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Date: March 10, 2022

Case: U.S. Chamber of Commerce - A.I. Commission Project

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LIVESTREAM CONFERENCE
U.S. CHAMBER OF COMMERCE
ARTIFICIAL INTELLIGENCE COMMISSION
COMPETITIVENESS, INCLUSION, AND INNOVATION
THURSDAY, MARCH 10, 2022
1:00 P.M. CENTRAL STANDARD TIME

Job No.: 437502
Pages: 1-191
Reported by: Bonnie Panek

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1 P R O C E E D I N G S

2 MR. FERGUSON: I'm going to kick things
3 off and first introduce my cochair, Mr. John
4 Delaney, former congressman from Maryland, and I'm
5 Mike Ferguson, former congressman from New Jersey.
6 We are cochairing this commission. We're
7 delighted to get things kicked off here, and we'll
8 make a couple of opening remarks in a moment, but
9 before we get to that I want to introduce our
10 other special guests here today, former
11 congressman Will Hurd who's going to make some
12 introductory remarks to kick us off. Will, it's
13 great to see you.

14 MR. HURD: Thank you. Great to be
15 here. I get to start it off?

16 MR. FERGUSON: You do.

17 MR. HURD: I will start it off. Well,
18 look, I'm here to say what we do matters, right.
19 What we do as a government matters, what we do as
20 businesses matter, what we do as individuals
21 matter, and to tell you like what you all do on
22 this commission matters, right.

23 And it blows me away the conversations
24 I'm still involved in and when I was in government
25 when -- now that I'm out in the private sector,

1 and ya'll have a important message, something you
2 do where you can't -- you're going to have to
3 ignore left-wing nuts. You're going to have to
4 ignore right-wing nuts.

5 You're going to have to ignore super
6 parodial business interests in order to put
7 something forward that is going to do something --
8 I think it's simple but hard, uplift humanity,
9 right. That should be our first principle. That
10 should be how we think about this.

11 And if ya'll are able to put something
12 forward and have the government take that up, and
13 it starts with uplift humanity, then we're going
14 to be successful. And one of the things -- look,
15 I spent a decade in the CIA, you know, seeing how
16 technology was used to try to catch me. I helped
17 build a cybersecurity company.

18 I spent six years in congress. I held
19 the first hearing on AI, helped develop an AI
20 national strategy with the help of the Bipartisan
21 Policy Center, which I know John is a board member
22 on, and now I help technology companies that have
23 a national security application, so I've had a
24 front row seat on how technology is upending every
25 sector.

1 When I speak to kids I've started
2 taking a new prop, and it's funny none of them
3 know what it is. It's a little box and I open it
4 up and it's a typewriter, and when I open the box
5 up the kids all ooh, ah, and they start clapping.
6 It's like I felt like I just unveiled King Tut's
7 tomb, right, and I tell them this is an actual
8 typewriter I used when I was in eighth grade.

9 And I say it's old, it's archaic, and
10 then I whip out my smart phone and I say imagine a
11 world when this is going to be old and archaic.
12 And the technological change we're going to see in
13 the next 47 years is going to make the last 47
14 years since the advent of the personal computer
15 look insignificant, and we have to make sure we're
16 ready.

17 And unfortunately we're at a political
18 cultural international moment in time where it's
19 hard to get big things done, right, and the thing
20 I learned, the only way you get big things done,
21 if you do it together, and that's not just
22 republicans and democrats. It's industry, it's
23 government, and ya'll have an opportunity to drive
24 some of these issues.

25 And so look, I -- we have to do -- we

1 collectively have to do something I learned when I
2 was working at a computer lab, in Cain Computer
3 Lab at Texas A&M University when I was a freshman
4 in college. When the computer wasn't working what
5 did I do? Hit reboot, right, you know. That's
6 kind of what we need to get back to.

7 I call it American Reboot. That's
8 actually the title of my book coming out at the
9 end of the month, and for me we got to get back to
10 those basic principles, and those basic principles
11 are what I led with, uplift humanity. We're
12 seeing that right now in Ukraine.

13 We think we know how things are going
14 to play out, but if you think you're going to
15 figure out the second, third and fourth order of
16 facts you're crazy, right. You're not. You're
17 going to get them wrong. So start with the first
18 principle, and to me when it comes to artificial
19 intelligence -- and I hope you start to clap,
20 John, grab me.

21 MR. DELANEY: You're doing great.

22 MR. HURD: To me it starts with
23 something that actually is uncomfortable for some
24 people. We got to realize what made in China
25 really means. We're in a conflict. There's no

1 question about this, and I get asked all the time,
2 they're like Will, you're overestimating.

3 You know, I call it a new cold war with
4 the government of China, and they're like -- but
5 that's what they say about themselves. This is
6 not me, you know, interpreting some Mandarin
7 expression that somebody 20 years said. This is
8 literally what they say in English on their
9 websites.

10 The Chinese government is going to
11 surpass the United States of America as the global
12 leader in advanced technology.

13 MR. DEESTIK: Exactly, exactly.

14 MR. DELANEY: Who was that?

15 (Several participants talking at the
16 same time, thus making transcription impossible.)

17 MR. HURD: They concur, you know, God
18 concurs.

19 MR. DEESTIK: Exactly. Exactly.

20 MR. HURD: Right, and so for me it is
21 they started with 5G. 5G, AI and quantum are
22 connected. Ya'll ought to know that, I'm
23 preaching to the choir, but this is a competition
24 and let's make sure they play by the rules of the
25 road.

1 MR. DEESTIK: Chris, can you turn your
2 camera off, please?

3 UNIDENTIFIED MALE SPEAKER: Who's
4 Easton?

5 MR. HURD: And so for me, for me, yes,
6 it's okay if we're in a competition, and somehow
7 --

8 MR. DEESTIK: Oh, Bonnie, can you turn
9 your camera off, please?

10 MR. HURD: Hey, Easton, you're on --
11 you need to put you on mute, my man.

12 MR. DELANEY: Easton just got removed
13 from the meeting.

14 (Laughter.)

15 MR. FERGUSON: We appreciate the
16 enthusiasm, but if everybody can stay on mute that
17 would be helpful.

18 (Several participants talking at the
19 same time, thus making transcription impossible.)

20 UNIDENTIFIED MALE SPEAKER: (Inaudible)
21 reboot.

22 MR. HURD: Yeah, yeah, exactly.

23 UNIDENTIFIED MALE SPEAKER: Rebooting
24 his computer, right?

25 MR. HURD: But also what -- part of

1 ya'll's mission is to help educate people on these
2 things, and it's not just educating elected
3 officials. You've got to educate and help explain
4 this stuff to people that care about putting food
5 on the table or a roof over their head or taking
6 care of the people they love.

7 I wish I had all the answers. I
8 don't. But we have to make a better case of why
9 this matters and why we have to push forward, and
10 we have to let legislators know that the
11 political nonsense that's happening in Washington,
12 D.C. is getting in the way of us that truly
13 compete.

14 And so, you know, we have to embrace --
15 we cannot compete. We can't outinnovate. If the
16 Chinese government is going to steal our
17 technology and our IP, let's steal their
18 engineers, right? Let's streamline legal
19 immigration. Hello. Like when every industry is
20 looking for people now is the time to streamline
21 that.

22 Oh, and if you get to come to UT Austin
23 or Texas A&M and College Station, let's keep you
24 here as well. They're all looking at what
25 happened to Jack Ma and that woman who was like

1 the first billionaire that got taken off the
2 internet, like nobody wants that. So we have a
3 real opportunity and we all have a chance to do
4 that.

5 And then I would say this: Imagine 10
6 years from now if the Europeans that are
7 complaining that the American regulatory
8 environment is moving so fast that it's harder for
9 European companies to catch up, right. We also
10 have to make sure our European friends recognize
11 that when it comes to privacy us -- our
12 transatlantic relationship views privacy better
13 and more of the same than they do with China.

14 And so imagine 10 years from now we're
15 talking about how, you know, the public and the
16 private sector work together, and the most
17 disadvantage of our society were the ones that
18 benefited first from all these new technologies
19 because, look, we can do it if we work towards a
20 very simple basic premise, and that's uplift
21 humanity.

22 That's what ya'll got to do, right, and
23 under the direction, guidance and wisdom of these
24 two on my right I'm pretty sure ya'll can do it,
25 so may the force be with ya'll.

1 (Laughter.)

2 MR. HURD: That's all I got, John.

3 MR. DELANEY: That was good.

4 MR. HURD: Yeah.

5 MR. DELANEY: Yeah, let's hear it for
6 Will.

7 (Applause.)

8 MR. DELANEY: So first of all that was
9 great, Will. It's good to see you again.

10 MR. HURD: Good to see you.

11 MR. DELANEY: We served together. I
12 didn't have the privilege of serving with Mike,
13 but Will and I definitely did some good work
14 together in the congress to the extent you can do
15 good work in the congress.

16 So it's great to be with you again and
17 those are -- that was a great way to kick off our
18 session, those are inspiring words and I think
19 you're spot on, so thank you. It's great to be
20 here with Mike, my cochair.

21 We've been excited for this work, and I
22 want to thank all of our commissioners for joining
23 us in this endeavor, and we look forward to an
24 exciting outcome, and I want to thank in advance
25 our panelists who are here to share their insights

1 because that's what it's about at the end of the
2 day.

3 So when I was in congress I founded the
4 Artificial Intelligence Caucus which was the brunt
5 of many jokes because when you throw the word
6 intelligence around in congress there's a lot of
7 opportunity there, but my view was that a couple
8 of things were happening.

9 Number one, if you think about the
10 future -- and I had come from the private sector.
11 I had started two businesses in the public and had
12 a multidecade kind of private sector career where
13 you're maniacally focused on where things are
14 going, where the puck's going and positioning your
15 business accordingly.

16 When you think about the future of
17 these technologies where clearly the most
18 important thing to think about because they were
19 fundamentally shaping our economic systems, our
20 social systems, and hopefully one day our
21 environmental systems, and there was very little
22 discussion about them going on in the congress.

23 But more troubling was there was just a
24 fundamental lack of understanding which makes
25 sense because -- Will has an unusual background

1 for someone who served in congress being so close
2 to national intelligence issues and technologies,
3 but most members of congress aren't engineers,
4 aren't data scientists.

5 And I think the first evidence of that
6 was when the first Facebook hearing occurred and
7 you watched some of the senators question the
8 senior executive team of Facebook, and it was
9 somewhat appalling the lack of even understanding
10 as to how Facebook worked, let alone the
11 underlying technologies.

12 So it was pretty clear to me and my
13 colleagues who formed the caucus that we needed to
14 create a forum to actually start talking about
15 these ideas, thinking about them, not only from
16 the perspective of our competitive position, which
17 as Will beautifully articulated really is our
18 competition with China where we have certain
19 advantages, right?

20 As a liberal democracy we have the best
21 universities in the world because fundamentally
22 great universities can only exist in a political
23 democracy, and that gives us a huge headstart.
24 But they have certain advantages, too, not the
25 kind of advantages we would want, but a lack of

1 privacy and other things that allows in many ways
2 their citizens to become kind of a giant
3 experiment in their efforts to dominate these
4 technologies, so there's a competitiveness aspect
5 to it.

6 There's huge potential associated with
7 these technologies and we've seen an accelerant of
8 some of them during COVID. You know, the great
9 tragedy of COVID has, in fact, also shown us that
10 areas like telehealth, et cetera, there's
11 opportunities for these technologies to
12 fundamentally transform our life.

13 And if you look back over human history
14 innovation has clearly by any measure made the
15 world better and better and better and there's no
16 reason to believe that won't continue with these
17 technologies, but there's also some flashing
18 yellow lights.

19 Privacy as Will talked about is
20 obviously an important consideration, the risk of
21 embedding biases that exist in our society that
22 we've struggled so hard to remove from our society
23 and we haven't done enough, but there's an
24 opportunity for these things to become hard coded
25 into these systems that will determine so many

1 outcomes in the future.

2 So there's tremendous work to be done
3 in this area which is why I was honored to play
4 this role as a cochair with my friend Mike, and
5 it's a privilege to work with all of you and I'm
6 looking forward to what we'll produce here which
7 in my judgment will be a series of kind of
8 nonpartisan, you know, fact-based recommendations
9 that comes from a collaborative process hearing
10 from people on the front lines about what actually
11 is happening, and with the input of such a great
12 commission, present company excluded, and coming
13 up with a series of smart and thoughtful
14 recommendations, and I think it's going to be
15 exciting. And I want to thank our friends at the
16 chamber for not only convening us, but organizing
17 us and putting this in place, so I'm excited.

18 MR. FERGUSON: Super. Thanks, John.

19 MR. DELANEY: Sure.

20 MR. FERGUSON: So thanks first, Will
21 Hurd for your presence with us here today. All
22 three of us I know really enjoyed and valued the
23 time that we were able to serve in congress. It
24 was a meaningful thing to get to do, but it's also
25 really a pleasure to get to continue to try to do

1 meaningful things as a private citizen which is
2 what we're all trying to do now, which is great.

3 Thanks to John Delaney of course, too,
4 for your leadership both when you were in the
5 house on these issues and now as cochair of this
6 commission. Thanks of course very much to the
7 U.S. Chamber of Commerce, to the Austin Chamber of
8 Commerce for hosting us here today in their
9 offices.

10 I also want to draw people's attention
11 to the -- in the interests of time today, and
12 we're not going to be able to go through and
13 introduce every single member of the commission,
14 but this is an incredibly impressive group and
15 their bios and descriptions are on the chamber's
16 web page, on the C TEC web page for the
17 commission, so I'd certainly encourage folks to
18 read about the really impressive group that the
19 chamber has convened here on this commission.

20 When it comes to the work of our
21 commission here, and we're going to hear from some
22 of our witnesses for the rest of the day, I really
23 approach this thinking well, what is the American
24 public looking for on these topics and how can we
25 serve them, how can we serve the interests of

1 America and the world in the work that we're going
2 to be doing on this commission.

3 And I think the American public has
4 really spoken loud and clear about the importance
5 of the United States being able to compete on the
6 global stage, and not just to compete to win, but
7 to compete because America represents certain
8 values which are important for those values to be
9 prominent on the stage, I think.

10 And technological innovation is one of
11 the key ingredients I think we would all agree to
12 make sure America leads in the world. You know,
13 we're seeing right now how the private sector can
14 assist in a place like Ukraine during a very, very
15 challenging time in that part of the world right
16 now from using technology to thwart cyber attacks,
17 to repurposing satellites.

18 There are so many ways that the private
19 sector is helping to keep Ukrainians connected, to
20 help innovation from the private sector that is
21 continuing to keep in the forefront trying to
22 serve those who are in particular need right now.
23 We recently saw to Will's point China and Russia
24 pledging to collaborate on artificial
25 intelligence.

1 In fact, President Putin said, and I
2 quote, "A nation that leads in AI will rule the
3 world," a frightening thing, frightening words to
4 be hearing from someone who is perpetrating war on
5 Ukraine right now. This is I think one of the
6 reasons why the United States has to lead in
7 developing and advancing this fourth industrial
8 revolution, artificial intelligence.

9 If we falter others who do not share
10 our values are going to fill that void. Eighty
11 percent of Americans by some measures agree that
12 the U.S. should develop AI and that we are the
13 best equipped to create the ethical standards, the
14 framework that needs to surround the proper
15 development of AI.

16 Today's hearing I hope is going to take
17 us another step closer to that by helping this
18 commission to try to find bipartisan and durable
19 recommendations around the fair and ethical
20 development of artificial intelligence, and again
21 I want to thank everybody for being here in
22 Austin.

23 Those of you who are not local, thanks
24 for traveling like many of us have, and for those
25 who are local thank you for welcoming us to your

1 community, and I'm really looking forward to
2 working with this commission as we develop some of
3 these durable recommendations.

4 Usually at the end of remarks we say
5 and I yield back, but now we're really just going
6 to move on with our witnesses, and Will, John and
7 I will -- Will.

8 MR. HURD: Yeah, I failed to do an
9 administrative thing.

10 MR. FERGUSON: Yes.

11 MR. HURD: Everybody say cheers.

12 (Laughter.)

13 MR. FERGUSON: Cheers.

14 (Mr. Hurd took a photograph.)

15 MR. HURD: There we go. Thank you.

16 MR. FERGUSON: All right. Well, we're
17 going to move straight into hearing testimony from
18 our witnesses. We're going to go in the order
19 that the sheet was handed to me. We're going to
20 ask each of our witnesses to use about a 10-minute
21 block for your remarks, and that will include the
22 questions and further drilling down on maybe some
23 of your remarks from our commission members.

24 So first I guess we're going to hear
25 from Dave DeCaprio, and I would invite you to

1 maybe briefly introduce yourself and as a part of
2 your remarks maybe tell us a little bit about you
3 and your work, but Dave DeCaprio. Dave is here?
4 Dave, there you are. Dave is the CTO and
5 cofounder at Closed Loop AI. Dave, the show is
6 yours.

7 MR. DECAPRIO: Hi. Yeah, Dave
8 DeCaprio. I'm CTO and cofounder of Closed Loop
9 AI. We are a health care AI company founded here
10 in Austin five years ago. What I work on is
11 explicitly AI and health care, so about taking
12 health care data and making predictions about who
13 is going to get sick, how sick they're going to
14 get, and what we can do to improve that.

15 Particularly we work a lot in reducing
16 health disparities and getting -- proactively
17 reaching out, so ideally reach out before somebody
18 goes in the hospital and lower the cost of care.
19 I'm sorry. I guess the claim to fame you can say
20 of our company was in 2019 CMS sponsored the AI
21 Health Outcomes Challenge, so a 1.6 million dollar
22 prize to -- for -- it was a challenge.

23 Three hundred teams competed to see who
24 was the best at AI and health care, IBM Watson,
25 Cleveland Clinic, Mayo Clinic, Deloitte, all big

1 names competed. We were known as a small company
2 in Austin no one had ever heard of, so I led the
3 team there so I've been doing this for a long time
4 and we have some credibility in the space.

5 I'm never good at sticking to my
6 prepared remarks. I've always got to say a few
7 things. You mentioned immigration. The number
8 one thing, talent, we need to bring in talent. I
9 personally lost an incredibly good resource last
10 year because of his H-1. He didn't -- somebody
11 who was a master student at Northeastern
12 University, came from India, he was a master
13 student at Northeastern University, a great AI
14 talent, really young in his career, worked for me
15 for two years and then had to move to Canada
16 because he didn't get his H-1B.

17 And because we're in health care I
18 can't have anybody outside the U.S. Everybody
19 who's working -- all of our data has to stay in
20 the U.S. Contractually I can't have anybody
21 outside the U.S. with access, so I lost a great
22 resource. I'm a small company. We were 20 people
23 at the time. I can't afford to lose somebody to a
24 bunch of immigration. There's no question to me
25 that this guy is an asset to the United States, so

1 the number one thing is immigration.

2 The second thing I'd say is I do
3 believe there is a real need for regulation around
4 this, particularly in health care. Health
5 disparities are huge in the United States, so I'd
6 estimate there's over 800,000 deaths a year due to
7 health disparities, people just not getting
8 treatment that's available to other people.

9 That's like double the number
10 attributable to smoking, like this is how large a
11 problem it is, and the default thing that is going
12 to happen without regulation is that those
13 disparities are going to get built into the AI
14 models and automation that increasingly they use
15 to drive this.

16 So the most famous example is 2019
17 Obermeyer published a paper about a model that
18 Optum, which is kind of the giant in the industry
19 was using -- they were using costs -- they were
20 predicting who was going to be expensive and using
21 that to figure out who would bring resources.
22 Hey, let's bring resources privately to the people
23 who are going to be expensive.

24 It sounds like a good idea. The
25 problem with that is that if you look racially

1 white people on average consume -- they are more
2 expensive to treat for the same condition -- not
3 that they're more expensive to treat, but on
4 average more money is spent treating them than
5 treating other races. So if just run that model
6 it was racially biased. It said white people were
7 sicker on average than they really were. This
8 became a lawsuit, it was a huge thing.

9 There has been -- there are ways around
10 this. Don't look at costs. Look at the
11 treatments people get because those are the same.
12 There's many other things, but the most important
13 thing I think is that if we ignore these issues
14 they will get baked in. It's not -- you have to
15 actively ferret these things out and clean them
16 up.

17 And I think the most important thing in
18 regulation at the start is transparency. Don't go
19 mandating how people should do things. Let's just
20 start by mandating -- let's have everybody explain
21 what they're doing. Let's have everybody give
22 insight into the methods they're using, and then
23 we'll figure it out because simple solutions like
24 you can't put race inside of a model that's used
25 in AI is not always the right answer.

1 There's sometimes where using race
2 actually helps you reduce health disparities
3 because the experience of the health care system
4 is different, and so it's a case where I think we
5 can't just assume we know if the right answer is
6 going to be attributed to the question, and so I
7 would advocate for regulation and for transparency
8 as the first goal of regulations. I've breezed
9 through what I have.

10 MR. FERGUSON: Questions?

11 MR. JONES: So with respect to
12 transparency how to walk -- how would you
13 recommend walking the line between having
14 disclosed what they're doing and how they're doing
15 it and protecting intellectual property because
16 that must be the resistance point?

17 MR. DECAPRIO: Yeah, I think there is
18 the data you are using to pull things in which can
19 be set -- the IP is usually in the algorithm
20 you're running, and I think you can separate those
21 things in terms of are you using this piece of
22 data, and at a high level how is that piece of
23 data being used, and can you prove whether or not
24 the piece of data was significant, and there are
25 several techniques for doing that that are

1 independent of the sort of core algorithm used. I
2 think it is possible to do.

3 MR. KATURI: David, you mentioned that
4 not using race is not the answer all the time. Do
5 you have views on when it would be appropriate and
6 when not appropriate?

7 MR. DECAPRIO: Yeah, there was a great
8 article in the New England Journal last August,
9 maybe it was two Augusts ago now with COVID, but
10 there's basically sort of three things. The first
11 is you need to have a plausible causal mechanism
12 why race matters, so for many of the things we do
13 the experience of the health care system is very
14 different, so you have a plausible causal
15 mechanism.

16 You need to have statistical evidence
17 that including race actually makes a difference
18 and it's useful, and then third you need to step
19 back and evaluate is this actually going to reduce
20 health disparities which it's not a statistical or
21 algorithmic question. It's really about how the
22 model was used, so that's a summary but there's a
23 great article in the New England Journal which I
24 think -- I submitted some slides and I think
25 that's referenced in the slides. That's the

1 framework we use to determine.

2 MR. DELANEY: So you create almost a
3 burden of proof?

4 MR. DECAPRIO: Yep. Do you have
5 statistical evidence that it matters. Do you have
6 plausible causal reason why race should make a
7 difference, and then can you step back and say
8 okay, if we apply this including race it's
9 actually going to reduce health disparities.

