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UNITED STATES DEPARTMENT OF COMMERCE
DIGITAL ECONOMY BOARD OF ADVISORS (DEBA)
PUBLIC MEETING

MONDAY, MAY 16, 2016

8:34 a.m.

The United States Department of Commerce Digital Economy Board of Advisors met at 8:34 a.m., at the Commerce Research Library, 1401 Constitution Avenue Northwest, Washington, D.C. 20230, when were present:

1 A P P E A R A N C E S

2 COMMERCE DEPARTMENT:

3 PENNY PRITZKER, United States Secretary of
Commerce

4 BRUCE ANDREWS, Deputy Secretary of Commerce

5 LAWRENCE E. STRICKLING, Assistant Secretary for
6 Communications and Information

7 ALAN DAVIDSON, Director of Digital Economy

8 EVELYN REMALEY, Designated Federal Officer

9

DIGITAL ECONOMY BOARD OF ADVISORS:

10

ZOBAIRD, DEBA Co-chair; Markle Foundation

11

MITCHELL BAKER, DEBA Co-chair; Mozilla

12

13 KAREN BARTLESON, Institute of Electrical and
Electronics Engineers

14 GREG BECKER, Silicon Valley Bank, SVB Financial
Group

15

JAMES CICCONI, AT&T

16

AUSTAN GOOLSBEE, University of Chicago

17

MINDY GROSSMAN, HSN, Inc.

18

OISIN HANRAHAN, Handy

19

20 SONIA KATYAL, University of California at Berkeley
School of Law

21 JAMES MANYIKA, McKinsey Global Institute

22 WILLIAM RUH, GE Digital

1 APPEARANCES CONTINUED:

2 BRAD SMITH, Microsoft Corporation

3 COREY THOMAS, Rapid7

4 MARTA TELLADO, Consumer Reports

5 ALSO PRESENT:

6 SENATOR MARK WARNER (D-VA)

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Moderator: ZoBaird

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ZoBaird

Adjourn Public Session

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

2 MS. REMALEY: Wonderful. Good morning,
3 everyone. Secretary, thank you very much for
4 walking us through that. Congratulations. My
5 name is Evelyn Remaley, and I'd like to call the
6 first Digital Economy Board of Advisors meeting to
7 order.

8 I just want to introduce myself. My
9 name is Evelyn Remaley, and I'm the designated
10 federal officer for the board. And there are just
11 three things to remember about that. One, you'll
12 be hearing quite a bit from me over the next two
13 years. So hopefully, that's a good thing and we'll
14 try not to make that too painful.

15 The second thing is that I am the person
16 responsible for making sure that the work that we
17 do is open and transparent. So I will be keeping
18 track of that as well. As a FACA, we need to be
19 working very openly and with public participation.

20 The other thing to remember, and I think
21 the secretary has actually characterized this very
22 well, is that me and my time, we're actually going

1 to be the bridge for the group into the next
2 administration. So I want to let you know that
3 we'll be working with you for the full two years
4 and helping to be the glue between those two.

5 In my day job, I'm actually the deputy
6 associate administrator for policy analysis and
7 development at NTIA, a mouthful of a title. And
8 NTIA is responsible for really watching and
9 stewarding the Internet, making sure that it
10 remains open and free and secure. We really help
11 to keep the flame for the Internet. Larry
12 Strickling will be talking about that a bit more.

13 But I wanted to just say that I'm very
14 honored to be serving with you all in this
15 capacity. I appreciate the secretary and assistant
16 secretary placing this responsibility with me.
17 And thank you again. And now, let me pass the
18 meeting over to the secretary. Thank you.

19 SEC. PRITZKER: Well, first of all, I
20 just want to say thank you to all of you. You
21 have given your most precious thing, which is your
22 time, to help us to address a number of really

1 exciting but challenging issues that we face, not
2 just at the department, but as Larry will tell
3 you, our responsibility to really be the chief
4 advisor to the president as it relates to digital
5 issues. And so, I'm really excited that all of
6 you have agreed to be a part of our Digital
7 Economy Board of Advisors.

8 So thank you for that. And I
9 particularly want to thank Zoand Mitchell for your
10 willingness to lead this effort. It's very
11 important that we're well-organized and well-
12 focused and I think that the group is in great
13 hands. So I'm very excited about that.

14 As you know, you met last night our
15 assistant secretary, Larry Strickling, and also
16 our digital director of digital economy, Alan
17 Davidson, and of course Evelyn, who's our -- not
18 only our chief federal officer, but plays many
19 roles for us at the department.

20 Really, the focus of the Digital Economy
21 Board of Advisors is to help us understand what is
22 the most effective way that we can be engaging as

1 it relates from a policy standpoint with the
2 changes that have come about because of the
3 digitization of everything. And fundamentally,
4 there is this notion of there's the digital
5 economy and the non-digital economy.

6 I don't buy that distinction. I think
7 everything has become -- runs on a digital
8 platform. I don't care -- and certainly GE would
9 be the primary example of that -- acknowledging
10 that. And so, the challenge that we face is that
11 the pace of change going on in industry is so fast
12 and government is really tending proactive in this
13 instance. And we find ourselves dealing with some
14 very complex policy questions without the kind of
15 guidance -- bring to us. And I think as you think
16 about your work -- dimension.

17 We're, of course, as political
18 appointees, time-dated. But the work is not time-
19 dated. And so, part of what we're hoping for you
20 to do is to develop an agenda that bridges not our
21 -- not just our work but the work into a future
22 secretary. And we feel part of what we're doing

1 is laying out with our professional staff, who
2 will survive us as politicals, and for the next
3 secretary and political leadership, an agenda that
4 is really robust and is well-informed by all of
5 your experiences and your personal leadership in
6 the economy. So that's a very important role.

7 The second is to help us think about
8 what are the dimensions or different topics that
9 we should be focused on as a department and help
10 us think even about organizational questions. Do
11 we have the right structures in place to be able
12 to do our job effectively, which is, among other
13 things, to be a policy creator and a policy
14 advisor as it relates to things that are issues
15 that are raised by virtue of the fact that our
16 economy rides on a digital infrastructure.

17 And you can help us to identify what are
18 the emerging challenges, what are the trends. But
19 you can also help us identify what are our
20 opportunities to help shape the policy construct
21 that will help address issues that are being
22 raised daily at this point.

1 Many of those issues, whether it's
2 privacy, cybersecurity, et cetera, are well-known
3 topics. But the implications for technology, for
4 innovation, for intellectual property protection,
5 for our entire -- you know, I could go on and on -
6 - our economy, of the fact that we live on a
7 digital backbone that was never designed to become
8 the digital backbone of the economy. It was
9 designed for a different purpose. And now, we're
10 retrofitting it constantly to fit its really
11 ubiquitous role.

12 So I think that this is -- you all have
13 a big task. So what I would then say is what is
14 most useful is not to boil the ocean, but to pick
15 three to five, three to six things to focus on and
16 really see where you can move the needle. And it
17 doesn't mean that other issues aren't important.
18 It's a question of focus and prioritization
19 because, while you are mighty, there is a finite
20 number of you. And your staffs have finite amounts
21 of time.

22 And we have found that our most

1 effective advisory groups have some focus and tend
2 to try and have things that they get done, so then
3 there's a sense of accomplishment and confidence
4 in the process and purpose of the group. And
5 then, you can move to different issues, as opposed
6 to trying to tackle everything at once.

7 So I just want to close by saying thank
8 you, thank you to the leadership on our team who I
9 have enormous confidence team, and thank you to
10 all of you for your commitment to this group.

11 MS. REMALEY: Thank you.

12 MS. BAIRD: Thank you -- oops, sorry --
13 to be able to work in this capacity and I thank
14 the secretary very much for creating this board,
15 for seeing the centrality of the issue to the
16 future success of the country and to all of you
17 for being willing to collaborate. And Mitchell
18 and I very much look forward to working with you
19 on trying to make this digital economy work for
20 all Americans, which is really what I think we
21 should have as our touchstone.

22 It's the largest transformation in the

1 economy in probably a hundred years, since we
2 moved from an agricultural economy to an
3 industrial economy. There's tremendous anxiety,
4 fear, even anger in the country because people
5 don't feel that they are participating, that this
6 digital economy is something where they can see
7 themselves succeeding. We've had stagnant wages.
8 Wages have been flat for many people for a long,
9 long time. And the digital economy is even more
10 disruptive.

11 So I think we should start this work
12 with a very strong sense of purpose and sense of
13 urgency because so many people in our country feel
14 that the digital economy is undermining their
15 success, when I think we all feel that there's
16 tremendous potential for people to succeed through
17 the digital economy.

18 There's the opportunity for small
19 businesses to use data to find markets all around
20 the world and to grow and hire more people.
21 There's the opportunity for people to get
22 retrained in order to participate in and succeed

1 in the jobs of the future, to find new career
2 paths, maybe to get stackable credentials that,
3 over the course of a lifetime, enable more people
4 to get a college diploma.

5 So I think we all feel that there's
6 tremendous potential in the digital economy. But
7 it's up to us to help the Commerce Department
8 really drive this so that everyone in our country
9 and around the world can participate and succeed
10 and this can be a benefit to everyone.

11 And so, I hope that we'll use the
12 talents and knowledge of everyone here, who
13 understand that you can use 3D printing to make
14 any place an advanced manufacturing facility, you
15 can use Internet tools to enable people to target
16 the skills that jobs -- that employers want and to
17 find the training.

18 And we need to find ways to really
19 provide energy behind that, to enable the Commerce
20 Department to fulfill its capacity to focus on the
21 right things and enable people throughout the
22 business sector and education and training sectors

1 to play the role that they can play.

2 So I wanted to start off just having us
3 appreciate this is no ordinary board. And the
4 secretary's created this for no ordinary task.
5 This is a tremendous transformation and I think
6 she has very high expectations of us. So I really
7 look forward to working with everyone to see if we
8 can step up to that. Mitchell?

9 MS. BAKER: I'd like to start by saying
10 thank you to the secretary for creating this board
11 and including me on it. I'll agree with
12 everything that Zosaid and add that I think the
13 Department of Commerce is a really exceptional
14 place to tackle these issues and to take advantage
15 of the opportunity side of the equation.

16 You know, here in the United States, the
17 power of commerce, and private commerce in
18 particular, guided by an appropriate social
19 framework is part of the magic sauce of the United
20 States.

21 And so, that question of the appropriate
22 social framework, what priorities and policies are

1 important from commerce, how to engage
2 productively with private activities and how to
3 build a new society based on a digital backbone
4 that carries the magic that we've known of private
5 economic opportunity unleashed, innovation
6 available, citizens educated and able to
7 participate with growing opportunity, that is a
8 key to our future.

9 And commerce has a particular role to
10 play. It's always been exceptionally important in
11 the United States. And to my surprise, as a
12 lawyer in training, you know, fundamental
13 constitutional questions about the nature of the
14 United States have come out of commerce and the
15 nature of commerce.

16 And so, it's an enormous opportunity.
17 And I think we have the background and the scope
18 and I think that this board of advisors in this
19 location and time can do something that's rare
20 internationally. And we can focus on
21 opportunities and challenges, plus private
22 initiative and innovation and hopefully, and

1 importantly, if we do well, bring in opportunity
2 to more citizens so that the opportunities are
3 visible and the change is less scary because
4 there's hope.

5 So I echo the excitement of working with
6 you. I echo the belief that good policies and
7 priorities are important. And I think we're in an
8 unusual and unique position, both in the United
9 States, but also globally, to be able to tackle
10 these issues. So thank you all for joining and
11 I'm really thrilled.

12 MS. BAIRD: Larry, I think we're looking
13 to you.

14 MR. DAVIDSON: Oh, I was going to say I
15 think when we had -- not to -- I think when we had
16 contemplated this section of the agenda, I think
17 we also -- not to step on the prerogatives of the
18 chairs, but I think we had contemplated at least
19 opening it up for any conversation or questions
20 for the secretary --

21 MS. BAIRD: Great.

22 MR. DAVIDSON: -- or for the co-chairs

1 about what you've said and about the kind of goals
2 for the board, because I think you've laid out
3 kind of an ambitious set of ideas about what we
4 could do. And I think we just wanted to make sure
5 that others had a chance to chime in before we
6 jumped into our presentations, but there may be no
7 comments, unless -- okay.

8 MS. BAIRD: Thanks, Alan. Larry?

9 MR. STRICKLING: Good morning, and thank
10 you. And thanks to all of you for your
11 willingness to participate in this committee.
12 We're at an important point, as the secretary
13 mentioned, here at the Department of Commerce as
14 we expand our horizons to pull in a variety of
15 issues that we're now putting under the rubric of
16 digital economy.

