sort of aligned with sort of these theories, and guidelines, and principles, and processes, I think you end up with the right answer.

[01:00:33.67] But I do struggle, with people sort of blaming the top of the organization with sort of the decisions that get made because rarely do the CEO really know or understand enough, to have driven an actual design decision. It's not to say that it doesn't happen but it is rare that, that is the case.

[01:00:57.16] SALLY HATCHER: Great point. And thank you Natalie great question, really appreciate it. This is so interesting and in an hour, we have only just scratched the surface, there is so much that I still wanted to talk about.

[01:01:09.70] Balancing freedom of the right to free speech, and the right to invent and sell new technology versus a tragedy of the Commons, and a loss of our free speech and our rights. There's just endless places we could take this data privacy we've just scratched the surface on.

[01:01:34.54] We also have talked a whole bunch about putting on guardrails. We haven't really explored more of the benefits of how can technology actually be an operator for good or for the common good.

[01:01:49.43] So much more, and we will hope the next two panels will take this and build on it. But Meanwhile, Lisa, Neal-Graves, Victoria Espinel, and Newton Campbell, it's been an absolute pleasure, thank you so much for being here today. I thoroughly enjoyed it and really just appreciate your expertise on the matter so thank you, and we will turn it back over to Silicon Flat lands .

[01:02:14.71] VICTORIA ESPINEL: Thank you so much Sally, Lisa, Newton, was great to get to meet you and I'm very happy to have been here.

[01:02:21.37] NEWTON CAMPBELL: Thank you, thank you, very much. It's a fantastic panel.

[01:02:24.76] LISA NEAL-GRAVES: Ditto, ditto. Thanks.

[01:02:27.82] SALLY HATCHER: Thanks.

Building the Proper Process

<https://www.youtube.com/watch?v=C-elzTrzoQs&list=PLTAvIPZGMUXOYGsBs5NBp6ydwSxrRwn1U&index=2>

[00:00:00.48] AMIE STEPANOVICH: To lead our second panel, I'm really happy to introduce David Sullivan. David is not only a member of the Silicon Flatiron Advisory Board, but he is the Founding Executive Director of the Digital Trust and Safety Partnership. Prior to that, David served as the Program Director for the Global Network Initiative, GNI, where I worked with him both in my current and previous roles. Thank you for joining us, David. You've got the mic.

[00:00:25.08] DAVID SULLIVAN: Thank you, Amie. Thanks, everybody. I'm delighted to be here, and really looking forward to building on the insights from our first panel as we start getting into really the specifics of what process means. So time is in short supply relative to the brainpower on this panel, so I'm just going to briefly introduce everybody before kicking things off.

[00:00:50.98] So I should just note first that my pronouns are he/him. Together, we have on this panel, Erin Kenneally, who is Director of Cyber Risk Strategy at Guidewire, a cyber risk analytics. Her pronouns are she/her. Lea Kissner, who is the Head of Privacy Engineering at Twitter, and whose pronouns are they/them, and Deji Bryce Olukotun, who is Director of Policy and Corporate Social Responsibility at Sonos, and whose pronouns are he/him.

[00:01:28.47] So getting right into things, I wanted to sort of go straight to the heart of the matter and start with Lea. Lea, you've spent more than a decade working in some of the largest technology companies on the planet building things like privacy and security into the development of products, into engineering. I'm curious, what does that look like in practice, and sort of what are the top things that you would advise a company who's thinking about how do we build ethics into our product development process? What would you advise them to do? What would you advise them not to do?

[00:02:07.16] LEA KISSNER: So, hi, all. Yeah, I'm the Head of Privacy Engineering at Twitter, but I used to be the Global Lead of Privacy Technology at Google. I designed and built a lot of Google security infrastructure back in the day. I also, went in last summer and helped Zoom deal with their exciting problems, and I was the Chief Privacy Officer of a startup named Humu. So I've had a little bit of a range of experiences on this and put a lot of security and privacy processes in place.

[00:02:39.29] So it's going to start off a little weird. Process is not enough, right? Policy isn't enough. And what I tend to see is people will, when they're starting up these things they'll say I'm going to go and make a process. I'm going to make a policy. And this is going to solve my problem. Here's the thing. These things almost always will diverge from the real estate of the world, and privacy and security is about what's actually happening in your system, and what's actually happening in your product.

[00:03:07.16] And you need to focus on that part of it. Policy and process are tools you can use to get there, but if you look at those first, you will tend to build a lot of process and a lot of policy as opposed to usually the things that you actually need. So things you should do in very, very, very brief because I can talk for hours about this stuff. You want to help people understand that great products and great systems are respectful, right?

[00:03:39.38] We, from privacy, security, trust and safety, I think of myself as working in the terrible things that happen on the internet business. We're here to help those people who are building products and systems, build great products and systems. I also use a here-there-be-dragons model, right? If you're like on old maps where there's like places with lots of little towns, and maps, not that really well, and then there's the part where they don't know what's going on, and they put dragons out there, and they are beautiful dragons.

[00:04:12.44] But the same thing happens when you're doing development where there's a bunch of things that people really should be able to do. The systems they're touching are really robust. The practices are really robust. They're unlikely to shoot themselves in the foot over there. They may need a check, but it's going to be fine. What you want is to have somebody help them. And like they're like I need to touch location data. Great, we are there to help you. We are going to hold your hand, and walk right by the dragon.

[00:04:44.72] And how those things change over time, like they can both expand and contract. And that's important to take into account as well, but long story. Be there to help them when needed, right? One of the things you could do is get people to work on security and privacy part-time. I very strongly recommend you get the engineers. Do not get the product managers. Do not get the program managers. They're wonderful human beings. I loved working with them, but their incentives are very strongly aligned towards getting things to launch.

[00:05:14.60] So you want to get the people who are-- they're supposed to get things launched right and get them. Get them to spend part of their time on your team because partially, that gives you this amazing view into exactly what's happening in all the teams, but also, they just start designing better. And if something goes wrong, you have somebody to call up who knows how that system works in really great depth.

[00:05:39.29] Do assurance. Don't assume that your system does what you think it does. It doesn't. I've debugged production too many times. Just trust me. It doesn't do what you think it does. Build in the way that makes compliance a side effect of the systems working correctly. People in most places do not find compliance motivating at all. Like they just don't, and it will tend to make them very grumpy about dealing with you. If you talk to them about like we need to keep this promise we made to our users, they'll talk to you about it all day, so like, great.

[00:06:09.23] We're going to make that compliance stuff happen, but that's not what we're going to talk about. And you need to build technology to give you better choices because the choices that you have in the system right now are probably not the best ones that you could have, and you're going to really need to think about where can you very carefully add things, change things. There are also a bunch of things you should not do.

[00:06:30.45] Don't make the Privacy and Security Team, the people who show up and say no. Very rarely should you need to say no in a reasonably operating company. Usually, you need to say things like that's really interesting. Can you back up three steps and tell me why you want to do that thing? Because it's probably something reasonable. It's probably something reasonable. And you're like I'm going to go help you get to the thing you actually wanted, but even if the thing that you told me you wanted to launch is absolutely terrifying.

[00:07:03.15] Don't come in late in the development process. The number of times where I had somebody come in really late and say I want to launch this thing, and I'm like oh, oh, you made a bad choice six months ago, and you have to go back. And they've had to go back and redo six months of work. Now, well, that had a salutary effect on everybody in their general vicinity where no one came to talk to me late anymore, it's not good. Don't design your process so you come in late. You really want to have a contact at design time.

[00:07:35.46] Don't ever ask people questions they don't know the answers to. If you are asking an engineer whether something is PII, or heaven forfend, what the category of processing is, you are in trouble. They do not know how to answer that question. Given the level of nuance about things like IP addresses, let alone anything any more complicated, you are probably in bad trouble. Don't ask them any question that they don't know the answer to.

[00:08:01.74] Don't rely on a lot of manual work. People are very, very bad at doing complicated things repeatedly. So you want to try and pull out things that are going to be repeated and try not to make them repeat it anymore.

[00:08:15.21] Don't rely on what people say at launch time rather than ongoing assurance through techniques like system monitoring, code analysis, and penetration testing. Systems diverge really rapidly, and systems often don't match what you think they did. Even if the team thinks that it does that, the number of times that we've gone in and been like it turns out your system does a bad thing, I'm really glad I looked at the code.

[00:08:41.17] And last one, please, please, please, as someone with a PhD in Crypto who's done a lot of anonymization. Do not roll your own anonymization, and do not roll your own crypto without somebody who is very deeply qualified for this. Those two are the places that I see people screw up virtually every time they touch them because it is subtle. It is quick to anger. And you are not going to know you messed it up until way, way too late. Like these are specialist fields. Approach with care.

[00:09:16.92] DAVID SULLIVAN: Thank you, Lea. That was terrific. I think some really hard-won lessons and insights. So now, I want to broaden things out a little bit, and also, start to build on, I think, some of the great observations and insights from our first panel about the importance of bringing actors beyond companies into these discussions, including researchers and research and development, whether that's happening inside companies, inside universities via the government.

[00:09:49.23] So I want to turn now to Erin, Erin, who previously was at DHS, where you led a process to identify and elaborate ethical principles and approaches to ICT research. So I was wondering how those principles can inform practice, whether it's across industry, government, academia when it comes to processes to develop ICT research and to use that research?

[00:10:19.46] ERIN KENNEALLY: Sure, thanks, David. And that guidance that you just referred to is called the Menlo Report, which is ethical principles guiding information communication technology research. It was modeled off of the Belmont Report, which for those of you who may be aware or may not be aware I should say, was then codified into the Common Rule. And the Common Rule is what establishes our IRB structure here in the US, and that's for any institution that gets federal funding for R&D.

[00:10:49.88] So before I directly answer your question, I think I'd like to take a little quick preamble, which is important and relevant for this discussion I think. It's worth taking a quick stroll down kind of motivation lane as I think even industrial development of technology shares some of the same drivers as what drove us to produce the Menlo Report. We have an historical basis for ethical protections for human subjects. And this was, early on, driven by things like biomedical research abuses.

[00:11:23.87] We had forced medical experiments on Nazi-held prisoners in World War II. Now, specific to Menlo, you know, we saw the train coming down the tracks with regards to potentially ill-advised regulation, or things going sideways and getting New York Times'd in the context of really well-served technology, research, and development.

[00:11:45.17] So the folks in our group, and the researchers that we built this around, were studying the structure of underground criminal economy, things like understanding software, radio attacks on pacemakers and ICDs, taking over botnets, and redirecting spam, things like that. So knowing that this work was for the betterment of science, we really wanted to make sure we didn't run afoul of the law and social expectations.

[00:12:10.52] You know, I think while tech has yet to sort of cause anything on the order of harm severity that we saw with the biomedical abuses, we've definitely seen from a frequency standpoint, increasing ethically challenged uses of technology. And I'm sure the earlier panel, which unfortunately I was unable to attend, spoke to some of those. And we're all kind of familiar with them, right? Deepfakes, technology

addictions, racially biased image systems, surveillance by household goods, that kind of a thing, Cambridge Analytica.