10 MR. FERGUSON: Dr. Gillum.

11 MS. GILLUM: It sounds like you're
12 advocating for transparency on the inputs of the
13 model. How about the outputs and assessing sort
14 of how the model performed and --

15 MR. DECAPRIO: Yes, I'll answer --

16 MS. GILLUM: Okay.

17 MR. DECAPRIO: -- both. I think the
18 outputs -- in health care that's absolutely
19 necessary. Every model we build always comes with
20 explanations behind it and those are based on hey,
21 given that I saw this here's how that impacted the
22 equation.

23 MS. GILLUM: And are you -- and sorry,
24 just to follow on, so there's an explainability
25 piece for the outputs and you're wanting

1 transparency around that. I know in health care
2 some of those AI systems tend to be incredibly
3 complex, that humans often can't always interpret
4 why the outcomes are what they were. What would
5 you like to see as far as regulations to sort of
6 provide that --

7 MR. DECAPRIO: Yeah. So I think
8 explainability gets easier when you make it local
9 explainability. So these models are very complex
10 to try to understand how is it making a decision
11 overall on every case, but when you get down to an
12 individual prediction for an individual person you
13 can -- all models can be simplified in that point
14 to hey, if I change this, if I change this, if I
15 haven't seen this here is how the prediction would
16 change.

17 So it's just like a doctor, trying to
18 ask a doctor how do you diagnose this patient, how
19 do you diagnose diabetes in general or complex
20 diseases in general is hard, but if you give them
21 an explicit patient a doctor can tell you I saw
22 this, this, and this and those were the case.

23 I think if we focus on those local
24 explanations it doesn't really matter, but you can
25 always -- if you can't explain a local prediction

1 then I think the algorithm is the problem. It's
2 probably not something you should use in health
3 care.

4 MR. TUCKER: So in terms of disparities
5 any thoughts on how you'd acquire the latent
6 features that may correlate to disparities such as
7 socioeconomic status?

8 MR. DECAPRIO: Yeah, socioeconomic
9 status is one that's pretty easy to get and
10 incorporate directly, and so collecting that data
11 is important to put it in because when you blind
12 us -- when we build models and we get blinded to
13 all this, we're going to be blinded to
14 socioeconomic status and race, it's actually more
15 difficult for us to make sure that the algorithms
16 aren't biased.

17 So there are many variables that are
18 correlated. We depend on most of our data sources
19 to sort of be able to give us access to that. In
20 health care we usually can. In a lot of other
21 industries I know that's not (inaudible).

22 MR. FERGUSON: Okay. We'll do one more
23 question because we're going to need to keep it
24 moving.

25 MR. DIMAKIS: Yes, just building up on

1 this conversation, I have also seen the point you
2 said that if there is an attribute that's -- a
3 protected attribute that is removed from the
4 training the algorithm can get worse for the
5 minority.

6 But I wanted to ask you -- and I do
7 teach that, I do say that, but I do want to ask
8 you do you have concrete evidence from your
9 practice that if the model was trained without a
10 predict that it would actually end up being worse?

11 MR. DECAPRIO: Absolutely.

12 MR. DIMAKIS: Okay.

13 MR. DECAPRIO: Absolutely I believe I
14 -- I probably -- yes, I absolutely have that,
15 we've seen that. I have built hundreds of
16 predicted models that have been deployed in
17 practice. Socioeconomic status always shows up.
18 I don't care what health outcome you're looking
19 at. It is better to be rich than poor.

20 There is like every outcome is better,
21 and so there are many cases where if you're
22 looking to figure out who should I reach out to
23 proactively for better education if you were to
24 exclude socioeconomic status it's always going to
25 get worse because you should always be biased in

1 that education, the lower economic --
2 socioeconomic status. That's one general case. I
3 have a ton of very specific examples, but that's
4 one general.

5 MR. DIMAKIS: That's great, very
6 useful.

7 MR. FERGUSON: Go ahead.

8 MR. HURD: Is there a data set that
9 the government has that you think it would be
10 valuable for me to have access to, and I think
11 that's a question for everybody on this panel and
12 it's something that the group can say is there
13 status sets that we can further open up in order
14 to drive the public/private partnership?

15 MR. DECAPRIO: Almost certainly. I
16 don't have one off the top of my head. I know we
17 do use -- a lot of the publicly available data we
18 have, it's called the census data and everything,
19 we incorporate that today. I'm sure there's
20 probably one.

21 MS. KARGIANNAKIS: At the same time --

22 MR. FERGUSON: Dave, thank you. Sorry,
23 Melissa.

24 MS. KARGIANNAKIS: Oh.

25 MR. FERGUSON: We're just going to keep

1 going so everyone has their 10 minutes.

2 MR. DELANEY: That's very smart. Thank
3 you.

4 MR. FERGUSON: Next -- yeah, really
5 helpful. Thank you very much, Dave. Our next
6 witness -- maybe I'll do this group and then you
7 can do the next one.

8 MR. DELANEY: Yeah, I'll do that, yeah,
9 yeah.

10 MR. FERGUSON: Iwao Fusillo. He's the
11 chief data and analytics officer at General
12 Motors. The floor is yours.

13 MR. FUSILLO: Cool. Thank you. Thank
14 you so much, and I really appreciate, John and
15 Will, the comments at the beginning. So my name
16 is Iwao Fusillo. I am the chief data and
17 analytics officer at General Motors. Prior to GM
18 I held the same position at the National Football
19 League, the NFL. Prior to the NFL I held the same
20 position at American Express.

21 So what I'd like to do for the
22 commission today is to offer up a set of views
23 around AI competitiveness, inclusion, innovation,
24 all of the things we talked about at the beginning
25 of the session today based on two decades, nearly

1 two decades of experience across multiple
2 industries, financial services, media and
3 entertainment, manufacturing, consumer products.

4 And what I would say is I think some of
5 the earlier comments really played to this, is
6 what is old is new again, right. So, you know,
7 you look at all of the innovations that have
8 happened since Will said, the invention of the
9 typewriter, which I remember very well, and you
10 look at all of the new technologies, the
11 capabilities, the analytic techniques.

12 And they always hold great promise, but
13 sometimes they come with the peril of, you know,
14 potentially inequitable outcomes like we were
15 talking about on the health care front with Dave,
16 and that's particularly true with unsupervised
17 systems. I'm going to come back to that later in
18 my remarks.

19 When I go back in my district back to
20 the typewriter as well, I did my undergraduate
21 work at Princeton University. I was in the
22 academy of aerospace engineer and data science
23 didn't really exist as a discipline back then. It
24 didn't exist largely because the compute power and
25 the data storage wasn't available in commercially

1 reasonable economic prices, right. But in the
2 1990s that all changed. It all changed because
3 data storage and compute power began to become
4 commercially available for some of the larger
5 companies, right.

6 The startups probably would have
7 struggled back in the '90s, but the larger
8 companies, you know, certainly, and by the early
9 2000s, my observation over the past couple of
10 decades, many industries including financial
11 services, so I was at American Express during what
12 I thought was a magical time because we started to
13 see enterprise-wide use of data sciences to drive
14 decisions at scale, business decisions at scale.
15 So thinking about banks and financial services we
16 began to see massive production databases coupled
17 with statistical models making millions and
18 millions of credit underwriting decisions just as
19 an example.

20 And many of us will remember,
21 rightfully so, there were some incredibly powerful
22 regulations that came out at about that time, you
23 know, the Fair Credit Reporting Act where you talk
24 about the use of regs or not, right, in
25 underwriting decisions. Those types of

1 regulations we view as certainly, you know,
2 beneficial, right, because it kept the banks in a
3 mode of wanting to supervise back then the
4 statistical models.

5 So here we are today. We have a new
6 innovation called artificial intelligence, and at
7 General Motors I, along with our chief technology
8 officer, Kent Helfrich, we run an AI-ML summit
9 every year. Over 1,100 AI-ML professionals attend
10 that every year, and during my keynote this year I
11 thought it was particularly important for me to
12 lay out five key principles that I asked all 1100
13 plus AI-ML professionals to follow as they began
14 -- as they deploy AI and ML across manufacturing,
15 supply chain management, sales, marketing,
16 customer experience.

17 Any process you can think of in the
18 context of, you know, auto manufacturing probably
19 encourages use case with AI-ML. So what I thought
20 I would do with the commission is actually share
21 those five principles. You know, those could
22 prove to be, you know, very useful in future work.
23 First, and we talked a little bit about this, data
24 preparation. Probably the hardest and most time
25 consuming part of the AI journey, but I would

1 argue probably the biggest return on investment.

2 Missing -- or low quality data. You
3 know, for sure no matter how good your AI
4 algorithm is it's likely to lead to anomalous and
5 unreliable results. Missing data is even more
6 dangerous because missing data is usually
7 systematically missing which means it's like to
8 like to create bias, so data preparation was
9 number one.

10 Second, return on investment. AI is
11 hard, you know, as Dave described, it is hard and
12 you need the smartest and best talent in the world
13 to do it. Make sure you actually need to use AI
14 in the particular application you're talking
15 about. Sometimes a business intelligence
16 dashboard from Power BI is good enough, okay, and
17 so when you want to launch into AI make sure that,
18 you know, that return on investment is there.

19 We talked about this just before,
20 explainable AI. So many companies have seen their
21 AI programs sputter because they did not
22 articulate the inputs and the outputs in a very
23 easy to understand common business vernacular, and
24 oftentimes AI algorithms produce results that
25 don't quite square with our intuition.

1 So if we haven't explained, you know,
2 the inputs and the outputs in clear business
3 vernacular and the AI results don't square with
4 our intuition, well, you know, a big recipe for AI
5 not getting adopted in your particular company, so
6 explainability AI is a big one.

7 We talked about supervise AI, AI
8 supervision. Many a social media company -- I
9 won't name any companies -- have allowed their
10 algorithms to go unchecked, and in many cases we
11 see some, you know, very unintended and very
12 unfortunate actually consequences, you know,
13 widespread depression among the nation's teenagers
14 that have often been talked about as being linked
15 to these things.

16 Hiring bias, right, many companies use
17 AI in eval in their hiring practices. We often
18 see again left unchecked, you know, these could
19 lead to, you know, very unintended hiring
20 practices and bias therein. At General Motors we
21 do supervise our AI because we have an overriding
22 intent to make sure it gets us towards our vision,
23 the mission we know our vision around zero, zero,
24 zero, which is all around making the world a
25 better place.

1 And that leads us to best practice
2 number five which is using AI for good, good for
3 our customers, good for our people. General
4 Motors is a member of a consortium of the Data and
5 Trust Alliance. That was founded by Sam Palmisano
6 and Ken Chenault. These are the former CEOs of
7 IBM and American Express.

8 And the 20 companies are companies of
9 the like of General Motors, American Express,
10 Johnson & Johnson, I mean the whole gamut, the
11 NFL, and the timeliness -- we talked about this
12 with the pandemic. The timeliness was almost
13 uncanny. The Data and Trust Alliance was actually
14 formed at about the time of the start of the
15 pandemic, and so timeliness was really quite
16 powerful.

17 Because we had an unprecedented sharing
18 -- Will, to your question -- like the government
19 -- the private sector all opened up their data
20 sets, and that created an unprecedented level of
21 data sharing and an unprecedented level of AI and
22 ML applications. So, you know, for us businesses
23 were changing their operating models it was the
24 perfect time to launch.

25 So what does the alliance do? Well,

1 the alliance establishes play books and best
2 practices in using ML, AI and data in a
3 responsible way and brings it to life with real
4 use cases, so how can we help ensure analytics
5 used in HR recruitment and development don't
6 unknowingly bias towards or against certain
7 genders, ethnicities or age groups. That is one
8 real project we embarked on.

9 Should we create an academy with the
10 chief data officers of each of our 20 member
11 companies to teach nondata executives both within
12 and outside the consortium around data and AI
13 literacy. There are many clear benefits to AI,
14 and we're constantly as a consortia asking these
15 questions to make sure we're harnessing the
16 benefits of the data but we're not creating --
17 inadvertently creating bias in unfair outcomes.

18 Another piece I'd love to highlight for
19 this commission is the impact and the role of
20 media. The media, as we know, can sometimes grab
21 onto sensationalist stories around AI.

22 UNIDENTIFIED MALE SPEAKER: No.

23 MR. FUSILLO: Right, yes. Why do they
24 do that? I go back to an incident that's somewhat
25 local here. Back in 2016 the Dallas police used a

1 remote controlled robot to deploy an explosive
2 inside a building to kill a sniper who had already
3 fatally wounded two police officers.

4 A media outlet that characterized that
5 as a robot controlled by the police killed a
6 sniper, well, they would have it right. A media
7 outlet that might report it as AI powered robots
8 are killing people would not have it right, but
9 that would probably be a more sensational, you
10 know, title for an article, and so those are some
11 of the things that we'd ask the commission to
12 consider.

13 The last thing is -- and, you know,
14 Will, John and Mike, you alluded to this in the
15 beginning, is where are we comfortable and where
16 are we not comfortable with the use of AI. So
17 recommendations for product and services, probably
18 pretty comfortable.

19 Recommendations, Dave, back to your
20 example for medical treatments, I don't know. I
21 don't know how the general public would react to
22 that, but perhaps the public is fine in both of
23 those instances just as an example. Maybe the
24 standard of the algorithm is different --

25 MR. DECAPRIO: Yeah.

1 MR. FUSILLO: -- so a product and
2 service recommendation, or you may say it just
3 needs to be better than the average here. For
4 medical treatments it better be better than the
5 best of the best medical professional. I'm making
6 this up, of course, but that's the idea.

7 And what I'd like to close with is
8 General Motors is clearly looking to extend our
9 data and AI agenda well beyond this Data and Trust
10 Alliance that I've described before, so General
11 Motors has nominated me for the National
12 Artificial Intelligence Advisory Committee, so the
13 NAIAC, that I believe this commission knows the
14 Department of Commerce established to help advise
15 the president, federal agencies and others on a
16 range of issues related to artificial
17 intelligence.

18 You know, certainly if my nomination
19 was accepted General Motors would absolutely look
20 forward to serving our nation and the potential to
21 improve 334 million lives and even more than that.
22 As a member of the NAIAC we play a role in
23 ensuring continued U.S. leadership in artificial
24 intelligence, R and D, trustworthy artificial
25 intelligence systems in both the public and

1 private sectors, and a work force that's ready to
2 integrate AI systems across many of the sectors in
3 our economy and our society.

4 While there is no current regulation
5 around AI in the U.S., regulators have clearly
6 sent a message that it's on the horizon. We
7 believe companies like GM are already crafting
8 policies and procedures across their organizations
9 to create a compliance-by-design program that
10 promotes AI innovation, but also ensures the
11 transparency and the explainability of our
12 systems, right, the responsible use of AI. So we
13 at General Motors are very, very grateful to have
14 the opportunity today to further our work by
15 participating in today's hearing.

16 MR. FERGUSON: Well, thank you. That
17 was fantastic. I know that our commission members
18 are going to want to follow up with questions for
19 you because that was a Tour de Fleurs, so a lot of
20 interesting things, and you've seen a lot in your
21 career. Unfortunately in the interests of time
22 we're not going to be able to do a round of
23 questions right now, but I know that we're going
24 to want to follow up --

25 MR. FUSILLO: I'd be happy to.

1 MR. FERGUSON: -- with you on some of
2 those things, so thank you very much. Thanks for
3 being here today, and thanks for sharing some of
4 your expertise with us. Our next witness is
5 Melissa Kargiannakis. I'm really -- I'm sure I
6 mispronounced -- is it Kargiannakis? Sorry.

7 MS. KARGIANNAKIS: It's Kargiannakis,
8 it's good.

9 MR. FERGUSON: Okay. I was a little
10 bit close.

11 MS. KARGIANNAKIS: Very close.

12 MR. FERGUSON: Melissa is the founder
13 and CEO of Skritswap. I got that correct, I
14 think.

15 MS. KARGIANNAKIS: You did, very good.

16 MR. FERGUSON: I did practice that
17 earlier with Melissa. So Melissa, thank you very
18 much for being here.

19 MS. KARGIANNAKIS: Absolutely.

20 MR. FERGUSON: Please take your 10
21 minutes.

22 MS. KARGIANNAKIS: Awesome, and I'll
23 keep it quite brief as I would like to focus on
24 questions for the most part and I did want to use
25 slides and just full disclosure, of course I have

1 a very important meeting I could not move at 1:15
2 so I'm going to have to skedaddle.

3 But the agenda, basically what we're
4 going to go through is little bit of an overview
5 on obviously my background and what AI is just as
6 a refresher and, you know, should the government
7 need to be involved. It seems like we agree that
8 that is the case, and just some moments from
9 history on why that is important, and then looking
10 at some of the predocuments and questions that
11 were sent talking about an independent body, how
12 bias can actually be eliminated using AI, and
13 disclosing what systems you're using and then any
14 areas where we shouldn't use it all, so those are
15 just the four areas that I'll cover.

16 And with regards to my background I am
17 -- obviously I run a AI startup that's heavy on
18 (unintelligible) processing. I'm actually a
19 Canadian immigrant so I love hearing the
20 immigration piece. I think it's critically
21 important, and I came to America because of all
22 the opportunities and because I was funded in
23 venture capital in San Francisco.

24 And it just -- it's -- even as a
25 Canadian it's surprisingly difficult. I have won

1 awards from the Queen of England, Top 100 Most
2 Powerful Women in Canada, Top 20 Most Innovative
3 Companies in Canada, and all of that was before 30
4 which is fine.

5 MR. FERGUSON: I'm sorry we can't post
6 your slides here, but I know you'll share those
7 with us.

8 MS. KARGIANNAKIS: I will share them,
9 yes.

10 MR. FERGUSON: So we'll be able to look
11 at those more closely.

12 MS. KARGIANNAKIS: Yes. And then
13 obviously you're a very knowledgeable panel, but
14 just for a quick overview I just wanted to remind
15 us of the history of AI. This is not as new as we
16 all think it is. You know, some of the early
17 hypothesizing and models, if you will, come out of
18 the 1930s and '40s, and we see a lot of the work
19 with Allen Tran, we see some of the work that
20 even with enigma in World War II, like that was
21 really critical in those months.

22 And that's like the earliest versions
23 of artificial intelligence, and then the Journal
24 of Artificial Intelligence was actually founded in
25 the 1970s, and this is what the world looked like

1 at those times, so it does go back quite a far
2 ways. At the same time I'll actually skip this,
3 you're all very knowledgeable, but in short the
4 simplest version of AI is that your
5 (unintelligible) statements, that is at the very
6 core and base of what AI is built on, and then
7 pattern recognition with examples.

8 What's fascinating is as humans we need
9 far fewer examples to do something well. I think
10 of being in grade seven and doing high jumps which
11 is hilarious because I'm five foot two, and I
12 didn't need that many examples to figure out how
13 to jump over the bar, but we need not hundreds and
14 not thousands, but millions and millions of
15 samples, and that's why to your point data is
16 absolutely critical.

17 Finally on the topic of should
18 government be involved, absolutely government
19 should be involved. Government has heralded in so
20 many incredible technologies across history and
21 time, and I'd recommend this book as additional
22 reading that talks about -- and all of these other
23 elements have hyperlinks in it as well, but like
24 government has a role absolutely and has had a
25 role in a lot of the innovations, you look at

1 telephone and other former innovations across
2 time.

3 And even looking at Silicon Valley
4 living in San Francisco the entire area, the
5 entire bay area was built on government subsidies
6 in the '50s and '60s, the entire area, so
7 subsidizing this work and making sure that yes,
8 you can regulate it, and yes, you can put laws in
9 place, but you also need to fund it. That's very
10 important. So as you can see we're clicking right
11 along, moving quickly.

12 In terms of an independent federal
13 oversight this is the best example and
14 recommendation that I have. Bottle the FDA. Why?
15 Because it's extremely similar. Think about it.
16 It's complicated, very dangerous and possibly
17 deadly consequences. You need experts to be
18 involved.

19 You know, the limitations matter and
20 I'll talk about even in the 1940s there were
21 certain countries, including the United States,
22 doing a lot of testing on humans in the health
23 sphere that shouldn't have happened, so the limits
24 matter. Putting limits in place for AI absolutely
25 matters.

1 And while this is very long term for
2 our vision the FDA as we know it today was founded
3 in the 1930s, but its origins actually go back to
4 the 1820s. That's a really long time, and I
5 believe that the FDA is the best model. If you're
6 looking for a recommendation of how to go about
7 building a body that regulates AI this is how I
8 would do it.

9 In terms of can AI eliminate bias, I
10 believe so, like without a doubt, and being a
11 trinomial of course I have to show this slide,
12 that's all. And the question is of course but
13 how, how is that possible, and that's much more
14 complicated. We certainly don't have time for all
15 that today.

16 The first step, though, would be
17 changes building in, and I will call it out
18 because it was International Women's Day this week
19 and it's International Women's History Month.
20 There are three women in this room, so it's just
21 really important to recognize that. We need to
22 change who's in the conversation, we need to
23 change who's in the room, and we need to change
24 who actually has the access to do this.

25 The only final thing I'll add on that,

1 I'm fortunate to have gotten VC funding. To come
2 from a single parent home in a tiny town in the
3 middle of nowhere Canada to get to Silicon Valley
4 and get funded by top VCs was no easy feat when it
5 was largely driving by networks, Ivy Leagues,
6 ex-Googlers, ex-Facebook, ex this and that, to be
7 able to get in and get my shot was no easy feat.
8 And the fact that funding for women led companies
9 that has a woman founder and CEO is stagnant at
10 two percent since 2017 is unacceptable and that is
11 stagnating innovation.

12 Moving on there are other ways that we
13 can use AI to eliminate bias. It can be done, but
14 it really, really matters to your point the data.
15 The data really, really matters, and during your
16 testimony, Dave, when you were asking -- when Will
17 asked about the data set, one of the best data
18 sets that the government has made available is the
19 SEC aggregate data set. How many of you or
20 familiar with that? A few of you.

21 My company is heavy in (unintelligible)
22 processing, specifically in contracts. That data
23 set is incredible. Being able to look at every
24 single contract that companies have is critically
25 valuable. So what's fascinating there is any

1 contract that has an impact on 10 percent of
2 revenue I believe which is considered material
3 goes into the SEC group reporting, and then they
4 just said hey, we need to report this anyway,
5 let's make it a data set that can then be used for
6 AMLS which is brilliant.

7 That's why you have companies like
8 Ironclad. That's why you have companies like Seal
9 that was bought out by DocuSign for a ridiculous
10 amount of money. They only exist because the
11 government made that data set available in a way
12 and in a format that engineers could use. And
13 disclosures about AI, and we talked about this and
14 Dr. Gillum asked a really good question about
15 inputs and outputs. Absolutely we should be
16 disclosing it.