17 But it's based on a foundation that I
18 wanted to spend a little time just introducing you
19 too in terms of what we've been working on the
20 last several years here at the department, which
21 has been perhaps a little more focused on pure
22 Internet policy.

1 And so, we welcome the broadening of
2 this inquiry to include these larger issues of the
3 digital economy writ large. And I think that's an
4 important evolution for us here at the department
5 and a point at which you all can make a very key
6 contribution to us as we start laying out an
7 agenda for dealing with these broader issues.

8 But for the last several years, as we've
9 focused on Internet policy -- and I'm speaking
10 primarily for NTIA. But this has been an effort
11 for the last several years that has engaged many
12 of the bureaus here at the department, including
13 the Patent and Trademark Office, the National
14 Institute of Standards and technology, our
15 International Trade Administration have all
16 participated in the work we've done.

17 But it's all come out of some very basic
18 principles that we have followed. One is we want
19 to maintain the Internet as a free and open space
20 that continues to allow economic growth, to
21 thrive, spurs job creation and encourages and
22 supports free expression.

1 And underneath that, there are two key
2 principles that we have really organized our work
3 around the last several years. The first is the
4 building of trust and the maintenance of trust by
5 the users of the Internet. And this brings within
6 it a wide variety of issues. Obviously, privacy
7 has been an important one that we've spent some
8 time on, as well as the protection of intellectual
9 property, dealing with the issues of
10 cybersecurity.

11 But all of this is based on the idea
12 that this tool will work best as long as people
13 trust it. And unfortunately, we are starting to
14 see a decline in public confidence in the
15 Internet.

16 Through some work that we've sponsored
17 with another of our sister bureaus, the Census
18 Bureau, we released some information last week
19 that indicates that people who are heavy users of
20 the Internet are starting to stop using it for
21 particular tasks because of the fear they have
22 that their private information might be

1 compromised through a data breach or through the
2 use of the information in a way that they're not
3 used to.

4 So we see trust is an area where we have
5 to continue to put a lot of emphasis. Here at
6 NTIA, we have convened stakeholders to develop
7 codes of conduct to improve consumer privacy. We
8 worked with the Patent and Trademark Office in a
9 stakeholder process to deal with the issue of
10 notice-and- takedown for illegal content that may
11 be out on the Web. NIST has utilized a lot of
12 these tools in terms of developing its
13 cybersecurity framework. So all of these come
14 under this notion of building trust.

15 Now, the other key element for us has
16 been inclusion. How do we get people connected to
17 this and how do we make sure that not just
18 domestically, but internationally we are doing
19 what it takes to get as many citizens of the U.S.
20 and citizens of the world connected to this
21 technology?

22 And so, in the United States, we've done

1 a lot of work on infrastructure in terms of things
2 direct as finding more spectrum to be made
3 available for broadband services. We also had the
4 opportunity to invest \$4 billion in projects under
5 the Recovery Act to expand the amount of Internet
6 access or broadband access that would be available
7 in more underserved parts of the country.

8 And as part of that, we've also focused
9 on how to get people the tools they need to have
10 to utilize this infrastructure. So we have spent
11 a lot of effort on things like digital literacy
12 training and sustainable adoption programs to get
13 people to actually subscribe to these services and
14 use them and benefit from them because it's
15 becoming increasingly difficult for anybody to
16 operate in today's economy without these basic
17 tools of digital literacy.

18 Internationally, we have been involved
19 with primarily ICANN as it continues to evolve as
20 an organization trying to engage the world in
21 terms of having more countries, more companies,
22 more individuals connected to the Internet. And

1 throughout all of this, we've been experimenting
2 with the tools of governance and the tools of
3 policymaking.

4 We have certainly found, and it's no
5 surprise to anyone, that the traditional forms of
6 regulation and legislation really aren't serving
7 this economy. And we have to find alternatives.
8 We just can't wait for the regulators to catch up
9 on last year's issues or wait for the legislators
10 to deal with these very complex problems.

11 And so, we have spent a lot of time
12 focusing on how to get -- make progress in this
13 space without utilizing the traditional tools.
14 And so, we have focused on what is now we've been
15 calling the multi-stakeholder process. And when
16 we started with this back in 2009 and 2010, you
17 know, the smart people said, oh, that'll never
18 work. You'll never get a newspaper to publish the
19 word multi-stakeholder because it's too
20 complicated. No one will understand it.

21 But it absolutely has become part of our
22 lexicon today for people who work in this space.

1 And what it does is it involves any stakeholder
2 who wants to participate. There are no
3 credentials required. If you want to participate,
4 you show up and participate. And we also provide
5 -- it's not a consultation. We provide to these
6 stakeholders the opportunity to actually reach a
7 consensus decision on a topic.

8 That's how we've done our privacy codes
9 of conduct. That was the way the notice-and-
10 takedown work was done with the Patent and
11 Trademark Office. And it's a tool that we continue
12 to explore and continue to look for opportunities
13 to utilize as a way to have people make progress
14 on these issues without having to wait for their
15 local commission or their local legislature to
16 catch up with the problem.

17 And so, it's something that's of
18 continuing interest to us as we focus on how to
19 make policy in this space and how to make progress
20 in this space, in addition to dealing with the
21 actual substantive issues we have to deal with.

22 And now, for I think more discussion of

1 that, I'll turn it over to Alan take you through
2 the digital economy agenda as it's been developed
3 here at the department.

4 MR. DAVIDSON: Let's see how this works.
5 Good morning. I'm Alan Davidson, director of
6 digital economy at the department. Great to see
7 so many of you here.

8 I do have a first set of slides we'll be
9 using. They've been -- they're actually in your
10 packets. For those of us who are up at the table,
11 they look like this. And we're projecting, and
12 for folks watching at home, hopefully the
13 projection has got it on the Web and we'll be
14 posting these also because of our -- yes --
15 interest in transparency and openness. And my
16 slides are not as awesome as James Manyika's
17 slides coming up.

18 But I will -- I'm excited to be talking
19 to you today a little about our agenda here. And
20 I'll say I've been at this job for almost a year
21 now. I think I was brought on in part with the
22 theory that this is a far-flung department, one of

1 the things that really struck me when I joined,
2 47,000 employees, 12 different bureaus -- you've
3 heard a little bit about it -- all of which are
4 now finding themselves doing pieces of work that
5 we would think of as being digital or related to
6 the digital economy or Internet policy.

7 And so, I came in, in part, to help
8 create an integrated approach, a broad, cross-
9 departmental approach to thinking about the
10 digital economy and of course this very advisory
11 board as part of that effort.

12 I think our goal for the next couple of
13 minutes was just to make sure that we were giving
14 you a flavor for the agenda that we've created
15 over the last year and that we've been honing and
16 we would, of course, love your feedback. A lot of
17 the topics we're going to touch on, very quickly,
18 are things that we could talk about for hours and
19 hopefully will in some ways in our work over the -
20 - in the coming months do that.

21 So just a -- so just in terms of a quick
22 level set, and of course some of these things are

1 things we've been talking about for a while.
2 Let's see. If I point this -- that totally works.
3 So just a quick sense of our theory of the case,
4 our starting point, as you've heard, there's a
5 strong belief here that the digital economy is a
6 key part of the future success of the broader
7 American economy. And it's a source of growth.
8 It's an enabler of trade.

9 We see data that shows us things like
10 the fact that ICT is already over 5 percent of
11 GDP. But that's only a little part of the story.
12 The coming digitization, the importance of the
13 digital economy and digital trade is something
14 that we know is going to be an ever bigger part,
15 feature of our economy.

16 At the same time, we know that the
17 success that we feel we've had so far is something
18 we can't take for granted, that technology is
19 changing rapidly. It's an incredibly competitive
20 business environment.

21 But also, that there is a -- if anything
22 - - maybe a pendulum swing, in some ways, about

1 regulation of the digital economy, particularly
2 globally, and that the openness that we've taken
3 for granted and the idea of permissionless
4 innovation that has been so critical, we think to
5 the success of the Internet is not something that
6 we could take for granted, especially in the
7 international environment.

8 So that is something that has motivated
9 our thinking about our agenda. We saw -- we set
10 out a set of grand, both -- I call them sometimes
11 grand challenges. The secretary is very keen to
12 call them opportunities as well. And we see these
13 opportunities - and they really reflect a lot of
14 the dynamics that Larry just outlined.

15 And we've created an agenda that focuses
16 on four main pillars: promoting a free and open
17 Internet around the world, where data can cross
18 barriers and borders without a lot of barriers to
19 that flow of data. A second is the pillar of
20 trust, promoting security and privacy online
21 because we know that the digital economy will only
22 thrive and only succeed if people can trust that

1 their privacy and security is protected. A third
2 is this area of access and skill building, very
3 much the digital inclusion issues that Larry was
4 talking about. And a fourth is how we can play a
5 role in supporting innovation and emerging
6 technologies.

7 And so, this fourth slide is really sort
8 of the business end of this, which is how we map a
9 lot of the activities that are happening within
10 the department against these priorities. And I'll
11 just tick through some of them really quickly.
12 And I'd really like -- we'd welcome your comments
13 or questions.

14 We've got -- in the area of promoting a
15 free and open Internet, I say open Internet not in
16 the net neutrality sense of openness but in the
17 cross-border flow of data view of openness. We're
18 doing a huge amount of work. This comes up, for
19 example, in areas like we've just recently
20 launched a project on digital attachto put people
21 in the foreign commercial service at post in
22 embassies who can help us tackle some of these

1 challenges.

2 Larry talked about IANA and ICANN, the
3 work around the digital single market in Europe,
4 making sure that it continues, even as we find
5 many positive things about it, we are also working
6 with our European colleagues to make sure that it
7 doesn't unfairly impact U.S. firms.

8 We're doing a big project on the G20
9 meetings this year, which will be held in China,
10 where there's a digital economy work stream and
11 making sure that that is something that still
12 promoted openness and freedom on the Internet.
13 We're doing a tremendous amount of work in the
14 trust agenda. The privacy shield and the
15 negotiations we've had with the Europeans around
16 cross-border data flows between Europe and the
17 U.S. has gotten a lot of attention.

18 We're doing a huge amount of work on
19 cybersecurity. We're supporting the president's
20 Cybersecurity Commission. We have the NIS
21 cybersecurity framework, which is a huge public-
22 private partnership. We do a lot of work on

1 government access to data. We've got some privacy
2 multi-stakeholder processes underway.

3 We also think about intellectual
4 property in this category of trust too. So we
5 recently published a paper on copyright in the
6 digital age, for example. Access and skill
7 building, you heard Larry talk about our work on
8 broadband access, on spectrum.

9 We also care a lot about thinking about
10 how we build skills. The secretary was just out
11 in Silicon Valley, in fact, in the Bay Area last
12 week talking to ed tech companies and career
13 accelerators and thinking about how we can play a
14 role in helping to make sure that people have the
15 skills they need to succeed. So it's more about
16 just getting online. It's making sure that people
17 can succeed when they're online.

18 And lastly, I think one of the things
19 that's really exciting to us is this area about
20 emerging technologies. Part of it is, of course,
21 the work of PTO in supporting good, smart patent
22 reform. But also, thinking about how we can

1 engage in emerging areas.

2 So we have a new project we've been
3 working on, for example. There's a lot of work in
4 the department in particular on new technologies
5 like autonomous and connected vehicles. We
6 released an RFC around the Internet of things. We
7 find people doing work on things like drones.

8 And we're trying to bring those --
9 collect those different groups of people who are
10 working on these things into working groups so
11 that we can offer support for emerging
12 technologies that we think are really important
13 and also we can do some issue spotting early in
14 the development cycle to think about how we deal
15 with the potential -- both the opportunities and
16 the disruptions that come from new technology.

17 So that's sort of a whirlwind tour of
18 the things that we're working on. We have some
19 structural initiatives that we're also doing.
20 This board of advisors is one of those. I
21 mentioned the attachproject, our support for
22 emerging technologies to build capacity.

1 But I'll leave you with this slide four,
2 which is really, like I say, our broad map of the
3 big themes we're working on and the big policy
4 challenges and opportunities we see. And as you
5 see, just not -- just a -- these are the big
6 picture issues. There are tons of smaller
7 projects happening in the department on these
8 areas and we welcome the chance to engage with you
9 on them. So, thank you. We welcome your
10 questions.