[00:12:43.46] I would also point out in addition to kind of these historical basis for this need for principles and practices, we've got really a difference with distinction, I would say, with regards to sensing and judgment of harm with regards to technology. Relative to our institutionalized and kind of socially internalized understanding of what harm is related to physical interactions with people, our ability to kind of qualitatively and quantitatively assess and balance the harms and benefits with technology are immature, right?

[00:13:17.15] We've got scale, and speed, and tight coupling of systems, and decentralization, and really opaque risk factors that make for conditions that enable harm to occur without us necessarily knowing about it or knowing about it too late. So to the specific question of how these principles inform practice, I'll use my go-to analogy. It's stood the test of time for me, and it's this. I think of ethics as a three-legged stool. You've got principles as one leg, the application of those principles, the second, and then enforcement of those principles and applications, third.

[00:13:52.16] And then I think kind of the seat on top of them is incentives, right? If there's no incentives, then those legs really aren't holding anything up or vice versa. With regards to the principles, I'm not going to spend time here. We're all pretty familiar with them. I think the previous panel discussed them. But I will say that I think we've pretty much exhausted the denominator with regards to kind of the world of possible principles that we should take into account, and we're moving towards some convergence on kind of the numerator.

[00:14:25.55] I can pretty easily crosswalk any set of principles to what we laid out in Menlo, which was respect for persons, beneficence, justice, and then respect for law. I think most advancement on the tech ethics front has been on this first leg of the stool, the principles. We've got professional org codes. We've got, I know in AI something like over 65 codes, documents, and things like that. So moving on to I think the more important point for this panel is the applications.

[00:14:53.99] To me, tech ethics is really about assessing and anticipating the risk of harm from a technology, be that a product, or a service, or a feature, and then reducing the uncertainty of those uses and impacts of the technology. We've seen less advancement on the application of ethical tech principles here, but we've seen some progress. And I'm talking about tools, right? Tools to provide kind of decision support. A lot of questionnaire-based approaches have emerged. We've got things like ethical impact assessments.

[00:15:26.17] And I think we've made progress. I still believe though that there's a shortage of ethics risk management guidance for companies. I will note that with regards to the Menlo Report, we had a companion report, which was this questionnaire-based approach. That was later operationalized into an ethical impact assessment that then was further operationalized into this thing that we called the CREDS Tool. And really what it was was a questionnaire wizard kind of based tool that was driven by kind of conditional logic underpinned by these questions.

[00:15:59.83] And it was really anchored around the R&D lifecycle, which is very similar to technology lifecycle. So I don't think there's really any need to kind of differentiate, and which is to say the collection used disclosure of data and systems. So just to be a little bit more concrete, so this notion, this principle of respect for persons. Well, it can be applied in any number of ways. We pointed out identification of stakeholders is one way that you can apply this notion of respect for persons. Informed consent is another one.

[00:16:29.63] This notion of beneficence, which is balancing harms and benefits, I should say, really can break down from an application perspective to identify your harms, identify potential benefits, and then

go through this balancing exercise where you're weighing kind of the burdens of tech and risk of harm to your stakeholders who are identified previously against the benefits that would accrue to larger society as a result of the technology.

[00:16:57.28] And I would also note that kind of the application of this principle is probably the most complicated. The key to this application question is having really a framework for applying the principles vis-a-vis whatever your tool of choice may be. It helps oversight entities that may not be familiar with IT kind of understand and reason about the ethical issues and the process by which your organization has gone through assessing the risk.

[00:17:27.52] It provides documented kind of transparent benchmark upon which stakeholders can then kind of determine how trustworthy is your organization. It counters visibility bias. That's another thing. One of the major impediments to accurate risk forecasting-- and, you know, I do this in the context of cyber risk-- is visibility bias. So not seeing all of the factors that inform the totality of the risk. And I think having a framework helps in that regard.

[00:17:57.55] And it also, obviously, provides a self-help mechanism for technology companies. I guess maybe the last thing I'll comment on is, again, whatever tool or mechanism that you choose to embrace to kind of apply these principles, one helpful mechanism may be to engage kind of a threat-model approach where you think of the threat as a failure to kind of embed these principles in your design choices and then develop prevention, and mitigation strategies, and techniques for those threats that you identify, right?

[00:18:37.33] So ask how, for instance, how could bad actors use the technology to harm the rights or interests of individuals, or of groups, or of society, or, in fact, maybe even undermine trust in social institutions? And I think it's also important to assess not only the first-order consequences of your technology, or your service, or your platform, whatever the technology is, but also, it bears looking at the second and third-order impacts, that collateral damage that might sneak into the equation.

[00:19:13.54] Prioritization is important here. You don't necessarily have to go through this rigorous assessment for every technology that really doesn't have consequence to users, you know? And then I just think part of that framework needs to include a governance structure. And we've also heard this notion of transparency and explainability. Those are topics in and of themselves, and we can perhaps delve into them later. But I would just point those out as well.

[00:19:41.44] DAVID SULLIVAN: Thanks, Erin, so much to chew on there. I really want to circle back to a few of those comments down the road, and I couldn't agree with you more that in this space, there is no shortage of principles, and it's how you actually apply those principles that really is the difference-maker. Now, what we've heard so far I think is really focused a lot on the sort of internal processes that companies or other actors undertake when considering how they're developing and deploying new technologies.

[00:20:15.82] But I want to turn to Deji now to sort of look beyond the institution that is making these decisions. You know, when the rubber hits the road is really like what are the impacts that these technologies have on people? What are those consequences and risks that Erin just alluded to? So, Deji, when it comes to listening to and learning from the kind of communities affected by your products, how does Sonos approach these difficult questions?

[00:20:55.31] DEJI BRYCE OLUKOTUN: Thanks, David. It's really great to be here. The last in-person conference I went to was Silicon Flatirons before the pandemic started, so I hope to see you all in person again soon, and it's great to see you. So for folks who don't know who Sonos, what we are or we do, we're a sound experience company. We were founded in 2002 above a Mexican restaurant in Santa

Barbara, California before the iPhone was released. And we invented the wireless audio market, so we have a strong history of innovation.

[00:21:28.63] To get an overview of all the things we're doing, which I won't have time to get into in any detail, you can go to listenbetter.com, and that takes you to our environmental, social, and governance report where we talked about things like sustainability, human rights, and our supply chain, privacy-- we released our first transparency report last year-- and just also how we give back.

[00:21:50.66] So one of the things we do in terms of listening and learning from different communities-- that's partly my role-- is to engage in conversations like these and learn, and make myself available to all the different product groups across the company to serve as an ethical voice. But one thing that I've really enjoyed is our stakeholder roundtables. So this actually came out of our philanthropy program when we were trying to decide where we should invest our money to give back to communities.

[00:22:22.87] And what we do is we gather civil society groups, academics, sometimes even other companies, and we used to do it in person, which was really the best experience because we could showcase what we were about as well. And then we ask them what they're working on, what they think we should be thinking about, and then we share the different products we may have in development and try to get their feedback. That's something that we found works a lot better earlier in the process for a lot of the reasons that Lea and Erin have mentioned.

[00:22:55.63] And then we also have other communities that we work with when developing products. We have a strong beta testing pool. These are people who get an early access to our products, and they voluntarily join this program so they can see what's coming down the pipeline. In terms of our philanthropy, as I mentioned, we mostly focused on the area of music education, but with the pandemic, we shifted our philanthropy because there was a global need to do more in terms of giving back as a company.

[00:23:28.57] We also have our employee resource groups, so these are groups often from marginalized groups like Black@Sonos, Ability@Sonos, Women@Sonos, who are constantly kind of advising, and engaging in our products, and making themselves available. Just to give a more specific example, in the area of accessibility, we have an inclusive design group, and this is a cross-functional team from different areas of the company, and that includes members from our employee resource group, Ability@.

[00:24:04.69] And they help us think about how our products are impacting people with impairments or disabilities, and that we complement this with our beta pool. So I mentioned our beta testers and who get an early access, early look at our products. We invite people to self-identify, and we had a group of folks who identify as having accessibility challenges or identifying as disabled, and we work with them on different products that we're considering.

[00:24:42.91] And then we try to complement that with our philanthropy, again. So we gave a grant to a really great nonprofit called Drake Music in the UK, and they specialize in hardware. It's a disabled-led organization as they call themselves, and they make musical instruments for people with impairments. So they will actually design a specialized violin, or a clarinet, or a saxophone to people who have different types of impairments.

[00:25:10.18] And we give them a grant for something called Planted Symphony, which is basically an immersive outdoor experience where you go to a garden in the UK, and you get to hear live music, and it's accessible, and it has very rich kind of plants, scents, and a really awesome experience, so just to give you an example of how we're sort of bringing inputs from all aspects of our company.

[00:25:38.53] And I definitely want to dig into the more formal processes. But I know some of those questions are coming, so I won't go too long on that. Just one last thing, and maybe this touches on what Lea was saying a little bit earlier. We try to, in terms of the teams that are considering these new

products, we try to meet them where they're at. So for example, at Sonos, we have what are called product requirement documents, and this is kind of a checklist.

[00:26:08.26] So whatever kind of product, these are things that must be in the product or must be considered, and make sure that we're speaking the language of the people who are building the products. So one thing is to get things like privacy or sustainability embedded in these product requirement documents. It's such a technical thing. It's very specialized. No one's going to tell you what that is called if you go to a new company, but that's been a very effective way to communicate with large groups of people who are making important decisions.

[00:26:37.94] So I'll stop there because I know we've got some good questions going. Happy to follow up on anything I mentioned.

[00:26:43.74] DAVID SULLIVAN: Thanks, Deji. So, yeah, so many things that have been raised. I think one thing that I wanted to maybe get into, one of the themes coming out of the first panel, I think, was the challenges around subjectivity when it comes to ethics in consideration of tech, and that terms like fairness, how do you actually measure that? What does that mean?

[00:27:13.09] And so I'm just curious whether each of you could speak to sort of ways to make the process around the ethical development and deployment of technology less subjective and more objective? So I'm going to go back to Lea to kick us off with this one, and perhaps others can weigh in as well.

[00:27:36.79] LEA KISSNER: So honestly, the first thing that we do is try and take the weight of decisions off of people as much as possible because there's only so much brain space that people have for this stuff. And if we take the piddly things off of their plates, they're much better at being able to think through this stuff. One other tool uses humancentric threat modeling, so we said, hey, we need you when you're thinking about your product, we want to think about the people who are affected by your product both directly and indirectly.

[00:28:11.44] So directly is easy. That's the people who are actually like uploading photos to your service. The people who are indirectly affected might be the people whose photos are being uploaded, right? This is a little bit more interesting when it comes to things like enterprise products, like credit bureaus, right? I am not their user, but I am affected by their system because, for example, they leaked a whole bunch of my data when they got hacked.

[00:28:39.42] So find those people, and then look at the different factors which can affect people's vulnerability to different kinds of attacks. And different people want different things, and they have different threats, and that's great. And if you're not actually solving for that, you're not actually solving the problem. So we had a whole big, old list and said here's a starter list, right? People who have visible marginalization like, for example, black people, right?