17 We have regulations around pillows in
18 this country. If we regulate pillows we can and
19 should regulate AI. If we regulate and tell
20 consumers what is in your pillow, what materials
21 are used in your pillow, in your mattress, in your
22 couch, we should be able to regulate AI. It's
23 very simple.

24 And again some areas where we probably
25 shouldn't be using AI, military, access to capital

1 bias and hiring, housing, renting. And other
2 things to consider, not necessarily don't use it,
3 but privacy and personal information is critical,
4 and that's it. I will leave it at that. We have
5 two minutes left for questions.

6 MR. FERGUSON: Great. Questions. Go
7 ahead.

8 UNIDENTIFIED MALE SPEAKER: So what
9 does your company do?

10 MS. KARGIANNAKIS: We take complicated
11 information and make it more clear, specifically
12 contracts. Instantly a contract could go from a
13 legales to a great (unintelligible) or a great
14 (unintelligible) reading level.

15 MR. OSOBA: Talking about the FDA
16 approach we were talking about, have you -- do you
17 have thoughts on how valuable, how will it fit for
18 such a broad spectrum technology? Like with FDA
19 you have food and drug and it's a very clear
20 mandate for what it's focused on. For AI it might
21 be a bit broader given that it's used everywhere.
22 Is that not a problem in your thinking on this?

23 MS. KARGIANNAKIS: I mean, the FDA
24 monitors a lot of things. Again, food is huge,
25 food is extremely broad, pharmaceuticals are

1 extremely broad. Diagnostic tools are extremely
2 broad, and there are some things that have to be
3 FDA approved and some things that are just kind of
4 on the fringes.

5 I think you sometimes need to report
6 into that area but you don't need to actually get
7 FDA approval if it's not I think triggered with
8 it. You know more about that than I do, but I
9 would say the FDA is equally as broad and has
10 equally as many facets and complications, and I
11 think it's the classic example for how you should
12 recommend a body that regulates AI.

13 MS. GILLUM: Excuse me. Oh, go ahead.

14 MR. JONES: All the speakers so far
15 have talked about data as a central resource and
16 access to it is critically important. Also that
17 access is an impediment, however, in being able to
18 innovate because it's expensive, it's hard to get,
19 there are barriers to get it. Does anybody have
20 any insights as to how that should be made easier
21 to create a national data resource of sorts that's
22 available for startups?

23 MS. KARGIANNAKIS: I mean, if we want
24 to tie in all of the pieces that we've talked
25 about today, if the United States Government

1 wanted to take all of the data that people are
2 reporting anyway, even things that don't have
3 personal identifiable information, but like I
4 mentioned with the SEC and their database there
5 are all sorts of things that individuals and
6 businesses have to report to government all the
7 time.

8 If you wanted to combine immigration,
9 educational opportunities and the arduous task of
10 cleaning up data and just hire a whole bunch of
11 new grads in machine learning with master's
12 degrees, with undergraduate degrees, heck, even
13 summer student opportunities and all they do is
14 spend time cleaning up government data that would
15 be an investment over 20, 30 years that would be
16 well worth the United States' time and effort. It
17 would also have a tremendous impact for folks who
18 are learning in schools.

19 MR. FUSILLO: I wanted to add
20 universities, right, so universities are very
21 likely to be sitting on completely disconnected
22 but extremely valuable information. So I remember
23 talking to my alma mater -- Princeton University
24 is a -- you know, a research institution, and we
25 were talking about, and I believe they had done

1 it, hiring a chief data officer. None of the
2 universities are really doing that in any way, any
3 big way.

4 But the idea is exactly as you're
5 saying, Melissa, to structure, to organize and
6 engineer the data so that anybody in any sector
7 could actually analyze all of the research
8 institution's data in one fell swoop. Right now
9 it's very difficult. You know, for all we know a
10 cure for, you know, persistent diseases actually
11 already exists, but we can't stitch together all
12 the data and put the AI against it. We don't have
13 it, right.

14 MR. FERGUSON: Melissa, thank you very,
15 very much. That was fabulous. Congratulations on
16 your success. It's a great story, holy mackerel,
17 and it's inspiring and you have a lot of very good
18 interesting thoughts, too. I've spent a lot of --
19 on policy time in my life working with the FDA and
20 it's a very interesting suggestion you have, so
21 thank you.

22 Last on this panel waiting very
23 patiently is Douglas Matty. He's the director of
24 Army artificial intelligence capabilities.
25 Melissa just made mention of military in one of

1 her slides. I'm very interested to hear your
2 thoughts on this, Doug, so the floor is yours.

3 MR. MATTY: I have some prepared
4 remarks but in the interests of time if it's all
5 right I'll just kind of hit the high points --

6 MR. FERGUSON: Sure.

7 MR. MATTY: -- and just follow up with
8 that as a reference. I'll kind of couch it to
9 bring it up a notch, if you will, in terms of the
10 strategic implications that I think we're all
11 looking to address. So any time you have a
12 strategic discussion you have to think about ends,
13 ways and means. It's kind of the framework we do,
14 so no surprise.

15 Much like you heard from Mr. Hurd,
16 we're talking about what are the objectives that
17 we have. So for us, you know, predominantly it's
18 our soldiers in terms of how they defend our
19 nation both in the application of what's called
20 multi-domain operations, but it's really about how
21 do we enable our soldiers and protect our soldiers
22 and allow them to do the challenging mission sets
23 that we ask them to make.

24 I'll skip down if it's okay to the
25 means, and so with our effort going back to as

1 early as 2018 when we established what was then
2 the Artificial Intelligence Task Force we
3 established that in Pittsburgh, and simultaneously
4 many of you may be familiar with Army futures
5 command was established here. It's the first
6 four-star headquarters in nearly 42 years here in
7 Austin to take advantage of the innovation, all
8 the dynamic startup activity, entrepreneurship
9 that was going on here in Austin.

10 The decision was made to put us in
11 Pittsburgh, and so some of the key aspects that
12 we've seen up in Pittsburgh that have helped lead
13 to the success of going from an AI task force now
14 to the Army's Artificial Intelligence Integration
15 Center with more than tripling the cadre and the
16 folks that are up there working that is really
17 going towards the ecosystem as well.

18 And so what you find there in
19 Pittsburgh, and it's like this in a couple of
20 other areas but not enough, and that is this blend
21 of academic and leading research, both at Carnegie
22 Mellon and University of Pittsburgh. You also
23 have a government role in there with the Federally
24 Funded Research and Development Center, so not to
25 toot our brand, but we have got RAND, we have FCI.

1 I mean, there are specifically designed
2 organizations to bridge that gap between industry
3 and public/private relationships, et cetera, and
4 then of course you have the innovation ecosystem
5 with our industry partners, things like you have
6 Robotics Row where you have a number of spinoffs
7 from Carnegie Mellon and other universities as
8 well as those larger corporations that we all
9 recognize as being protechnology leads have been
10 brought up, some of those, and established a
11 presence in Pittsburgh.

12 And so you start to get that feedback
13 or that virtuous cycle of interaction amongst our
14 industry partners, and so with us being immersed
15 in that area of place being out in a post or just
16 a camp station, et cetera, we're actually part of
17 that effort embedded in that to bring those things
18 together. And so what we've done based on our
19 interactions and working with those is we've
20 focused on really five main kinds of efforts, if
21 you will, and that's what's helping drive the
22 progress.

23 First you talked about it somewhat with
24 this discussion about data. It's actually broader
25 than that, which is if you see some folks that are

1 out there laying in these environments that allow
2 the sharing of data, code, collaboration on
3 algorithms and developments, and that's a lesson
4 we've taken to heart.

5 We're working to have that established
6 not only for internal development to the Army, but
7 our industry partners, our research partners so
8 that we can share the data, share the algorithm,
9 really actually have that virtuous feedback, so we
10 have an AI platform is the term of art we're that
11 using at the facility.

12 The second, we've touched on this as
13 well, is our work force. We are not able to just
14 allow others to come in, but with that embedding
15 in the ecosystem we can actually leverage lots of
16 this, and so as you heard from some of the other
17 panelists here there is great talent but it's in a
18 global sense, and so how do we harness that to
19 help further the research so that then we can have
20 the appropriate folks that have access to data and
21 those other specific kinds of applications bring
22 their talents to bear.

23 So it has to be a blend of both
24 external and internal folks from our state board,
25 and to do that we've done a tiered approach

1 focusing on leadership development because again
2 think about AI in a broader sense. You have to
3 have leaders that understand it. I go back to
4 your comment earlier, sir, about how do we, you
5 know, have a discussion at a testimony hearing,
6 and do they understand the questions they're
7 asking or the answers they're getting.

8 We've addressed that head on because
9 again the Army is driven by leadership. We also
10 think about our work force in terms of the users
11 of the AI. So for them to just blindly hit a
12 button -- a lot of folks may use an app and say I
13 click on it and they say oh, it tells me to go
14 left or right. They don't understand the
15 underlying assumptions as to why it's telling you
16 to do that. So think about 400,000 trainees that
17 I'm responsible now that make informed AI users.
18 That's where we're going with that.

19 And then in the middle are the folks
20 that do that development. I mean, again it's easy
21 to get enamored with the Ph.D.s and the master
22 students that we all know help to do this
23 development, but from our standpoint just like the
24 NCOs or noncommissioned officers are the backbone
25 of the Army we've identified this role called AI

1 technicians, and they are our master gunners, if
2 you will, that will take those technological
3 advancements that our professionals develop and
4 then make it deployable and realistic and have
5 that operational relevance that we need to have
6 for its implementation, so the AI technicians are
7 really the center of gravity of where we're going.

8 What's nice about that -- I'll just go
9 a little bit deeper on that, is so we asked our
10 partners, if you will, at Carnegie Mellon how they
11 were helping industry prepare for the advent, and
12 so they had a -- I read an article that talked
13 about Microsoft, for example, is going to develop
14 15,000 machine learning engineers, and so again
15 they're finally starting to talk about scale.

16 I said how are you going about doing
17 that. So the faculty there at Carnegie Mellon
18 said we're actually reaching into the community
19 colleges, and I find that interesting that they
20 were reaching that far up into the talent supply
21 chain, if you will, to get folks that aren't
22 necessarily interested in doing that because they
23 may or may not have been exposed to it. Again
24 small town, you don't have the advantages of high
25 tech high school or secondary education, et

1 cetera, and so they give this course to those
2 community colleges for free so that they can help
3 inspire folks to do that.

4 We've taken that, leveraged it and made
5 it scalable just in a boring kind of format so
6 that we can go across the Army and touch all of
7 our soldiers, whether their reservists, active
8 duty, et cetera, and so it helps us reach in and
9 find and develop those AI technicians that we
10 really need to have. The last two things that are
11 -- I'm sorry, three things that I'll talk about is
12 the projects are absolutely essential.

13 We talk about ROI. We're working on
14 projects that are not only directly responsible
15 for our mission, but also supporting that mission.
16 So, for example, the first project that we worked
17 on came from what's known as the Joint Artificial
18 Intelligence Center up in Tadea Dema (phonetic),
19 and so they were trying to work through and
20 establish I'll say trust with our industry
21 partners as to what kinds of projects would be
22 useful, and so they asked the Army since we
23 already had spun up our team if we would help take
24 lead on that effort and so we did, it's predictive
25 maintenance.

1 And so the ability for us to take care
2 of in this case aviation assets, make sure that
3 when our soldiers take off and fly and execute
4 those missions they know maintenancewise they'll
5 return safety, and potentially even have benefits
6 for savings on the cost of operating those fleets,
7 that was also a big win for us.

8 And then the next thing I already
9 touched on a little bit with partnerships is we've
10 got a thank you for congress in terms of -- and
11 you don't want to hear that often, of giving us
12 special authorities that allow us to have these
13 flexible contracts in relationship with industry
14 partners so that we can learn as well as the
15 industry partners can develop.

16 And I think that's absolutely essential
17 in terms of the new acquisition employees that
18 have been given to the Department of Defense that
19 allow us to learn together, scale together, much
20 like you would see in industry. You don't just
21 start off as, you know, a blue chip company. It
22 takes a while to grow and develop those things, so
23 we're always exploring the partnership piece.

24 And then the last thing is we talk
25 about ethics. Every aspect of our development

1 process, there is nothing that we can think of
2 where we're not complying with the law of warfare,
3 ethical considerations, statutes, laws, et cetera.
4 It has to be embedded not only in the development,
5 but even as far back as project ideation where we
6 say what is the real purpose of what we're trying
7 to accomplish with this capability, so it really
8 ties in to do that.

9 We were the first service to actually
10 establish a chief ethics officer, so we've named
11 that role, we've developed a training pipeline so
12 that, you know, folks that -- actually can come in
13 and help us with those frameworks and understand
14 what those implications are, and so we continue to
15 extend the ethics work into the Department of
16 Defense now as a very large effort of responsible
17 AI, and that extends both the -- I'll say the
18 logical aspects of the ethics as well as the
19 empirical aspects of the underlying data and those
20 types of issues. So that'll -- that's a quick
21 summary of what I can offer to you in terms of
22 written testimony.

23 MR. FERGUSON: That's amazing. Thank
24 you. We're looking forward to reading the full
25 testimony that you put together, and certainly

1 looking forward to following up with you with
2 questions also. I know we don't -- unfortunately
3 we're just behind on our time, but this has been a
4 powerful panel. I'm blown away, but thank you.
5 Yeah, really, really impressive.

6 Thank you, all four of you, for the
7 work that you're doing in the private sector and
8 the people that you're serving, especially our
9 country, thank you, and we're looking forward to
10 following up with you with additional questions as
11 we continue with the work of the commission. We
12 are going to take a three-minute break. You were
13 promised five. You're not getting five.

14 (Laughter.)

15 MR. FERGUSON: So we're going to come
16 back. John is going to lead us through the next
17 panel, but let's reconvene in three minutes.

18 (A brief recess was taken in the
19 proceedings.)

20 MR. DELANEY: All right. So let's get
21 started. We have four panelists for this session.
22 Robert is here in person, and we've got at least
23 two of our three virtual panelists. Thanks for
24 dialing in. You've got the whole of the AI
25 commission here.

1 I'm John Delaney, cochair, and I'm
2 joined by my cochair Michael Ferguson, so we're
3 grateful for your time today. We're going to try
4 to get through this within our allocated time
5 which means wrapping up at about 2 o'clock Austin
6 time here. And so with four participants maybe if
7 we could steer you all, each of you towards 10
8 minutes maybe with five minutes of remarks and
9 then five minutes for questions from the
10 commission.

11 We've got incredible members on the
12 commission with deep expertise in the subject
13 matter, so we want to have an opportunity for you
14 all to ask questions and dig in a little deeper.
15 So with that, Bdar, I'm going to start with you.
16 Do you want to kick us off? I think you're muted.

17 MR. BOUSSABAT: Yeah, I'm ready for it.

18 MR. DELANEY: Great.

19 MR. BOUSSABAT: So first of all I would
20 like to thank you, members of the commission.
21 Thank you for the invitation. This is such an
22 important topic, and you were right to make it
23 happen today. Let's start with a quick definition
24 because it's very important to understand
25 artificial intelligence from an economic point of

1 view. I would like to share with you some
2 insights linked to artificial intelligence in
3 economies.

4 Just in a nutshell I'm the founder and
5 the president of AI Together, gathering leaders of
6 artificial intelligence. I'm also a speaker, a
7 writer and entrepreneur on artificial
8 intelligence. But in a nutshell artificial
9 intelligence is a set of algorithms pertaining to
10 automate tasks. Actually artificial intelligence
11 is not a typical tool. It's a systemic tool,
12 meaning it will have an impact in all sectors, in
13 all sectors simultaneously.

14 Consequently it will cause a drop in
15 costs and it is going to create such an important
16 value, meaning in terms of competition it's going
17 to give us the opportunity to create new
18 businesses, known businesses, but one condition is
19 very important. To make artificial intelligence
20 successful and inclusive there is a very important
21 key condition. We need to tackle the unbankness.
22 In the U.S. we have up to 25 percent of Americans
23 who are unbanked or underbanked.

24 However, artificial intelligence and
25 (unintelligible) require banked people to be fully

1 connected to the banking system because artificial
2 intelligence and (unintelligible) needs a
3 connectivity, a better connectivity. We can't
4 take advantage of artificial intelligence and
5 improve inclusion without solving this issue.

6 Moreover, even for better competition
7 or better competition firms that would like to
8 compete thanks to artificial intelligence need
9 also banked consumers. Artificial intelligence
10 companies need data to grow, and solving this
11 issue will also help develop the economy and
12 taking new market shares.

13 After solving this issue we will be
14 more likely to fully consider data as a real
15 funding for companies, and this is great news
16 because data is based on the process of unlimited
17 creation of data, and this will have a -- I mean,
18 a better -- yeah, a positive impact on competition
19 if we consider data quality, but this is a
20 technical issue and we are not going to cover that
21 today.

22 And artificial intelligence gives us
23 the opportunity to enter a new era, the connective
24 capitalism based on data and energy in general,
25 and actually connective capitalism needs consumer

1 participation to develop. Indeed, connective
2 capitalism is increasingly based on data
3 processing, and remember -- don't you remember in
4 2019 Amazon offered its premium customers
5 (unintelligible) in exchange for \$10.

6 Tech companies have realized that data
7 is more valuable than currency. If we commit to
8 strengthening economic competition the use of data
9 must be central to the strategy. There is a very
10 important element that underscores what I have
11 just said. The value of money today is
12 decreasing.

13 The \$20 bill in your pocket is
14 decreasing in value. In fact, when the interest
15 rates are low there is more money in circulation
16 so the value of money decreases. This means that
17 there is a negative correlation between the amount
18 of money in circulation and its value.

19 However, the story is different with
20 data. Its value increases -- is increasing on a
21 daily basis, and the correlation between the
22 volume of data available and its value is totally
23 positive, meaning when there's more data available
24 the value of data increases to show that in the
25 connective capitalism, in the connective era

1 driven by artificial intelligence it creates huge
2 opportunities in extracting economic competition,
3 but it will also increase the inclusion because in
4 the past in the modern capitalism, in the
5 traditional capitalism competition and inclusion
6 are opposing concepts.

7 But with artificial intelligence and
8 the use of data competition and inclusion are no
9 longer opposing concepts, meaning that with
10 artificial intelligence based on people
11 participation thanks to data we're going to
12 accelerate competition, but it will also improve
13 the economic inclusion in general.

14 And just one last remark, one last
15 thing. Each year we waste up to 50 percent of
16 data. I mean, 50 percent of data each year is not
17 used by artificial intelligence systems. It
18 become actually dark data, and if we consider data
19 as a funding you would understand actually that we
20 should create a new strategy in order to help
21 companies to better use data in order to feed the
22 artificial intelligence systems, and finally to
23 increase inclusion and to better develop the
24 economy in general. Can you hear me?

25 MR. DELANEY: Yes, yes. Do you have

1 more to add or should we open it up for questions,
2 Bdar?

3 MR. BOUSSABAT: I'm sorry?

4 MR. DELANEY: Do you have more comments
5 or can we open it up for questions?

6 MR. BOUSSABAT: No, we can go for
7 questions.

8 MR. DELANEY: You raised a lot of very
9 good issues there. So who wants to have the first
10 question for Bdar? Yes.

11 MR. KATURI: That's great conversation
12 talking about economics and data. The question
13 I'm thinking about is if you think nationally and
14 you put the constrict of data being an asset how
15 should we think about systematically building the
16 data as an asset at the national level?

17 MR. DELANEY: Good question.

18 MR. BOUSSABAT: Yeah, this is a very
19 interesting question. Actually, it's all about
20 the architecture. You know, today in the
21 financial sector in general we have built a very
22 complex system in the financial markets in general
23 and we have very difficult, complex product like
24 derivatives and so on.

25 Actually, those kind of products were

1 very difficult to build because just like an
2 obstruction and there's an increasing obstruction
3 while you create more and more complex product,
4 and actually we can do absolutely the same with
5 data by putting data in the center to a strategy
6 and to an architecture, so to build a new
7 architecture.

8 This is very important to understand
9 that now tech companies or companies in general
10 are more considering, better considering data when
11 actually the hardwares are sufficiently developed
12 to create value, to create information. So we
13 need actually a perfect collaboration between the
14 private sector and the public sector in order to
15 create a new architecture.

16 And the U.S. is -- can get this role to
17 influence people to -- I mean to push other
18 nations, other countries to do the same in order
19 to create a new international data system where we
20 can actually exchange data and also create new
21 opportunities. We did it for the financial sector
22 with very difficult product.

23 I mean, I have been working for years
24 in the financial sector as well, and I noticed
25 that we are working on such complex products and

1 we can use data in that kind of architecture. We
2 just need a perfect collaboration between the
3 public sector and the private sector, and just one
4 comment about that.

5 I don't know if you have noticed what's
6 going on in Asia. There is a new strategy, a name
7 -- a state capitalism, meaning that the most
8 important strategy we used in the Asian countries
9 in general are based on the collaboration between
10 the private sector and the public sector, and you
11 know the private sector is an offensive force, an
12 offensive force, and you need the state, the
13 public to regulate and to give the opportunity to
14 the private sector to develop, and this is the
15 right strategy if we want to make artificial
16 intelligence useful for companies but also for
17 people in general.

18 MR. DELANEY: Thank you.

19 MR. OSOBA: Can I just ask --

20 MR. DELANEY: Please, yeah.

21 MR. OSOBA: What happened to privacy,
22 is that relevant in this vision of the world?

23 MR. BOUSSABAT: Indeed privacy is a
24 very important topic. Actually, we do this thing
25 for the financial sector. You know in the

1 financial sector you have very sensitive data.
2 You have very complex data. We can't display or
3 like publish on social media or whatever, and
4 there is no to date -- I mean today there is no
5 objection to create a similar architecture and at
6 the same time let's say protecting people from any
7 disclosure.

8 I mean, it's very important to
9 understand that it's all about how we can put in
10 place a strategy between the public sector and the
11 private sector. We have the technical knowledge.
12 We have the right mindset. We just need this
13 perfect collaboration. If we -- I mean, just if
14 we consider the example, the case of China, you
15 see that this growing economy has been based on a
16 perfect collaboration between the private sector
17 and the public sector.

18 This is the new way of doing business
19 in the future. You need two forces that team up
20 in order to give to people -- well, to give them
21 the opportunity to grow, and in terms of privacy
22 we can also create new agencies, new public
23 agencies composed of, I don't know, data
24 scientists or artificial intelligence leaders to
25 monitor that kind of strategies. This is, I mean,

1 a new way of thinking. We need to refresh our
2 thought and our spirits about this issue.