11 MS. BAIRD: Does anybody want to make a
12 comment or ask any questions of the leadership of
13 the department before we move to focusing on the
14 substance of our work and trends? Any comments on
15 what's been said so far or questions?

16 MR. DAVIDSON: And I would just ask,
17 either now or later, we welcome -- are we missing
18 anything? Does this make sense? Does it resonate
19 with you folks? You've heard Larry talk about the
20 - - you know, the big challenges we see.

21 This is kind of one map -- one way to
22 write it up. There are lots of different ways to

1 cut this -- slice this. But we'd be really
2 interested in your thoughts on whether we're
3 missing anything or --

4 DR. MANYIKA: Thank you, Alan. I was
5 just going to ask one questions. One of the
6 things that's extraordinary about the place where
7 commerce sits is all the different agencies and
8 entities underneath it.

9 I'd be curious what other things, with
10 regard to measurement, to what the -- you know,
11 the bureaus, I think like the Bureau of Economic
12 Analysis, do with respect to support you in what
13 you're doing with the digital agenda. It's a very
14 impressive agenda, by the way.

15 MR. DAVIDSON: And I'd just say I think
16 it's a terrific question. We've actually engaged
17 in -- it's actually like a sub-bullet and I should
18 probably pull it out because it's becoming a
19 bigger part of work. Under our free and open
20 Internet, for example, we've just started a
21 project in coordination with ESA, the Economic
22 Statistics Administration, here to do more work on

1 measuring the digital economy, something that I
2 know we'll be talking about more.

3 And we in fact -- was it just last week
4 -- just last week, we had a roundtable of
5 economists -- one of your colleagues was there,
6 actually -- talking about how we measure cross-
7 border data flows. So we actually have a work
8 stream in process right now where we're beginning
9 to think about this issue of measuring -- well,
10 measuring the digital economy writ large, which is
11 a huge area.

12 And even -- but the most actionable
13 thing we're doing right now is specifically trying
14 to think about cross -- we're slicing off this
15 piece of, okay, let's just focus on cross-border
16 data flows as a starting point. How do we measure
17 that? And I think that's just the tip of the
18 iceberg.

19 I would also say there are other huge
20 areas around data that aren't even mentioned here.
21 We've looked at our -- you're looking at our
22 digital economy policy agenda. We also are doing

1 a huge amount of work with data. We have a chief
2 data officer, I think many of you have heard about
3 this, we've launched something called the Commerce
4 Data Service. And you know, arguably, you would
5 say data could be part of this larger umbrella.

6 Structurally, we have a -- we've got a
7 little bit of a structural separation in the sense
8 that we've got a group that's working on these
9 data projects and you're looking at the policy
10 agenda. But we are -- we work very well very
11 closely together.

12 DR. MANYIKA: Thank you.

13 MR. SMITH: I think it's a really useful
14 framework and I like the four categories you have.
15 When I look at access and skills, I think one
16 aspect that is perhaps missing is a focus on the
17 needs of people with disabilities.

18 You know, one in eight Americans has a
19 disability. And just as the Americans with
20 Disabilities Act really opened access to public
21 buildings and infrastructure a generation ago, you
22 know, it's just readily apparent that that group

1 of people is only going to be able to achieve
2 their potential if all of these digital resources
3 are open to them as well. And there's perhaps an
4 opportunity to explore that a bit more.

5 MR. CICCONI: Just one other thought.
6 I'm not sure how to capture this, Alan. But these
7 are all very positive, forward-leaning things.
8 But I think one of the things that we're seeing
9 this year is a lot of concerns about the digital
10 economy growing in our political system too and
11 the levels of disruption. And in fact, skills
12 training and things like that aren't necessarily
13 keeping up.

14 I know that one of the things we're
15 going to be doing over the next four years is as
16 we virtualize our network and go to software-
17 defined networking, we're going to buy roughly
18 half the level of equipment on an annual basis
19 that we buy today. You know, that roils through a
20 lot of companies there. We're probably going to
21 need half the number of people actually tending --
22 and I imagine this is true across a range of

1 things. And I do think a lot of the things we're
2 talking about here depend heavily on political
3 consensus.

4 And I do fear that that's starting to
5 break down, just because there's a lot of -- a
6 growing segment of people in this country that
7 feel left behind as this economy charges forward
8 into the digital age. And so, again, I don't know
9 how to capture it. But I do believe it's a factor
10 that affects all of these things.

11 MS. GROSSMAN: I would say the one other
12 thing, and we're certainly talking about training,
13 but how does it go all the way back to education
14 and early education and are we building the skills
15 at the beginning that we're going to need for, you
16 know, many years to come, because we can train and
17 we can take people out of school, but how are we
18 changing the education process?

19 DR. TELLADO: Thank you. I
20 wholeheartedly appreciated the framework you
21 provided, because it is daunting. And so many of
22 us come from slightly different places. And as a

1 consumer voice, I look at these and it raises a
2 lot of questions. I wanted to build on something
3 James put on the table having to do with other
4 agencies.

5 And having spent enough of my career
6 here, you raised an interesting thought in one of
7 your blogs that you asked us to read around the
8 Internet of things and how lines are being
9 blurred. And give us some insight. Because the
10 lines are also being blurred in the digital
11 economy, how that translates within a governmental
12 context where you have health, telecommunications,
13 commerce are all in this pot, rulemaking.

14 But it's not consolidated. It's not
15 holistic. So how do we get some connectivity to
16 other agencies which are in this space but
17 commerce is not empowered to oversee or to -- just
18 wanted a little bit from you there.

19 MR. DAVIDSON: Yeah, and others can
20 chime in too. We have a -- on the Internet of
21 things particularly, we have a request for comment
22 that we've put out. And I think you've raised

1 this really good question, which is -- and part of
2 the motivation behind this RFC and one of the
3 things we specifically asked for is how do we need
4 to be better integrated as a whole-of-government
5 approach, because one of the things that we're
6 worried about is the Internet of things is so
7 broad, you're starting to see rules -- we do this
8 -- we are very good at doing sort of very kind of
9 stovepipe, sectoral rules.

10 So we're seeing rules around connected
11 vehicles, rules around, you know -- potential
12 rules, anyway -- ideas around drones, for example.
13 Instances of the broader Internet of things. And
14 we want to make sure there's consistency, right?

15 So just even take something like
16 spectrum or cybersecurity. We want to make sure
17 that, yes, we can tailor make these kind of
18 approaches for those particular areas, but that
19 they're not in conflict with each other. So you
20 find that, you know, nothing can -- there's not
21 interoperability or we've got very conflicting
22 standards among different areas.

1 So that is an active area of
2 investigation. It's a terrific point. You know,
3 and at some level, we're the Commerce Department.
4 We can really only control what the Commerce
5 Department does. But on the other level, our hope
6 is that if we offer some intellectual leadership
7 here and try and create frameworks, I know that we
8 do work very closely with a lot of these other
9 agencies and particularly on issues like
10 cybersecurity, where we have a huge amount -- or
11 privacy, where we have a lot of expertise in the
12 department and we're working hand in hand.

13 SEC. PRITZKER: My observation, having
14 come from the private sector into government and
15 not coming out of government, so there are a lot
16 of pockets of both void and overlap, if you
17 thought about charts or Venn diagrams. And our
18 approach has been one of trying to build -- I like
19 the words that Larry and Alan used about
20 intellectual leadership. And I would applaud
21 Larry, who frankly has been here the longest of
22 us, who really began tackling this and defining

1 the footprint without necessarily other --
2 guidance from others, if you will.

3 I think that an administration and this
4 administration, you know, my observation is
5 there's lots of pockets. But what we've tried to
6 do is create a more wholesome or holistic -- not
7 wholesome, holistic -- approach, taking into
8 account that -- kind of empowering ourselves
9 because the private sector is such an
10 extraordinarily large footprint when it comes to
11 the digital world.

12 And so, one of the things that you can
13 do as a group is to step back, look at our
14 framework, maybe give us -- you know, how we
15 should adjust and advise, but then also put that
16 in the bigger context. An administration ought to
17 think about a policy expertise that exists in the
18 department that -- and we're trying to
19 institutionalize what we've created because it
20 shouldn't just go poof, and then some poor new
21 secretary has to reconceive of what is the
22 construct that you ought to have.

1 We're in the process of creating another
2 deputy assistance secretary under Larry that might
3 take on the roles that Alan is doing, because
4 right now, we've kind of just created all this.
5 But for it to survive -- and frankly, it needs
6 ultimately to have more professional and career
7 support under it than we have today.

8 So one thing you might look at is what's
9 our literally organizational structure and what --
10 how ought it to be staffed appropriately so it can
11 play the role that we've sort of -- we woke up and
12 defined this ourselves. Nobody said here's what
13 you ought to do.

14 And so, it's a little bit of being
15 entrepreneurial in a government sense. But it's
16 also recognizing an enormous void. When Larry and
17 I got dragged into the privacy process that was
18 run by John Podesta at the White House, you really
19 realized that there was no center of expertise.

20 And that really led us to evolve from
21 that to these two gentlemen, with Evelyn really
22 saying, okay, we've got to grab this and begin to

1 define what are the capabilities, what is it that
2 ought to be going on. So you have a big role in
3 helping shape this or, as I said, bridging into
4 future administrations.

5 MS. BAKER: And I want to thank James
6 for leading us off here with an overview of the
7 sets of issues relating to the digital economy.
8 And I think with that, I'll just turn it over to
9 you, James.

10 DR. MANYIKA: Thank you, Mitchell.
11 Madame Secretary, thank you very much for the
12 privilege and opportunity to be able to serve in
13 this capacity. And I'm actually quite delighted to
14 be able to do this with an extraordinary group of
15 colleagues, many of whom I've kind of watched and
16 been amazed at what they've been able to do in the
17 world. So this is a real privilege.

18 I'm going to try and give a short
19 overview of some of the trends and opportunities
20 in the digital economy. This is by no means
21 intended to be exhaustive, because it can't be.
22 This is a vast topic, as we I think can all agree.

1 But I thought we would highlight some key aspects
2 of this, of what's going on.

3 The one thing you notice, and I think
4 the secretary said this, which is we do seem to be
5 digitizing just about everything, whether we think
6 about where we live and the way we live in our
7 homes, how we as individuals move about the world
8 and conduct commerce, track information, find
9 things, track our own health of our bodies and
10 also when we go to work, how we actually get to
11 work in terms of how our transportation systems
12 and mobilities have evolved, as well as what we
13 actually do at work, whether it's in an office or
14 actually in the factory.

15 So we do see -- digitization does seem
16 to be touching most aspects of just about
17 everything. This obviously raises a question as to
18 exactly how big is a digital economy. And I think
19 Alan alluded to this, which is if we think about
20 just the sectors that actually make up what you
21 might call the information communication
22 technology, it's about 5 percent of the -- as a

1 share of GDP. However, that underestimates lots
2 of things.

3 So if we think about, for example, how
4 this plays into other sectors in terms of the
5 pricing effects of these actual products and
6 services being consumed by other sectors, you can
7 get to a number about as big as 10 percent. But
8 if you really truly think about what does this
9 actually touch in terms of products and services
10 and what actually happens in the economy, you
11 start to get to where you are talking about pretty
12 much every aspect of the economy in almost every
13 way.

14 And there's just some small examples to
15 think about in terms of what different parts of
16 this it touches, particularly for individuals. So
17 this has become a very pervasive aspect of how our
18 economy works. And we've seen all the examples of
19 everything from big data and analytics, how we use
20 the Internet, how we do commerce, how we buy and
21 sell products, how we find products and services.
22 This has become quite, quite pervasive.

1 But we're not done yet. One of the
2 things that's quite extraordinary is that there
3 are even more technologies that are still playing
4 out that are going to continue to transform the
5 economy over the next decade or so. The list I'm
6 about to go through here was selected for some of
7 the ones that we see that are likely to have the
8 biggest impact in terms of scope -- by that, I
9 mean touching just about every aspect of the
10 economy -- as well as in terms of the scale of the
11 impact over the next decade.

12 The first set is what you might call
13 technologies that are related to how we use what
14 we've traditionally thought about as information
15 technologies. These range from -- you know, the
16 mobile Internet is not done yet. And we still
17 have, you know, the growth of cloud computing.
18 But we're also starting to see, for example, some
19 of the things that are happening with the Internet
20 of things and some of the things that, you know,
21 people on this board are doing and companies in
22 the economy are doing.