[00:29:11.61] Indigenous people are visibly marginalized. People who are marginalized, but in a way that may be less visible, like so, for example, trans people, queer people in general, disabled people slash people with disabilities. It depends a little bit on which community which language people tend to prefer. And you say, and here's a whole bunch of things. But we tried to do this in a way that was like let's think through this, right?

[00:29:45.35] Like every time we talk to you about your thing, we're like, OK, let's think through this with you. And after we do that a bit, it's not just about getting that product into a good state. It's about getting people to be able to think through this in the future. Anyway, we go through those, and then you look at your attackers, right? And you look at attackers by what they want. So you say, OK, what do they want? Do they want money? Do they want to hurt somebody? Do they want to change the world? Like there's a whole bunch of things that attackers tend to want.

[00:30:15.65] Some attackers come with special bonus features like they are insider attackers. They have privileged access to the inside of your system. They are particularly powerful in a bunch of different ways. And then you look at your system, and you say, where is my system going to break? Right? What happens if this part breaks? What happens if this part breaks? What happens if they both break at the same time?

[00:30:38.42] And you can kind of go through that, and that tends to end up in places where different people will come out with a little bit more of the same answer, and people will not forget things nearly as much. We also had an active research program, so at Google, I had a whole UX research team. And we would very actively see this because, well, the team was for tech, extremely diverse because a low bar, right?

[00:31:11.12] We had people born on every continent except for Antarctica, 10% or 20% at least, of the team was Black and Latinx, you know, very [INAUDIBLE] LGBT and plus representation, for a range of disability statuses, people who came from all kinds of professional backgrounds, blah, blah, blah, blah, blah, right? Like it's not my job to represent trans people at work. It's not, right? But it made us better at that. We also had an active research program, so, for example, you can see papers that we put out about security and privacy practices of people who are survivors of intimate partner abuse.

[00:31:44.27] And so we could use that and feed that into this, and make sure that we were keeping this up to date as much as possible.

[00:31:55.44] ERIN KENNEALLY: I'll jump in real quick on that. Yeah, I think those are great comments. I don't have a whole heck of a lot to add other than to refer back to some of the suggestions I had made. I think this notion of identification of stakeholders and being transparent about it, will really expose kind of the level of subjectivity or objectivity that the organization is at. I mean, look, frankly, I'll say this, and this applies in the realm of kind of legal compliance.

[00:32:27.95] Half the battle is being able to outwardly demonstrate that you've made deliberate and thoughtful choices ex-ante before something bad happens. It's not to say it's going to prevent it necessarily, but when it comes to the court of public opinion or regulators, if that's relevant, they're going to look at that. That's going to be a big factor.

[00:32:50.16] So you know, I think to the extent that you can involve a wide range of stakeholders in the design, and the development, and document that information, it really will go a long way. And that subjectivity, I think, will get snuffed out pretty quickly.

[00:33:13.84] DEJI BRYCE OLUKOTUN: Yeah, I think I'll just chime in adding one thing that we try to do a lot, which is helpful for us, and actually, it's pretty natural for most businesses is to look at what is the competitive landscape? But rather than think of it as competition, to think of it as sort of benchmarking with peers. So who is doing this right? Who do we respect? And who can we emulate?

[00:33:42.70] And I think one thing that gets lost, and I don't want to steal the fire for your next question, David, but there are some companies with vastly different resources. So some have a ton of resources at their disposal and have teams of 100 people working on privacy compliance. Others have one person or half a person. And just trying to benchmark and identify which peers are doing it right, which peers are doing it well, and what approaches have they taken that can translate over to the way we do things at our company?

[00:34:20.66] As opposed to this is the A-plus student doing higher math and you're just learning geometry, so I think that's one thing that we try. And the reason for that is people internally at the business, are motivated. You can take away motivation when you're looking to something that's just completely disproportionate or someone who's just way better, but if you say, look, this is what our friend, or partner, or business partner is doing, and then we can do it too.

[00:34:56.42] And actually, we'll actively try to get peers at our company talking with peers at another company, and just trying to share best practices to build a community because a lot of times people, like myself, we don't have a lot of folks doing a similar role internally. So we have to go out, and reach out, and find out how other people are managing, and sometimes it's super creative solutions, sometimes they're very basic, but it definitely helps.

[00:35:28.59] DAVID SULLIVAN: I will say as someone who is currently in the business of starting a coalition of technology companies working together to try to identify best practices for trust and safety, and to turn that into a framework that can be independently assessed, I'm taking detailed notes on everything that everyone has just said. And I think the point about trying to have systems that can apply, whether you have the teams of people dedicated to these different types of issues that a company like Google has that Lea was alluding to, or to the company where one person is splitting this responsibility with like six other things.

[00:36:12.91] And so I was curious, Lea, since you went from Google to a startup if I'm not mistaken, and so what was that like? And is there a way you can make these kinds of approaches sort of proportionate to the level of resources at play?

[00:36:34.26] LEA KISSNER: Yeah, I went from running a pretty dang large team at Google to the team was me and some other people in their copious free time. So the job splitting thing actually continued to work in a startup pretty well, right? And so there was a guy named José, and he had never done privacy or security engineering before, but I co-opted him a little bit.

[00:37:07.17] I had him help debug a bunch of stuff, and then he was like, well, this is really interesting. And I was like, yes, I will talk to you about this all day long. So co-opting people 100% works. I do it shamelessly. One of the things that I do, and that I do now, and this is-- apologies-- is a shameless plug, but there is now a Privacy Engineering and Respect Conference.

[00:37:36.96] So if you're sending people there like because just a couple of years ago, all of the privacy engineers basically, virtually, all of them were-- actually, almost all of them in the world reported to me, which is not a good situation. But we started seeing more people come into the field, and it was like, oh good, now we can have an actual conference. So the talks are up online for that. And that tends to be a good place to pick up who's doing what kind of research?

[00:38:08.38] What are we seeing in academia? What are we seeing coming out of companies? Also, and this is not intended to be a shameless plug. I catch a lot of stuff on Twitter. So the research teams at some of these companies will try to put things out externally. And so you can pick them up, especially like differential privacy community. It's doesn't matter if they're in a company or not.

[00:38:39.20] They'll try and put out papers, so you can try and keep up on those. So those are a bunch of my like really major sources for leaning on the teams that other people have.

[00:38:55.15] DAVID SULLIVAN: That's great. Well, we can definitely-- I think Amie is already ahead of me to-- oh, that's on something else in terms of making sure people's questions go into the Q&A and not into the chat. But let's also drop some of those resources, Lea, that you just mentioned into the chat as well. I know that the Silicon Flatirons folks are collecting some of those. I want to make sure we do get to questions, including a student question.

[00:39:21.52] But before that, there were just a couple of other things that I wanted to pick up on that also are picking up on, I think, some of the observations that have been made in the chat. One thing, so we heard about the impact-assessment approach that BSA has put out for artificial intelligence during the first panel. And we heard Erin mention impact assessments as a key aspect of the Menlo framework that she described.

[00:39:51.01] There are now, I've been trying to keep track of the number of different types of impact assessments that folks in the tech space can and should be doing from privacy impact assessments, ethical impact assessments, data protection impact assessments, human rights impact assessments, algorithmic impact assessments. Erin, how do we keep all of these different approaches from conflicting with one another?

[00:40:18.69] Is there some way that companies, and, again, maybe thinking to the startup side of things as opposed to the behemoth that can put a team on each one of these things, how can we sort keep all of these different approaches from conflicting with one another, and perhaps also, how do we think about that internationally as governments, legislators, and regulators are thinking about different requirements for companies across all of these different issues?

[00:40:49.23] ERIN KENNEALLY: Sure, you know, first off, I have a strong opinion that if laws are constructed correctly, they're going to embed our ethics, right? And we all know that that doesn't happen oftentimes, but it does occur oftentimes as well. And you can say the same about some of our policies and standards as well. So in that regard, I come from the place where I do believe that there's much commonality between all these different impact assessments and whatnot.

[00:41:22.15] And in the context of, OK, how do we kind of include within this realm of all these other risks that we have corporate legal department stood up for and whatnot? First off, I don't think there's a need to stand up a separate ethics structure. I actually think that ethics should be embedded in the existing risk governance mechanisms. Perhaps taking existing risk management frameworks, and questions, reassessing them to include a lot of these ethical considerations, I think is the right approach.

[00:42:01.25] I think another approach is to engage knowledgeable domain experts to kind of crosswalk these existing governance and risk management practices and policies and have them help you embed those ethics there too. You know, we don't hesitate to hire attorneys if we're worried about legal risk. Why should we hesitate to bring on domain experts in this regard as well?

[00:42:26.71] On the international front, first off, I'm a big believer that you've got to start kind of local, and control what you can control. I do think that there's an opportunity to kind of share lessons learned and benchmark ethics in those type of global international settings. I mean, that's how we share knowledge and what works and what doesn't work. And I know there's been a number of efforts. I think the OECD is the first one that comes to mind.

[00:43:01.36] Those are important absolutely, but at the end of the day, I think the more important part is having these conversations globally, identifying areas that we have in common with regards to principles and applications, respecting that, look, not everyone is going to apply or necessarily enforce a principle that you share in the same way, and that's OK, right? You know, the bar from an ethics standpoint with regards to technologies, frankly, is pretty low now.

[00:43:37.09] So the starting point should be like, let's do something. Like perfection can be the enemy of the good here, so let's do something. And I think there's, as I mentioned before, there's something like 65 plus international global organizational type principles documents just in the AI space. And looking at those, again, there's a ton of commonality across those.

[00:44:05.28] And they don't all say the same thing, but, again, I've been in this space for a while, so I can look at something and say, wow, this is very similar to this principle or this application. So you know, we're not talking apples and oranges. I think that's a sign of promise in that regard.

[00:44:23.92] DEJI BRYCE OLUKOTUN: David, if I can comment--

[00:44:25.33] DAVID SULLIVAN: Yeah, please.

[00:44:25.99] DEJI BRYCE OLUKOTUN: --on that and just chime in. From someone who has to operationalize this stuff, it's interesting because we do some of this work because it's the right thing to do, and we have a clear mandate to do that. But at a certain point, you do need signals from stakeholders, so you do need to know would an algorithmic impact assessment-- is that valued? And I include investors in that. We do look to how investor ratings agencies and investors are looking at some of these efforts.

[00:45:00.32] And you can see a lot of thought going towards climate, for example, so it's natural that a lot of companies are steering in that direction. And I think that's an important one. And if you do take the time and motivate everyone internally to do this assessment because it's the right thing to do, but then what are the consequences? What's the follow-through? I think, people are always going to be asked the question, well, if I didn't do it, what would it-- and this relates to Erin's point about enforcement-- what would be the negative side of that?

[00:45:35.71] And you know, I think if you think of that three-legged stool that Erin mentioned earlier, making sure that these assessments have an incentive built in so that if you're filling out a human rights impact assessment as someone who's building a product, you can see the value to the end product beyond the right thing to do because there are a lot. And we do have to make those choices.