3 MR. DELANEY: A few more questions for
4 Bdar before we go to our next panelist? So 50
5 percent of data goes dark?

6 MR. BOUSSABAT: Yeah, indeed.

7 MR. DELANEY: Meaning it never gets
8 used again for any purpose?

9 MR. BOUSSABAT: No, no. I mean, that's
10 kind of the -- we can't reuse it if we, for
11 example, refresh our hardwares in the companies,
12 but we need actually to help companies to increase
13 the digitalization.

14 We need to help them to understand that
15 data is more valuable than money, than currency in
16 general, and this is very important to share with
17 companies in general, and yeah, 50 percent of
18 data. I mean, it's more than the U.S. debt. I
19 mean, this is crazy.

20 MR. DELANEY: Right. Very interesting.
21 So our next panelist is Robert Armstrong, so
22 Elizabeth, we're going to go from the digital,
23 virtual world to someone in person here and then
24 come back to you in 10 minutes or so. I just want
25 to give you a sense because we're just going in

1 order with our list here. So Robert Armstrong
2 from SAP.

3 MR. ARMSTRONG: Sir --

4 MR. DELANEY: Thanks for being here.

5 MR. ARMSTRONG: Absolutely. Thanks for
6 having me. Representative Delaney and
7 Representative Ferguson and distinguished members
8 of the commission, good afternoon. My name is
9 Robert Armstrong and I am the senior manager for
10 government affairs at SAP, so -- and I cover the
11 central 17 states including obviously the state of
12 Texas, so thank you for allowing me to testify
13 today.

14 I'll try to keep this short and sweet.
15 My boss said -- my long-time boss in the
16 legislature said the only good testimony is short
17 testimony, so I'll try to keep to that. I am not
18 a technologist so I will have to read a little
19 more than I would like. I do want to say
20 congratulations to the Austin chamber. I think
21 some of them are watching virtually, but they
22 hired Susan Holt, another legislative staffer here
23 from Texas that I worked with a lot. She was
24 absolutely incredible, one of the smartest
25 staffers in the state of Texas.

1 But prior to being at SAP just so you
2 have my quick, quick background I worked at DIR
3 which is a state agency that oversees
4 cybersecurity, technology and the technology
5 procurement for the state of Texas, and I spent,
6 gosh, I mean, undergrad and throughout law school
7 my entire time and then 10 plus years in the Texas
8 capitol, which if ya'll haven't seen you need to
9 go look at, and I'm sure you'll know this but it
10 is taller than the U.S. Capitol.

11 (Laughter.)

12 UNIDENTIFIED MALE SPEAKER: Everywhere
13 in Texas, so what is not?

14 (Laughter.)

15 MR. ARMSTRONG: So welcome to Texas.
16 So who is SAP? As members of the U.S. chamber,
17 you know, we're one of the world's largest
18 enterprise software companies and we have over
19 1,000 employees. We have over 500,000 customers
20 and we're in 25 industries, sectors, in 190
21 countries worldwide.

22 For me personally, you know, in the
23 state of -- in the U.S. we have 25,000 employees
24 but we have 1300 in Texas, and our key offices are
25 in Plano and in Houston. SAP has 99 out of the

1 100 largest companies as customers; 77 percent of
2 the world's transactions revenues touches an SAP
3 system, usually through our ERP system which we're
4 known for, and about 3.7 trillion dollars in
5 digital commerce runs through our business
6 networks on an annual basis.

7 Beyond the private sector SAP supports
8 national, state and local government enterprises.
9 This includes 15,000 public sector customers, 130
10 countries which all run SAP. Now to get into AI.
11 So SAP and AI, SAP commends U.S. chamber for
12 launching the AI commission as it is an important
13 step in advancing U.S. leadership in the use of AI
14 technology.

15 SAP has made significant investments in
16 AI technology and is helping our customers deploy
17 AI solutions to recruit their products, services
18 and entire business models. SAP and EPIX
19 specifically get into things like obviously the
20 internet and cloud computing, mobile devices, the
21 emergence of AI that's transforming every sector
22 of the economy.

23 As a German-based company we have to
24 obviously deal with the European laws and we're
25 headquartered in the U.S. with a office in Philly,

1 our North American headquarters, so we're uniquely
2 positioned to contribute to the global public
3 debate on AI. We are working closely with the
4 European Commission high-level working group on AI
5 and are engaged with AI officials at the White
6 House to share our perspectives.

7 To ensure responsible development and
8 sale of AI applications, SAP was one of the first
9 companies to publicly release guiding principles
10 for AI which was in 2018 and set up external AI
11 ethics advisory panel and internal AI ethics
12 steering committee, so just on basic
13 recommendations I personally in 2019 and in 2021
14 encouraged state agency to pass laws in Texas to
15 encourage state agencies and local governments to
16 use next generation technologies.

17 Specifically 2054.601 of the Texas
18 Government Code encourages state agencies and
19 local governments to consider the use of
20 technologies such as RPA and artificial
21 intelligence obviously with the laws, you know,
22 and ordinances from local governments. We
23 recognize that absent global standards and federal
24 regulations on AI there is an interest from state
25 and local governments to regulate.

1 We believe that before local policies
2 are developed policy makers should ensure that the
3 proposed rules are in line with existing
4 regulations and that they do not lead to
5 burdensome rules that can hinder recent
6 investments and interest in AI. Before policy
7 makers move to those burdensome rules to regulate
8 AI stakeholders must have time to implement the
9 new technology and need to have flexible
10 governance as these technologies mature.

11 To ensure the responsible development
12 of AI applications and position the U.S. as a
13 global leader U.S. policy makers must embrace
14 common sense regulatory approaches that invest in
15 AI research and development, open government data,
16 and support the creation of global AI standards.

17 In conclusion, SAP believes that AI has
18 the potential to unlock boundless potential for
19 business, governments and society. Today's
20 hearing is an important part in assuring AI
21 technology is used responsibly and ethically, and
22 we commend the U.S. chamber and the members of the
23 CI commission for your efforts. We appreciate
24 your consideration of our comments and
25 recommendations, and thanks for having SAP testify

1 today.

2 MR. DELANEY: Thank you, Robert.

3 MR. ARMSTRONG: Thank you.

4 MR. DELANEY: I appreciate that. That
5 was a very good overview. Questions for Robert?

6 UNIDENTIFIED MALE SPEAKER: You
7 mentioned SAP does some work at the EU level with
8 the high level group on artificial intelligence.
9 Maybe you can offer some reflections about how
10 that process is playing out. I know as of late
11 there's been some new EU working papers, white
12 papers rather on artificial intelligence and its
13 governance talking about the need for prior
14 conformity assessments with new regulations that
15 have been going into place or existing ones like
16 GDPR. Can you maybe offer us a feel for is that a
17 model I should be considering or does it create
18 some of the burdens that you say SAP is concerned
19 with?

20 MR. ARMSTRONG: Like I said, if I
21 understand your question correctly, I would say
22 SAP is luckily, you know, a company based in the
23 EU, so we're out of Germany, so we're kind of used
24 to where we apply those regulations already. We
25 actually think it would be a benefit, you know, as

1 we're seeing data and privacy legislation taken on
2 now by five states as of yesterday, we see
3 actually that there was kind of a federal
4 framework that that would actually probably
5 benefit versus having local governments and states
6 all taking a different approach.

7 Of course, you know, something
8 reasonable in working with, you know, both higher
9 education professionals working with the private
10 sector and government professionals making sure
11 that, you know, kind of that framework is done
12 properly I think is something that SAP would
13 encourage.

14 MR. DELANEY: Other questions?

15 MR. TUCKER: How would you avoid
16 fragmentation of your AI systems if there's large
17 disparity in policies from region to region? What
18 are your thoughts on that?

19 MR. ARMSTRONG: Well, like I said, I'm
20 not a technologist. I'm just a government affairs
21 guy but, you know, I do think looking at what our
22 company did to set up the guidelines in 2018 I
23 think that is something that they -- at SAP we
24 tried to address, was to create an approach, and
25 it doesn't matter if you're in state government --

1 or if you're in a state, if you're in another
2 country, if you're all across the world, you know,
3 everybody should have an ethical world and then of
4 course a business side, confidential side, privacy
5 was brought up in the last question, so I think
6 that's why we created the 2018 guideline way
7 before any regulations came out other than GDPR of
8 course, but -- was to create hopefully a system
9 that works no matter where you are.

10 MR. DELANEY: Dr. Gillum, you had a
11 question.

12 MS. GILLUM: Some of the regulatory
13 proposals in the United States are really focused
14 on social media companies and out of that context
15 you mentioned as an enterprise company. Can you
16 explain sort of what you're advocating for, if
17 there needs to be a distinction between the AI
18 systems that are being regulated and the type of
19 appropriate regulations that might be different in
20 the enterprise context?

21 MR. ARMSTRONG: Yes, that's been
22 brought up -- that was brought up yesterday in a
23 meeting I was on. I mean, privacy and -- you
24 know, all the privacy conversations and there
25 seems to be legislation obviously on a federal

1 level and on the state level targeting more social
2 media versus enterprise software link, but for
3 sure at this point, so gosh, that point is
4 something, you know, that needs to be considered,
5 is the difference between the two.

6 But we as a company, I do know that we
7 look at both types of legislation that would
8 affect either enterprise software and/or social
9 media because there's a lot of -- well, right now
10 there's a lot of targets on social media. There's
11 a lot of unintended consequences that would affect
12 all types of technology.

13 I'm not sure if that really answers
14 your question, but I do know there is a link
15 between the two that we have to be very aware of,
16 especially us state government affairs folks who
17 are keeping track of 50 different states and 50
18 different bills that are targeting certain types
19 of technology but having a lot of unintended
20 consequences.

21 MR. DELANEY: Well, great. Thank you,
22 Robert, thank you for being a part of this today.
23 I appreciate it very much.

24 MR. ARMSTRONG: Absolutely.

25 MR. DELANEY: And thanks for your

1 participation.

2 MR. ARMSTRONG: Thank you.

3 MR. DELANEY: Elizabeth.

4 MS. ADAMS: Hello. Good afternoon.

5 Can you hear me?

6 MR. DELANEY: Yes, we can, very well.

7 Thank you for your patience. You're up next, so
8 if you wouldn't mind beginning your testimony and
9 then we'll have some questions for you.

10 MS. ADAMS: Sure, thank you. So hello.
11 I am Elizabeth M. Adams, and I bring you greetings
12 from Minneapolis, Minnesota. I would like to
13 first thank the commission for the opportunity to
14 share my perspectives today.

15 So I've worked as a technologist for
16 over 20 years directing large scale efforts for
17 Fortune 500 companies and government
18 organizations. I'm currently an affiliate fellow
19 at Stanford University's Institute for Human
20 Center AI, and I'm also the chief ethics and
21 culture officer for Women AI, a global community
22 of over 10,000 women.

23 MR. DELANEY: Wow.

24 MS. ADAMS: In addition, I'm working on
25 my executive doctorate of business administration

1 at Pepperdine with a research focus on leadership
2 of responsible AI. But for the past five years
3 I've focused primarily in the AI ethics space, and
4 I have expertise and depth working across civil
5 society, government, industry and academia, but
6 today I'm offering testimony as a private citizen
7 and as the CEO and founder of a small woman-owned
8 business.

9 I am the community. I consider myself
10 brilliant and bright and credentialed. However, I
11 am having trouble finding funding to explore
12 AI-powered solutions that in my view could put
13 vital data in the hands of policy makers and
14 leaders across our nation with the touch of a
15 finger. So I'm not a unicorn by any stretch of
16 the imagination. Others such as myself have
17 connections with industry, government, academia
18 and civil society but are facing enormous hurdles
19 finding a place to explore AI innovation.

20 Whether it's jumping through hoops to
21 navigate various diversity and supplier
22 initiatives offered by Fortune 500 companies with
23 different requirements or being told to pitch your
24 ideas to venture capitalists or to apply for a
25 slew of accelerators or incubator programs, or

1 spending countless hours navigating the SBIR site,
2 the Small Business Innovation Research site, to
3 comb through RFPs to hopefully find a match for a
4 project that matches my technology interests, only
5 to find my peers and I are still looking for
6 solutions to bootstrap our ideas.

7 So how am I supposed to believe that
8 there is a place for me in our country where I can
9 participate in the AI ecosystem and participate in
10 competitiveness, inclusion and innovation if at
11 every turn I'm met with more challenges than
12 solutions? When my colleagues and I get through
13 the door and we're met with gatekeepers we hear
14 well, that's not what we're doing here, that's not
15 our focus, or we have more people than spaces in
16 our program, come back next year.

17 These are all common phrases, and how
18 is it supposed to motivate a community of
19 brilliant minds, brilliant technologists,
20 brilliant innovators, and how can I lead efforts
21 to build community trust if I am the community and
22 I and we don't see that these opportunities for AI
23 exploration exist for us?

24 What I'd like to see is an organization
25 like one I've managed many, many years ago for a

1 government agency. I was the head of a systems
2 integration lab with over 200 technologists. It
3 was a place where we could contribute to the
4 development of technology-based real world
5 solutions, and it was my responsibility as the
6 leader to ensure that new technologies introduced
7 into our environment receive the resources and
8 tools needed to further develop and integrate into
9 our ecosystem.

10 The program benefitted a lot of small
11 business owners, but they didn't look like me or
12 have my lengthy experience. They received
13 assistance, but it came through channels that were
14 never really clear to me, and as a scholared
15 practitioner I currently spend my time working
16 with CEOs and executives to increase stakeholder
17 participation and broaden stakeholder involvement
18 in the development and design of AI-enabled
19 systems by adopting responsible leadership and
20 tech inclusion.

21 While I enjoy this role immensely, I
22 often ask myself if I spend so many hours
23 advocating for tech inclusion when do I get to
24 spend time working on innovation, and if I spend
25 so many hours navigating programs for small

1 businesses with multiple requirements and multiple
2 deadlines when do I get to spend time working on
3 innovation.

4 Many of us don't have anywhere to turn
5 to help drive innovation and provide the best
6 technologies for the world, so here are the most
7 pressing issues I've observed in four areas as
8 well as potential solutions. For civil society we
9 need opportunities for exploration and training
10 and a reduction in hurdles for success. With the
11 government training and videos to help policy
12 makers and staff understand the power of AI and
13 the capabilities of AI and why it may require
14 oversight and regulation. I've spent a lot of
15 time educating policy makers on the same topic.

16 And in industry partnerships that
17 include broader stakeholder involvement and not
18 othering, such as considering communities of color
19 and vulnerable populations as part of a diversity
20 and inclusion project, but seeing civil society
21 members as equals and essential in terms of
22 knowledge sharing and ability. We need funding to
23 allow technologists like me to experiment and
24 break things, putting real world scenarios to the
25 test.

1 And academia, more research ties with
2 industry and government including scholarships for
3 business doctoral degrees with a focus on
4 technology leadership for those of us who wish to
5 use our research to solve business problems, to
6 solve government problems and return back to
7 community with those solutions.

8 So I'll continue to advocate for
9 individuals who haven't had a voice in the
10 process, but it's past time to change the myth
11 that only those who look like Silicon Valley CEOs
12 are capable of developing world class, life
13 saving, life changing and revolutionary
14 technology.

15 And I'll add this as I close. It feels
16 as if business owners are going at it alone with
17 the wrong type of competition being established,
18 meaning competing for finite resources, instead of
19 a competition set by how we can collectively and
20 quickly get a product or market -- or excuse me, a
21 product or service out into the marketplace.

22 And as I close I want to express my
23 gratitude to this commission for this opportunity
24 and for making accommodations for me to deliver my
25 testimony from here in Minnesota. I sincerely

1 hope that something I've said will contribute to a
2 more equal and fair outcome for small business
3 owners like myself who have creative ideas for the
4 use and development of technology.

5 Remove the obstacles, provide room for
6 discovery, refine competition measured by
7 collaboration and sustainable support, and watch a
8 new generation of technology arrive that is best
9 for the world and best in the world. Thank you.

10 MR. DELANEY: Well, thank you,
11 Elizabeth, for that very compelling testimony and
12 for highlighting an issue that we have not
13 explored yet, so I appreciate that very much. So
14 I'm going to open it up for the commission for
15 questions for Elizabeth.

16 MS. ADAMS: If there are no questions
17 I'm okay with that.

18 MR. DELANEY: Oh, no, there's
19 questions.

20 MS. ADAMS: Oh.

21 MR. DELANEY: Okay. You go first, Dr.
22 Gillum. Did you have your hand up? I'm sorry.

23 MS. GILLUM: Hi, Elizabeth. Good to
24 see you. As far as targeting investments, you
25 know, in research and innovation how -- do you

1 have any specific recommendations for how that can
2 best be done and really sort of get out of the
3 typical loopholes of Silicon Valley investments?

4 MS. ADAMS: Yeah, I mentioned it
5 briefly in my testimony. I really do believe in
6 the power of labs. I really do believe in
7 investing in places where community leaders,
8 technology leaders have a place to go to test out
9 their concepts without going at it alone.

10 I speak with a lot of small business
11 owners who are working through accelerators or
12 trying to connect through SBIR programs like I
13 mentioned, but it still feels like an individual
14 kind of journey, and that's what I loved about
15 being in this lab environment which is where all
16 of these technology providers could benefit from
17 each other's best practices.

18 And while there might have been a
19 little bit of competition, the competition really
20 was how can we get the best product out the door
21 and into the marketplace as quickly as possible
22 and not really competing for, like I said, finite
23 resources.

24 MR. DELANEY: Great. Well, thank you
25 very much. Any other questions for Elizabeth, or

1 if not we'll move on to -- is Swathi here with us?

2 UNIDENTIFIED MALE SPEAKER: She was on
3 here a few seconds ago.

4 MR. DELANEY: Whoops. Did we lose
5 Elizabeth? Oh, there you are. Sorry.

6 MS. ADAMS: I'm still here. I thought
7 you were moving on.

8 MR. DELANEY: Well, yeah, we're trying
9 to find our fourth panelist in the ether out
10 there, so -- to make sure -- we have about 10
11 minutes left and we wanted to give her -- make
12 sure she has her allocated time, but if we --

13 MS. ADAMS: I do hope you get to hear
14 from Swathi. I know her. She is a colleague --

15 MR. DELANEY: Great.

16 MS. ADAMS: And yeah, she is an
17 excellent technologist and CTO.

18 MR. DELANEY: Well, we can keep talking
19 to you while we wait. How's that?

20 MS. ADAMS: Sure, I'd love that.

21 MR. DELANEY: So you basically framed a
22 situation where you -- at least in part of your
23 remarks you talked about how there's programs out
24 there that perhaps were well intentioned to
25 address this problem, but they've become very

1 cumbersome to access. Can you expand on that a
2 little bit?

3 MS. ADAMS: Sure. Let's talk first
4 about diversity in supplier programs. So here in
5 Minnesota we have lots of big companies. We have
6 3M, we have Best Buy, we have General Mills, we
7 have Target, we have a number of others. Each one
8 of those diversity and supplier programs have
9 their own unique requirements to get through.

10 And there are also people on the other
11 end who may not understand the power of technology
12 or may not understand how communities,
13 specifically those that represent communities of
14 color or vulnerable populations, really do have a
15 different way of looking at technology solutions,
16 and so that's been part of my particular
17 challenge, is finding and navigating a way to get
18 into some of these organizations.

19 We think about the accelerator programs
20 again. Many of them do help some folks,
21 specifically business owners that I know that have
22 products, but when you have a service or maybe you
23 want to pilot some sort of a technology again
24 there are gatekeepers or there are people that are
25 part of that accelerator program that are trying

1 to sell their services, so they might come in and
2 be a guide for the 10 or 12 weeks and then you
3 have to kind of pay them, whether it's for
4 marketing or something else.

5 And so you still end up trying to
6 figure out how to bootstrap your idea, how to kind
7 of get your idea off the ground, and so those are
8 just a few of the challenges, and then I'll add
9 one more. On the SBIR website, which I was really
10 excited about and actually had hoped to partner
11 with someone who could help me navigate it, what I
12 realized is that there are RFPs or projects out
13 there, and if your particular technology does not
14 fit within that -- so most of what I do is to help
15 leaders.

16 Most of what I do is to help executives
17 and policy makers kind of understand the tenants
18 of responsible AI. There really isn't a place for
19 that, and so I'm having personal challenges with
20 trying to navigate the best way. Does that make
21 sense?

22 MR. DELANEY: It does. It does. Thank
23 you for that.

24 MS. ADAMS: Sure.

25 MR. DELANEY: Any other questions? We

1 have a couple of minutes. Any other questions for
2 Elizabeth or --

3 MR. THEIRER: I guess I'll follow up on
4 that, just a quick follow up on that question.
5 You specifically mentioned the sort of burdens
6 associated with SBIR program and similar types of
7 efforts. Maybe you could elaborate. I'm not sure
8 if everyone knows what SBIR is, but you might want
9 to mention that and how you think that could work
10 better.

11 MS. ADAMS: Sure. It's Small Business
12 Innovation Research program, which I do believe is
13 spectacular, don't get me wrong, but going out to
14 the website there's a lot of information. So
15 remember I'm a small business owner, I'm trying to
16 figure out how to get funding for my idea. I've
17 already tried to navigate other avenues, and I
18 come to the SBIR, which I think is a fascinating
19 effort, but I still -- there's the onus on me to
20 try and figure out which particular AI technology
21 or responsible technology my particular idea fits
22 in.

23 I also need to find someone who can
24 help me navigate through that process, and I do
25 believe that there are people that do that, and so

1 it's this retrofitting. There really isn't a
2 place that allows us to explore and kind of break
3 things. It's all kind of already figured out for
4 you and you have to fit within that confine. I
5 hope that makes sense.

6 MR. THEIRER: Yes, it does. Thank you.

7 MS. ADAMS: But I guess what I'll say
8 is that I think we're missing out on the
9 opportunity for many people with great ideas who
10 could possibly, like I said, produce technology
11 that's best in the world and best for the world,
12 but we have to kind of fit within these confines,
13 and I think that there's just an opportunity to
14 allow for more exploration while you are growing
15 and while you are collaborating with other
16 business owners and leveraging the resources of a
17 government industry and academia as well.

18 MR. DELANEY: Great. Well, again thank
19 you, Elizabeth.

20 MS. ADAMS: Thank you.

21 MR. DELANEY: Thank you, Robert. I
22 think we'll finish up this session a couple of
23 minutes early. I don't think we'll have a protest
24 over that.

25 MR. FERGUSON: We'll get back on

1 schedule.

2 MR. DELANEY: Right. That's right.
3 Okay. Let's take a break and resume at 2 o'clock
4 here. Thank you.

5 (A brief recess was taken in the
6 proceedings.)