1 And then, of course, we've got some of
2 the new trends that we're starting to see around
3 machine learning, artificial intelligence and also
4 the beginning of the automation of knowledge work.
5 We are also starting to see machines affecting
6 other parts of the economy, whether it's in terms
7 of advanced robotics or autonomous and near-
8 autonomous vehicles and drones and other things
9 that move about in the economy, as well as what's
10 starting to happen in arenas like manufacturing.

11 There are also other things that are
12 happening alongside this that are actually quite
13 important. While they may not be purely digital
14 in their initial instance, I think we're going to
15 find that digitization will touch these. So think
16 about what's happening with synthetic biology and
17 next-generation genomics, when that's coupled
18 with big data and analytics. We're also starting
19 to see things happening in terms of how we think
20 about and use energy.

21 So we think that these are some of the
22 technologies that are going to have a profound

1 impact and digital is going to touch these. But
2 even this is not done. We're starting to see
3 other things too, whether, you know, it's block
4 chain and encrypted currencies, what we're
5 starting to see with, you know, virtual reality
6 and augmented reality. And you could go on and
7 on, sort of defined networks and there's a whole
8 set of things that are going to continue to happen
9 to transform the economy. So there's a lot more
10 that's going to happen.

11 So what we thought -- what I thought I
12 might do is to then at least focus on three areas
13 of opportunity and challenge that are worth
14 thinking about. One is this question about just
15 how much -- how can the economy as a whole take
16 advantage of digitization because the promise
17 here, the expectation is that this is going to
18 drive growth and productivity, as well as more
19 pervasive innovation in the economy.

20 And then, second, we're going to touch
21 on this question of what you might call the
22 digitization of globalization. Alan alluded to

1 some of this around data flows. And then, of
2 course, one of the big questions is how
3 digitization's affecting work. Then we'll
4 conclude with some of the -- some initial
5 observations or some of the foundations that we
6 could focus on that are important to get right.

7 One way to think about the U.S. economy
8 in terms of the extent of digitization is to at
9 least - - we're tempted to try and measure this
10 with metrics and indicators in three categories.
11 One is assets. So this is thinking through the
12 sectors and companies in terms of the digital
13 infrastructure they have now deployed, whether
14 it's information technology equipment, software,
15 hardware, anything - - and even data itself.
16 We've thought about that as an asset.

17 Second is usage. So think of this as
18 usage of technology in terms of making payments,
19 making marketplaces work, transforming business
20 processes. So several measurements related to
21 usage. And then, of course, labor, which has to
22 do with how much are we empowering workers with

1 digital capacities and capabilities and
2 technology, to what extent are we creating new
3 digital jobs -- think of data scientists and so
4 forth.

5 So the picture you get -- and no need to
6 pay attention to the fine details -- but hopefully
7 you get an impression across the sectors, visually
8 at least, as to which ones are the most digitized
9 sectors and which ones are not. Let me point out
10 at least some key features of this. There's a
11 group at the top that we numbered one here. These
12 are, you know, sectors that are very knowledge
13 intensive and these are very highly digitized
14 across the kind of metrics that I just described.
15 And it's no surprise, you know, that it's the
16 media sector, professional services and
17 information technology sector itself.

18 You've also got a set of sectors that
19 are very capital intensive, like oil and gas,
20 utilities and so forth, that still have an
21 opportunity to further digitize their assets. And
22 you're starting to see that in pockets as some of

1 these companies start to deploy more instrumented
2 or more digital aspects to what they already do in
3 what are traditionally physical technologies.

4 You also have a set of sectors that,
5 even though we may see some of them as looking
6 digital, they have a very long tail of smaller
7 entities that are not very digital. So examples
8 could include even retail trade. So even though
9 we may think about e-commerce, retail trade
10 actually includes a lot of small businesses that
11 may not be as digitized as we imagine. And then,
12 of course, there's another sector of B2B sectors
13 that could improve how they use digital
14 technologies.

15 But the group that's probably worth
16 focusing on is group number five and six. So
17 number five, these are very large, labor-intensive
18 sectors that have the potential to give more
19 skills to their workers because they're very
20 labor-intensive. And then, group number six is
21 particularly interesting because this group is
22 actually -- consists of some of the largest

1 sectors in the economy in terms of employment, in
2 terms of share of GDP. And these are also sectors
3 that generally are not considered as high
4 productivity sectors.

5 So that's where some of the big
6 opportunities are and, no surprise, it includes
7 the government, health care, hospitality and
8 construction. You may want to notice that the
9 black dots are particularly interesting. The
10 black dots on the chart are intended to indicate
11 some specific examples of highly digitized
12 entities that have emerged in those spaces doing
13 some fairly spectacular things.

14 So obvious examples would be if you
15 think about hospitality, what we're seeing with
16 companies like Airbnb, using platforms, what we're
17 seeing in transportation, so with car ride sharing
18 services. So some of these not so digitized
19 sectors, you're starting to see some fairly
20 spectacular examples, if you like, of higher
21 digitization. So that's the one point I'd like to
22 make on the economy.

1 The second point is worth noting as
2 well, which is as you look at these measures of
3 digitization across the economy, we're starting to
4 see a gap widening between the most digitized
5 entities, whether they're companies or sectors,
6 and those that are relatively less digitized.

7 So the blue part on this is looking at
8 sectors and companies you might think of as being
9 at the frontier of being able to use these digital
10 technologies. And the brown, at the bottom, is
11 kind of the rest. And you're starting to see this
12 gap, at least by these measures, starting to widen
13 over time. And you also see the same thing when
14 you look specifically at businesses.

15 And this particular chart shows a sample
16 of some very large corporations who -- that you
17 might think might all be digitized. But you're
18 starting to see big differences, even amongst
19 them. And by the way, the established leaders here
20 at not just the Internet companies. There are
21 also some very traditional companies in that blue
22 group to the far right.

1 So you're starting to see these
2 differences and gaps between the leaders and the
3 rest. So that might show I think perhaps what we
4 may have talked about in the past as the digital
5 have and have-nots. I think what we're starting
6 to see are what you might think of as the digital
7 haves and the have-mores, haves because pretty
8 much every -- most companies and most parts of the
9 economy now have digital technology, to some
10 extent.

11 But we've seen some of the ones who are
12 making the most use of it, the have-mores seem to
13 do better. And what you find is that the have-
14 mores, the ones who are making big use of this, if
15 their companies typically see faster revenue
16 growth, faster profit growth and if their sectors
17 are typically you see higher productivity and
18 levels of innovations. And also, interestingly
19 enough, the have-mores tend to have actually
20 faster wage growth, which is already interesting.

21 And also, when their companies -- these
22 tend to be some of the companies that we typically

1 associate with driving disruption, who are doing
2 these extraordinary things in the economy. So
3 this is something that's probably worth thinking
4 about as we think about digitizing the economy,
5 how do we expand this.

6 Let me shift to a second area, which is
7 the digitization of globalization. One of the
8 things that's interesting, if you look at the
9 global economy, the global economy has had a
10 phenomenal run over the last two or three decades
11 and certainly in terms of the flow of goods,
12 services, finance, if you like. And arguably,
13 some would say it seems to have stalled since the
14 recession.

15 But one area that has continued to
16 expand pretty significantly is the flow of data.
17 And this is just looking going back to just a
18 decade ago to about 2005. This is what you might
19 -- what it might have looked like in terms of a
20 map of the digital flows. And you can look at
21 this, both flows between countries, between
22 cities, between companies.

1 But this is essentially measuring kind
2 of data flows. And look how it's changed in just
3 a decade. So in just a decade, these digital data
4 flows have grown 45-fold and the size of the
5 bubble here, which aren't even done to scale,
6 because the scale would be much larger, you'll see
7 that there's a big pool of inter-country data
8 flows happening in Europe. There's a big set of
9 flows that happen in North America. And there's
10 also a big set of flows within Asia.

11 And the patterns are pretty interesting
12 when you look at country by country. What you see
13 is you have many more countries participating if
14 you look globally. You also see that you have
15 many more companies participating, both large and
16 small. And you also see individuals
17 participating. And this is particularly
18 interesting when it comes to thinking about small
19 businesses, for example, because we find that, for
20 example, many small businesses are now
21 participating globally directly.

22 So we know, for example, that small

1 businesses, when they happen to be on these global
2 platforms, they tend to export more. They tend to
3 engage the world a lot more and quite directly.
4 Zoalluded to this earlier in her opening remarks.
5 It represents remarkable, interesting
6 opportunities for small and medium-sized
7 businesses.

8 On the question of individuals, going
9 back to something that I think Alan mentioned,
10 it's actually quite extraordinary to see how much
11 directly individuals are engaging globally and
12 enabled by these technologies. That first big
13 circle is simply a measure of individuals on
14 social platforms who have at least one foreign
15 connection. And that's close to a billion people.
16 We also start to have, you know, today, something
17 like 360 million individuals patriating in cross-
18 border e-commerce, whether they're buying
19 something from another country basically through
20 e-commerce.

21 You're also starting to see -- and these
22 numbers are, in fact, in our view,

1 underrepresented -- the number of cross-border
2 online students, underrepresented because simply
3 this is tracking where people are actually paying
4 for those services. There's a lot more where these
5 things are done freely. Think of the kid in
6 Bangladesh who might be using the Khan Academy to
7 learn, for example. That wouldn't be measured
8 here because it's free. So we're starting to see
9 individuals engage quite broadly. And this
10 represents a pretty exciting arena, which is why I
11 was quite pleased, Alan, to see you point to this
12 in some of your remarks.

13 Let me touch on the third and final
14 area, which is the digitization of work. I think
15 this is one of the more profound changes and
16 impacts that I think we're going to actually
17 contemplate and think very hard about.

18 I'm just going to focus here on two
19 aspects of it. One is what we're starting to see
20 in terms of how labor markets work. And I think
21 we're starting to see many, many examples of
22 platforms that are matching individuals with jobs.

1 And you're starting to see there are some
2 platforms like LinkedIn and others where these
3 have become places that -- where employers and
4 employees publish or make available their own
5 skills and capabilities.

6 Employers and recruiters typically go to
7 these places to find people and the matching
8 ability of these platforms is actually quite,
9 quite impressive. You're starting to see quite a
10 variety, from master all the way to skillful and,
11 a more recent issue by the New America Foundation,
12 starting to try and match people with
13 opportunities.

14 The other part we're starting to see are
15 these platforms for what you might call on-demand
16 work or the gig economy. This is -- many, many
17 words have been used to described this. But these
18 are much more time-specific, task-specific
19 matching of supply and demand, if you like, to
20 fulfill particular tasks.

21 Now, these have been very complicated
22 and there's a lot of work to do to make these

1 things work effectively. But this is a phenomenon
2 that probably isn't going to go away. And part of
3 the question for us is how do we help the various
4 participants in this get the right benefits and
5 have it work the way it worked well for everybody.

6 But these have been quite remarkable
7 platforms that have grown over time. And then, of
8 course, you've also got other types of training
9 and recruiting tools that are starting to emerge.
10 So this whole question of how labor markets work I
11 think is a very important area to think about.

12 The other area to think about is what's
13 happening to work in automation. And what you see
14 here is these dots represent numerous jobs in the
15 economy. We had the good benefit of being able to
16 draw on some of the work that the BLS and others -
17 - and the O*NET database have been doing, looking
18 at jobs and tasks.

19 What you could be taking away from this
20 are several things, that at least based on
21 currently demonstrated technologies, we're likely
22 to see automation start to happen for both high

1 wage, high skill occupations as well as low wage,
2 low skill occupations.

3 So you'll see at the high end on the
4 vertical axis categories that are likely to be
5 easily automatable and all the way to the bottom
6 where you've got tasks like the landscape and
7 grounds keeping staff that are less likely to be
8 automated. But you also see highway jobs going
9 over to the right that are potentially going to be
10 automated.

11 A few things I might highlight and sort
12 of some things to take away from this. One is
13 that at least when we look across over the next 10
14 years at the level of activities, not whole jobs,
15 but activities, we're likely to see as much as 44
16 percent of activities -- not jobs, activities --
17 be automated.

18 However, when you translate that to
19 whole jobs, because any one job consists of lots
20 of different activities -- when you translate that
21 to whole jobs, at least for the next decade
22 anyway, we don't see that affecting more than

1 about 5 percent of whole jobs. Having said that
2 though, there's a very important other thing
3 that's going on. We actually see something like
4 close to 30 percent of activities and about 60
5 percent of tasks start to get automated.

6 What that means is that most jobs will
7 change. So while they may not go away, most jobs
8 will change. And how we enable workers and others
9 to be able to work with technology becomes very,
10 very critical. And you might think of this as
11 technology augmenting jobs.