[00:46:03.22] I wouldn't necessarily call them trade-offs because I always feel like that's a negative framing, but I think we want to know where should we be emphasizing? And then do you have our back? If we take the time to do a human rights impact assessment or another assessment and someone comes after us for whatever reason and says we did something wrong, will you say that, no, look, this company did this assessment, and it shows they're committed, and we need to value that.

[00:46:32.98] And by have our back, I sort of mean in the sense that there are times where companies have to extend themselves and take risks on certain things, and to get support from civil society when things don't necessarily go right can really make a difference, or academia, or another stakeholder. So those are just some of the things that we think about. And I definitely think they're super important, and we need to learn from them, but we do have to make choices sometimes about which ones to use.

[00:46:57.92] ERIN KENNEALLY: You know, the other thing just real quick, I just wanted to tag on something that you said. You know, we're quick to jump on sort of the parade of horrors, and the media loves to sink their teeth into the latest and greatest ethical wrong. We don't do a good job of championing the folks who do it right and making kind of heroes out of them, and I think that would go a long way as well.

[00:47:31.01] LEA KISSNER: Like Deji is 100% right. We cannot do all of these things. It is literally impossible, and some things kind of contradict each other. Thanks, people passing privacy laws. Please make sure they work together. I got one system, and the more weird dongles I have to put on it, the more likely it is to have bugs. But the goal that I have when I'm building the process for this stuff is I want compliance, and I want all of the stuff to be a side effect of the system working correctly, right?

[00:48:04.77] And for a couple of reasons. One of them is compliance is necessarily reactive, and like it just is. That's how it is. Like somebody made a checklist. It's a reactive checklist. I mean, I care about not making those mistakes. But I care just as much about not making new mistakes because-- and this might be swayed a little bit by the kind of companies that I've worked at-- but you can make new and exciting mistakes that aren't illegal at the time you make them, and you will still get in trouble, right?

[00:48:41.63] So if I find people having to think about particular frameworks or anything like that when they're doing the development, then I think we probably have a problem. Like I need to be asking them questions they know the answers to. I need to be asking them with the right information, the right place,

at the right time to do that. And I need to be able to have it be very clearly part of the development process.

[00:49:11.70] DAVID SULLIVAN: So, all right, incredible amount to chew on there. I think really helpful in terms of thinking about how we can aim to not just kind of not make the same mistakes again, but perhaps not always make new mistakes. So with that, I think it's now time to turn to audience questions. And as noted, at Silicon Flatirons, we have the Phil Weiser Rule where a student asks the first question. So I think we have Jonathan Stokely ready for that first question. Jonathan, are you with us?

[00:49:54.40] JONATHAN STOKELY: I am, hello. Thank you for your time today. It was a very intellectually stimulating conversation. As somebody who's worked in technology for the last 10 years before coming back to school to get my Master's of Business Administration-- I'm actually in the second year-- ethics has always been in the forefront of implementing technology and improving the technology platforms I've worked on.

[00:50:18.24] And there's definitely been a few different times where you're kind of implementing something like wondering how this is going to work, especially in terms of like capturing data, and customer data, and especially within the bounds of law. So I'm curious. I have two different aspects of the question. I've worked a lot in fintech with algorithmic trading, and then on the other side of at what point is the markets reacting to the technology that we're stimulating and putting into it, I mean, whether it's Twitter and sentiment analysis, and then everything else you see in the news?

[00:50:53.67] And then at what point, kind of the second part of that question is, if you see something, do you say something? Or when's the right time to pull the plug? So that's kind of an open-ended question, but there's just the two thoughts of my past with the algorithmic trading, and all the volatility we see in the markets, and how technology has essentially, changed how trading actually works. But then at the same time as you're implementing things to kind of help reach that next second higher level, how do you pull the plug on that?

[00:51:28.50] LEA KISSNER: Could you help me understand a little bit more about what you mean by pull the plug?

[00:51:33.15] JONATHAN STOKELY: Well, I mean, if you get to a certain point where you may be crossing a threshold or you start implementing something, and then you've working with engineers, and you have kind of the project layout, and then you start to see applications of the technology that you're implementing, and especially when, in terms of marketing and data gathering of every button click, I screen time how much I've read, how long I scrolled, and all that data is gathered, and then fed into another system that's analyzed either by additional algorithms, or it's fed into a salesperson so they can pick up the phone and say, hey, Mr. Customer, I see you're interested in XYZ product.

[00:52:18.41] And I work specifically this on the financial side of things, and I know it's even more rampant in data privacy laws on the non-financial side of things. So I was just curious if you could kind of talk to at what point of like, hey, I'm implementing the system, and it's gathering all these data and touchpoints, and on the front side it's doing nothing more than serving up an advertisement that maybe is a little bit more directed at things I might be interested in purchasing.

[00:52:47.87] But on the other side of the coin, I mean, some of this data can be potentially used for nefarious aspects. And so at what point should you maybe take a step back and say, hey, maybe we shouldn't be doing this? But at the end, you know, it's all about shareholder profits, and ergo kind of my other aspect of the algorithmic trading side of things, it's when is enough, enough, and we should just not be implementing some of this technology? And how do I approach that conversation with the manager or shareholders in saying, hey, this isn't exactly what we thought it might be all cracked up to be?

[00:53:25.85] LEA KISSNER: So I think that you should be doing that over and over again, right? Like that's something you should be asking every single time you're picking up data. And you should also try to align incentives so that people are picking up the right data and keeping it for the right reasons. Help people understand that it is expensive to manage data, right? You don't want data that you don't actually really need. It is expensive. All of the care and feeding around that is expensive.

[00:54:06.31] JONATHAN STOKELY: And I think that's one of the issues right now is companies are massively just scraping data right now, and they're just sitting there, and they're just waiting for technology to catch up and figure out what to do with it.

[00:54:24.65] LEA KISSNER: I think there may be slightly less of that than you would think. But some of that is things like do you have a logging framework that knows how to not log everything? Right? You actually have to build that because it's much easier to log everything. It's much easier than to not log everything, right? Do you know how many like, oh crap, we-logged-everybody's-password things there are. It's not because people try to log the password, it's because it's much easier to log everything or nothing, than things in between.

[00:54:59.98] One of the things that I found is very helpful when explaining why this by a particular thing might not be a good choice and why we should probably not do that thing, like I try most of the time to be like, well, what is it that you actually want? Let's figure out how to get there? But sometimes it's a this thing is not a good idea. One of the most important things is not to hand this poor exec a here's a technical risk, and here's a business thing, right?

[00:55:33.28] What you've just handed them is apples and flaming orangutans, and they don't know how to deal with that, and they don't know how to make a decision. So you have to kind of try and translate into a framework that people are going to understand like here's The New York Times headline that will come out about this. And people would go, well, that would be bad. Yeah, you don't want that. So let's do this other thing. Giving people concrete alternatives like that also helps a lot.

[00:56:06.61] Sometimes being able to say like basically, here's what this means.

[00:56:16.51] DEJI BRYCE OLUKOTUN: Could I chime in, Lea, here on this?

[00:56:18.41] LEA KISSNER: Go.

[00:56:18.88] DEJI BRYCE OLUKOTUN: So, yeah, thanks. And this is related to speaking out when you see something. What's often surprising is how many other people may share your opinion, but have been quiet maybe because they didn't know how to say it, or they've been saying it, and didn't realize there's someone else in the company who has the same opinion. And so that moment of speaking out, which is very much what people in civil society do all the time, companies are not a monolith at all.

[00:56:53.17] There could be groups which are super pro-private on one side, and then there's just one group that has a revenue goal that they have to meet, and they're just trying to get there. And so and I think that involves also civil society talking to companies publicly or calling them out on something that it's not a monolith inside. There may be people inside who are championing a cause who haven't had their voice heard, and suddenly, because an activist outside is saying something, then they're listened to.

[00:57:21.05] So I think that's another thing that just kind of having faith that there are lots of people with different kinds of opinions inside as well has been effective for my work.

[00:57:32.08] ERIN KENNEALLY: I would just add I think continuous monitoring, like think of it in the context of kind of threat modeling risk management, right? You don't do it once and forget about it. It's a continuous process. The same holds true for this situation, and I think would address the scenario that

you raised. And then to your first question, I would caution strongly against looking at near-term market reactions as a signal that practices are ethical or not.

[00:58:03.26] I know in my world with regard to data breaches, there was quite a bit of study done on how does the stock price of a company on the heels of a data breach, how is that impacted? And the reality is I don't think you can tell much from short-term stock prices. I think you've got to look at sort of long-term trends from a financial standpoint, especially because incentives are so driven by short-term profits.

[00:58:34.01] DAVID SULLIVAN: So I think we have time very briefly for one more question. So I think Dan has posed a question we're going to tackle. How does regulation ever keep up with the rapid change of technology? What tests can we humans have that any technology can be tested against? Dan, I hope I did your question justice, and open it up to our panelists to perhaps drop a closing thought in response to that.

[00:59:04.93] ERIN KENNEALLY: I'll take that. A couple of things, one is, look, there's always going to be a gap between our laws which really inform our expectations, and our technology development which really inform our capabilities. What can we do, and what should we do? I don't know that we want a world where there is no gap, right? Because we tend to value innovation.

[00:59:27.39] This is a perfect segue or champion for this entire panel, which is to say I see ethics as that mechanism to sort of moderate that delta between capabilities and expectations, between what we can do and what the law formally says we should do because it takes so long. You know, the law is slow to change for good reason and sometimes for not. But I think that ethics fits perfectly as sort of a mechanism to mind that gap.

[01:00:03.80] LEA KISSNER: Yeah, and I'd add to that so whenever you build something that requires compliance, what you're going to get is a checklist. By design, you're going to get a checklist. And there's this really useful thought-sorting thing. There's a thing called the [INAUDIBLE] and it talks, in part, about the difference between complicated and complex problems.

[01:00:32.32] Complicated ones are ones where you have to think really, really hard, and you're going to use all your expertise, and you're going to come out at the end with an answer, and that's really cool. And then there's complex problems, and we're like I don't know. Like we're going to have to figure this out for first principles. Like this is where research problems live. So things like, for example, algorithmic fairness live very squarely in a lot of ways in complex.

[01:00:58.84] A lot of privacy still lives very squarely in complex. Security has been kind of moving around. You have to get to well-understood problems until you get a checklist that works really well. And so and a lot of us have been working to kind of move things around kind of down that direction, but we don't know how to build good laws that are about things that are research problems because like we don't know how to build a checklist that actually has a correspondence with the thing that we want to regulate.

[01:01:36.10] So it's one of those things where anything that's in research land is going to be very hard, and so that's cool. We should keep trying to push this towards places where we have understanding of repeatable processes and scalable systems, and work it in that way.

[01:01:53.48] DEJI BRYCE OLUKOTUN: I love that framework. I've got one last thing, David. One last thing, so there's one sentence.

[01:01:59.65] DAVID SULLIVAN: No, please, I was going to ask you to put on your science fiction author hat for a second when thinking about this one as well.