7 MR. DELANEY: All right. Let's resume
8 here. All right. So we'll start our next time
9 block here. We have four panelists which we
10 appreciate very much. Thank you for being here.
11 I think we've got two here now and two coming.
12 I don't think we have any virtual this time, do
13 we?

14 MR. FERGUSON: No. There's probably
15 only three on this panel. I think David is not
16 coming.

17 MR. DELANEY: David is not coming.
18 Okay. So we have three. So why don't we plan on,
19 you know, spending 10 to 15 minutes each, maybe
20 spend half your time on testimony and then give us
21 an opportunity to ask some questions because we've
22 got a wonderful commission here, present company
23 excluded, who will undoubtedly have probing and
24 smart questions to ask, so we can keep this
25 informal. Charlie, I understand you have a time

1 deadline so can we start with you?

2 MR. BURGOYNE: I appreciate that.

3 MR. DELANEY: Yeah, sure.

4 MR. BURGOYNE: I certainly have 15
5 minutes to chat through. Thank you very much for
6 having us come in today. My name is Charlie
7 Burgoyne. I'm the founder of a company in town
8 called Valkyrie. In short we -- you can think of
9 us as a modern day Bell Labs, top physicists,
10 mathematicians, statisticians combined into one
11 decent lab to solve problems for services,
12 engagements, and then we also have our own
13 (inaudible) investment views.

14 So my personal training starting as a
15 teenager working at NASA's Goddard Space Flight
16 Center (inaudible) as a physicist evolved into
17 being an operational CI. Basically I was an
18 operative for a number of years for an
19 intelligence group, and since then went into the
20 private sector developing machine learning teams,
21 labs for different organizations, Broad Design,
22 Rosetta Stone, Air Force research labs before
23 starting Valkyrie.

24 In short this is actually a really
25 fascinating topic for us if you think about it

1 being mathematicians in the space of machine
2 learning and artificial intelligence because of
3 the unflinchingly rigid dichotomy between
4 innovation and protection of privacy. This is a
5 problem we deal with regularly. We've got clients
6 on the commercial side who are constantly thinking
7 about a new feature that should be augmented into
8 the digital services and then defense clients and
9 intelligence clients who are constantly trying to
10 do the exact opposite.

11 So where we -- where our philosophy
12 really resides is balancing innovation for the
13 sake of growth with as much governance and
14 altruism guiding that growth as possible while
15 still maintaining a high fidelity on obviously the
16 socio impact. I have a tactical example that
17 hopefully will resonate. A couple of years ago
18 Fitbit became a thing, and now a lot of us are
19 tracking our steps throughout the day.

20 Now, the data itself living in its own
21 unobstructed state is pretty noninvasive, like how
22 many steps would you take during the day, probably
23 not that interesting, but it's been proven time
24 and time again that Fitbit's relatively adept team
25 of scientists are able to comingle those data

1 that are auxiliary sets that are able to give them
2 insights that are extremely invasive.

3 For example, we worked with an
4 insurance company to provide Fitbits for the sake
5 of the health of a number of their customers, and
6 they were able to show correlations between the
7 gait to somebody's steps and things like whether
8 or not they were obese, likely to be in need of a
9 knee replacement, whether or not they suffer from
10 pulmonary disorders.

11 This is actually a really fascinating
12 state for this data to be in, right. Unadorned it
13 is really innocuous, but when you suddenly add
14 additional sets all of a sudden the problem gets
15 much more complicated. In the first state before
16 we had commingled these data and you see data --
17 you see a company that's developing features for
18 the health of their customers and their populous.

19 Suddenly when you start commingling it
20 with other things now you see real threats to
21 national security and consumer protection even in
22 ways that further exacerbate certain (inaudible)
23 qualities and challenges that exist for a lot of
24 people. This is a real problem, but at the same
25 time you can't overreact to that and stipulate the

1 data must exist in a singular space without any
2 kind of commingling with other sets because that's
3 exactly how Fitbit develops their features.

4 Fitbit depends on the ability to -- and
5 Fitbit exists really only as a thought experiment
6 here, it's not actual testimony around the nature
7 of Fitbit's business model, but it's very
8 emblematic the way folks in the digital services
9 space think about data. Fitbit's business model
10 depends on them being able to develop features to
11 outpace competitors like Apple, Garmin, and all
12 sorts of -- a whole plethora of different folks,
13 and those features need to be able to resonate
14 with the customers for whom they serve.

15 So it may be very possible that you'd
16 like to know if you're going to be diabetic in 15
17 years based on the cadence of your steps, it's
18 very likely a lot of consumers would be very
19 interested in that, but the problem is that they
20 can't make that -- they can't determine that for
21 you without all of a sudden entering into the laws
22 of data governance restrictions. They do not all
23 of a sudden want to be governed by HIPAA or
24 different types of protection acts while at the
25 same time being really timid about how to push

1 innovation.

2 We see globally, and we spend a lot of
3 time involved in the supporting of defense and
4 intelligence space, we see globally that the
5 relationship the nation stake has with their data
6 and innovation and AI specifically to be very
7 emblematic of more macrocultural components of
8 their governance.

9 For example, in China the idea of the
10 right to privacy is not respected or thought of
11 nearly the same way as it is in the United States.
12 And for that reason gargantuan amounts of very
13 finite, very invasive data is collected on behalf
14 of features that are developed for products.
15 There are many cell phone providers, for example,
16 who actually just give their phones away for free
17 on the stipulation that all assets on the phone,
18 all sensors on the phone are turned on at all
19 times.

20 On the other side of the pendulum
21 western Europe has ostensibly decided that
22 innovation is not worth the risk to privacy.
23 They've developed a number of different types of
24 legislative acts including things like GDPR which
25 on the table sounded really good. It's to protect

1 a bunch of consumers from having their data used
2 in a way that they did not participate at the
3 outset.

4 What it actually did was completely
5 spur all -- it totally destroyed the innovative
6 groups of people who were pushing for different
7 ways of utilizing machine learning and data in
8 novel approaches, i.e. it destroys Fitbit's
9 version 2.0 and version 3.0 when you're unable to
10 use data in a way that it wasn't explicitly stated
11 at the outset, and it accidentally created so much
12 white noise when putting people through different
13 types of cookie settings and acceptances that now
14 we're totally immune to any western Europe-based
15 website and the protections they're trying to
16 procure.

17 So it's a real pickle. We have -- we
18 don't want to foster -- we don't want to spur the
19 innovation domestically at the expense of privacy,
20 but we also need to be able to remain competitive
21 against adversaries who don't operate under the
22 same character calculus that we do, the principle
23 of calculus that we do. So where Valkyrie sits is
24 we think -- we believe strongly that advocacy at
25 the federal level for intelligent regulations is

1 probably the appropriate step to take.

2 We actively work with folks on the hill
3 as well as the executive branch to try and
4 identify different ways in which the proliferation
5 of this field which is unequivocally going to be
6 the basis for all types of engagements that are
7 non-kinetic for the United States moving forward,
8 how do we retain dominance especially against
9 adversaries, like one being China that can throw
10 large numbers of people at the problem and
11 Russians who because of very interesting nuances
12 that I would be happy to discuss later on over,
13 you know, an arm chair with a bottle of scotch
14 talks about why they are fundamentally better at
15 this than we are.

16 So yes, with that I'm happy to dive
17 into any of these things with more questions or
18 answer, field any of your more generic questions
19 about our perspective.

20 MR. DELANEY: Yeah, the one thing I
21 would say is I'm certain there will be a lot of
22 questions for you right now, Charlie. So Adam, do
23 you want to start us off?

24 MR. THEIRER: Yeah, I'd love to. Thank
25 you for your testimony. It was really excellent.

1 You're stressing there's this fundamental tension
2 between this conflict division we have between a
3 model like China's and a model like the EU's. You
4 know, we don't want to be either of those, but
5 finding some sort of a sensible middle ground or
6 intelligent regulation is a challenge for all of
7 us.

8 Towards that end there have been a huge
9 number of frameworks set forth in recent years by
10 professional trade associations, academics,
11 business groups, the chamber has a pretty good
12 model of best principles. I don't know if you've
13 spent time looking into these sort of best
14 practices or guidance documents, or IEEE for
15 example has one called Ethically Aligned Design
16 which was 230 something pages of recommendations,
17 but it's just one of many now.

18 And I'm wondering are those frameworks
19 a helpful sort of hybrid model between those two
20 poles, could they be the basis of intelligent
21 regulation or should they remain a form of what
22 others have called soft law, sort of like informal
23 operational principles for AI governance?

24 MR. BURGOYNE: My personal perspective
25 is that it's the latter case, so these are good

1 operational guidelines as opposed to the basis for
2 future regulation. My thought on that is because
3 it is -- is that it's very easy to balance the
4 pendulum at the high level in a vacuum almost as
5 an altruistic motivation, but when you actually
6 start digging in tactically to what the IEEE
7 standard means it does unintentionally prohibit a
8 number of different types of innovations that
9 we're going to be dependant on.

10 So I think -- you know, I'm a big
11 believer in the value of a truly free and open
12 market with some degree of governance of the
13 periphery, and I think that really by just the
14 articulation of how experiments are to conducted,
15 not necessarily the regulation of those, like in
16 the market side who should win or loss based on
17 those practices is probably the better approach.

18 You know, in short I think that it's
19 probably a more appropriate use of our time to be
20 focusing on the guidelines and then encouraging
21 direct transparency even if those guidelines
22 aren't capable of that. I have -- a good friend
23 of mine is a Navy pilot and they always joke that
24 the Air Force has a manual this large for what
25 they're allowed to do.

1 The Navy has a manual this large about
2 what they're not allowed to do, right, and that's
3 probably why the Navy has the best pilots in the
4 world. I would contend that we would be much
5 better off just outlining a small handful of
6 guidelines and things that we are not allowed to
7 do, in other words things it's harder for us to do
8 because of our competitive edge.

9 MR. DELANEY: Do you think about
10 privacy differently, because I think about privacy
11 around expectations and understanding, right,
12 people have certain expectations, are they
13 reasonable or not, and how much understanding do
14 they have in terms of what they're engaging in,
15 and it seems to me there's a difference between
16 how privacy relates to adults and children. How
17 do you think about that?

18 MR. BURGOYNE: I think we happened to
19 just have survived a -- over the last 24 months a
20 monumental shift in the idea of privacy, a
21 societal control-alt-delete, the ramifications of
22 which we aren't going to fully appreciate for
23 quite a while.

24 That is to say that leading up to the
25 pandemic there was already bifurcation mentalities

1 around privacy between I would say the Millennials
2 and Gen -- some refer to the latter half of the
3 Gen Xers as Gen Zs, and then the first half of Gen
4 Xers all the way through the numbers beyond. That
5 relationship with privacy fundamentally shifted
6 because of the exposure I think to digital
7 capabilities.

8 And now individuals are very, very
9 comfortable in exposing all sorts of -- you know,
10 I would say folks that are, you know, 50 and
11 younger right now are very comfortable exposing
12 immense amounts of extremely -- what we would
13 traditionally consider extremely private data on
14 behalf of services, and that is a transaction that
15 was at first not articulated directly.

16 Companies like Alphabet exploited the
17 fact that -- and hid the fact that really you were
18 exposing data for the sake of transactions and
19 advertisements, but even now that it's been
20 exposed and people are very comfortable with that,
21 they don't mind.

22 TikTok is a really great example, the
23 same application they have as YouTube, the way
24 their business model shifts to be explicitly tied
25 to your relationship with ads, even going as far

1 as directly asking you about your relationship
2 with the advertisements, so they're based off of
3 your very private data.

4 The other thing that happened was that
5 the -- to pair it up the pandemic also served as a
6 major catalyst for us to change our relationship
7 with digital services in general. If you had told
8 me three years ago that we would be having regular
9 doctors visits digitally, that I would be
10 performing the plurality of my commerce digitally,
11 even going as far as not interacting with my
12 grocery store directly anymore I'd say I thought
13 you were crazy, but the reality is that while we
14 will bounce back on a lot of those behaviors to
15 some degree that it's hard to put that to a model.

16 MR. DELANEY: I think what happened is
17 it accelerated this.

18 MR. BURGOYNE: I think so, a major
19 catalyst, yeah.

20 MR. DELANEY: But you don't -- what I
21 was really getting at, children who are engaging
22 with technology, do you think that there's a
23 different set of standards around privacy for
24 them?

25 MR. BURGOYNE: I think privacy is not

1 an inherent -- it is not inherently appreciated.
2 It has to be instilled, much like many of the
3 other things that we indulge in. So if the
4 culture around privacy is shifting the parent
5 culture --

6 MR. DELANEY: Right, it's going to
7 shift with the kids.

8 MR. BURGOYNE: It's going to shift to
9 the children to further exacerbate some of the
10 issues that we've seen with that lack of
11 appreciation of privacy.

12 MR. OSOBA: So can I?

13 MR. DELANEY: Yes, sir.

14 MR. OSOBA: So less a question and more
15 of a comment, and maybe there's a question in
16 here. So I really appreciate your discussion of
17 the cultural dependence of people, of how culture
18 determines technology evolution in different
19 countries like EU versus China in terms of
20 privacy.

21 I guess I'm curious, maybe there's a
22 way of reframing the tension between innovation
23 regulation that -- as you put it. Like when I
24 think about GDPR I see the burden it put on
25 companies, the amount of money they're spending to

1 comply with GDPR, but I also see them as fostering
2 an ecosystem that got researchers to thinking more
3 carefully about what it means to have explainable
4 models.

5 Like before GDPR there was a
6 causational interpretability. GDPR asks sort of
7 without requiring interpretability and all of a
8 sudden you have this wellspring of research around
9 things we care about, we want to make our models
10 interpretable, so I don't necessarily see that
11 that regulation was hampering innovation in the
12 way you brought it across.

13 So I'm thinking as long as the culture
14 cares about, for example, privacy explainability,
15 you know, regulation can sort of make that -- can
16 improve our ability to address that cultural
17 requirement, and that's the primary -- I guess I'm
18 wondering how rigid you think that tension between
19 innovation and regulation is.

20 MR. BURGOYNE: Ostensibly I think we
21 can assume that interpretability is actually an
22 altruism that we should be pursuing. The majority
23 -- I wouldn't say a majority. A good selection of
24 the models that we depend on right now to be
25 competitive against our peers and their peers are

1 dependent entirely on deep neural networks which
2 have no interpretability.

3 The question is do we want to be able
4 to further differentiate our industries by giving
5 them advantages being able to have R-squares that
6 are three points higher than the traditional
7 R-canonical model that doesn't have -- that has
8 explicit interpretability, or do we want to be
9 able -- or do we want to pursue an altruism that
10 may actually not have any desired outputs at the
11 outset.

12 Really the majority of -- I sit and
13 eat, sleep and breath this, and I have since I was
14 a teenager. The majority of the biases that we --
15 that are introduced that either perpetuate or
16 dismantle some of the challenges that we're trying
17 to address with GDPR are introducing the biases of
18 the data themselves, not interpretability
19 necessarily of the models. That's a major -- in
20 my mind it's a major component for GDPR that was
21 missed, not focusing is that -- on the
22 introduction of those biases before it was brought
23 in.

24 MR. OSOBA: How would that -- oh,
25 sorry.

1 MR. DELANEY: Keep going. We've got --
2 I think, Charles, you've got like two more minutes
3 I understand, so you can go ahead.

4 MR. OSOBA: I mean, like how would you
5 prefer GDPR to address the question of bias? Like
6 I assume the data is mostly socially generic and
7 prepoisoned with respect to race.

8 MR. BURGOYNE: There's a great example
9 from our own portfolio. We worked with Mercedes
10 Benz a number of years ago putting in an effort
11 they have for public transportation to be
12 democratized, more freely in the city of Portland.
13 They gave us data on which routes were utilized by
14 buses and trains, and they asked us to come back
15 with ways we could optimize the locations of
16 people to be picked up and to serve the
17 communities.

18 Now, the models we developed had
19 proficiency in both the canonical approaches and
20 the deep learning -- the deep neural that was the
21 chart, you know, that was not attributable. They
22 both had pretty strong performance, slightly
23 better in the deep learning network, but what made
24 a much bigger difference is when we realized that
25 they only developed an iOS app.

1 Anybody that's spent a long time in the
2 city, especially with the underserved communities
3 that don't have access to private transportation,
4 would know that they're not all wondering around
5 with iPhones. That's actually something that
6 should have -- like with the phones was maybe
7 missed.

8 So if we were to account for the
9 discrepancies between the services and the biases
10 that were perpetuated by the tools that Mercedes
11 had us come in and evaluate unequivocally the
12 overwhelming majority of the issues that were
13 generated from that were from the biases of data
14 coming, not Android and iOS itself.

15 MR. OSOBA: Is that a concern that's
16 addressable through regulation or just having --
17 making sure that people develop impactually,
18 developing with the right intention, like it's not
19 something you can regulate away, right?

20 MR. BURGOYNE: You really can't
21 regulate it, especially because it's so domain.
22 It's not even sector dependent, subsector
23 dependent. It's maybe even department
24 dependent-ish.

25 The problem is that fundamentally we do

1 not develop systems, models on capabilities where
2 the people who are developing the models and
3 thinking about those problems are paired up and
4 braided to people who have collected this data.
5 That fundamental disconnection creates some of
6 these vast unintentional biases. Nobody at
7 Mercedes Benz said we're going to try and
8 disenfranchise anybody.

9 MR. OSOBA: Yeah.

10 MR. BURGOYNE: But the person who's
11 developing the app, the collection of data, the
12 people who bring the data into curation, the
13 people who are developing the models are all
14 sitting in different spaces, so we have to think
15 about having individuals who can privately -- be
16 privately regulated by the companies themselves,
17 when you think of it ostensibly act as good
18 stewards of this data as we traverse through this.

19 That's probably the only way we can
20 really address the problem, and there are several
21 ways do that, too. I mean, that's the beautiful
22 thing --

23 MR. OSOBA: Yeah, yeah.

24 MR. BURGOYNE: -- about the market.

25 Mercedes Benz wants to do the right thing both

1 from an altruism standpoint and from a capitalist
2 standpoint.

3 MR. OSOBA: A follow-up question,
4 what's -- have you -- what's your best example of
5 that pairing of knowledgeable -- domain
6 knowledgeable stakeholders and developers? Have
7 you seen examples where that worked really well,
8 and is there a model that you can maybe sell or
9 something like that?

10 MR. BURGOYNE: That's a good question.
11 Years ago I worked for the United Nations on a
12 health data exchange platform to basically create
13 a tool where refugee camps could catalog and track
14 different types of ailments that were spreading
15 throughout the space and the availability of
16 resources.

17 This singular dashboard was designed in
18 a very novel approach. I'm not a designer but I
19 was working closely with the design team. It was
20 designed such that there was a single interaction
21 model for doctors, for the patients, for the
22 administrators of the refugee camp, and then also
23 the medium, so this was supporting operations that
24 were going on in Syria, and then later we realized
25 that that material for (inaudible) had gone.

1 I actually -- I think that, you know,
2 creating a degree of transparency not only of the
3 lobby itself but how those data are being
4 interpreted by different factions within the same
5 body, that's a very powerful tool in trying to
6 remediate some of these issues.

7 MR. DELANEY: Thank you, Charlie.

8 MR. BURGOYNE: It's my pleasure.

9 MR. DELANEY: Okay. Katharine, thank
10 you so much for joining us.

11 MS. MCADEN: I'm not sure how you
12 follow that, but I will do my best. Just be
13 patient, I have not been studying this since I was
14 young.

15 MR. DELANEY: Well, you are from
16 Google, after all.

17 MS. MCADEN: I am from Google, though.
18 I represent a lot of people that have been
19 studying this since they were teenagers.

20 MR. DELANEY: Yes. Thank you for being
21 us with.

22 MS. MCADEN: Thank you. Distinguished
23 commissioners, thank you for allowing Google to
24 participate in this important discussion. We look
25 forward to supporting the work of the commission

1 and welcome an opportunity to share our learnings
2 with public servants working on AI governance and
3 oversight in the public sector.

4 As background I support Google's public
5 policy in the southern United States based in
6 Texas. We're proud to employ over 2,000 Googlers
7 in our growing Austin, Houston, Dallas offices and
8 our data center in Midlothian. Our corporate
9 engineering, global recruiting, cloud and YouTube
10 trust and safety teams are proud to call Texas our
11 home state.

12 Google seeks to use science and
13 technology to significantly improve the lives of
14 people around the world. In Texas and across the
15 globe AI has significant potential to help and
16 solve challenging problems, including by advancing
17 medicine, understanding language, and fueling
18 scientific discovery.

19 Google uses AI across a number of
20 products and services including search to
21 understand search queries obviously, translate for
22 unsecure translations and improved translation
23 accuracy, PlaceWare to assist customers in app
24 discovery, Gmail and our smart reply and spam
25 filtering functions and cloud to help us run a

1 more efficient and sustainable data centers,
2 provide app development without coding and
3 automate document processing, even in photos
4 through image search, suggested sharing and
5 Colorcom that uses AI to detect the subject of a
6 photo and leave them in color while changing the
7 background to black and white.

8 To realize AI's full potential it's
9 critical that AI is used and developed
10 responsibly. Alongside industry, academias, civil
11 society and others policy makers play a critical
12 role in providing a balanced fact-based analyses
13 of the opportunities and challenges presented by
14 AI reflecting views and costs to first disciplines
15 perspectives and (inaudible).

16 Google aspires to create technologies
17 that solve the important problems and help people
18 in their everyday lives. We're optimistic about
19 the incredible potential for AI and other advanced
20 technologies to empower people and while we
21 benefit current and future generations. We
22 believe that these technologies promote innovation
23 and further our mission to organize the world's
24 information.

25 We -- here's where ya'll are

1 interested. We recognize that these same
2 technologies also raise important challenges that
3 we need to address clearly, thoughtfully and
4 affirmatively. To that end we've established
5 principles in 2018 that guide Google AI
6 applications, best practices to share our work
7 with communities outside of Google, and programs
8 to operationalize our efforts.

9 Our AI principles reflect our
10 commitment to develop technology responsibly and
11 establish specific application areas that we will
12 not pursue. Our recently released AI transparency
13 report outlines many of our internal
14 considerations. You can reference our principles
15 and the transparency report at ai.google.

16 At Google a central team is dedicated
17 to putting our AI principles into practice. These
18 teams review new and AI advancing technologies
19 before launch working with internal domain experts
20 and machine learning fairness, securing privacy,
21 human rights and the social sciences and for
22 culture context Google's own employee resource
23 groups. We believe these principles are the right
24 foundation for our company and the future
25 development of AI.