12 Now, when you look at much out beyond 10
13 years, there's a lot more work to be done. And
14 some would argue all bets are off. But I think
15 this is at least what we see over the next 10
16 years.

17 One point that's worth emphasizing
18 though with this question of jobs and automation,
19 there's one area where this is going to matter a
20 lot. And that's in the middle skill occupations.
21 And there's been some extraordinary work that
22 David Autor and others -- and many others have

1 actually done related to this. But one aspect of
2 it is if you look historically, we've always had a
3 pretty -- somewhat steady is not the right word,
4 but at least a fairly low level of automation for
5 middle-skilled jobs over different decades over
6 time.

7 But if you look at what we're starting
8 to see with these new technologies, it's quite
9 possible that in a middle-skilled category, that
10 rate of automation could double. Now, that could
11 be mitigated in fact if you think about it, if the
12 demand for the jobs goes up. Then, maybe we don't
13 have as big an adverse effect and there's some
14 real debate in the economics profession about the
15 volume of work, if you like, as these automation
16 rates proceed. And that's to an ongoing debate
17 and discussion.

18 Let me conclude with some thoughts and
19 observations of some of the foundations that may
20 be important to get right. If we are going to
21 fully capitalize and get the benefits of this
22 digitization, whether in terms of what it might do

1 for the economy, in terms of growth and
2 competitiveness globally, what it might do for
3 business and entrepreneurs, but even for
4 individuals -- we think of the individuals as
5 workers or consumers or citizens in society as a
6 whole.

7 Several areas to highlight. One is
8 clearly cybersecurity, which has been on
9 everybody's mind, I think, and there's a lot of
10 work that's going against this. The other is
11 obviously, you know, data and privacy, which has
12 already been highlighted. There's also questions
13 about just Internet access and governance. And
14 the governance part in particular becomes very
15 important when we think about this in a global
16 context, particularly as we think about data flows
17 globally.

18 An important area that perhaps hasn't
19 had as much attention is the implications around
20 work and wage effects. Again, people like David
21 Autor and others have talked to this idea of
22 skill-biased technical change and how that is

1 starting to affect how we think about the wage
2 question when we have massive amounts of
3 digitization.

4 That's a very important arena to think
5 about and it affects -- it may be related to some
6 of the discomfort, I think, that we're all feeling
7 and noticing in our political season, as we think
8 about what's happening to work.

9 A related concept, an idea to think
10 about is this question of skill, capability and
11 also the infrastructure gaps that we have. It's
12 quite remarkable, and I think many of us who live
13 in the private sector see this all the time, where
14 the skill gaps are quite massive.

15 At times, when in fact employment, you
16 know, is not where we'd like it to be, we sort of
17 have many corporations and companies finding it
18 difficult to find the right skills and
19 capabilities. And then, also this question of
20 other capabilities in the economy, how do we help
21 some of the companies and small businesses which
22 might not be as digitized as they could be, how do

1 we help them, how do we help entrepreneurs who
2 don't always get the attention that they should.

3 Then, I think there's an interesting
4 question, which I think is quite important, given
5 where we are and the context in which we are going
6 to operate I think as a council and as a board,
7 which is how does policymaking adapt to a digital
8 era, when in fact things are moving much faster.
9 And quite often, the technology capabilities far
10 outstrip the ability of policymaking to actually
11 keep up.

12 Should we be thinking about adaptive
13 policymaking in a different way? Should we be
14 thinking about experimentation in a different way?
15 Should we be thinking about evolving policy in a
16 different way? I think there's new questions
17 about how to do policymaking in a digital era.
18 Then, of course, there are all the measurement and
19 classification challenges. I think many
20 economists have already pointed to the fact that
21 the way we measure the economy today doesn't fully
22 capture the benefits, the impact of digital

1 technologies.

2 And there's also all kinds of
3 classification questions as we start to blur the
4 boundaries, as I think was pointed out, and we
5 start to think about sectors blurring, about jobs
6 blurring, about worker classifications changing.
7 How do we think about some of these measurements
8 and classification challenges? Let me leave it at
9 that. Thank you.

10 MS. BAKER: Thank you, James. I'm going
11 to make a few comments and then we've had a few
12 conversations with Brad and asked him to make a
13 few remarks. And then, moderate a discussion
14 relating to the digital trends that we might want
15 to think about as part of our work.

16 And for myself, I was going to take the
17 opportunity to do as the secretary suggested and
18 just set this in context a little bit. Now, I
19 know, James, you said that wasn't comprehensive.
20 But it certainly was close, if not. And I imagine
21 we may discuss and find a few things to add to it.
22 But thank you for such a broad and brief, but

1 close to comprehensive set of topics.

2 To set it in context, I thought I'd add
3 a few different things in it, one of which, to
4 come back to Larry's comments about explorations
5 and governance, which I think is something that's
6 often underlooked as part of the work, but very
7 interesting. We see this, of course, in Internet
8 governance in general, but also in the work being
9 done here.

10 Larry talked about multi-stakeholderism.
11 And that's I think a long word with sometimes a
12 very technical meaning, but good as a placeholder
13 for how might we explore this area. Policymaking
14 is a form of governance. We have the issues
15 raised that not only the Department of Commerce
16 but perhaps our overall governmental structure
17 doesn't have a center of gravity for addressing
18 something as fundamental as digital economy.

19 And so, as we work those things out,
20 those are long processes. And in the meantime,
21 either as immediate activities or potentially as
22 experiments for the future are some

1 experimentations in governance and policymaking.
2 And so, multi- stakeholderism could be a good
3 sample or example to look at. How would one
4 gather people who are affected? Try to look at
5 issues -- maybe in the sense of design thinking,
6 as it were, try to iterate, prototype a potential
7 solution, try it out.

8 You know, certainly the other
9 stakeholders in the process have more freedom to
10 try than government, more freedom to try, more
11 freedom to fail, more freedom to iterate and try
12 version 2.0, 3.0 or 4.0. And so, I think this
13 question of explorations in governance and how we
14 interact and how we might test out policies could
15 be a fruitful area. Certainly from the Internet
16 area, which I have some experience with, it tends
17 to be fruitful in two particular circumstances.
18 One is where the problem is generally shared and
19 it is something that everybody wants to solve.

20 The other is a little trickier. It's
21 when you have business interests that may be
22 competitive, but for some reason or other have

1 potential solutions to this problem needs to
2 happen now. So we have immense experience with
3 that in the standards bodies, for the World Wide
4 Web, for example.

5 Sometimes it was obvious there was a
6 problem we all needed to solve. Other times, like
7 Brad and I could probably tell stories that
8 Netscape and then Mozilla and Microsoft would have
9 really quite different interests. But a number of
10 really important solutions emerged out of those
11 kind of conflicts and trying different
12 implementations. So that's one area.

13 A second area of context is -- that I
14 would like to explore a little bit is the
15 individual experience. James has described -- and
16 your comments are really about the changes in jobs
17 and the change in the economy that automation
18 might bring. It is an immense period of change.
19 And human beings typically are nervous about
20 change, whether or not it's positive or negative.

21 So huge amounts of concern, plus change
22 in jobs and that means loss of jobs for some and

1 change for as many, you know, as can be managed.
2 So in the context of individual experience, so
3 there is such a need for opportunity and
4 hopefulness and whether our, you know, educational
5 institutions can adapt fast enough is a big
6 question.

7 And so, once again, I think there's a
8 real question about what sort of explorations and
9 change could be managed. There are certainly
10 priorities and policies for the department and
11 there may be a great deal to do there. And
12 perhaps the work of this board might include are
13 there explorations in whether it's skills or
14 capacity or wages or work that might be possible
15 to run.

16 And I think the final piece of context
17 I'd like to add is the global aspect, in which,
18 you know, the United States has clearly been the
19 leader in the digitization and technology.

20 It's also clear today that there's at
21 least one other market that is large enough to
22 develop and sustain massive economic growth and

1 change without the United States. That's China.
2 It is doing so. I think it's -- I personally
3 don't -- am not as -- I think it will take longer
4 for Chinese innovations to fundamentally affect
5 the rest of the world because that economy has
6 such characteristics, both in language and the use
7 of the Internet, that the language actually drives
8 different forms of input, different visuals. But
9 it is an economy with a power of its own.

10 Probably, you know -- so open question,
11 whether we integrate with it, whether we fragment
12 with it. And that I think has a very large
13 business effect on our policy and our policy will
14 need to consider that as well. And certainly, you
15 know, the Arab-speaking world is large enough to
16 maintain its own really active and dynamic digital
17 or Internet economy. That hasn't -- clearly
18 hasn't -- it's not as integrated as China as one
19 nation-state. But it's also something to actually
20 consider.

21 So the final piece of context that I'd
22 like to leave us with is that the open borders of

1 the Internet will bring a different degree of
2 global interaction into the priorities and
3 policies. And our ability, I think -- and the
4 ability of any nation-state to isolate itself and
5 still remain part of the world economy is really
6 complex.

7 So that's a big challenge. I think it's
8 also an area where the United States can -- you
9 know, has in the past and can here provide really
10 exciting leadership. And so, we have the
11 opportunity to do that, provided, of course, we
12 can solve the security and trust issues, which our
13 leadership in that area has suffered in the last
14 few years.

15 And so, one other topic is the degree to
16 which we have the interest, will and ability to
17 continue to lead in that area. And so, with that,
18 I think because we've had some conversations with
19 Brad, I'm going to ask him to comment. And then,
20 we'll have the kind of general discussion phase of
21 digital trends and topics.

22 MR. SMITH: Sure. Well, thank you.

1 Well, first of all, James, I thought it was a
2 terrific summary and the report itself was
3 invaluable I think as a foundation for everything
4 that we need to think about here. I'd say
5 certainly for me it highlights two of what I think
6 are the fundamental questions that we'll all have
7 to grapple with, namely where are the jobs of the
8 future going to come from and who is going to fill
9 them.

10 When we think about what's going to
11 happen to jobs, it's readily apparent that some
12 jobs are going to go away and some new jobs are
13 going to be created. You know, I think it offers
14 some solace to recognize that this has been going
15 on for about 150 years. It's not new and we can
16 learn some things from the past.

17 Personally, I'm struck by two
18 photographs I've seen recently of the same
19 intersection in New York, on Broadway. One was
20 taken in 1905 and one sees street cars and horses
21 and there's not a single automobile. Twenty years
22 later, at the same intersection, one sees street

1 cars and automobiles and there's not a single
2 horse.

3 In 1905, a quarter of the country's
4 agricultural production was used to feed horses.
5 There were tens of thousands of people in New York
6 who had jobs simply to feed and clean up after
7 horses. All of those jobs were gone 20 years
8 later. But there were lots of people who were
9 building, maintaining and even driving cars, all
10 of which required new skills.

11 So I think that we face a lot of
12 daunting challenges. But it's helpful to just
13 have the perspective that we've been through this
14 before. Certainly when you ask where the new jobs
15 are going to come from, it's on one level
16 impossibly I think to know in advance, but on the
17 other hand easy to predict certain things. If
18 it's all about digitization, then the jobs of the
19 future are likely to involve work with data and
20 digital technology, regardless of what part of the
21 economy one is in.

22 And as your report, the written version

1 pointed out, we even have small businesses
2 basically functioning as micro-multinationals
3 using platforms like eBay to sell their products
4 around the world. So I think the big question in a
5 way is how will we help the American people fill
6 these jobs of the future.

7 And I was very struck by one experience
8 I had last year, last June. I was in a town in
9 Kenya called Nanyuki that's about a hundred
10 kilometers north of Nairobi. It's right on the
11 Equator. Only 12 percent of the people in this
12 area even have electricity. But I was visiting an
13 Internet cafethat was connected through a super-Wi-
14 Fi or white spaces technology and that had a solar
15 panel for electricity.

16 And I met a very sharp fellow in his
17 early 20s who had a laptop computer. And he was
18 sitting here at this hotspot. And I asked him
19 what he was doing. And he showed me that he was
20 basically using this place as his office and he
21 was providing technical support for a U.S. startup
22 and he was providing technical support to

1 Americans. So there he was in Kenya, in a place
2 that had no broad electricity, working for a U.S.
3 startup, supporting customers in the United
4 States.

5 What it shows is that the jobs will
6 frankly go to wherever there are people who can do
7 them. And if we want our own people to fill these
8 jobs, we're going to have to equip them with the
9 skills that are needed.