[01:02:09.76] [LAUGHTER]

[01:02:09.88] DEJI BRYCE OLUKOTUN: Oh geez. I write science fiction on the side. Wow, that's a hard one. Well, I mean, I think the trend is, in science fiction, it's much easier to imagine what could go wrong rather than what can go right, so actually, science fiction is a very useful tool to think about even in regulation. One of the first stories I wrote was, what would happen if you could copyright, so there's a famous musical composition, and it's a series of musical rests.

[01:02:46.75] So what could happen if you copyrighted musical rests? You'd basically be copyrighting silence. And then you'd take that, so that's a regulation. And then you'd take that, and someone gets paid every time there's silence over the air. And as you can take things out, and that person becomes the richest person on the planet. You can take things out in that absurd way and just follow their logical conclusion. It is helpful for regulation and law. It tends to be a negative framing.

[01:03:11.80] The positive exercise is much more difficult and very enjoyable, and totally recommend that. On a non-sci-fi, I was just going to say when thinking about regulation, I often will sometimes say substitute the word protection. So are we talking about protections and who are we protecting? Because the word regulation is so loaded. At some moments we do need protections, and what are we protecting from? And who are we protecting and why?

[01:03:41.83] And just to sort of switch those out from time to time and say what am I really rallying? Am I rallying against the notion of regulation, or actually will something good be available here? Thanks, I mixed the answers there, David, but.

[01:03:55.54] DAVID SULLIVAN: No, that was great. So I want to thank our panelists for this session. I learned a tremendous amount. Thanks to Silicon Flatirons, and really looking forward to continuing this conversation. Thanks, everyone.

[01:04:12.26] AMIE STEPANOVICH: Thank you, David. Thanks to all of our panelists.

[01:04:14.99] DEJI BRYCE OLUKOTUN: Thank you.

[01:04:15.32] AMIE STEPANOVICH: This was really amazing.

Is There a Bright Line?

https://www.youtube.com/watch?v=J8v4fGp_NZE&list=PLTAvIPZGMUXOYGsBs5NBp6ydwSxrRwn1U&index=3

[00:00:00.72] AMIE STEPANOVICH: Wherever you're joining us from, welcome back for the final panel of our event today. This one will be moderated by Silicon Flatirons fellow Jill Dupre who serves most of her time as the associate director of the ATLAS Institute here at CU Boulder where she teaches, studies, and advises graduate students on a pretty wide range of topics. Jill, thank you so much for leading this conversation and bringing us home today. Over to you.

[00:00:30.45] JIL DUPRE: Thank you so much, and thanks, Silicon Flatirons for this wonderful conference. I've been enjoying the day. As Amie said, I'm the associate director of the ATLAS Institute here at CU Boulder where our students and faculty focus on interdisciplinary creativity and invention.

[00:00:47.34] And a couple of years ago, we had the pleasure of hosting Alan Kay, who's a Turing Award winner and did pioneering work on windowing graphical user interfaces and object oriented programming. And when he toured ATLAS and talked with our PhD students, he asked a few questions about the technology, but I was a bit taken aback and also grateful for how confrontational he was in asking questions about and challenging how those students' ideas would impact the world for better or worse.

[00:01:18.96] And he specifically referenced Facebook as the sort of greatest evil and the need to really think ahead when introducing technology. And I'm glad that those questions are a part of the culture here, but it also seemed clear that they aren't always asked in companies. And so I love that Amie brought together this group to explore the question of whether sometimes the Zuckerberg mandate of move fast and break things isn't really the right call and that even if we can do something and make money doing it, it might not be the right thing.

[00:01:54.49] And so some of you will remember Google employees walking out over project Maven, which was an AI-powered surveillance system, and that Google ultimately chose not to renew that contract. More recently, Facebook decided to pause its Instagram Kids project after pressure from both lawmakers and parent groups. And so I'm really looking forward to this panel following up on the excellent conversation in the first two panels.

[00:02:22.17] I think I'll introduce panelists as I go, but also, be sure to check out their bios on the Silicon Flatirons website. And I'm going to start with you, Eli. Eli Dourado is a senior research fellow at Center for Growth and Opportunity at Utah State University. And Eli, in your experience with policy and innovation both within startups and now at the Center for Growth and Opportunity, I'm really curious how you think about this issue.

[00:02:53.79] ELI DOURADO: Well, thanks, Jill. I think that as I was kind of mulling over this question and preparing, I really started to just divide the question into two different dimensions. I think that there is an economic dimension and an ethical dimension of the case. So let's handle the economics first. And in some ways, maybe it's useful to think about the trivial case. So when you're developing a technology, when might you want to put it back on the shelf?

[00:03:21.64] So the simplest case is simply when a company no longer thinks a product is going to be attractive to customers. So even if we build this thing and it works, people won't buy it at a price where we can be profitable with it. So don't commit to sunk cost fallacy, cancel the program. And of course, beliefs about profitability aren't going to be binary.

[00:03:41.13] There's a probability-weighted vector of possible outcomes. You think there's so much of a chance that we're going to be profitable and some chance that we're going to be less profitable and even less profitable, and it's going to be disaster. And then you take sort of a weighted average of that.

And so it just depends on your risk tolerance as a company if you're building that. So that's the trivial case.

[00:04:04.41] And then there's, I think, other considerations that are really still basically fundamentally economic, like does it open us up to liability, right? And that brings in stuff like security and safety. Is it bad for our brand? Is it going to harm us in other markets that we compete in? Is this something that our employees are willing to work on? And the key point I think for all of these issues is that it's a question of risk tolerance, and different organizations are going to have different answers depending on how much risk they want to take on.

[00:04:36.61] And then I think separate from the economic questions, there's the ethical dimensions. And I think I can say very confidently nobody should ever do anything that's unethical. That part's easy. The problem is, who decides what is ethical and what is not ethical. And of course, there's all kinds of codes of professional ethics and so on. And I think there is at best a tenuous link between various forms of professional ethics and what I would call real ethics when I say people shouldn't do anything that's unethical.

[00:05:09.75] And for example, under legal ethics, lawyers are not permitted to form a partnership with non-lawyers for a business that involves the practice of law. That's just straight up restricting competition. That's not enforcing real ethical behavior. So I think a lot of fields of professional ethics are just basically invented by academics so that they have an avenue for publication or by activists so they can try to exercise power over people. So for those of us that watch the show Silicon Valley, we all remember Gavin Belson's "Tethics" as an example of that.

[00:05:45.06] So anyway, ethics is something that people don't all agree on, and liberalism like what our society is based on is almost defined by the idea that we all get to choose our own ethics. We have pluralism. So I think people and companies can decide whether they want to abide by one of the forms of ethics that I would consider real ethics, whether it's consequentialism or deontology or virtue ethics or anything else, or they can be nihilists. It's up to them.

[00:06:17.90] And then I think underrated is this question of moral risk. So just as in the economics case, there's a question of risk. There's moral risk as well, and we all get to make our own decisions, not only about the system of ethics that we want to adhere to, but the level of moral risk that we're willing to take.

[00:06:40.41] And so if you put these either both of those dimensions together, what stands out to me is the element of risk, either economic risk or moral risk. And I would argue and have argued that people have the right to decide that question for themselves within sort of the legal framework that we've set out.

[00:07:02.07] And I think we can also ask whether we as a society are too risk tolerant or too risk averse. And there are people who in specific cases seem like we're too risk tolerant in some cases like you mentioned. Maybe we shouldn't have tolerated Facebook. But I think broadly in terms of economic risk, I think we can see-- I think overall we're too risk averse as a society.

[00:07:34.93] And so in economic terms, you can look at evidence for this in terms of global interest rates, which are extraordinarily low. People are not borrowing large sums of money to go out and do big things in the world. And that in turn shapes innovation, right? Real world projects are too risky so what have we seen? We've seen lots of innovation in information technology in the world of bits rather than in the world of atoms.

[00:08:00.79] And in terms of moral risk, I think there is a certain sense also in which we're too risk averse. Although, perhaps in other senses, maybe we're too risk tolerant. But consider something like, I think, in vitro fertilization, which I believe is a 40-something year old technology now. What an uphill battle it had

to become socially accepted. And today, it's enriched millions of lives and actually has created millions of lives. And that's in my book a good thing.

[00:08:29.89] So my bottom line is that decisions to cancel technology projects are based on subjective assessments, and any individual actor-- for any actor, there may or may not be a bright line that they're willing to or unwilling to cross. And probably overall for society as a whole, I think we're too risk averse.

[00:08:56.66] JIL DUPRE: Great, thank you. Tiffany, I see you reacting. I'm excited to go to you next. Tiffany Li is an assistant professor of law at the University of New Hampshire School of Law. And Tiffany, given your expertise with privacy and AI and your work as a legal commentator, I imagine you've seen and thought deeply about some of the products that maybe we wish didn't exist in the market. And I wonder how you think about the question, this big question of whether some products and services simply shouldn't come to market and then also your reaction to Eli's excellent framework.

[00:09:33.97] TIFFANY LI: Thanks, Jill. Those are great questions to start off with. I mean, I think to start, we have to set a baseline, right? We can say that there are some products that we can mostly agree are bad. And I say this because sometimes, especially in the tech industry, we start to default on this idea that some products or some technologies can be ethically neutral, right, that a tech, a new technology could be used for good or for bad, and so we shouldn't do anything about regulation for the technology because it could be good or bad.

[00:10:06.81] And I think that that's a nice thing to believe, but in practice, it doesn't really work that way. There are technologies that sometimes are just mostly harmful or very rarely used for good purposes. And I think we want to set that bright line ahead of time just to say that. Now, the difficulty then is we don't agree on what those technologies are, right?

[00:10:29.22] So many people would say, for example, that something like facial recognition, a technology that allows a system to identify a person based on an image or video, some people would say facial recognition technology is always bad and should be banned outright. Others would say that this technology can have some good uses, right?

[00:10:49.16] You could argue that the technology could lead to false arrests. It could lead to people being arrested and even given jail time incorrectly. Others might say that it could lead to us finding or solving cold cases. It could lead to greater safety. So even something like facial recognition technology, which is so much talked about in the news, that is still up for debate. So it's hard to draw bright lines. It's going to be a little difficult in this panel, I think, to really agree on what those lines are.

[00:11:17.81] I do want to think a little bit about this question that Eli raised, this idea of whether or not society is too risk averse because that's interesting to me. Prior to my academic career, I worked for a few years in-house an attorney in technology organizations. And that was always something that I counseled, and I think it's something that any lawyers in the audience, you've all done this, right? We talk about the risks of new technology.

[00:11:43.20] If you are developing a new product or if your company is launching a new product or even just a new feature, there are risks and benefits. Sometimes those risks can be legal. Sometimes they can be ethical. So for example, if you are launching a product that uses a lot of data, a lot of personal data from your users, one of the first ethical risks is always that that data could get hacked.

[00:12:07.37] You could lose that data. There could be a data breach. The legal consequence could be data breach notifications. You might get lawsuits. The ethical consequence, though, is harder to determine, and that's where a lot of this analysis gets a little squishy. It's hard to say what the ethical lines are and what's too much risk?