1 We acknowledge that this area is
2 dynamic and evolving as alluded, and we recognize
3 that our approach with -- and we recognize -- I
4 lost my place. It happens. We acknowledge that
5 this area is dynamic and evolving, and we will
6 approach our work with humility and a commitment
7 to internal and external engagements and a
8 willingness to adapt our approach as we learn over
9 time.

10 There's also significant opportunity
11 for government engagement and promoting
12 responsible AI growth. Indeed, AI can and has
13 helped government services work better. Whether
14 it's administrating unemployment benefits more
15 efficiently or providing communities with
16 authoritative information about COVID-19 vaccines,
17 these practical applications of AI ease roadwork
18 and deliver better outcomes for the public at
19 large.

20 AI can support agencies by processing
21 paperwork, digitizing claims requests and
22 automating rogue tasks such as reviewing
23 applications allowing state agencies to operate
24 more efficiently and cost effectively. AI can
25 also help create interactive chat box and call

1 centers to free up civil servants time and
2 allowing constituents to get quick answers to
3 common questions and then connect customers with a
4 human agent for more sophisticated tasks.

5 AI can also help get through paperwork
6 when applying for assistance after a natural
7 disaster, aid processes like licenses, qualifying
8 to bid and other paperwork intensive work. Using
9 practical results today AI means better served
10 constituents and a more effective, cost effective
11 service delivery. These are critical and positive
12 outcomes for delivering better government
13 services.

14 So we're very proud of the work we have
15 done to create technologies and solve problems and
16 help people in their daily lives. We are
17 optimistic about the incredible potential for AI
18 and other advanced technologies to empower people
19 while we benefit current and future generations
20 and work for the common good.

21 We appreciate the work of this
22 commission and look forward to working with you
23 for as you seek to address the challenges and
24 opportunities for the adoption of artificial
25 intelligence within our society. At this point

1 I'll conclude my remarks and I would be happy to
2 answer any questions.

3 MR. DELANEY: Great. Well, thank you
4 for your testimony, Katharine. Questions?

5 MR. JONES: Google operates pretty much
6 around the world --

7 MS. MCADEN: Yes.

8 MR. JONES: -- and you have direct
9 relationships with -- I don't know what percentage
10 of humanity you have relationships with. How does
11 Google go about reconciling cultural differences,
12 not legal differences but cultural differences
13 around the use of data without people?

14 MS. MCADEN: That's a very important
15 question and one we take very, very seriously. I
16 mentioned the common good multiple times in my
17 testimony.

18 We believe it's our responsibility to
19 do that, quite frankly, and many of our AI
20 practices that are now principles or operations
21 that are now entering into partner society through
22 private businesses or governments we have tripled,
23 quadrupled, I mean, they're under deep, deep
24 review to ensure that their quality of fairness,
25 biases -- I've got my list -- we believe it's our

1 duty to ensure the quality and accuracy and
2 unbiases of those applications during those
3 factors, so we have actually hundreds of people on
4 that team internally that reviews those before
5 they even are released. I don't know if that
6 answers your question.

7 MR. JONES: Yes.

8 MR. OSOBA: Can I?

9 MR. DELANEY: Yes, sir.

10 MR. OSOBA: I'm sorry.

11 MR. KATURI: Just one -- a couple of
12 questions actually. You talked about principles
13 of AI in 2018, and you said you actually have
14 certain things that you cannot do, right. Can you
15 give me a couple of examples of what you had in
16 mind when you said that?

17 MS. MCADEN: So we actually have the
18 full list on our website with detailed
19 explanations of each.

20 MR. KATURI: You do, perfect.

21 MS. MCADEN: Yes, detailed, very
22 explicit.

23 MR. KATURI: And the second thing, I
24 understand having talked about privacy, which is
25 great, and this is a question I'm asking more from

1 an individual user of Google in several of the
2 areas. Many companies usually want us to opt in
3 by default and opt out specifically if I don't
4 want the data to be seen.

5 On the other hand, I personally felt
6 hey, why can't I just have an opt out, don't even
7 use any of my data. If I want to I will let you
8 know that I want you to because a default position
9 is people don't read everything, we just go with
10 the flow.

11 Has Google thought about this, or have
12 you thought about privacy from that perspective?
13 On the one hand you have people who would say I'd
14 rather you not use my data unless I opt in. On
15 the other hand you just kind of take everybody
16 else along the way, right, you just take the data.
17 I'm just curious what your position would be on
18 that.

19 MS. MCADEN: I'll be honest and say
20 that I'm here to speak about AI and not privacy,
21 but opt-in features are definitely a major
22 consideration in ongoing legislation across the
23 country.

24 We believe that our systems are built
25 to maintain personal privacy and disclose those

1 items that are used as data sets that give
2 ultimate opportunity and discretion on
3 transparency of what is elected and give that
4 opt-out option, and so I think that's an ongoing
5 conversation that is important to address.

6 MR. KATURI: Thank you.

7 MR. OSOBA: So following up on Jerry's
8 point about the fact that Google is a
9 multinational company and paying attention to the
10 fact that the commission also includes questions
11 around competitiveness for the United States, is
12 there -- what's Google's perspective on supporting
13 the United States being competitive relative to,
14 say, China or Russia, is that something you'll
15 stay out of completely or is that -- any thoughts
16 you can offer us on that?

17 MS. MCADEN: Again I'm really excited
18 to be here speaking about AI, but as far as
19 foreign policy is concerned we're very excited to
20 be an American company and respect the laws of the
21 U.S., and operations within other countries are
22 definitely important but not one that I'm
23 qualified to speak on behalf of right now.

24 MS. GILLUM: What type of regulation
25 would Google welcome in terms of AI, if any?

1 MS. MCADEN: We believe that it's very
2 important. Actually, it's in our self-written
3 article several years ago that said AI is too
4 important not to regulate.

5 We believe very firmly that our
6 principles that we established in 2018 are very
7 effective now and then and going forward. A
8 model-based line are reflecting -- I will say
9 we're honored that a lot of regulatory proposals
10 have reflected a lot of the Google principles that
11 we have self-regulated for the last several years.

12 MS. GILLUM: So meaning you would hope
13 those principles would be translated into
14 regulations across the board that would apply to
15 the companies?

16 MS. MCADEN: I would absolutely say
17 that we're comfortable and we for our practices
18 believe that the model written, and again open to
19 continuous adjustments, we believe it is effective
20 for regulating AI.

21 MR. OSOBA: Do you have a preference on
22 whether it's a hard form of regulation or whether
23 it's like a industrywide softer form of
24 regulation? If we take the content of Google's
25 principles do you prefer it on the government side

1 or self-governance like crossing the street
2 somehow?

3 MS. MCADEN: I think self-governance
4 has been a very effective method of regulating AI
5 for a long time as a capitalist company, but there
6 are incredible opportunities for various uses of
7 AI, so I do think it's very important that the
8 federal government takes a look at this and apply
9 (inaudible) and determine for addressing this
10 topic.

11 MR. OSOBA: May I follow up one more
12 time?

13 MR. DELANEY: Of course.

14 MR. OSOBA: So when we talk about high
15 regulation at the level of the federal government
16 there's definitely going to be an element of a
17 stick, like we want you to do certain things and
18 if you don't there will be a stick. Do you have
19 thoughts on what is acceptable as a stick in this
20 case? Like GDPR is those large vines and I don't
21 know how we can have good regulation without
22 something like a stick.

23 MS. MCADEN: I'm going to get a little
24 bit legislative wonky here, but the definition of
25 a shower in May is at the discretion of a lot of

1 policy makers and it will be a definite
2 consideration. I think the framework in
3 consideration of what is regulated is more
4 important.

5 MR. THEIRER: Google is involved in a
6 lot of different AI battles, if you will, and
7 we're talking at a very high level here, but in
8 the weeds of other issues like autonomous systems,
9 driverless cars, UASes, things like this, maybe
10 you can give us a feel for how you think those
11 issues are unfolding, and what principles Google
12 would like to see drive those efforts.

13 MS. MCADEN: Honestly all of those
14 would lie into this conversation here directly
15 with AI, and that's our internal principles and
16 the internal team with hundreds of members that
17 review every single bet or product area in our
18 operation. I mentioned just a few of the
19 examples, but autonomous vehicles or search your
20 photos, all of them fall under some -- many, many
21 of them fall under some sort of consideration of
22 AI development that we apply our principles to
23 from the foundation.

24 MR. KATURI: The question I have, just
25 a follow-up on your position on less regulation

1 here, one thing is that, you know, definitely
2 regulation is a stick and I got that, but on
3 several of the prior speakers they said how
4 information from one company or one industry, then
5 collect with the information from another company
6 of industry would be valuable, right. Would you
7 then say a regulation to allow for purposeful
8 value added sharing of information across
9 companies is actually a good regulation?

10 MS. MCADEN: I can't speak to the
11 regulatory components of that, but as a
12 foundational principle at Google we are a very
13 open source. We published a transparency report
14 in November that outlines very detailed working
15 systems of how we establish our AI (inaudible), so
16 I think sharing is critical in this discussion,
17 absolutely.

18 MR. KATURI: Thank you.

19 MR. JONES: One of the things that was
20 gone into was many of the effects here today is
21 the availability of data, and clearly Google has
22 access to one of the world's largest accumulations
23 of data without any doubt about it, and it's a
24 tremendously valuable asset for Google. It can
25 also be a tremendous asset for society at large.

1 Does Google have a stance on the
2 interoperability of data, in other words
3 (inaudible) permit Google to gather back all of
4 the data that they entrusted to Google, get it
5 back and give it to another enterprise across all
6 of your entities?

7 MS. MCADEN: I believe that's a little
8 bit more of a privacy question than I'm prepared
9 to answer or I'm able to answer right now, but I
10 will say that usually data sets are -- robust data
11 sets are very printable to the development of AI
12 and that that's a major factor in considering the
13 biases that you referenced to earlier. Trying to
14 gather as much accurate information as possible is
15 what is the key, is a key to essentially entering
16 unbiased in processing data.

17 MR. FERGUSON: Katharine, thanks for
18 being here today. Thanks for your testimony.

19 MS. MCADEN: Absolutely.

20 MR. FERGUSON: Let me just ask you a
21 question as a human being, right, like I think
22 about a lot --

23 MS. MCADEN: I'm still wearing a Google
24 nametag.

25 MR. FERGUSON: Yeah, of course, right.

1 (Laughter.)

2 MR. FERGUSON: I mean, we all come to
3 these questions with our own, you know, life
4 experience and point of view. I mean, I think of
5 so many of these issues as a dad, right. I've got
6 kids. I've seen the way technology and in many
7 cases AI has impacted their lives and
8 opportunities that they have, things that can be
9 done now that couldn't be done when I was their
10 age. It's both thrilling and terrifying, right.

11 Just as a person, you know, you work
12 for this incredible technology company, what about
13 the things that we're talking about maybe as a
14 human being sort of most excite you and maybe most
15 frighten you about the possibilities that are out
16 there with this type of powerful tool?

17 I like to talk to my kids about, you
18 know, whether it's technology or the internet or
19 anything else it's an incredibly powerful tool.
20 It's like a chainsaw, okay. When it's used
21 properly it is so incredibly helpful and saves so
22 much time and energy and effort. When used
23 improperly it can be devastating, right.

24 I try to help my kids think about these
25 issues in both ways. Is there any of that -- I

1 mean, you're on the inside of this amazing
2 technology company. How do you think about these
3 things?

4 MS. MCADEN: As a mother of a ten year
5 old and seven year old --

6 MR. FERGUSON: Yeah, there you go.

7 MS. MCADEN: -- I very much appreciate
8 the opportunities and challenges that's identified
9 in some of the emerging technology. I think we've
10 outlined it specifically, and (inaudible) said it
11 himself, AI is too important not to regulate, and
12 Google as an organization very much tries to meet
13 the needs and enhance the lives of users and
14 address the challenges and problems.

15 I would say that we are not able to do
16 it all by ourselves, and that's why we absolutely
17 support you as leaders in our federal government
18 to identify the needs of our constituents and
19 represent moms like me outside of the corporation
20 in those considerations. Are there risks?
21 Absolutely, and we're aware of those, and we just
22 have our principles and establish our transparency
23 reports and mitigate those as much as possible.

24 There are things that we don't develop
25 for that reason, because of the potential risks of

1 those. Are there benefits? There absolutely are.
2 I think the idea that you can take a picture
3 that's on your phone and it identifies a person in
4 a party and can put the party in the background
5 and the person in the front and if I'm wearing a
6 red shirt my red shirt will show is unbelievable.

7 I mean, just some of the technologies
8 that are available now in this field just are mind
9 boggling and incredible. I do believe strongly
10 that they have the opportunity to enhance society,
11 solve challenges, enhance government operations,
12 seed responses, and a lot of other solutions,
13 change medical history.

14 MR. DELANEY: Other questions? Well,
15 thank you for being with us today.

16 MS. MCADEN: Thank you all for the
17 opportunity.

18 MR. DELANEY: We appreciate it very
19 much.

20 MS. MCADEN: Thank you.

21 MR. DELANEY: Thank you. Okay. I
22 think we can have another break here.

23 (A brief recess was taken in the
24 proceedings.)

25 MR. FERGUSON: All right. It's 3

1 o'clock. We're going to begin our final panel for
2 the day. My cochair, Congressman Delaney, had to
3 catch a flight, so that's why we worked it out so
4 I did the first panel and he did the two in the
5 middle, so thanks, everybody.

6 We have a great panel for our fourth
7 panel with four great witnesses and then we're
8 going to have some closing remarks at the end, so
9 we're going to do our best to stay on schedule.
10 The first of our afternoon final panel is Austin
11 Carson. Austin is the founder and CEO of Seedai.
12 All right. Ten minutes. Please share with us our
13 thoughts, and if we have some time we'll do some Q
14 and A as well.

15 MR. CARSON: All right. I appreciate
16 it. I just got off the plane so this might be a
17 little rough (inaudible).

18 MR. FERGUSON: All right.

19 MR. CARSON: My name is Austin Carson.
20 As you said, I am the founder and president of
21 Seedai which is a nonprofit that I founded for the
22 purpose of building up AI resources for
23 communities around the United States specifically
24 focused upon liberal development of AI capacity in
25 the form of data and compute and education,

1 educational resources, training resources and then
2 the talent around it as well as the creation of
3 ecosystems to support that including academia,
4 including reputation groups, including liberal
5 geos, large and small businesses. And so --
6 (inaudible) zoom in completely (inaudible).

7 (Laughter.)

8 MR. CARSON: And so, you know, I came
9 to doing this job because I used to work at NVIDIA
10 whose main primary components were AI compute.
11 Those of you that aren't aware -- I imagine all of
12 you are, so I'll go on to something else. And so
13 over the course of a three-year period of time we
14 worked a project with the cofounder partially
15 funded because he graduated from the University of
16 Florida, built the most powerful academic super
17 computer and I think maybe second most powerful
18 super computer at the time at the University of
19 Florida. It HiPerGator-free, it's like 1200 big
20 A, but cutting edge A-100s. I don't know if it's
21 700 odd TF-16s, some crazy stuff.

22 And so around that process they had the
23 state of Florida put in like 500 million bucks and
24 they hired a bunch of different AI researchers,
25 some educators who could do AI cross improving

1 projects and started working on connective issue
2 with other parts of the university system for
3 taking that AI across the curriculum and
4 translating it to things like art school, business
5 school, community colleges and getting down to
6 some of this more kind of application layer stuff.

7 And so it became at least pretty
8 reasonably probable to me that there was a
9 template modular way of which you could take a lot
10 of policy rules that we have, which is increasing
11 equity representation, increasing overall AI
12 capacity in the United States. It ended up having
13 more local and national and international
14 competitiveness, opening up entirely new markets.

15 And I would make the statement that
16 even if you stop, you know, there's a question
17 that (inaudible) recently were closed. What do
18 you say about hype, right, when people go on about
19 AI and all the things that you can do what do you
20 say about the hype. You say I'll be hopeful and
21 nonhopeful simultaneously, right.

22 The unhopeful part is that the hype is
23 incredibly reasonable, right. Even among -- even
24 if you had zero leads -- and I said this even
25 before like Google's multimodal, you know, model

1 came out and then they started having all the
2 different no-nos (inaudible). At the very
3 beginning of that, which as you all know has
4 expanded substantially, it's like even if we had
5 no new technological development we have like five
6 percent of what we have applied right now, right.

7 There's this endless pool of unknown
8 data of people that aren't able to participate
9 right now purely because we can't get this
10 application, you know, then there's this layer of
11 application space. Instead of it being all about
12 the singular computer science it's focused purely
13 upon the actual AI developers and AI codes, right.

14 And so looking at that as a model I
15 spent a lot of time talking to people in congress,
16 talking to people in administration, talking to
17 researchers largely through the guise of working
18 with the University of Florida, but as time went
19 on I got consumed by this idea that if you didn't
20 do something to strategically increase
21 availability of resources and training and
22 opportunity, right, moving into a rhetorical
23 space, opportunity for participation to pretty
24 much define where your future goes considering
25 it's going to be largely defined by artificial

1 intelligence and asking opinions, what they want,
2 take their strengths and amplify them and help
3 people amplify them with the statement.

4 And so I want to read a couple of just
5 statistics that I pulled up or that I found when
6 we did some polling. When I kicked off the
7 organization we commissioned a poll from Morning
8 Consult which is (inaudible), a very reputable
9 polling entity if you're not aware that does
10 partnerships with like ESPN and New York Times.
11 They're kind of the macro polling guys, but did
12 like plus or minus two percent poll all across the
13 country on people's sentiments on artificial
14 intelligence.

15 Results across ideology is 59 percent
16 of liberals, 51 percent of moderates, 59 percent
17 of conservatives, so they would be more likely to
18 approve and represent this in congress if they
19 committed to investing in AI technology
20 development and juncture. Three quarters of
21 Millennials and Gen X adults said that they would
22 be more interested in learning about AI if there
23 was an opportunity to do so (inaudible) 61 percent
24 of Baby Boomers.

25 Nearly half of all adults say that if

1 the U.S. were to invest in developing AI
2 technology, training workers for AI jobs or
3 educating students on how to use AI technology, 46
4 percent, 50 percent, 50 percent, they would be
5 less worried about the potential negative
6 consequences of greater AI (inaudible).

7 And we have this huge list of what are
8 all the concerns that you possibly have about AI.
9 There's like loss of agency, loss of human
10 activity. Interestingly enough, the number one
11 concern people have is the hackability of AI, 55
12 percent were concerned about that. And then
13 finally approximately two-thirds of adults
14 definitely believe that private companies, their
15 state's government and the federal government
16 should all work together to ensure AI is safe and
17 trustworthy.

18 So you would expect I think some
19 ideological designs because there's some
20 ideological divides there, that people would not
21 want the federal government to ensure diversity in
22 a new technological area. They wouldn't want --
23 they wouldn't feel any differently about Biden, if
24 Biden had like a 22 percent swing and somewhat
25 support he would agree with you then.

1 The idea that there's anything that
2 would make a polarized political environment turn
3 on them like that significant of a percentage, it
4 honestly amazes me, and the methodology's on my
5 website. There's like a full cross tabs if
6 anybody wants to look through it, but -- it's very
7 impressive.

8 Okay. So I'm getting kind of long
9 here. I have way too many more points, so maybe
10 I'll let you guys -- I'll make a couple of quick
11 other points. So first of all, you know, if you
12 look at conversations around investment or around
13 building up ecosystems we can't just do AI here,
14 right. It's not that we just suddenly have AI,
15 and the point is it's not like we're asking you to
16 come -- we're asking folks to develop a plan with
17 the intent of suddenly becoming, you know, MIT or
18 CMU or like putting out the most cited AI
19 research.

20 I think the expectation is is that each
21 area has an existing set of industries and
22 capabilities that if given the capacity and the
23 assistance -- again, you've got kind of this AI
24 research resource that's at the research level
25 that's very valuable as a kind of core for this,

1 but to expand that out to a broader population it
2 takes on those democratizing technologies, you're
3 going to be able to bring in this
4 cross-disciplinary aspect of it and a much broader
5 section of both the country and the population at
6 large.

7 And then my final point I'll make on
8 this is that I think that there's also a really
9 important place for safety and validation on the
10 two sides of this plan, right. The first side is
11 that in setting up systems, as you probably
12 already know from working in academic
13 environments, you have to have some type of use
14 restrictions or something.

15 You know, if you're (inaudible) they're
16 like guess what terrible thing might happen, we're
17 not even going to ask you to fix it, just guess
18 what terrible thing might happen. So I think you
19 can have these internally competitive environments
20 of how do you use this machine, how broadly or how
21 narrowly and how much do you allocate for
22 different purposes, right.

23 And then even on the federal funding
24 side or on the federal policy side I think there's
25 a good argument to be made that we should if we're

1 going to build out a lot of infrastructure make a
2 significant portion of that dedicated to test
3 bits, real world testing that can include people
4 that are a little bit down the sophistication
5 line.

6 On this, you know, I see a lot of --
7 there's a lot of examples involving startups
8 working with community colleges or working with
9 historically black colleges or universities or
10 with other minority serving institutions where one
11 startup (inaudible) is using their computer vision
12 technology along with pharmaceutical school to
13 show them how they can apply that for the sake of
14 the accurate counting of the medications.

15 And so if you're not -- instead of
16 having this environment where like things are
17 being tested on people, instead of that people are
18 participating in testing technology that they then
19 have some ownership of and can apply to things.
20 So I know that there's a huge chasm between like
21 developing the next most amazing large language
22 model or something and then counting pills, but
23 the unsexy stuff is where all the magic starts.

24 Like this is this gigantic unsexy pile
25 of opportunity that then, you know, gets very

1 appealing as it continues to expand over time, so
2 that's about half of what I wrote down. I really
3 don't want to bore you guys because I can see you
4 fading a little bit. If you want to ask me
5 questions and we can move on.

6 MR. FERGUSON: A couple of minutes for
7 questions for Austin.

8 MR. OSOBA: If there are no questions
9 can I ask you to expand a little bit about your
10 vision of democratizing AI? What exactly is the
11 point? Like I have ideas but I want to hear you
12 talk about that.

13 MR. CARSON: Yeah, so two things. The
14 first would be I do think that the foundation of
15 technology and the foundation of the way that
16 society interacts is going to be largely dictated
17 by artificial intelligence in the not too distant
18 future. There's going to be a layer of at least
19 language processing that underlies everything.

20 There's going to be these type of cones
21 built on top of that and these huge marketplaces
22 of (inaudible) networks, and then all of that
23 technology is going to get progressively more
24 sophisticated and more accessible, right. So on
25 hand you have an opportunity to democratize, which

1 is exciting. On the other hand all of those
2 different technologies are going to have
3 characteristics baked into them, breeders of those
4 technologies, right.