10 And just as there was a time when first
11 there was no universal education in the United
12 States, and then there was, but it was only until
13 people were, say, 12 years old, and then over time
14 it expanded to today where we expect people to go
15 to school until they're 18, you know, we may
16 really need to focus on a future where people go
17 to school until they're 20 and then stay connected
18 to learning throughout their lives. And as much
19 as anything else, I think what we need to grapple
20 with is how to ensure that the jobs are created
21 here and filled here. Otherwise, the future is
22 going to be far more daunting.

1 MS. BAKER: Would anyone else, you know,
2 like to comment on the digital trends and the
3 scope of things we are looking at, might look at,
4 that go into our work?

5 MR. THOMAS: I too think it was
6 incredibly insightful. You know, one of the
7 things that strikes me as we look at the many,
8 many issues -- and I'm reminded what the secretary
9 said about sort of focusing on a few -- is that
10 how do we actually go about thinking how do we
11 enable these things, how do we actually enable the
12 job creation, address some of the trends, but at
13 the same time, minimize the unintended
14 consequences.

15 You know, one of the things that always
16 stands out to me is that I think that how
17 difficult it is to participate and the barriers
18 that you have -- and when I look across our
19 current government right now, I see lots of people
20 attempting to address lots of different aspects.
21 And when you actually have focus and energy and
22 attention and lots of people trying to solve it,

1 sometimes you end up with complexity.

2 And so, one of the things that I think
3 we should just be mindful of as we go through this
4 is how do we, as much as possible, come up with
5 solutions in the broader context that simplify
6 because I do think complexity is the enemy of
7 participation and the enemy of accessibility.

8 MS. BAKER: Well, that's a fascinating
9 phrase, since participation is such a big aspect
10 of the digital economy, whether it's from user
11 communities to -- at least from open source, which
12 big parts of the Internet technology came out of.
13 And so, that's a really interesting piece.
14 Complexity is the enemy of participation.
15 Fascinating.

16 MS. KATYAL: Corey's comments made me
17 think about something similar, but from a
18 different angle, which is just about the design of
19 law. And when you were doing your wonderful
20 presentation, I kept thinking about how law
21 impacts digitization and how digitization impacts
22 law. I mean, as an academic, one of the things

1 that I often try and look at is to find data about
2 how the design of legal entitlements affects
3 things like innovation.

4 So if you have very high trade secret
5 protection, that impacts the mobility of labor
6 markets. If you have significant uncertainty in
7 the copyright world, that affects lending and, you
8 know, how people want to invest in disruptive
9 technologies.

10 And so, one thing that I wish we had a
11 little bit more data on actually was the question
12 of kind of how the design of legal entitlements
13 impacts innovation, but also this question of the
14 interactivity between different agencies that are
15 doing rulemaking and common law. I mean, the ES -
16 - the whole privacy shield issues came up out of a
17 litigation case and so how those things interact,
18 I think is, such an important thing for us to
19 study and to think about.

20 MS. BAKER: You know, you mentioned
21 briefly the question of intellectual property
22 protection and labor, which I also think is an

1 area that is underserved. It's, you know, my
2 personal theory that Silicon Valley is hard to
3 replicate because of California's labor law, which
4 allows employees to leave a company and maintain
5 in their head the knowledge we've learned and go
6 work for a competitor the next day. It's very,
7 very hard on management and I've experienced this
8 as well. It's very, very hard.

9 But the history of Silicon Valley,
10 starting from semiconductors, is exactly that.
11 And certainly I know when we hire people and need
12 to wait six months or a year, it's a real drain on
13 innovation. And so, as to are we interested in
14 innovation, you know, or is the ability of an
15 individual person -- i.e., labor -- to be able to
16 move important or is the ability of management to
17 have consistency important or just have such huge
18 impacts.

19 Yes? And I might ask, you know, James'
20 presentation, does anyone have any thoughts on
21 anything that wasn't included in it, that we might
22 like to think about? I'm going to go through a

1 series and just see if we've covered the scope of
2 things here, a series of questions.

3 DR. GOOLSBEE: I guess I have one
4 question about the distinction between what can be
5 digitized and what will be digitized. Is the
6 presumption that the cost of automation is
7 becoming so cheap that you would just
8 automatically replace people with machines?

9 And I give the example, there was a guy
10 that was an economist in Chicago and his wife
11 worked at the World Bank and was the case officer,
12 whatever you call them. And her assignment was in
13 Sri Lanka. And this guy was an economist, set up
14 his teaching schedule so he could go to be
15 wherever she was, you know, when she would do it.
16 So he spent the month in Sri Lanka. And he said
17 there are many things in Sri Lanka that are
18 automated.

19 But they are not electric because, you
20 know, at that time there wasn't a lot of
21 electricity. And he said if you go to the grocery
22 store, they have an automatic door opening. But

1 it's just two people who pull the door open as you
2 walk up and then they shut it. It's just the
3 price of labor was so low that the store owners
4 were like you'd be an idiot to install an electric
5 mat to open the door. I can just pay two guys to
6 pull the door open.

7 You know, so that, while being a trivial
8 example, if you looked at your list, where it
9 said, you know, 30 percent of these job functions
10 could be automated, are you conceiving that it's
11 going to get considerably cheap to automate them
12 and they would rather have machines do it than
13 people?

14 DR. MANYIKA: Thanks, Austan. That's a
15 very important question and actually I'm going to
16 split it into two parts. So the first question is
17 will everything that can be automated be
18 automated. The answer is clearly no.

19 And in fact, one of the things that's
20 quite interesting is that I think we always
21 imagined that it would always be the low-skilled,
22 menial tasks that'd be the first to get automated.

1 When you throw in the economics of that, it's
2 actually not likely to be the case because what
3 happens at the low end, where the work is mostly
4 physical and manual, so even though automation
5 technology has made huge progress, we've made
6 relatively less progress on physical machines
7 working in unstructured environments and
8 automating that is actually much, much harder.

9 And by the way, even if we could, those
10 are still physical machines that actually cost
11 something. The surprising impact of that is that
12 the work that is actually easy to automate is
13 actually most of what we all do, which is all the
14 thinking work because most of that is actually
15 software. It involves very little physical
16 machinery. And by the way, those are mostly
17 algorithmic things.

18 And so, no surprise that most of the
19 automation that we've seen has been happening
20 actually in the middle-skilled category, not so
21 much in the low-skilled category because in the
22 low skill, you've got both complexity of the

1 technology and the economics of doing it, per your
2 door example. So that's one thing. So I think
3 that's why, you know, the deeper issue is mostly
4 in this middle-skilled category.

5 And then, of course, as -- you're an
6 economist, right -- of course the labor supply at
7 the bottom end is going to be much larger and more
8 malleable. So even though we may not automate
9 those jobs in the low-skilled category, there may
10 be different wage effects that might not be as
11 attractive. So even though those jobs may still
12 be available, the wages for those may not be that
13 great because of the abundance of labor. And so,
14 it's a much more complicated question. But
15 hopefully, that gets to your point.

16 MS. BAKER: Could you say just a little
17 bit about -- you also said -- you said middle-
18 skilled and then high-skilled. Could you say a
19 little bit more about that as well?

20 DR. MANYIKA: Yeah. So if you -- most
21 of where the progress in machine learning and
22 artificial intelligence and so forth has actually

1 been in things that are repetitive, but tasks that
2 we've typically paid well for. So accountants and
3 clerks and some parts of the legal profession,
4 discovery and so forth. That's where most of
5 these technologies have actually made the most
6 progress. That's also where, by the way, the
7 scarcity of the labor and the workers to do that
8 is much higher than the low-skilled jobs.

9 So the tradeoff to then choose to
10 automate is much easier to make at that level.
11 And also, in some cases, it's not just a cost
12 issue. It's that when you apply these algorithms,
13 the result is actually better. So it's not just
14 you're doing equivalent human level performance.
15 In some cases, you're actually getting better
16 results. So I think, you know, we're going to --
17 so while we've worried historically about
18 automation at the low wage level, I think the
19 middle-skilled category and maybe even the high-
20 skilled categories are going to be an interesting
21 place to watch.

22 MS. BAKER: Well, I remember my time

1 doing discovery and reading documents. So I can
2 imagine that. You know, thinking to the
3 experiments in governance, I'm wondering, Karen,
4 since the IEEE is also an expert in different
5 forms of governance, if -- not to -- well, I guess
6 I will put you on the spot -- but to see if you
7 have any thoughts about that or anything you might
8 add on that topic.

9 MS. BARTLESON: So two years ago, IEEE
10 started what we called the Internet Initiative
11 because we recognized the exact same things that
12 Larry talked about, the same focus of commerce,
13 the need for trust in the Internet that was being
14 eroded, the need for security and privacy and
15 Internet governance as well was changing. So the
16 program is designed to bring technologists to the
17 policymakers so the policymakers can make better
18 decisions.

19 For those of you who don't know IEEE,
20 we're the world's largest professional
21 organization of engineers. We started as
22 electronic and electrical engineers, but we now

1 span pretty much every discipline of engineering.
2 And one of our most powerful -- well, I say that
3 from parochial interests -- but one of our most
4 powerful activities is standards.

5 So we've worked closely with W3C and
6 ISOC and IETF to develop what we call the open
7 stand principles for market-driven standards. And
8 some of this helps us to say that it's the market
9 that drives the standards, not the government,
10 which is a very interesting parallel model.

11 But anyway, for the last two years,
12 we've been holding forums in various parts around
13 the world to discuss the issues like we're talking
14 about today and see how the technologists can
15 bring some reality policymakers.

16 So in Europe, the right to be forgotten,
17 or just erase me from the Internet. Well,
18 technically speaking, that's not so easy to do.
19 You can go to the Internet Wayback Machine and see
20 what your website looked like in the '80s. It's
21 really an interesting experiment. So anyway,
22 we're trying to help bring the reality to the

1 policymakers to help us to have the right
2 decisions all around the world. I hope that's
3 what you were asking.

4 MS. BAKER: (Off mic, inaudible)

5 MS. BARTLESON: You know, and I was
6 really glad to hear you talk about China. Our
7 past president of IEEE recently went to the China
8 Internet Forum. And the discussion there was
9 that, you know, China has very strict policies
10 about Google's not allowed, Facebook's not allowed
11 and the government controls a lot of the
12 information flow. They see that as a security
13 issue and a privacy issue. They see that as
14 protecting their citizens, whereas we, from the
15 outside, see it as walling off their country and
16 preventing commerce and preventing the flow of
17 information.

18 So the philosophy is completely
19 different thinking. And at this point, there's no
20 right or wrong. But it's something we need to
21 understand.

22 MR. RUH: So James, one question. I

1 think you did a great presentation. And the thing
2 is that when you look at the ability to actually
3 capture the opportunity, most of it is actually
4 being captured on the consumer side, not the
5 industrial side. And in fact, industrial
6 productivity has gone from a traditional global 4
7 percent down to 1 percent in the last five years.
8 And so, there are natural barriers that are
9 causing this to not occur. And I think the
10 promise has been there probably even for a decade,
11 yet is not moving as fast.

12 We see two things, and I'm just curious
13 if there are others. One is the cost of
14 technology still has not reached a point to where
15 the economics work. I think it works on the
16 consumer side because people like some of the
17 coolness and social factors, not necessarily the
18 cost effectiveness. And so, one question is where
19 do you see the cost effectiveness of this for
20 widespread adoption beyond a consumer environment.

21 I think the second think is talent, that
22 these technologies are more complex than

1 traditional manual approaches. And they require
2 new kinds of skills. And as a result, you know,
3 we have a large number of unfilled positions
4 globally, especially here in the U.S. We see
5 ourselves having to bring in H-1B employees to
6 fulfill those, which is a limitation. And we see
7 the growing of native talent inside the U.S. as
8 slower than we'd like.

9 Do you see either of those getting
10 solved in the near term, and what other barriers
11 would you see that we have to be concerned about?

12 DR. MANYIKA: Bill, thank you. I was
13 actually hoping you were going to solve the
14 industrial benefits part of the question, given
15 what you're doing. I say that in part because one
16 of the things that's quite interesting on the
17 productivity questions -- and there are enough
18 economists in the room that hopefully you can all
19 chime in on this -- it's quite remarkable, you
20 know, how we used to have the Solow paradox in the
21 '90s about, you know, computers were everywhere
22 but we couldn't actually see this in the

1 productivity results.

2 And I remember doing some work with Bob
3 Solow actually on that question in the early
4 2000s.

5 and one of the things that we concluded
6 from that work was that we saw the big benefits in
7 the economy broadly in terms of productivity when
8 a few things actually happened. One was when we
9 started to have the very large sectors in the
10 economy actually start to make big gains and big -
11 - you know, process changes. That's when we
12 actually saw the big change -- the numbers were
13 big enough to be noticed in the broader economy.