[00:12:25.91] I would advise startups to really think carefully depending on your resources, thinking about how you might be able to defend yourself if a case were to come up, thinking about how you might be able to pivot your company if a product really just completely failed, and thinking about how you might be able to respond if your product or your service or your new feature created PR backlash based on privacy or some sort of data misuse or something like that. These are all different risk calculations that you have to make as someone who's part of a company or representing a company.

[00:13:01.23] But I think that as an individual, though, you always have power to do something. So you can always make a recommendation for what the company should do or what the project should do. And that can be a recommendation based on external factors like this quarterly goal for your specific department, but it can also be based on these muddier ideas about ethics. I think I just want to bring up a few concepts that we can play around a little bit with this panel.

[00:13:32.58] I think the first is this idea of data quality. So no matter what project you're doing, if it involves AI, if it involves machine learning, think about where you're getting your data from. What are your data sources? How much data are you collecting? When you collect the data, what sort of notice and choice are you giving to people, the users, who you're getting your data from?

[00:13:55.96] I would encourage everybody who is representing anyone in tech or who is in tech to really push back against this instinct that I feel a lot of developers have, which is to take as much data as they can because they can use it someday. I've heard this from so many people, and I understand the impulse, the idea that you can keep the data, use it at a later time.

[00:14:17.75] But first of all, this might be violating some laws. The GDPR, for example, has a pretty strict purpose limitation for data being collected. But second, on an ethical basis, there are some problems with that. If you get people to consent to one thing and then you use their data for another reason, that's ethically questionable. Also, there's again greater risk of cybersecurity concerns. If there's a breach, you have so much more data that is at risk of being leaked. So try to push back against that in your general thinking about where the data is coming from and the quality of your data.

[00:14:51.04] I think the second thing to consider is really just have you baked ethics into the product development lifecycle. I think this is really key because regardless of whether or not you ultimately decide to shelve the product or the feature, you've got to make sure that this process is ethical because even if this one product fails, the next product is going to come up, and it's going to have ethical concerns.

[00:15:14.44] And you've got to make sure that there are people on your team who are thinking about ethics, people who are classified as privacy program managers, as policy officers. If you are a very large organization or company, you may have people who are actually just ethicists on board.

[00:15:30.46] But every single person who's involved in product development, or for example, involved in advertising, which is very data heavy and data driven, should have some training about ethics so they can make these decisions, too, because no matter what your position is, you can't control everything at your organization. But you can encourage other people to take on some of this burden through training, through information, through education. Make sure you have people who are able to bake ethics into the product development lifecycle.

[00:16:00.78] And the final thing I would want to encourage you to think about is really consider who's on your team as well. So not only should your product development lifecycle include issues of ethics, it should include everyone thinking about ethics, but you should be hiring people who are able to do this work.

[00:16:17.65] And this might mean, for example, encouraging, let's say, undergraduate computer science programs to implement ethical classes as part of the required curriculum. It could also include looking past the certifications and degrees of people you're hiring to see if they've been able to actually fully

implement products at a practical level. It could also include asking people questions about ethics during the interview stages.

[00:16:43.20] Also, as one general matter I think we've seen really run into AI ethical concerns, this problem of AI and bias. Many of our automated systems have been exhibiting signs that reflect the biases of society. We've seen examples of, say, paper towel dispensers in bathrooms not recognizing people with dark skin when they wave their hand under the towel dispenser. That's a small example of an area in which you think, maybe if there had been a few more people who had different skin tones on that design team, maybe it wouldn't have run into that issue.

[00:17:19.82] So when you think about hiring and you think about inclusion inside your company organization, also remember that there's an ethical choice to be made in how you form your organization. Think about having diverse team members, including people from diverse perspectives on issues like ethics to sort of help bake in ethics not only into your product development process but into your entire organization. So just a few thoughts to kick things off. We can get into the more theoretical difficult decisions about what is ethics, but I think those are some things I'd like everyone to consider on the practical level when you're working through these with your own organizations.

[00:17:59.31] JIL DUPRE: That's wonderful. Thank you so much. And next, I'll go to Austin Chambers, who's an associate at Dorsey Whitney. And Austin, you work with clients on data privacy and security compliance, and I wonder whether and how you ever talk with clients about technologies that might be perhaps too flawed. Oh, I think you're on mute. Oh, and we still can't hear you.

[00:18:35.21] AUSTIN CHAMBERS: How about now?

[00:18:36.35] JIL DUPRE: Yes.

[00:18:36.86] AUSTIN CHAMBERS: Perfect. OK, sorry, wrong microphone. Yeah, so it's interesting. Coming in a conversation about ethics talking about the law and ethics, it's to me almost two separate things because when people come to me and ask questions, they want to know, is this legal or not? And then, can we go forward? And so it's always an interesting challenge to me to talk through with clients and to bring ethics into the conversation.

[00:18:57.23] And to me, I think one of the interesting things that we see out of this panel is trying to get how to build an organization and a process within these companies and within our clients where they are taking ethics into account even if that means going above and beyond necessarily what I might advise or what is strictly legal. And I think that's an interesting conversation to have.

[00:19:16.01] So on my side, I'll speak today just from a strictly legal standpoint and coming what is legal, what isn't. And what I think is interesting is that in most cases, privacy and security law for the most part, it is adaptable to what Eli mentioned as sort of your own ethical frameworks, what you think is appropriate. And it gives you some flexibility to do that and to at least give it a try.

[00:19:36.98] There's not a whole lot that is, per se, illegal. We can say, OK, you can't collect this type of data without maybe getting consent, or you can't use it for this obviously nefarious purpose. That's strictly illegal. OK, maybe these are easy questions, but there are very few of those, I think.

[00:19:52.70] And so what I think is very interesting is the process that I approach when I talk to clients about privacy, compliance, risk, and everything. We try to think through, what are you really trying to do? What's your objective? What are you actually trying to do and to take the privacy compliance steps and really use that as a method of really flushing out the issues and making you accountable for what decisions you want to make.

[00:20:18.38] It's like, let's take a privacy policy, probably the most simple privacy compliance tool out there. We take that, and so in order to write it, we ask, what are you collecting? Why do you really need this? What are your objectives with this? And I think that that's been a process that I found with clients they want a privacy policy, they want it done in an hour, and they think they can pull it off the internet, whereas really, this is the perfect compliance tool, and I found that writing those has actually been something where we get that focus.

[00:20:43.34] We start those conversations, and those questions come up. Well, if we wanted to do this, we want to do that. And then this is where we can start to take all these product and feature ideas and put them on that spectrum of risk, and then we see perhaps some areas where we say, OK, you could do this. Theoretically, you could do this. But in order to do that, you're going to have to get consent to this. You're going to have to disclose this. You're going to be accountable to the public and your customers because through your privacy policy or through other compliance requirements in this way.

[00:21:09.99] And I think that that's where we've seen-- I rarely tell somebody, no, you can't do this. It's just illegal. For the most part, it's like maybe, but here's exactly what you're going to have to do in order to make that strictly lawful or to mitigate your risk to a degree that you would find acceptable.

[00:21:23.30] And so that's what I've found very interesting at least in the course of advising people is it's getting to that yes. It's helping people to define, refine, and build better products and use privacy compliance as a tool to build that internal accountability and build those internal structures to build better products.

[00:21:42.57] JIL DUPRE: So maybe we can use that jumping-off point for a little bit more open discussion. I hear you on this separation between what's legal and what's ethical and that it's not necessarily your role to talk to companies about what's ethical. But I'm curious how you all respond to whether-- in the first panel, people talked about creating a culture of ethical behavior, and Tiffany, you talked about ethics as part of the product life cycle. And I'm curious whether you feel like we need more of a mandate for that or if it's something that should be left to companies to decide how much they incorporate that thinking.

[00:22:32.33] TIFFANY LI: So I think that's an interesting question. It'd be pretty difficult to mandate that. Definitely, we can encourage companies to consider ethics. And I think that what Austin was saying about some of our legal advice actually being ethical bias to an extent, I think that's certainly true.

[00:22:51.72] Some laws really implement ethical ideas, right? We have privacy laws that, if nothing else, support the idea that we have an ethical value attached to this concept of privacy. So definitely, some of our legal laws and regulations do work to enforce ethical boundaries for companies. But I think there's not-- we can't ever say every company must be ethical. We've tried it in various laws, and it happens. It works sometimes and sometimes not.

[00:23:24.73] But what we can do is when we're working with a company or advising a company, we can keep that ethical point of view in mind, and we can share that opinion. I mean, in terms of professional responsibility, lawyers are allowed to advise on ethics. It's not something we cannot advise on.

[00:23:42.51] And I think very often when we're talking about risk analysis for various questions from clients, you have to think about the long-term downstream effects. Especially if you are working in house, for example, you're thinking of things like reputational harms if you have a product that's found to be unethical. So I think that's really a part of this.

[00:24:03.87] It's something that anyone advising a company or working in a company can do. And the law certainly helps, but it's a little bit more specific, right? It'll have one law implementing one ethical standard. It's hard to have one law that just says companies must be ethical. Don't be evil, but in law.

[00:24:22.69] JIL DUPRE: Great. And any response from the other panelists?

[00:24:29.02] ELI DOURADO: I mean, I agree it's really challenging to sort of mandate ethics because none of us agree on what's the right ethical code. Do only consequences matter, which is a view held by some philosophers? Or do intentions matter as well, right? And so what is for a company to say-- OK, it's one thing for a company to say, we're going to be ethical. But then it's this very hard problem of who's ethics and what are we trying to do.

[00:25:00.79] Now I do think companies-- I think it is fitting and proper for companies to sort of have their own view on what is and is not ethical and for them to try to inculcate that behavior in their employees and through processes and so on. And I think it's also very appropriate for companies to tell their customers what their values are.

[00:25:26.05] It can almost become a marketing tool where the companies say, well, these are our values, and if you are our customer, we will treat you in accord with these values. I think that's very appropriate. But at the end of the day, there's going to be a plurality of different frameworks that people use for adjudicating these questions, and I think that's OK, and I don't think we're going to improve upon that.

[00:26:02.82] AUSTIN CHAMBERS: Yeah, I agree as well. I think, again, coming from my perspective as an outside advisor, I very much agree with Tiffany. It is a challenge between talking to clients about what is strictly illegal but what ought you be doing and how do we take these processes, and how can we build accountability and ethics into the process and help you think through these issues and use compliance as a tool for building a better organization.

[00:26:26.77] I feel like that's kind of been a theme across the panels today is really understanding how you bring in these different stakeholders, how you use the law as a guide almost to bring in or build a better organization even if the strict yes or no is not really-- there isn't one oftentimes.

[00:26:48.55] JIL DUPRE: Sorry, got distracted by the chat. On that, I wonder about the pressures on companies. And from each of your perspectives, which pressures seem to be the most effective in terms of if there ever are bright lines and if there are times when a company would not take a product or a service to market, what are the external pressures that you see being the most effective, be it some of these internal processes and employees blowing the whistle and saying, hey, we need to stop this, consumers, government, and if you can just talk through how some of those forces act on a company's decision.