5 And so in my view -- and there was a
6 letter recently sent to OSTP and NSF that I gave a
7 supporting quote for from the sponsors of the
8 national AI research resource about how such
9 democratizing resources should also contribute
10 proactively to the support, protection and
11 enhancement of human rights, right.

12 And there's finally two sets, A from
13 the testing test bed validation understanding of
14 technology and view; and then B for the fact that
15 again it's a representation of whoever creates it
16 (inaudible), and so in my view the body of people
17 creating artificial intelligence should look like
18 the body of people that are going to be using
19 artificial intelligence.

20 And the final point is there is a ton
21 of stuff that we're not making because there's
22 only so much shit that -- I'm sorry -- there's
23 only so much shit that like random people that
24 look mostly like me out on the west coast --
25 that's Massachusetts -- can make. You know, I

1 mean, I only got so many ideas. People only got
2 so many ideas, and then you see it time and again,
3 every time there's any expansion you have a bunch
4 of people and things that happen.

5 MR. OSOBA: So I asked that question
6 because the refrain democratizing AI is always
7 loud and it's never clear exactly why people are
8 asking for it. The last point you made about it,
9 about AI being used to target matters that people
10 on the ground care about seems to be a very
11 compelling point.

12 MR. ORRELL: So I wondered if you could
13 expand just a little bit. You were talking about
14 interdisciplinary approaches. What's that entail?

15 MR. CARSON: So I think there's two
16 main models that I would throw out versus the AI
17 institutes which are these -- they happen sort of
18 like in a sache where they have NSF and another
19 department at home that are collaborating on a
20 project, and like I was speaking to people at the
21 University of Illinois yesterday at one, it was
22 the Department of Agriculture, a focus on I think
23 the crop conditions and spraying.

24 And so they have a focus on a societal
25 issue it's for and there's a list of what those

1 issues are. Funding is moderate, but it exists.
2 You know, I mean, I think that -- so kind of where
3 I'm coming from a lot of those programs like the
4 infrastructure, right, you have a 5-year program
5 that has 20 million in aggregate funding. That's
6 better than zero, right.

7 But if you're going to do some of this,
8 especially if it involves like large-scale
9 simulation or if it involves any type of
10 sophisticated, dense or large kind of data pool
11 neural network you're going to be very limited on
12 resources, so you're going to have funding I think
13 (inaudible) for those things.

14 That said that's I think an unfounded
15 opinion, so I'm going to stop talking about that.
16 I feel you should ask somebody else that has more
17 resource experience.

18 MR. FERGUSON: One more quick question
19 for Austin before we have to keep going.

20 MR. DIMAKIS: Yeah, and by the way we
21 do have an (unintelligible) institutes here in UT,
22 the foundation. So my question really is on you
23 said that there will be market -- or you think
24 there will be marketplaces or free trade models or
25 obviously data sets.

1 There's a unique aspect of AI. I
2 might, for example, want to talk about code. If I
3 take some code from (unintelligible) and I use it
4 in commercial project it's clear that code is
5 there, but one thing that happens with models is I
6 can take a GPD model, train on some data, fine
7 tune it, post that model, and then somebody else
8 takes that model and fine tunes it on their own
9 data and, in fact, it's not even clear at all we
10 can even know what data sets have been touched in
11 the making of a final model that somehow you may
12 find in a marketplace.

13 So I guess my question on that is do
14 you -- what do you think is a -- what would be a
15 good regulation or what would be good rules to set
16 for this kind of --

17 MR. CARSON: That's a great question
18 because I talked about this like three hours
19 yesterday. Okay. So one thought is that you
20 would make it (inaudible), right, which is that
21 their cold storage is very inexpensive
22 comparatively, and so if you're pretraining you
23 have a model and then you're going to retrain it,
24 right.

25 You're going to have this much smaller

1 data set, the kind that needs to be archived
2 somewhere, so you could have a pretty much no-cost
3 archive that could then be indexed, tagged to
4 that, and whenever that was retrained -- so you'd
5 have this kind of -- I mean, I'm launching this
6 but you could -- whatever format had this kind of
7 tagging and indexing thing over time I think cost
8 and labor is the most prohibitive factor in
9 presuming overtime.

10 But first of all there's some loss
11 coming out (inaudible) crack open the case, it's
12 that thing we're trying to figure out anyways, but
13 I think we have a good opportunity to do so right
14 now, either A, in some (inaudible) what they're
15 anticipating or trying to figure out what to do.
16 Another friend of mine has a startup call Column
17 which is aggregating and digitizing all public
18 notice information.

19 I spoke with him yesterday. He's also
20 figuring out how to index this, how can you make
21 sure that you do have that cascading data because
22 again I think about this, and I'm going to talk
23 about it some more a couple of days from now.
24 Have you ever seen an old XKCD comic, the guy's
25 like holding the blocks and then it's like this

1 one little piece, and it's like this piece
2 maintained by some thankless guy in Nebraska since
3 2007, it's like all digital infrastructure.

4 And I can see the same scenario
5 inevitably happening for artificial intelligence.
6 There's going to be like the best model for X
7 that's going to get out there and it's going to
8 have 18 different retrained layers of whatever,
9 however it works, who knows, it works very
10 differently every six months, right, and then
11 something crazy is going to happen. It's going to
12 randomly retrain in some other generate stuff, all
13 the weird pathology. We're not going to know how
14 to deal with it, and so I think that's actually --
15 I agree, that's a very critical point as well, but
16 --

17 MR. FERGUSON: Austin, this is
18 fascinating. There's like a hundred threads to
19 pull on there, so I'm going to be the bad guy and
20 try to keep us on schedule, but thank you very
21 much. That was fascinating. Our next witness is
22 Sherri Greenberg. Sherri is at the University of
23 Texas, a professor of practice, a fellow of the
24 Max Sherman Chair in State and Local Government.
25 Sherri, thank you very much.

1 MS. GREENBERG: Thank you. Thank you
2 for the opportunity, and good afternoon,
3 Commissioners. I'm also on the leadership team
4 for Good Systems which is one of three bridging
5 barriers bringing challenges at University of
6 Texas at Austin, very large multidisciplinary
7 research teams, and Good Systems works to ensure
8 that the needs and values of society drive the
9 design of artificial intelligence technology, so
10 that's the goal of it.

11 AI-based technologies are helping us
12 solve complex problems in nearly every discipline
13 in industry, but they have the capacity to be
14 harmful to us in ways we might not predict or
15 intend, so we want to design AI technologies that
16 benefit society, and that's our grand challenge so
17 to speak.

18 AI is in our lives. People in AI can
19 work better together than either can in isolation
20 given their distinct and complementary strengths
21 and weaknesses. Also, though, there are
22 unintended consequences. Technologists who
23 develop AI do not always fully consider the
24 possible ethical and societal implication of their
25 designs, but likewise we can have very reactive

1 laws. Law makers and policy makers are not always
2 equipped to understand AI's effect, so how can we
3 ensure that advances in AI are compatible and
4 responsive to the needs and values of society?

5 I want to spend just a few moments
6 speaking about an idea and actually a paper that I
7 wrote with a colleague of mine, Ken Fleishmann,
8 who is a professor at the school of information
9 for Day One Project. It was published about a
10 year ago, January of 2021, and we talked about
11 Fair Artificial Intelligence Research and
12 Regulation, or otherwise we called it FAIRR,
13 F-A-I-R-R, Bureau. I know. How did that happen?

14 So artificial intelligence is
15 transforming our everyday reality, and it has the
16 potential to save or cost lives. Innovation is
17 advancing at breakneck pace. We know that. With
18 technology developers engaging, though, in de
19 facto policy setting through their decisions about
20 the use of data and the embedded bias in their
21 algorithms policy makers must keep up. Otherwise,
22 policy makers are acceding decisionmaking
23 authority to technologists.

24 And as we know we face rising threats
25 all over the world to U.S. national security. We

1 certainly know that more than ever today
2 unfortunately, to our economy, health, and again
3 we probably know that more than ever today and
4 beyond as posed by AI. So we need to be proactive
5 in making policy recommendations. What FAIRR
6 would do is bring together experts in technology,
7 human behavior, and public policy from all
8 sectors, from the public, private, nonprofit, and
9 academic sectors to research and develop policies
10 that enable the United States to leverage AI as a
11 positive force for national security, economic
12 growth, and equity.

13 The FAIRR Bureau would adopt a
14 interdisciplinary evidence-based approach to AI
15 regulation and policy needed to address these
16 unprecedented challenges. AI-based technologies
17 can be a matter of life or death, and we saw this
18 with, for instance, the Boeing 737 Max and those
19 issues.

20 Indeed, AI is becoming ubiquitous in
21 the everyday lives of Americans from
22 transportation with autonomous vehicles to health
23 care which makes use of deep learning-based
24 automation in radiology, for instance. Our
25 national and economic security could be enhanced

1 or threatened by AI.

2 AI is not merely a single technology,
3 but rather a family of technologies with manifold
4 applications that can (inaudible) to presenting
5 unimaginable new technologies as we just
6 discussed, so we believe the federal government
7 should adopt a proactive rather than reactive
8 approach in anticipating the potential risks of
9 AI-based technologies given the high expectations
10 of the American public for rapid, useful
11 technological innovation.

12 But also there's skepticism and lack of
13 trust, you have to earn that trust. You must be
14 trustworthy and then people -- you earn that
15 trust. And there is intense global competition in
16 the technology sector, as we know. So given that
17 we are proposing establishing an agency, as I
18 stated there, whose research mission would be
19 model on the patient centered outcomes that we
20 have seen with PCR created through the Patient
21 Protection Affordable Care Act and whose policy
22 mission could be modeled on, for instance, the
23 Consumer Financial Protection Bureau models in the
24 federal government.

25 The FAIRR Bureau would conduct research

1 and evaluation and make policy recommendations for
2 the federal government on AI applications.

3 Additionally, the FAIRR bureau would serve as a
4 coordinated multisector and interdisciplinary hub
5 for education outreach on the same inequitable use
6 of AI.

7 The FAIRR Bureau would centralize the
8 federal government's activities potentially in AI
9 and research and regulation through a strategic
10 plan with a mission vision in core values that
11 drive budget priorities. The bureau would work
12 with several federal agencies, for instance.

13 In conclusion, given the immense life
14 and death stakes of IA there is -- AI, excuse me
15 -- there is need for evidence-based policy making
16 to depoliticize AI funding regulation, and like
17 the prior speaker I believe that that certainly is
18 possible from surveys and research that have been
19 done and from research that we have been doing.

20 The FAIRR Bureau would engage leading
21 experts from across academia and cutting-edge
22 research on the implications of AI to discuss its
23 benefits and harms, and would also involve those
24 from industry, nonprofit sector and others, and
25 then feed these findings into proactively

1 regulating and developing the use of AI.

2 Thus, the FAIRR Bureau's is made to
3 ensure that AI does not further concentrate
4 inequities and that it benefits all Americans with
5 an emphasis on combatting these systemic
6 inequities and achieving justice for all. Thank
7 you for your time. I appreciate it.

8 MR. FERGUSON: Sherri, thanks for your
9 research on this and citing the paper that you
10 mentioned, and I think that's what we're looking
11 for, is ideas. Your FAIRR Bureau is an
12 interesting idea. We heard some others from
13 earlier witnesses who talked about COPB and other
14 models --

15 MS. GREENBERG: Right.

16 MR. FERGUSON: -- that can be modeled
17 on, very, very interesting stuff. We have time
18 for one question for Sherri. I'll be the bad guy.
19 Yeah, go ahead.

20 MR. JONES: So taking reality as it is
21 --

22 MS. GREENBERG: Yes.

23 MR. JONES: -- and we have a system of
24 government in the U.S. that would have a hard time
25 deciding that today is Thursday, and there seems

1 to be a general consensus that AI should be
2 regulated, but how in the world in a democratic
3 country like the United States with this many
4 people and this many divisions can government keep
5 up with the pace of technology, and should the
6 technologist be seeded in order to regulate
7 themselves under general ethical principles?

8 MS. GREENBERG: That's a good question.
9 Clearly we think that we should not just seed that
10 ability to the technologist. I've been involved
11 in policy making in prior lives and I've seen with
12 different industries seeding self-regulation. It
13 doesn't necessarily work, but that's why the model
14 we're proposing would involve the technologist at
15 the table, industry at the table, academia,
16 government, everybody would have a seat at the
17 table.

18 And I think that's something that
19 politically people on all sides believe in, and
20 that if you give everyone a seat at the table you
21 will come out with the best results.

22 MR. FERGUSON: Sherri, thank you very
23 much your testimony.

24 MS. GREENBERG: Thank you.

25 MR. FERGUSON: Thanks for being with us

1 today. Our next witness is Sakshi Mishra. She's
2 a senior autonomist systems engineer at Microsoft.
3 The floor is yours.

4 MS. MISHRA: Good afternoon,
5 (inaudible) members of the commission (inaudible).
6 Thank you for the opportunity to (inaudible) --

7 MR. FERGUSON: Sakshi, as you already
8 heard I'm the bad guy. Can I ask you to just
9 speak a little bit louder --

10 MS. MISHRA: Okay.

11 MR. FERGUSON: -- because we're far
12 away over here just so we can make sure we're
13 hearing everything you said. Thank you.

14 MS. MISHRA: Thank you for the
15 opportunity. The views and opinions expressed in
16 this testimony are my own and don't reflect the
17 views of my employer. As an applied AI researcher
18 and practitioner I have been (inaudible) the wave
19 of the AI's application in the broader technology
20 sector (inaudible). The technological innovations
21 of AI have already started benefitting people
22 around the world.

23 (Inaudible) involvement in building its
24 application in clean energy and (inaudible)
25 sectors have helped me comprehend how useful AI

1 technology is for solving burning issues of the
2 day. Today industry, academia and government are
3 beginning to reach the consensus that the fast
4 pace and far-reaching changes from AI offer
5 dynamic opportunities for improving environmental,
6 economical and social spheres of the nation.

7 However, harnessing the full potential
8 of the technology for the benefit of the nation
9 also requires addressing complex challenges, a
10 bunch of them, and so today I want to talk about
11 the labor market transition as one of the
12 challenges, and it's a complex one.

13 There are growing concerns that
14 advances in AI have the potential to disrupt the
15 labor market by creating job displacements as
16 technology grows and becomes more prevalent. So
17 proactively understanding the nature of job
18 transition and collectively taking steps towards
19 getting society with upskilling will suddenly help
20 at driving (inaudible).

21 In the testimony I would like to offer
22 a set of recommendations for (inaudible) the
23 upskilling process for effective policy measures.
24 The emotional upskilling needs to serve all ages
25 and levels in the labor market. It needs to

1 inform and educate the current work force that
2 directly or indirectly works with systems that
3 will incorporate AI in the near future.

4 It also needs to build a strong talent
5 pipeline which can then in coming next years of
6 the kids take the AI moving forward. The approach
7 also needs to keep the current decisionmakers,
8 that is industry leaders, informed and abreast
9 with multifaceted implications in deploying AI.

10 The considerations include, as the
11 previous speaker alluded to, like security,
12 privacy, and ethics, bias safety, confidentiality,
13 explainability and many more. So following that
14 set of concrete recommendations to realize this
15 inclusive approach to upskilling the labor market
16 first only opportunities, exposing young minds of
17 the nation to this sphere by offering AI in the
18 school curriculum will help the work force of
19 tomorrow get prepared and get a headstart in the
20 field.

21 It need not be a fully (inaudible)
22 extremely technical curriculum. Instead, it can
23 be a gradual introduction to the field. Young
24 minds who are exposed to (inaudible) technology
25 early on, it would create a robust talent pipeline

1 for years to come. Second, social awareness.
2 Raising awareness to help society recognize the
3 opportunities that lie from their well-being with
4 increasing (inaudible) of AI and not perceive it
5 as a threat. That is preparing the mindset of the
6 current labor market who interpret AI not as an
7 adversary.

8 Instead, approach it as an opportunity
9 for them to experience better levels of building
10 with the new technologies powered by AI to do the
11 mundane tasks for them so that they can focus
12 their energies on learning and executing more
13 exciting tasks, or rather adding tasks.

14 So this is because AI is not just
15 simply about automation and replacing people. AI
16 can make existing workers more productive at their
17 jobs for having AI platforms to do the mundane and
18 boring tasks and focusing the workers on higher
19 (inaudible). An example would be using AI to
20 schedule nurses in the hospital so that nurses
21 themselves can focus on caring for patients
22 instead of having to enter things manually to the
23 computer.

24 Third recommendation, shared
25 responsibility in upskilling. Feeding the task of

1 upskilling the work force in all the industries as
2 a shared responsibility of the organization
3 (inaudible) and the massive open online
4 (inaudible) education system.

5 I'm emphasizing on home education
6 system here because a lot of traditional degrees
7 are significantly longer and (inaudible)
8 competitive for majority of the work force. The
9 move is targeted at only needed skills. By
10 sharing the responsibility we think the
11 organization that is employing the people and the
12 human diligence can help upskill them more
13 effectively, faster (inaudible).

14 Fourth, information dissemination. The
15 dissemination of information from entities with
16 similar interests of upskilling the work force
17 such as federal government, state government or
18 corporations. The point is keeping the work force
19 informed with the expectations of the types of
20 skills needed will go a long way in helping them
21 understand what they can do in order to
22 (inaudible).

23 An example, with more automation being
24 introduced there will be more jobs creating to
25 fixing and improving automation, fixing your watch

1 as an example. There will also be new types of
2 jobs introduced as well, such as data quality,
3 governance and education.

4 Fifth and the last but not the least,
5 diversity and inclusion. We just celebrated
6 International Women's Day on March 8th, and
7 inclusion is of paramount importance in labor
8 market transition process. As the work force is
9 mobilized to upskill it is crucial to ensure that
10 the existing STEM gap does not get projected as
11 such or even worse amplified in the process of
12 upskilling.

13 Diversity and inclusion is not just a
14 humanitarian effort. It is actually an
15 economically smart strategy because tapping into
16 the (inaudible) talent or the collective brain
17 power of all genders and ethnicities must be
18 tapped into by holistically harnessing the AI with
19 whatever task you offer as the nation strives to
20 write the way of AI-powered industry.

21 The U.S. has continued to be at the
22 forefront of technological innovation, not only
23 nurturing the talent inside but also attracting
24 global talent (inaudible) or fostering
25 (inaudible). I am myself an immigrant, an example

1 of immigrant who has chosen to address my time and
2 energies into a country moving to the global
3 technologic sphere of the U.S.

4 Developing effective policy solutions
5 that can help upskill the work force to keep up
6 with the pace of AI innovations will help the U.S.
7 maintain its leadership in the domain and will
8 ultimately translate to (inaudible). To
9 summarize, for ensuring a labor market transition
10 that is constructively approached by all the
11 parties policy measures for building human
12 capacity on AI with upskilling would be the key
13 (inaudible).

14 MR. FERGUSON: Actually, thank you very
15 much. You touched on some really important
16 points, and this commission is among other things
17 very focused on the impact of AI on the work force
18 and how do we create a work force for tomorrow
19 that is compatible with where we hope AI will help
20 us to go, so thank you very much for your
21 recommendations and your thoughts. We have time
22 for a couple of questions. Go ahead.

23 MR. ORRELL: I'm with the American
24 Enterprise Institute and I study work force
25 related issues and so I really, really appreciate

1 your comments. It's very important.

2 I think one of the big challenges is
3 simply being able to put out a coherent picture of
4 the employment impacts that we can foresee, right.
5 So we know the technology is changing very
6 rapidly, it's going to hit in places that we can't
7 imagine right now, but industry can do a huge
8 service to us if they could talk about the
9 exposure, the relative exposure of workers at
10 various industries to AI and the need for them to
11 be upskilled.

12 I know it's going to be everywhere, but
13 there are some people who are going to be at the
14 front end and some are going to be a little bit
15 further behind that, and just from my own
16 perspective I would love to see greater engagement
17 from industry to say -- and not just by sector but
18 even by geography, you know, how is this going to
19 impact in the Bay area compared to Austin,
20 compared to other areas with different kinds of
21 regional economies that have different industries
22 in them.

23 That level of information is really
24 needed, so I just -- is industry doing something
25 in this from across -- you know, you've got a

1 competitive atmosphere, right, so it's hard to
2 have those restrictions, but I'm really curious as
3 to where that is happening and where we can learn
4 from it. I'm sorry. That was a lot.

5 MS. MISHRA: And I will follow, it's
6 helpful in context. So I think industry in
7 general right now is in a place where they
8 themselves are trying to figure out how to deploy
9 the technologies which have been built, so yeah, I
10 mean, confidential information apart I think my
11 experience has been having worked at a national
12 lab and now at Microsoft they're in the process of
13 trying to really just build the platforms and test
14 out the systems.

15 So once they are tested out that's when
16 they can make any (inaudible). Like, for example,
17 if it's like utility industry and they are sending
18 some applications for the people working in the
19 transmission lines or working on the distribution
20 system it's hard at this point to tell -- because
21 once the application is deployed and has been
22 tested for quality that's when we can say what
23 skills do they need to do, do they need to know
24 programming or more software stuff or --

25 MR. ORRELL: You know, I think linking

1 this technological conversation to our futurists
2 who are more comfortable maybe trying to project
3 out would be really useful because I know that in
4 the intricacies of the technology it's like your
5 concern, or a company Microsoft is concerned with
6 the specifics of how something is going to work,
7 but I think what we need is more of the landscape
8 of where this is going to start impacting so that
9 we can try to redirect resources to communities
10 and to pipes of workers who are going to impact
11 it, so anyway --

12 MS. MISHRA: Actually, I can add if we
13 --

14 MR. FERGUSON: We have one more quick
15 question. Go ahead, Conrad.

16 MR. TUCKER: Thanks. So you mentioned
17 democratizing access to these systems and having
18 more people participate in the development of AI.
19 Can you speak on the challenges maybe in expertise
20 in who develops AI versus the general public?

21 One specific comment that comes to mind
22 is Microsoft's Tay platform which was deployed in
23 the real world and then trained using social
24 networks that was quickly -- I think every "ist"
25 in the world had to be pulled offline. How do you

1 balance expertise and the collective wisdom of the
2 crowd?

3 MS. MISHRA: Just a quick note before I
4 answer that. These are my personal views, not
5 Microsoft views.

6 (Laughter.)

7 MS. MISHRA: But I would say that in
8 cases like how Austin's entity is developing and
9 the resource and all sorts of nice models, that
10 explicit example you have brought up is somewhat
11 actually training the model, letting people change
12 the model. This was an experiment and it failed,
13 so that takes me to the points on the jobs of the
14 governance additions.