14 And now, arguably, if you take the heat
15 map that I showed, we haven't seen yet
16 digitization really impact the really, really
17 large sectors. If you remember on that chart, if
18 we put the numbers the size of the sectors, most
19 of the ones that were red were actually the really
20 large ones, by the way. So arguably you could say
21 we've yet to see the full benefits of this round
22 of digitization because we have not really started

1 to move the really, really, really large sectors
2 in the economy. If you take that historical
3 argument.

4 I think the question on the consumer
5 question -- and I think it is the case -- I think
6 the consumer question represents some interesting
7 conundrums. On the one hand, you know, many
8 economists, Hal Varian and others, have argued
9 that we don't measure it properly. There's a
10 measurement part of the question.

11 But the other part is that most of these
12 technologies, the good thing about them is they
13 have conferred huge consumer benefits -- in an
14 economist's terms, a kind of consumer surplus in
15 the sense that the products and services that
16 either are free or very, very cheap, which is
17 wonderful if you're a consumer, challenging if
18 you're a company and a business wanting to make
19 money and you want to measure things that you can
20 actually see as GDP.

21 So there's that part of it too. So we
22 love that as consumers and users of these products

1 and services but probably don't like that as
2 businesses from a monetization standpoint. I
3 think that's one of the issues.

4 I think on the talent question, this
5 one's the harder one because on the one -- I think
6 the signals have been there for a very, very long
7 time that there are benefits to more education,
8 better education in terms of wages. And yet,
9 somehow, the system doesn't respond very well.

10 So either somehow we're not making
11 education interesting or we're not educating
12 enough people, creating the right incentives. So
13 that's an ongoing problem that's been the case for
14 a while. But it may actually be about to get
15 worse, which is it may be that we're going to need
16 to rethink what we actually train and educate
17 people to be able to do.

18 So one of the interesting things, if you
19 take the arguments and the evidence from machine
20 learning and AI is that most of the things that we
21 - - that are the center of our education policies
22 and training are in fact the things that machines

1 can do very easily -- do mathematics, calculate
2 things, memorize things, remember things. Those
3 are the easiest things to automate, by the way,
4 whereas things like creativity, other kinds of
5 thinking, those are slightly harder things to do.

6 So there's a question here which -- how
7 is it that our educational training systems are
8 going to evolve, both in recognizing what the
9 technology can do, but also what's actually
10 needed. And it's no longer as simple as teach
11 everybody math or teach everybody the facts or
12 teach everybody history. Yes, those are important.
13 But those are the things that machines can do very
14 well as well.

15 MR. HANRAHAN: So I think that your
16 point on consumers benefiting the most, I think
17 the consumer surplus is absolutely right. I think
18 that consumers are leaning towards these products,
19 these technologies because it's giving them
20 something they didn't have before. I think one of
21 the things that's less talked about is what it's
22 giving the supply side. So whether it's Uber,

1 whether it's Lyft, whether it's Handy, whether
2 it's TaskRabbit, we're giving people incredibly
3 flexibility to work in a way they didn't work
4 before.

5 And you put that together with the fact
6 that you're going to see such a huge change in
7 jobs over the next decade, which whether it's 60
8 percent or 30 percent, it really doesn't matter.
9 It's just such a large number anyway. I think
10 there's probably three things that we should
11 really press on.

12 The first one has been talked about.
13 It's education. The second one I think is this
14 idea that we need an experiment framework that
15 allows us to go much, much further than we've gone
16 before without feeling this risk of failure. And
17 the third one is I think a topic that's a little
18 more controversial. And it's this idea of how we
19 classify work.

20 So all of us are employees of one
21 organization or another. And the legislation that
22 that, you know, pertains to goes way back to 1938.

1 And there's this conversation that we're having
2 around what does it mean to be an employee versus
3 a contractor and what that actually means as you
4 look, you know, a decade forward where a large
5 percentage of jobs are going to be automated.
6 Should you really have a full-time -- a full-time
7 job and what does it mean if you're working across
8 three or four different platforms?

9 DR. TELLADO: A slightly different
10 topic, but there was mention of consumers and I
11 feel compelled. I do think consumers are enjoying
12 the gadgets and the devices. But I think one of
13 the things I don't want us to lose sight of is
14 that there is so much burden falling to consumers
15 about the marketplace and about these devices.

16 And we have to ask ourselves about the
17 interoperability of these devices across brands.
18 And that ties us and brings us right back to this
19 notion of how important it is, the trust side of
20 this. And so, I just wanted to put a marker
21 there.

22 SEC. PRITZKER: Yeah, one question that

1 -- or issue that we've been grappling with is this
2 notion of products today are developed and used
3 equally by consumers and businesses. And should
4 the rules of the road be the same, given these
5 different users, because by virtue of having one
6 set of rules, we're creating some real challenges.
7 And there's not a line at all that -- and so, for
8 example, what's the right of privacy for my
9 personal phone versus my Commerce phone. And one
10 could argue that maybe they should be different,
11 right?

12 But right now, they just look the same.
13 They're just different colors so I can keep track
14 of which is which. But this is I think -- you
15 know, these products were often developed as
16 consumer products. But they're tools that we all
17 use in our day-to-day business. So that's a very
18 important thing to keep in mind, and a question I
19 would just ask, if there's some thought the group
20 would want to have about that division. Is that
21 an important division or not?

22 MR. THOMAS: I just had one -- I just

1 had one thought there. You know, it's
2 interesting. We talk a lot about how innovative
3 companies and new companies are able to disrupt or
4 get their position. And I think a big part of it
5 though is that they've changed the model in some
6 ways. For lots of I think history, you actually
7 had to have a large salesforce that had lots of
8 cost and lots of complexity to actually penetrate.

9 And I think this fact that you're
10 actually talking about or being able to find ways
11 to access and see and get in on the consumer side
12 or on the individual side and then expand your
13 footprint has been one of the drivers, that it's
14 allowed people to innovate.

15 And I think that part of the complexity,
16 I think not just from a policy perspective but
17 from an experience perspective is how do you
18 actually maintain the ability to actually have low
19 friction or for the best technology or the best
20 solution, to deliver the right experience, but
21 then address some of these issues of trust and
22 complexity to come so that then you actually have

1 these blurring of lines that happens all over the
2 place. And I think that's something that
3 technologists and innovators struggle with once
4 they've got sort of like in the position to get
5 inside.

6 But I think lots of the reasons that
7 you've had some of the flexibility and the un-
8 adoption is that you no longer necessarily have to
9 have a highly experience salesforce to actually go
10 penetrate institutions and organizations. And I
11 think that's been a net-positive effect.

12 MS. BAKER: (Off mic, inaudible) --
13 sorry. I'd like to thank James for kicking off the
14 discussion, for a broad ranging set of topics that
15 we can keep in mind as we follow the senator's
16 comments with a discussion about how we might
17 focus on our own work going forward. And with
18 that, I'm going to turn it to Zoto make an
19 introduction.

20 MS. BAIRD: Thanks, Mitchell. That was
21 a great session. One of the things that we've
22 talked about pursuing as we do our work is to

1 bring in others who have been thinking about these
2 issues for a long time or more recently with
3 intensity to inform us.

4 And we have the privilege this morning
5 of having Senator Mark Warner with us, who has
6 been collaborating with a number of his colleagues
7 and probably many of you around the table,
8 including the Commerce Department, to think about
9 what these transformations in the economy mean for
10 the people of this country and what the role is of
11 Washington to engage with that. So if I may, let
12 me invite Mark to make a few comments.

13 SEN. WARNER: Well, thank you, Zo And
14 Secretary Pritzker, thank you for putting together
15 this panel. I apologize about kind of leaping in.
16 If you were mid-conversation, I'd be actually
17 happy to wait a couple moments and then -- and
18 then add or let me go through three or four of my
19 points, and then if time and interest allows,
20 would love to be able to sit through -- I know
21 you've got a break coming up a little bit later --
22 but would much rather kind of participate in the

1 flow of the conversation.

2 Three or four items that I wanted to
3 mention, and it is true, with the help of people
4 like ZoBaird and others around the table, this is
5 a space that I've gotten -- I'm very interested
6 in.

7 Some of you know my background. I spent
8 20 years in the telecom and IT business and brings
9 a little bit of experience, at least relative to
10 my colleagues, in this space. And I think it's an
11 extraordinarily exciting -- but it raises a whole
12 host of new policy questions. And let me kind of
13 go through in no particular order.

14 One, I'm amazed as I travel Virginia and
15 the country -- as we think about the digital
16 economy and what it means -- how many Americans
17 still don't have access to broadband. I think
18 that we have -- those of us who live in urban and
19 more suburban areas think this is a problem of the
20 past. It is not.

21 I think about in my state, wide swathes
22 of southwest Virginia, both topography and the

1 failure to have the incumbents have a focused
2 distribution network, you know, and there is a
3 huge understanding, I think, that -- that most
4 communities, that broadband is not a guarantee to
5 success, but the failure to have broadband means
6 you're not even going to be on the map. And I
7 know this is -- we've had lots and lots of other
8 governmental efforts, private sector efforts.

9 I still think we lack a good how-to
10 handbook for local-based communities on how you
11 can aggregate enough demand to bring particularly
12 last mile providers, most of which I think will be
13 wireless, to communities in terms of access.
14 Access is number one.

15 Number two is the whole question of
16 security. As more and more of our devices have
17 enormous security challenges and opportunities, as
18 we think about databases being broken into --
19 there's not a -- again, a week that goes by, if
20 I'm out around Virginia, that I don't hear still
21 from OPM, both current and former federal
22 employees, concerns about their personal data

1 being hacked into.

2 I still feel like we lack a single
3 standard, kind of an underwriter's laboratory,
4 Good Housekeeping seal of approval around
5 security. I think about this from the policy
6 standpoint, particularly as we move into the
7 Internet of things.

8 I don't think most Americans have any
9 sense of what is about to happen as we think about
10 all of our devices, from appliances to autos to
11 refrigerators, you name it, all having sensors
12 connected to them raises a whole host of issues
13 around security, around privacy, around questions
14 about what happens in the aftermarket if you found
15 out your device has got a bug in it and somebody's
16 hacked into it, whose responsibility does that
17 bear? Again, policy questions here, but ones that
18 are not on most members' kind of front-of-mind in
19 terms of Congress.

20 One of the things, because of the
21 encryption debate, but not necessarily entirely
22 driven by encryption, more encryption and overall

1 digital security. Mike McCaul, the chairman of
2 the Homeland Security Committee in the House, he
3 and I have put together legislation that would say
4 let's put together a commission to try to look at
5 these issues around digital security.

6 Now, I know and I would tend to agree
7 with the premise that usually encryptions are
8 congressional punts, where there is a willingness
9 to kick the can.

10 I for one, again, who have spent 20
11 years in networks and six years on the Intel
12 Committee, know though that if we rush to a top-
13 down, legislated solution, particularly one that
14 would legislate some form of a backdoor, that we
15 raise a whole host of issues around security,
16 around maintaining America's innovation lead, as
17 it will push most of the bad guys, both criminals
18 and terrorists, in other words, don't form based
19 on hardware and software.

20 But trying to elevate up the security
21 issues -- and I don't know whether that exactly
22 falls within the purview of this commission. But

1 we need a common set of facts. If we can't get
2 this legislative commission together, where it is
3 broad-based and bipartisan and we've got lots of
4 support from intel, law enforcement. I've been a
5 little candidly surprised at tech who kind of are
6 in one day and out the next day on this. But
7 security is going to be a huge issue.

8 And then, finally, the one where many of
9 you around the table I've engaged with, and that
10 is the whole changing nature of work that is being
11 driven by this digital economy. Some of you have
12 heard the analogy I've used, and it was coined by
13 my friend Lindsey Graham, who I'll never be as
14 good at political phrases as he is.

15 I spent this -- I spent an hour in the
16 car with Lindsey recently where he had to listen
17 to my whole, you know, on-demand economy, sharing
18 economy pitch. And I talked about the
19 transformation of work and how, you know, we've
20 moved to more and more contingent work and people
21 are being able to monetize their time and their
22 energy and their assets on a real-time basis and

1 great freedom and flexibility, but enormous
2 challenges.