[00:27:34.89] AUSTIN CHAMBERS: So I can certainly say for one that I've seen, and again, I think we've heard a couple of times across the panels, of cost, just pure cost and risk. You can ask, what are you really trying to achieve with this product, and I would say I've rarely shelved an idea or talked to a client and said, no, don't do this.

[00:27:49.66] But what we have done is say, if you're really trying to do this, is the best way to do it? Is this the lowest risk way to do it? If you're collecting this information, again, it costs a lot to store it. We have to disclose this. We have to go through all these steps in order to collect it. Can we achieve this in a different way? And I think oftentimes the cost effect is probably one of the strongest.

[00:28:08.08] And the next up is reputation. I've seen clients that if you have to put it out there, if you have to get consent, if you have to be upfront and direct about what you're doing, sometimes that's enough for them to reconsider maybe how they go about it and if they might want to find a more friendly way to do it. So I think transparency in that sense really is, it does have some power.

[00:28:33.46] ELI DOURADO: Yeah, and I agree. And yeah, economics can be a tool for ethics in a way in the sense of if the customer base has a different view on a question than the company does, well, the company is going to probably have to adopt the view of its customers if it wants to keep them to some extent. So sort of thinking about the bottom line as a tool to sort of check the behavior of companies via the market, I think that works.

[00:29:15.32] JIL DUPRE: Yeah, and so I wonder the extent to which when we're balancing these ideals of innovation and also protecting consumers whether we want to shift the balance or whether you're all sort of comfortable with where the balance is now. Would we want to have more of an economic impact when products go wrong? Or do you worry too much about how that would impact innovation on the market? And Tiffany, I think to you first.

[00:30:00.24] TIFFANY LI: Great, thank you. It's hard to determine how much we should change the balance, and I'm thinking right now, the first example that comes to mind is Uber and ride sharing. So that's a corporate model where we've seen some ethical concerns develop. There have been allegations that people who are driving have not been compensated fully. They don't have benefits as independent contractors and so on. There have also been cases where people say they've pushed the taxi industry out so people who own medallions are now in trouble.

[00:30:36.33] And I understand these ethical concerns and I get them. I also, though, have a bit of a hard time with this because it's true that I do think we do need more protections for people who are driving, for example. And people who did own those medallions suffered a huge financial loss, and no one has come in to pick up the pieces.

[00:30:54.61] At the same time, the taxi industry really did need to be disrupted. So I'm sure you all remember trying to take a taxi 10 or 15 years ago before Uber really took off. And the service was very unreliable in many cities. And in some places, you didn't even have service. You had those last mile concerns. So we did need to disrupt the industry. We needed that innovation.

[00:31:18.52] At the same time, though, after that first burst of innovation, now we've got into a stage where we do have a new world or a new understanding of how we should be thinking of private transportation, and we haven't caught up. The ride sharing companies haven't caught up.

[00:31:35.41] So I think one way to think about this balance is this idea of innovation and disruption of the industry as a little bit separate from the ethical dimensions of what happens when an industry is a little bit more mature because I can definitely buy an argument that says early stage Uber, early stage Lyft needed the lack of regulation in order to take off.

[00:31:56.39] And certainly, if Uber had actually listened to regulators and complied with regulations when they were first starting as a startup, first launching their pilot projects around the nation mostly in jurisdictions that weren't very friendly to them, the company probably wouldn't have taken off at all. They probably would have died at the start.

[00:32:14.51] But now as a mature company, we should be thinking of different ethical standards, and that's something that I think is important when considering this balance. We should support the power of new startups to develop new things and innovate new things. But once they become more mature companies, whether that's through age, through time, through size, through impact, there's got to be a level where we say, well, thank you for the innovation, but the ethical concerns are now overpowering that first burst of newness that we had. So that's something that I'm thinking of a little bit as one dimension of this trade-off that you're talking about.

[00:32:51.23] JIL DUPRE: Yeah, that's great. And I don't know--

[00:32:55.22] ELI DOURADO: Can I cut in?

[00:32:55.49] JIL DUPRE: Sure.

[00:32:56.72] ELI DOURADO: Yeah, yeah, I mean, so I spent some time at a startup working on supersonic airplanes. And so I think that's an area where we were highly regulated, very highly regulated, and it was, I mean, it does harm innovation. But I don't think it's ethical issues that are-- it's not the voluntary issues

that are the decisions that we made to try to be as safe as possible, et cetera. Those are not the barriers to innovation.

[00:33:31.67] I think that the barriers to innovation are sort of it's like poor regulation, shall we say, regulation that's overly prescriptive or overly unimaginative and does not leave room for it. So I don't think it's ethics per se that is the obstacle to innovation. A lot of times this focus is on the IT industry, but having come from sort of the world of aerospace, there's a much wider world of innovation that's not digital, and I think the issues are a little different.

[00:34:24.38] AUSTIN CHAMBERS: And I would agree with that overall as well. I think I do see that risk in over regulation in a sense, and I think premature regulation. I do think that there always needs to be some way to bring accountability to a company for their actions and how they handle data and things, which is what I think about most of the time.

[00:34:40.91] But I definitely do have concerns that trying to get out too far ahead of it does run that risk of stifling potential innovation and in AI in particular, and I'm sure others have more sophisticated thoughts than I do maybe on that particular point, but it's an area where I see a lot of concern today, and I do worry a bit about over regulation as a lot of our clients are really doing innovative things. And I think we try to build in good processes. We try to get them to think about these things. But it is uncertain, but of course, at the end of the day, if they get shut down by regulation, there could be a problem so.

[00:35:14.87] TIFFANY LI: I do want to make a really quick point, too. All of this talk about regulation and the threats, if you were advising a company, it's still down to risk tolerance, right? If they're willing to take the risk to go against the current regulation or the current law, go for it, right? That's up to them.

[00:35:31.13] If they decide that the risk that they'll be caught doing something is pretty low or they're willing to pay the fine and it's not something that's blatantly-- obviously, you do not want to advise anything blatantly illegal, but we all know that there are legal gray zones, especially technology, that's something where it's up to them. It's their risk tolerance.

[00:35:52.82] On a lot of these issues on things like AI, things like privacy, cybersecurity issues, sometimes there are those gray zones where you just have to tell the client, it's up to you to think about your own risk. If you want to take that risk, go for it, but here are the potential legal consequences.

[00:36:10.59] JIL DUPRE: And what about if you're advising consumers or employee? If you're talking to the people who are either learning about potential new products or the employees who are working on them, what are the areas that you feel like, hey, anything that impacts this is something that I personally wouldn't be part of or that I would fight against? And I guess what I'm trying to get at is this panel, is there a bright line? I feel like we've talked a lot about the calculations and we've talked a lot about what you balance, but so far, I haven't heard people giving us sort of bright line about if it does this, then no.

[00:37:10.12] ELI DOURADO: Right. So I think in terms of talking to ordinary people, I think the problem is it's very fundamental, which is that they have to have a well-considered view of what their ethical beliefs are and so on. And I can tell them, I can just yell at them and say, adopt mind. You should all adopt my particular view of ethics, but that doesn't really work. People have to actually have a considered view.

[00:37:37.12] And I think a lot of times, ordinary people don't. This is not a priority for most people. It's like, I'm going to really figure out what I believe about right and wrong and the nature of that and why so that I'm able to evaluate these things. So I think that's the fundamental challenge that we all face is that there isn't-- it's not a question that's verifiable in the sense of the way science is, we can prove that things are right and we can build multi-generational knowledge that keeps growing.

[00:38:14.86] With ethics, we haven't really advanced past Aristotle. 2,500, 3,000 years and it's not really-- it's not the kind of body of knowledge that is objective and that grows over time. So we're all still trying to

figure things out, and I think I have a lot of sympathy for people because we're all kind of just thrown onto this planet without really an instruction manual, and we kind of have to figure it out for ourselves.

[00:38:49.14] JIL DUPRE: Great, thank you.

[00:38:52.87] TIFFANY LI: I was going to say it's tough. I think that even in some cases where we say there is a strong, there's a clear, bright line about what's good or bad, there are still so many downstream effects of technology that it's hard to determine. And I'll just bring one example.

[00:39:08.56] I think that everyone on this panel probably agrees that genocide is bad. Genocide is probably ethically bad, right? I'm seeing some nods. Good. So that's great. But then what about, for example, if you are a company and you sell surveillance technology to authoritarian regimes? Are you contributing potentially to some form of genocide? We don't know.

[00:39:33.35] What if you don't even do that? You say, I'm not exploring technology at all. I'm only selling this technology within the US. It won't get there. But because your technology takes off, other people are able to be influenced by your work or take bits of your design or even use your products to create their own form of something else that also then has downstream effects of contributing to potential genocide. That's also negative.

[00:40:01.17] And if you're representing the company that is making that technology in the first place, that's a really hard question to ask. Is the bright line that you just don't make the tech because it could be misused later? Or is it that you tried to maybe bake in some protections? You try to build in a fail safe of some kind. Is that even possible, right? So I definitely agree with Eli that you can't really draw those lines too easily.

[00:40:25.49] And at the same time, if you're representing a company that is working on any sort of tech that could get into questionable ethical territory, you have to somehow help them draw those lines. And that's something where, it's something that I think anyone at a company can do, but you definitely need to be really seriously thinking about these things, doing the reading, doing the research, thinking through all the implications, and not just stopping at this is a fancy new thing that will get a lot of press or will get a lot of new users.

[00:41:01.39] AUSTIN CHAMBERS: Yeah, I agree with that. I think one of the-- I've not worked with a ton of companies that do anything particularly sensitive but I think one of the fundamental things that I've realized is that privacy is a multidisciplinary sort of subject as a security, right? And so I think one of the important things, again, is building that culture. It's bringing all these people into the conversation to have those conversations about what you want to do, where are you going with this, and not making it a pure compliance exercise but really working across the organization, developing those relationships.

[00:41:29.98] That's been effective for me just from a pure compliance standpoint, but I think it translates very well into building a better organization that is both compliant and I think ethical and able to have those conversations, ask those questions before they become a very, very serious problem.

[00:41:47.26] JIL DUPRE: OK, that's wonderful. Thank you all. And I think it's time for us to turn to our audience questions. And I know there should be a student question following the wiser rule. And I think-- yeah, Taylor.

[00:42:12.08] TAYLOR HARTLEY: All right, hello. Thank you so much for that. So all right, my question, it seems like honestly, I think we could determine what's good and what's bad similar to genocide murder and just awful things. Those make it to the bad side. But it is very high level as most laws are. So I'm just going to jump into my example.

[00:42:38.72] Driving a car, we have laws that regulate, rules of the road. We have police officers. We don't stifle engineers from building faster cars, but we also educate drivers through driver's ed, and you have to get a license to operate a vehicle. So something that wasn't really talked about is, how can we give consumers or users tools and education to keep themselves safe because I feel like that's where it's all starting, and then maybe people will determine that line for themselves?

[00:43:33.03] AUSTIN CHAMBERS: And so I think one of the interesting things-- I mentioned earlier privacy policies are sort of the foundational privacy compliance tool, but I think transparency and thinking about better ways to do transparency. And there's been conversations about iconography and how do you express purposes. And think about street signs. We know what this means. You're entering a dangerous area, or you can do certain things in this space that you might not be able to do, and people innately understand that. I think it's very hard to express the ethics of your product or even exactly what you're doing. It is challenging.