15 There are new jobs. We need people who
16 are dedicatedly working on understanding what data
17 we use, is it ethical to use that, working for the
18 governance of the data, so developing systems
19 which interact with the population who learn from
20 them without any filter or without any
21 intermediate processing of the data is likely not
22 the way to go. There has to be some way of
23 ensuring that the data which is being used to
24 teach these learning methods is somehow being
25 taken care of in terms of the ethics and bias and

1 all those things.

2 MR. FERGUSON: Thank you. Thank you
3 very --

4 MR. CARSON: Test bits, because that's
5 why the test bits project exists in the first
6 place, purely because you won't be able to
7 understand what the implications are with what are
8 needed to do with the application layer unless
9 you're able to do it (inaudible).

10 MR. FERGUSON: Actually, thank you very
11 much, and I'm going to continue to move through
12 our panel. We have 10 minutes left and that is
13 for Anshu Shrivastava, founder and CEO of Third
14 AI. The floor is yours.

15 MR. SHRIVASTAVA: Thank you. Chairman
16 Mike and members of the committee, thank you for
17 the opportunity today and to (inaudible). I'm
18 currently an associate professor at the science
19 department at Rice. I'm also a financier for AI
20 Con, a new startup working on democratizing
21 artificial intelligence through mathematical
22 denominations. My specialization is machine
23 learning for very large data centers.

24 I want to start with highlighting what
25 is this ongoing debate that is going on in proving

1 (unintelligible) models and why this is important
2 and why it can lead to some unintended
3 consequence. So let me walk over a popular use of
4 AI, a question answered. So imagine I go to Alexa
5 CE or even Google Assistant and ask the question
6 when did Beyonce start becoming popular.

7 Now, the AI-enabled system will quickly
8 match this question with a sentence from Wikipedia
9 that says -- it's a Wikipedia article on Beyonce
10 that says she rose to fame in the late 1990s as a
11 lead singer of Destiny's Child, and that will lead
12 to the answer of 1990 which is the correct answer.

13 Now, the system heavily relies on a
14 special form of language model, let's call it the
15 core AI that understands the English language, so
16 there is one AI item that understands how we
17 understand English language. For us it's very
18 easy, yeah, when did she start becoming popular.
19 She rose to fame in 1990, Destiny's Child.
20 Perfect valid answer.

21 That's not easy for computers. The
22 computer needs an AI to somehow recognize that
23 rose to fame is same as star becoming popular, and
24 it's not easy. In fact, we didn't know how to do
25 it until very recently. The same AI will also

1 match then with the word 1990 as in you're trying
2 to know something about the time.

3 And these AI systems are remarkably
4 accurate now, and we only got to control them or
5 get some sense of how to make them work not more
6 than three to five years back. Unfortunately,
7 this core piece of AI that is supposed to
8 understand the natural language is extremely
9 expensive to make.

10 What we are talking about is hybrid
11 infrastructure that costs hundreds of billions of
12 dollars. These models are trained over weeks to
13 months on terabytes of information. The model
14 needs constant maintenance in the form of fine
15 tuning and retraining that costs tens of millions
16 of dollars.

17 Not to mention the costs and time
18 associated with assembling a rare expert team for
19 AI. In short only a handful of entities today are
20 in the position to (unintelligible). The harsh
21 reality of AI is that (unintelligible). There's a
22 costly advantage of bringing this core, AI core
23 and LB, as you may say it, reserves in a very
24 (unintelligible) AI processor.

25 A handful of entities capable of making

1 this core are now offering this core as a free
2 service because not everybody can build this, and
3 they are offering this as a free AI service for
4 the benefit of all, and we are constantly seeing
5 that most AI systems are now blindly relying on
6 this free AI service to build their ecosystem and
7 software status.

8 And we are talking about AI systems
9 that are almost everywhere, search engines,
10 authentication systems, social networks, health
11 care, paralegal, you name it. But we want -- we'd
12 like to understand that there is a core AI that
13 not everybody can train, there are very few
14 entities that can train and manage it.

15 And because of the economics everybody
16 else is relying on that core understanding of
17 language or images to build their other services,
18 and we have seen this movie before where the
19 (unintelligible) gets free service. The one who
20 owns the free core AI implicitly controls the
21 meaning of the words and entities in every other
22 system (unintelligible).

23 Implicitly may or may not mean that --
24 imagine a day in which the core AI stops matching
25 shoes with Nike but very well matches it with

1 (unintelligible) areas. I can assure you that's
2 not going to be a very good day for Nike. And all
3 I give you is just one example. We could replace
4 Nike shoes with anything, countries,
5 (unintelligible), meanings that all the systems
6 are going to derive from this core.

7 The problem is any reasonable orders
8 for this AI system is almost impossible to
9 achieve. Who wants to be held accountable for it?
10 Is your system accountable or is the core AI
11 accountable, and like talking about a system which
12 can (unintelligible) system accountable we are
13 building AI that surpasses even our capability to
14 understand things.

15 Auditing them is like me with one year
16 of knowledge of chess trying to understand what a
17 grand master is thinking and trying to stop him
18 from doing something else. So we may not be sure
19 about how to R and D systems. Now, in my opinion
20 our best hope is to ensure an ecosystem of AI
21 where the core is decentralized or democratized.

22 What I would like to think about is
23 that we should be incentivising, and I don't know
24 the right mechanism, but we should be
25 incentivising entities to use entities using AI

1 system to own their AI, build their AI. So it
2 also comes with accountability, because if my
3 system is relying on some other AI system which is
4 the core then accountability is hard, but if I own
5 the system, if I build it from scratch then I own
6 the system and there could be some accounting.

7 The same thing will also help us to
8 enable faster AI innovation. We should be mindful
9 of the fact that AI innovation is needed because
10 if we are not doing it somebody else is doing it.
11 We cannot hamper the path to innovation, but if we
12 ensure some sort of incentivization for everybody
13 to start thinking about AI and to start building
14 the AI and if we could enable the masses to build
15 these kind of bigger models on the core models on
16 their own we are not just fostering innovation,
17 but we are also awarding these possibilities of
18 (unintelligible). So I think in some way a
19 decentralized AI ecosystem is better and also
20 help. Thank you.

21 MR. FERGUSON: Thank you. That's some
22 provocative stuff, so thank you for that and it
23 puts a fine point on some of the things that we've
24 been grappling with a little bit. We have a
25 minute or two for questions.

1 MR. JONES: How can you build an AI
2 system that understands morality because that's
3 what you're getting at, is -- as a real attack?

4 MR. SHRIVASTAVA: And I don't think we
5 know that answer yet, and I don't imagine we'll
6 know that anywhere soon in the future because AI
7 is based on the kinematics.

8 Now, in the kinematics if you cannot
9 define something you cannot achieve it, so there
10 has to be a formal definition of something for us
11 to formally guarantee that we can achieve it, and
12 things that does not have a formal definition you
13 can never guarantee them.

14 MR. CARSON: Yeah, like how well can
15 you define morality, you know, all the way down to
16 the pit of all moral things, so one interesting
17 note that you might want to check out --

18 MR. JONES: Yeah.

19 MR. CARSON: I get it. I get it.

20 MR. JONES: No, I know but, I mean,
21 take the classic Carter Stewart, the pornography.

22 MR. CARSON: Yeah, it's seeded, yeah.

23 MR. JONES: A machine can pretty well
24 determine pornography, okay, so that is an aspect
25 of being able to program morality if it could.

1 MR. CARSON: Yeah, so what I was going
2 to say is there is an attempt to do this in GPT.
3 They just released a new version of GPT called
4 Instruct which is supposed to have more of a model
5 towards (inaudible), like I don't know if more
6 moral is necessarily the answer, but at least
7 actively less harmful.

8 Another system that they tried to
9 implement I believe is called Palms. I think
10 other people would know more about this than me,
11 but I believe it's called Palms where they tried
12 to put like value system cordoned off on their
13 large models.

14 And so I think a lot of that morality
15 decision -- I mean, the real problem is going to
16 be, especially since we're all like making general
17 systems, what happens when a nation we don't like
18 wants a morality system that governs on top of
19 like a general purpose, who has to regulate it,
20 but the morality question is (inaudible).

21 MR. SHRIVASTAVA: So right now the way
22 we put any sense to machine learning is by first
23 defining it in a way that we believe is
24 reasonable, and then we can force the system,
25 because once we can practically quantify what is

1 moral and what is not moral in some ways then we
2 can impart that through system, but the whole
3 thing breaks down because we are talking about
4 everything starts in machine learning at a map
5 level. Things need to be formally defined. At a
6 social level things are not formally defined and
7 this gap is where (unintelligible).

8 MS. GREENBERG: But it is a huge issue.
9 You're using the term moral. I used the term
10 ethical, right, so how do you define moral, how do
11 you define ethical, which term will you use.
12 These are huge challenges in what I'm calling
13 ethical AI. That's the --

14 MR. KATURI: Actually just one
15 question. You talked about an LB and LGI. I get
16 that, but you're also talking about core AI.
17 Anything else that you think should be a part of
18 core AI within the natural language?

19 MR. SHRIVASTAVA: Look, I just gave an
20 illustration of natural language, right. People
21 are building now in images, text, like even
22 speeches. And in fact they are building models --
23 there was a paper that said one model to do them
24 all, which was basically write all of them
25 together, right.

1 So we don't really have a -- like we
2 don't really have to just focus on LB. This would
3 be the core of what we think would be -- the
4 representations of the measures, right, and then
5 what I'm talking about is, you know, like all the
6 basic things we can sense, images, speech, text.

7 MR. KATURI: So in a sense you would
8 argue that in core AI first of all define what
9 would constitute that, that should be centralized
10 and then build it?

11 MR. SHRIVASTAVA: Right. What I was
12 saying is that more than the eye looks right now
13 there's this concept of retraining and fine
14 tuning, and we have heard about that, is basically
15 somebody needs to go and understand these
16 terabytes of information in a way that is
17 consistent with our understanding of AI.

18 And once we build this core then this
19 core automatically enables a very accurate AI, and
20 that is needed frankly because otherwise these
21 systems won't work and these systems are working
22 remarkably well and making our life easy, but the
23 economics of how this system is working creates a
24 potential for, you know, what we have seen before.

25 It's like you cannot now imagine

1 something wrong happens here. We will never know
2 whether it was intended or whether it was just an
3 artifact of how things work.

4 MR. DIMAKIS: Yeah, so just -- so these
5 models in general are good foundation models now,
6 and I would say foundation models exist for --
7 it's like what a baby learns first, perception, a
8 vision and language and speech. But would you say
9 that some of those models or maybe the data sets
10 that are used in those models should be public
11 property like, you know, (unintelligible) Spectrum
12 or something that, you know, we have all agreed
13 that maybe you can rent it, maybe you can get a
14 part of it, but in general it belongs to the
15 public and it needs to be open. Otherwise, it's
16 completely stifling competition or it could
17 completely stifle and lead to a monopoly.

18 MR. SHRIVASTAVA: No, no, that's a
19 great point. So right now what is -- like the
20 morals that I'm talking about are built on public
21 data sets, so those are the Wikipedia areas. If
22 we are building a model with nonpublic data set
23 and it's not there then I don't think, you know,
24 we can be like even -- consider that model to be
25 -- you know, we don't know what is baked in that

1 model.

2 But these models are actually built on
3 public data set, but the infrastructure cost is so
4 much that even though -- like the whole Wikipedia
5 on the web is free, you can download it, but --

6 MR. DIMAKIS: But you cannot use it for
7 both. I mean, the fact that something is public
8 and that's an issue of scale -- I'm sorry I'm
9 jumping in, but we've been having this
10 conversation before. ImageNet, these images are
11 scraped from the internet, but still I cannot use
12 ImageNet for commercial purposes --

13 MR. SHRIVASTAVA: Correct.

14 MR. DIMAKIS: -- or, you know, at GPT-3
15 I don't even know which GPT-3 was trained on, and
16 probably it was trained on --

17 MR. CARSON: It was 25 terabytes, in
18 essence of 12 million dollars a pop.

19 MR. DIMAKIS: Yeah, but it is public,
20 is it -- like what license, and when we say
21 something was public was it licensed for
22 commercial use, or Copilot by Microsoft I
23 understand was trained on GitHub on public --
24 people made that go public, but I don't know, I
25 don't think that they actually gave permission for

1 profit use of the code, right? I mean, I don't
2 know if anybody knows about this, but --

3 MS. GREENBERG: We probably need all
4 the sectors looking at this.

5 MR. DIMAKIS: So it's not as simple as
6 when you say something is public, sure, you know,
7 I can put my pictures up but if a company is
8 making profit maybe I didn't consent, so it's not
9 that simple.

10 MR. SHRIVASTAVA: No, no, that's a good
11 point. (Unintelligible) these AI models
12 (unintelligible).

13 MR. CARSON: I would make the
14 suggestion that the public/private model -- I
15 mean, one of the issues is Stanford just put out
16 -- talking about foundation models just put out
17 GPT-3 when it's GPT-2, right, and so you're now
18 three generations behind Google's Multimodal
19 model, right, so I think if you can have a
20 public/private partnership with increased share to
21 the public or shared resources and create that
22 competitor that's what lives in the public, that's
23 what you can probably like ask a better
24 dissimulation on to see what weird stuff is on it.
25 I think that's the only way you can possibly do

1 that.

2 MR. FERGUSON: This is probably a
3 perfect place to draw our session to a close today
4 because to me it really highlights how much more
5 work we need to do. There are so many questions
6 that need more advice and thinking and grappling,
7 and that's what this commission is charged with
8 doing.

9 So hearing from folks like yourselves
10 who have so much expertise and knowledge about
11 these issues is incredibly helpful to us, so thank
12 you very, very much for your time and your effort
13 and your testimony and sharing your thoughts and
14 views with us here today.

15 I am going to turn it over to Tom
16 Quaadman from the chamber of commerce which is the
17 entity which is convening us all, so Tom.

18 MR. QUAADMAN: Well, I want to thank
19 our designated bad guy.

20 (Laughter.)

21 MR. FERGUSON: I'm a dad. I'm a really
22 good bad guy.

23 MR. QUAADMAN: No, I have to say, you
24 know, having been as you were involved in many,
25 many, many congressional hearings they don't go

1 this smoothly.

2 MR. FERGUSON: Right.

3 MR. QUAADMAN: And, you know, first off
4 I want to thank the Austin chamber who are our
5 great hosts today for having us. I want to thank
6 each one of you. I know I've talked I think with
7 most of you individually. I know you get to deal
8 with Jordan and Michael a lot, but I'm the guy
9 behind the scenes making sure they have what they
10 need.

11 But I know you were each taking a lot
12 of time out of your day, out of your weeks to work
13 on this very important project, so thank you. I
14 do think -- you know, Shekar and I were having a
15 little bit of a side bar and, you know, Mike, you
16 were just getting to this point, too, of this is a
17 good scene setting, right.

18 This is a good context for providing
19 good context, and now we've really got to work
20 through what these different issues are, what are
21 the recommendations around that, and I was just --
22 you know, throughout the day I have been
23 reflecting a little bit on Will Hurd's opening
24 remarks, but I think two of the points that he was
25 making are at the very center of this, and this is

1 why Jordan and I were talking about this project
2 two years ago when we were just conceptualizing
3 it.

4 One is for the benefit of humanity,
5 right, because, you know, AI is going to continue
6 so it's like how can it be used in the best ways
7 for, you know, for society, and then the other
8 side of it is, too, we have to put our parochial
9 interests aside, right. I mean, traditionally you
10 hear the U.S. Chamber of Commerce. It's like oh,
11 they're the antiregulation people. Well, no,
12 we're not that here, right.

13 We need to have the right structures.
14 We need to have the right rules in place in order
15 for this technology to develop and to move forward
16 and, you know, Jordan and I have also been very
17 careful as well that we wanted to make sure --
18 we're doing an international component. We wanted
19 to make sure we were having EU engagement and UK
20 engagement.

21 And Mike, to your point earlier today
22 those discussions are much, much more important, I
23 think have a much, much different veneer now than
24 they would have had even three weeks ago, so I
25 really want to thank each one of you for that.

1 We've got a lot of work ahead of us.

2 We have flipped the order a little bit,
3 that Claire has been able to make it. So just a
4 couple more minutes and we'll let you go on your
5 way and we'll see you all in Cleveland, and thank
6 you. So Claire.

7 MS. VISHIK: Thank you. Thank you so
8 much. I am Claire Vishik from Intel. It's an
9 honor to be here, and my (inaudible) testimony
10 and (inaudible) and traffic wasn't what we
11 expected to. It took an hour and 10 minutes to
12 get here.

13 (Laughter.)

14 MS. VISHIK: So I certainly appreciate
15 this opportunity to talk to this distinguished
16 audience, and I would like to focus on a few areas
17 that have not yet been covered by others.

18 Artificial intelligence certainly captures the
19 imagination of technologists, policy makers and
20 users, but this technology, the thought that we
21 could emulate a human brain by computers is not
22 new.

23 Even machine learning is not new to the
24 world. The idea of artificial intelligence
25 emerged in the 1960s together with the computers

1 in neural networks, ideas that brought them
2 forward in the 1980s. So why was there
3 essentially a delay within the years in everyone
4 using artificial intelligence as we know it today?

5 There were many factors, such as
6 changing the paradigm, looking at what the
7 computers did better rather than attempting to
8 emulate the human brain. But the main, the most
9 important factor was a different one.

10 It was that advanced computing, the
11 computing power was finally ready to process all
12 this information in that the computing
13 infrastructure to support it already existed. We
14 are talking about networks, storage of (inaudible)
15 power, ability to formalize data and many other
16 things.

17 So, you know, the field of artificial
18 intelligence as we know it today would not have
19 been possible without advances in computing and
20 semiconductors especially of course serve as the
21 foundation for this ecosystem, and this is what
22 drives artificial intelligence as we know it now.

23 So I would like to say a few words
24 before pointing out a few important areas for
25 end-to-end artificial intelligence, to the big

1 picture for artificial intelligence that sometimes
2 is not easily captured. Artificial intelligence
3 as a (inaudible) has significant benefits.

4 Frequently when I participate in
5 meetings where people talk about artificial
6 intelligence they talk about risks, they talk
7 about concerns, and it is true that artificial
8 intelligence cannot exist without addressing the
9 concerns having to do with ethics, having to do
10 with privacy, having to do with fighting bias and
11 a number of other issues.

12 But it's also true that the majority of
13 competitive obligations in artificial intelligence
14 systems that provide the most benefit to date are
15 not human basic. They are based on data that is
16 not personal data. Those are things that have
17 tremendous impact on the efficiency of the economy
18 that makes everyone's lives better.

19 Among those applications I would like
20 to mention things like network orchestration,
21 something that allows you to use networks without
22 bottlenecks even when there is big traffic, things
23 like early detection of defense on the
24 manufacturing front, things like capturing issues
25 in the soundness of a building before it

1 collapses, like taking it as pictures, things to
2 -- like looking at the drain or capturing weather
3 information from the sensor and processing it.

4 All those applications have
5 machine-to-machine applications or there's another
6 machine that uses this information for a
7 beneficial process, not the human. And it's just
8 important to understand we are talking about this
9 highly beneficial technology and we need to see
10 the benefits at the same time as we talk about the
11 risks, including societal risks.

12 I would like here to highlight a few
13 areas that I think are extremely important for the
14 angle of competitiveness with regard to artificial
15 intelligence that will help the United States
16 preserve our leadership in technology, in emerging
17 technologies in general including artificial
18 intelligence.

19 The important thing is to see the big
20 picture. It's great to focus on algorithms, to
21 focus on data, the nature of data, but there will
22 be no algorithms, no data if you don't have the
23 semiconducting structure that is capable of
24 supporting them. So when we are talking about
25 competitiveness, and this is usually the

1 discussion of R and D, of commercialization, we
2 have to see the big picture.

3 We have to start at the bottom,
4 advanced semiconductors or hardware, network
5 storage allow you to have the system that allows
6 you to process algorithms in a way that
7 approximates the decisionmaking of the human
8 brain, although it does it differently.

9 So innovation and security of privacy,
10 that is important for the success of artificial
11 intelligence, but it is also a big area that is
12 rooted in hardware as well as energy efficiency.
13 It's great to, you know, aspire to be as energy
14 efficient as possible. This is a challenge in
15 artificial intelligence.

16 But it's impossible to do it without
17 advanced processors that allow you to do things
18 that save energy, such things as (inaudible) where
19 you don't expect cycles and to run energy on
20 something that's not essential, something that's
21 low impact, on things such as comarked encryption,
22 for instance, that allows you to combine data from
23 various data sources without jeopardizing privacy.

24 It is something that supports neural
25 data processing, these native architectures. To

1 date more energy cycles are spent moving data than
2 processing data, so if you can process data at the
3 source it will create a world of difference. So,
4 you know, because -- a couple of words on the
5 regular (inaudible) frameworks because artificial
6 intelligence is so horizontal, so broad it spans
7 from, you know, manufacturing to education and
8 everything in between.

9 It's important to know that we have
10 already a very powerful functional actionable
11 regulatory frameworks in most of those areas.
12 Adapting them to artificial intelligence rather
13 than building new controls is probably the best
14 way to go. It's something that will allow
15 technologists and users and regulators to
16 integrate artificial intelligence in everyday life
17 as quickly as possible.

18 And because artificial intelligence is
19 so broad horizontally and so pervasive vertically
20 from processors to, you know, human factors to
21 using the computers it's also impossible to do a
22 lot of work through private/public partnerships to
23 ensure that we invest and we support and, yes,
24 collaborators, the big picture from the processors
25 to the human beings that use the systems.

1 So thank you very much for allowing me
2 to speak here today, and well, again I want to
3 congratulate you for this -- the gradual but
4 visible return to normal life after two years of a
5 pandemic, so thank you very much.

6 MR. FERGUSON: Thank you.

7 (Applause.)

8 MR. FERGUSON: That is a wrap. Thank
9 you, everybody, for a great first session. I
10 appreciate it very much.

11 (The conference was concluded at 4:00
12 p.m. CST.)

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1 CERTIFICATE OF SHORTHAND REPORTER - NOTARY
2 PUBLIC

3 I, Bonnie K. Panek, a Notary Public in
4 and for The State of Texas, the officer before
5 whom the foregoing proceedings were taken, do
6 hereby certify that the foregoing transcript is a
7 true and correct record of the proceedings; that
8 said proceedings were taken by me stenographically
9 and thereafter reduced to typewriting under my
10 supervision; and that I am neither counsel for,
11 related to, nor employed by any of the parties to
12 this case and have no interest, financial or
13 otherwise, in its outcome.

14 IN WITNESS WHEREOF, I have hereunto set
15 my hand and affixed my notarial seal this 14th day
16 of March, 2022.

17 My commission expires: January 22, 2025

18

19

20

Bonnie K. Panek

21

NOTARY PUBLIC IN AND FOR

22

THE STATE OF TEXAS

23

24

25

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