[00:44:08.08] But I think thinking about transparency and coming up with a better way to express these ideas from a company side, and then I think consumer literacy from technology to information and everything else is vastly important. We can never underestimate the power of education in a complex world. I think some of these things frankly just require true almost education reforms frankly just in terms of being able to understand these things. Transparency only gets you so far.

[00:44:35.90] ELI DOURADO: I think education would work if people would do it, but people hate that stuff. Like when you go-- I don't know if you've been part of an organization that has every six months, you have to go change your password or whatever, and they make you watch-- people absolutely hate that. They just do not want to do those trainings, right?

[00:45:00.23] So I think, I mean, there may be an opportunity to-- maybe you could get someone to fund a very, very entertaining and infotainment version of this. But I think for the most part, it's lack of demand. I think even people who have very poor-- ordinary consumers who have very poor cyber hygiene, I think they just don't want to be bothered with it, and they are willing to take the risks for it. So I think education would work as a solution, but there has to be demand for it, and I fear there isn't.

[00:45:42.27] TIFFANY LI: I think there is a demand for privacy, but I don't necessarily think that translates to a demand for the sort of education or information gathering that would be necessary to protect your own privacy. Many studies have shown even young people right now, a lot of people say young people don't care about privacy, they very much do. Teenagers today really want privacy. They create their own methods to do it, including fake social media accounts and so on.

[00:46:08.67] But you're right. Those steps to understand a privacy policy, being able to read a privacy policy in the first place is already many steps ahead of many people. And why should people have to be able to understand the privacy policy? Of course, we can advise people, companies to write very easy, very clear privacy policies, but the average policy is written as a contract or as a pseudo contract, and many people don't want to read that.

[00:46:34.87] So when we think about how to empower individual consumers, I think some of it is still education. We can think of different educational methods. Some regulatory agencies put out fun PSA videos and stuff like that. We can try to think about how to translate the desire for privacy into something actionable.

[00:46:59.15] So I do like when some writers in newspapers put out something like, here's a guide to all the settings you should turn off on your phone right now. That's very easy and simple for people to do. Or when people talk about these issues in the public sphere, so on public newscasts or so on or in programs for children, I do think something like that could be helpful, could be empowering.

[00:47:24.67] And I think that companies can help, too. Privacy policies can be simpler. There can be more settings that people can manage on their own. You should be able to have an opportunity to turn different settings off to make sure cookies aren't being collected, your location's not being tracked, what have you.

[00:47:41.71] And at the end of the day, what consumers can do most of all is vote with their wallets. If they really hate a company's practices, they can stop using that company's services or products. And one way to empower them then is to make sure that we have a startup world in which there are competitors because right now you can say delete Facebook, delete Instagram, but then where do you go? All your friends are on Facebook and Instagram. So that's something else we can think about, how to empower the consumer through allowing them to have more choices.

[00:48:17.88] JIL DUPRE: Thanks so much.

[00:48:19.31] TAYLOR HARTLEY: Thank you.

[00:48:20.99] JIL DUPRE: Thanks for your great question, Taylor. And while we're waiting for other people to put questions and answers into the chat, Tiffany, I want to follow up on that idea to ask, when you outlined some of the ways to think about this, your second one was, is ethics part of the product life cycle, the product development lifecycle? And I wonder if you see people voting with their wallets for companies that have included that.

[00:48:53.61] TIFFANY LI: I don't actually have the empirical research on that. I keep seeing companies try to make it a marketing point so I would assume that they have done some market research on this. A few years ago, Apple put up huge billboards in some major cities saying things like, "we protect your privacy." I think this was around the time right after the Apple FBI case where they fought against the FBI trying to get into someone's phone.

[00:49:22.89] So I do think that companies are using it for marketing so it must be helpful in some way, I'm guessing. But that's a good point. Maybe people just say they want privacy, but then they still use Facebook, they still use Apple, they still Yammer. They use all the tech companies anyway, and they don't vote with their wallets.

[00:49:40.41] I think one reason might be that there aren't sometimes other choices. You don't want to use Apple or Google, what phone are you buying? There are other options, sure, but are there that many options? If you don't want to use any of the major social media platforms, how do you connect to your friends? If you don't want to use Amazon, at this point, in some areas of the country, you really can't buy anything. You're stuck with Amazon or Walmart, and that's it.

[00:50:08.64] So in the absence of choices, it's really hard to empower people to protect themselves and to align their consumer behavior with their ethics, but that's sort of a much larger systemic issue, and I'm not sure we can solve that just as people advising for it or working for tech companies.

[00:50:30.01] JIL DUPRE: Thanks so much.

[00:50:31.05] ELI DOURADO: And I think with that example of Apple in particular, I think Apple did something very smart. They solved for the equilibrium, which is they knew that in the future they probably wanted to go into health stuff, right? And if they have a reputation for not caring about your privacy, then no one's going to use their health products because people are more sensitive about health privacy than other things.

[00:50:54.91] And so you see Apple going into the health industry with the watch and collecting a lot of biometric data and stuff like that. But no one's using Facebook Health because Facebook hasn't invested

in that reputation to do that. So I think that's another more dynamic way in which market forces are pushing companies to behave differently depending on their future plans.

[00:51:25.85] JIL DUPRE: Yeah, that's a great point. OK, so we have some questions in the Q&A. Michael asks, even if you teach consumers how to read a privacy policy, who is reasonably going to read the micro-print 20-page policy to install an app? Should it be regulated like the GDPR?

[00:51:49.45] AUSTIN CHAMBERS: Yeah, so I'll take that one. So I mean, I think first off, the GDPR does set out standards, and if you want to pick a reason why privacy policies are longer than ever, GDPR is a pretty good reason. Not to say that it's bad necessarily, and frankly, it's actually good because the GDPR forces you to talk about specific processes, specific data to tie all these things together.

[00:52:09.22] What people use to say and what Google did for many, many years, let's talk about things in very, very overarching language. "We use your data to improve products and services," which is a great way to say that we mine everything in every way to sell better ads fundamentally and to do all kinds of other stuff that we may or may not know about.

[00:52:29.92] Whereas now the GDPR requires that specificity, but of course, with that specificity comes cost. And that's in terms of time, comprehension, and there's the oft-stated quote that if you were to read every privacy policy that you were subject to on a given day, you'd be reading every waking hour every year.

[00:52:45.95] So this is why I think it's a challenge, right? You want to empower consumers to make the choices themselves. And that's why I think iconography and maybe what Apple's done now, which is try in some way to standardize the disclosures through the App Store with the mandatory sharing disclosures and the data use disclosures, I think it's a difficult problem to solve, but it's still at the core. In my mind, if you want that consumer choice, transparency and understanding still are two conditions to that.

[00:53:19.50] JIL DUPRE: Thanks. And Liz asks, do you ever see the consumer or citizen having as much voice as the business in this area of technology ethics and data privacy?

[00:53:38.09] ELI DOURADO: I mean, I think that the individual citizen probably no, but collectively, if you have a lot of people who are essentially the customer base, they are actually pretty sovereign. Companies do what their customers tell them to do. So I think people can get frustrated over this company's not doing exactly what I want, but I think if the customer base as a whole is paying attention and cares, companies are pretty responsive to what they want. So I do think a lot of the power lies in the hands of ordinary people.

[00:54:21.33] TIFFANY LI: I also want to note that people aren't just consumers. We also are citizens. So I think Liz also asks, is our wallet our only voice, and I don't think that is. We can definitely stop using Facebook if we want, stop using Uber or whatever. We can make a fuss online. Social media campaigns have caused huge hits to companies in the past.

[00:54:43.94] But not only the market forces, right? We can try to talk to our own representatives, and that's happened. We've seen some people in government really take a strong stance on technology ethics, partially because their constituents really want it and care for it. So that's another way you can try to get a voice, a larger voice in the system not as consumer but as a citizen. And of course, as an individual, empower yourself with education and information, learn as much as you can, and do as much as you can to protect yourself and people you know as well.

[00:55:18.31] ELI DOURADO: I'll just add I agree with what Tiffany says, but I would caution that there's moral risk entailed in making things illegal, too, right? So when you make something illegal, what you're doing is you're enforcing that societally with violence. You're saying potentially we could get into a

situation where the FBI has to march in and violently rip someone out of their chair and take them to jail. And so that itself entails moral risk. So we should be cautious about that as well.

[00:55:58.08] JIL DUPRE: Yeah, I think some of those issues would get teased out and that anonymous question of governance can be the start of a solution to complex regulatory or social issues. Does governance have an important role to play here, or is this a place for a more populist solution, or is it really both?

[00:56:21.51] AUSTIN CHAMBERS: I believe that governance does have a role to play. I mean, again, the law is a reflection of ethics. I think that's another thing that we've mentioned a couple of times here on the panel so far. And insofar as there is something that we can identify as a society that is bad, then yes, we can outlaw that or we can create a regulation or process around enforcing that idea.

[00:56:43.80] So I mean, take consent, whether or not we require someone to be fully informed and you actually have to do something in order for this to happen to you and for your data to be processed in this way. So that would almost never happen without regulation. If you didn't explicitly require consent in some cases, I'm not sure that it would happen. I don't think there is enough market demand for it.

[00:57:06.69] And I would also add that sometimes regulation can be a source for innovation. You can set up guardrails, and sometimes people will innovate. They'll think through achieving this purpose in a different way. Say, OK, we can't go about it this way, but people are creative and companies are endlessly creative about these things, and sometimes they'll find a better way to do it. And I think regulation can provide those guardrails. It may not be efficient.

[00:57:37.68] JIL DUPRE: Michael asks, just because a company is willing to accept the risk, should they be allowed to put my data at risk? Full stop on the corporate wallet being the arbiter on what is ethical development.

[00:57:57.98] TIFFANY LI: I think that's a larger ethical question. Sometimes a company can be fully in compliance with the law, but maybe they're not acting in accordance with what one might consider ethical. And I think it can definitely be something where many people, I would say, believe that certain privacy laws are not strong enough and that companies themselves are not doing enough to protect individual data. So then based on that sort of ethical decision, we have to think about what we need. Do we need better corporate standards? Do we need better regulations? Do we need better technology?

[00:58:31.85] I think Austin mentioned innovating around regulations or around technology. We've seen some privacy-preserving or privacy-enhancing technologies developed specifically to help people still innovate, still use the data, but still protect privacy. So we can argue that there should be more done there, and I definitely see your point. A lot of people, I think, are on your side with this. Even if the company wants to take the risk, the individuals don't so perhaps there could be more that could be done. Certainly, I think we can always do more.

[00:59:09.59] JIL DUPRE: OK, I think we will end there as we're about out of time. But I just want to thank the panelists so much for continuing the Silicon Flatirons tradition of elevating the debate. I really appreciate your thoughtful and sort of balanced responses to all of the questions. So thank you so much. And thank you to Amie and Silicon Flatirons for putting this on.