3 And Lindsey said, well Mark, what you --
4 you know, this is how I'll explain it to people in
5 South Carolina. What you're telling me is you're
6 saying that work is a little bit becoming like the
7 way we used to have to buy cable TV. You used to
8 have to buy cable TV and you had to buy the whole
9 package with a hundred channels, even though you
10 didn't want the hundred channels. You just wanted
11 ESPN and HBO. But you had to buy the whole
12 package to get the channels you wanted.

13 And now, more and more, people are
14 buying a la carte. Work in a certain sense is
15 being broken into that category. Employers used
16 to have to buy a whole person for 40 hours a week,
17 50 weeks a year to get the skill sets they needed
18 on an intermittent basis. Increasingly, we're
19 finding ways that work can now be purchased on an
20 as-needed, skill-driven basis. Enormous upside
21 for consumers in that, enormous driving down of
22 costs.

1 I've found a great number of people who
2 are workers in this on-demand economy who love the
3 freedom and flexibility. But from a policy
4 standpoint, this raises as many fundamental
5 questions as anything I think that those of us on
6 the elected side will have to deal with. This
7 really shakes up at its core the social contract
8 that was derived in the 1930s and the 1940s.

9 As more and more work becomes contingent
10 - - and Austan and I have talked about this a bet
11 -- and while the gig and on-demand workforce is
12 still relatively small, the contingent workforce,
13 which now numbers somewhere in the, you know, 30
14 to 40 percent, depending on the way you want to
15 cut it, is more and more corporates starting in
16 the '90s decided to take everything that was non-
17 core to their function and outsource it, if not
18 literally outsource it outside the country, at
19 least outsource it from being within inside the
20 corporate structure.

21 And all of that work that's been
22 outsourced, whether it is back office work,

1 whether it is your janitorial or your feed
2 services, really operate in a totally different
3 set of rules and regulations.

4 And I think our binary view of
5 employment, 1099 versus W-2, one coming with a
6 whole set of social contract -- unemployment,
7 workman's comp, disability, health, retirement --
8 other with basically no social insurance, we're
9 seeing kind of happen underneath the top line of
10 the economy a massive shift to this contingent
11 workforce, which again, at 35 percent I think is
12 the most accurate number and growing exponentially
13 -- from an economic free-rider standpoint, if we
14 end up with 60, 70 percent of the workforce in
15 some form of continent, whether we call them on-
16 demand or not.

17 We have a huge challenge with our public
18 entitlement and social safety net programs because
19 if no one's been contributing to social insurance
20 along the way, workers and employers, when bad
21 things happen, those people fall upon a safety net
22 that's already strained.

1 My hope would be -- and I don't think --
2 my hope will be that Congress will not top-down
3 legislate and stop this innovation -- is that we
4 can see more innovative models being tried out in
5 local communities on a regional basis, on a state
6 basis. I commend what Uber and the machinists did
7 a week ago. I think that is just one model.

8 My hope, and I know people around the
9 table and I have spent a lot of time talking about
10 this -- you know, whether we can get more models
11 to try out -- Secretary Pritzker, one of the
12 things that, you know, we've talked a little bit
13 here. There is great fear amongst the companies
14 about trying anything in this space, model -- and
15 in terms of benefits because of the fear that it
16 will be used against them in our 1099, W-2 world.

17 Secretary Pritzker, if we could get some
18 more in effect, you know, regulatory sandboxes or
19 ability to try innovative pilots, I think we would
20 go a long way. I'd close with this. You know, as
21 one of the things that if we are going to move to
22 this new model and beyond the two classifications

1 of work and as we think about a third or a fourth
2 classification of work, there's two parts that at
3 least where some of the work we're doing at the
4 Aspen Institute under the future of work project
5 that we're focusing on.

6 One is portability of benefits, making
7 those benefits attach to the human being rather
8 than being connected to the workplace.

9 But two, and this is again where a lot
10 of the companies -- maybe not in this forum, but
11 elsewhere could I think help us think through
12 these items -- if we were to be able to suddenly
13 wave the magic wand and say everybody in the
14 contingent workforce, on-demand or not, is going
15 to have portable set of benefits that travel with
16 them, that is going to have some kind of joint
17 contribution coming from the employer and the
18 worker, before we simply port over from the 20th
19 century unemployment, workman's comp, disability,
20 health and retirement, those are still big
21 buckets.

22 Before we simply port all of those over

1 to the 21st century in a portable benefit
2 framework, what I would hope we would also think
3 about is can we reinvent what that social contract
4 would look like.

5 The last point I'll make is that one of
6 the things that we've discovered as we started
7 with the on-demand and then spread to more
8 contingent workforce and then really kind of dug
9 in with some of the FinTec firms and some of the
10 more traditional financial institutions, one of
11 the challenges I think most Americans face right
12 now that really is exponentially different than it
13 was 30 or 40 years ago because if you think about
14 work, it was 40 hours a week, 50 weeks a year.

15 Whether you made a little bit of money,
16 a medium amount of money or a lot of money, you
17 had predictability. If you have now a workplace
18 which is much more contingent and your income
19 volatility is exponentially higher -- and
20 JPMorgan's done a lot of good work here -- our
21 current benefits package is not meant for a
22 universe of Americans who are going to work --

1 even if they make enough money -- in an
2 extraordinarily income-volatile situation.

3 So are there tools, particularly coming
4 out of FinTec, that can income-smooth, that can
5 help create that emergency \$400 that can only be
6 used once a year without diverting people into
7 payday or car title loans or into these debt
8 spirals that people get into. All this is
9 possible. But it is going to require -- it is
10 going to require making sure that everybody has
11 access. It is going to require thinking through
12 this transformation in our economy and thinking
13 through the security issues.

14 And then, finally, it is going to
15 require, as people think about the changing nature
16 of work, I hope we end up with a place where there
17 is social insurance, where there is a 21st century
18 social contract and that part of that social
19 contract is going to entail some level -- some
20 ability to have some form of income smoothing
21 because I don't think we're going to go back to a
22 predictable income stream the way we had in the

1 20th century.

2 So I know I've bounced around a little
3 bit, but would love to sit and listen or have
4 people respond. I guess one thing that I would
5 love to hear from the panel, if we've got a couple
6 of moments, is, you know, what should Congress do
7 over the next few months, recognizing Congress is
8 not going to do much over the next few months.
9 But you know, what should Congress do and what
10 should Congress not do, you know, in the short
11 term in this space.

12 SEC. PRITZKER: Senator, first of all,
13 thank you very much for attending our meeting. I
14 think you've provided some valuable insights that
15 frankly some of which we had not focused on as of
16 yet.

17 If you look on the board, or on the
18 screens, this is the sort of framework within
19 which Commerce has been acting and this is sort of
20 a framework against which the group has been
21 reacting to say is this an inclusive enough agenda
22 or not. And we don't pretend at Commerce to think

1 that we have a fulsome enough agenda. That's why
2 we created this working group, which is very
3 helpful.

4 I think that access has very much been
5 on our mind. I think Brad suggested that our
6 access agenda should also include folks with
7 disability, so not just coverage, but also that we
8 need to include folks with disability. As it
9 relates to security, this is absolutely sort of in
10 the area of our trust bucket.

11 And it's a huge issue that your point
12 about there is not a Good Housekeeping seal or a
13 how-to book is exactly right. We have -- the
14 Cybersecurity commission has made one of it --
15 which is not this group, but another -- that we
16 support has made that one of its to-dos is to come
17 back with a set of suggestions about how do we
18 measure appropriate cybersecurity and security.
19 And this doesn't mean it's not a purview of this
20 group. I'm just saying it's also in their bucket.

21 The point of the changing nature of
22 work, we spent a lot of time talking about that.

1 But you brought an additional dimension. We've
2 spent a lot of time talking about the need to
3 change education, the realization that work is
4 changing. But your point about the social compact
5 and the social safety net is one that we had not
6 focused on. And I think that really is an
7 important dimension to be added to the work of
8 this group.

9 One of the things Larry Strickling, our
10 assistant secretary at NTIA, has really championed
11 is the whole multi-stakeholder process of coming
12 up with ideas and solutions in the digital world.
13 And that might be a way to reinvent the social
14 contract is to really engage in some form of
15 multi-stakeholder approach. So those are just a
16 few reactions to your approach.

17 SEN. WARNER: Can I --

18 SEC. PRITZKER: Sure.

19 SEN. WARNER: Just two questions -- just
20 a couple of quick comments. On the Cybersecurity
21 Taskforce, and I've spent some -- you know, quite
22 a bit of time with Tom Donilon on this and I

1 commend the president for moving forward on this
2 initiative. My understanding -- and I could be
3 wrong -- of what the president's taskforce is
4 really focused on is more kind of cyber-hygiene
5 for USG. You know, and terribly important and
6 obviously in a state like Virginia, exponentially
7 important.

8 But questions around, you know, getting
9 ahead of the debate on as we move to the Internet
10 of things, at least thinking about market and
11 aftermarket. If you've got software in your
12 refrigerator and somebody hacks into it two years
13 after the fact, whose responsibility is that going
14 to be? I'm not saying this commission needs to
15 come up with that answer. But I don't think most
16 Americans or most policymakers that I work with
17 even know what the Internet of things is.

18 And then, three, this -- the current
19 debate about encryption is -- as someone who feels
20 like I'm hanging on by my fingernails trying to
21 understand all of the kind of ramifications of
22 this, you know, God forbid another incident,

1 particularly if the bad guys use encrypted
2 technology, which more than likely they will.

3 It gets me to the fact that there's, you
4 know, a couple thousand new apps a day added to
5 the iPhone store and over half of those are
6 foreign and most all of them are encrypted. For
7 us to presume that something won't happen and it
8 won't be using encryption, if we don't kind of lay
9 out proactively some of the set of options, there
10 will be political solutions offered that I think
11 may sound good, may not make Americans safer and
12 could do enormous damage to our -- you know,
13 America's long-term economic lead in the area that
14 we are still the world leaders.

15 I know it's not perhaps the purview.
16 But it's -- boy oh boy oh boy, it's coming and
17 it's been very disheartening that, you know,
18 because the current -- just because one set of
19 litigation has gone down, that many people have
20 kind of buried their head in the sands again. And
21 I say that as a friend of the tech community. But
22 it's really been pretty disheartening to see

1 people retreat from the debate.

2 And then, on the question around how we
3 get it right with the social contract or about
4 social insurance, you know, we will have -- I
5 think the worm -- editorial comment here -- the
6 view around the gig and on-demand economies, I
7 think the public's mood is shifting. It was all
8 very positive a year ago, six months ago. I'm not
9 sure it's as positive anymore.

10 And notional ideas of let's say let's
11 just put everybody back into a traditional 20th
12 century box in terms of classification I think is
13 a much higher -- much higher chance today than it
14 was even three months ago. And my fear will be if
15 we don't try some models, if we don't try some --
16 and again, Madame Secretary, you and I have talked
17 about this, you know, before.

18 I know there are even internal
19 discussions within the administration where we
20 fit. If we can't try out some new models, then
21 policymakers are going to be left with I think
22 only two choices. We either put everybody back

1 into a 20th century context or we just say we're
2 not going to have any social insurance at all.
3 And the ladder of everyone for themselves I just
4 don't think is going to fly.

5 MS. BAIRD: The issues you're raising,
6 which, I think you know, are very important, I
7 would mention too that Senator Warner's working on
8 these on a bipartisan basis. He's leading his
9 effort with Mitch Daniels, who was head of OMB in
10 the Bush administration, and governor of Indiana
11 and now present of Purdue.

12 These issues are really a piece of a
13 broad set of policy issues for which we don't have
14 a very good means of deciding what we even value
15 as a country, let alone reaching conclusions on
16 those policy issues.

17 The issues you raise about portable
18 benefits and the social compact and the
19 classifications of work, there are issues Mitchell
20 raised earlier about positions America might take
21 in the global discussions about data flows and the
22 compartmentalization by country of the Internet.

1 And so, I think one of the challenges
2 for us will be to see if we have a way of thinking
3 about how Commerce can lead a development of the
4 current values in a very divided country in order
5 to develop consensus around positions, let alone -
6 - or broadening of consensus around positions that
7 we even know what direction the experiments might
8 go or what direction we might want to seek for
9 policy.

10 Brad, did you want to make a comment
11 before we move to the next part of the agenda?
12 Because I do think we need to move on pretty
13 quickly. But I know you were --

14 MR. SMITH: Well, sure. I'll just offer
15 two brief comments. First, I personally -- since
16 we're all in our personal capacity here today --
17 think that the legislation that you've introduced
18 with Representative McCaul is extremely important.
19 The notion that we should take a knotty issue and
20 develop a common understanding of the facts before
21 we develop an opinion on the outcome is perhaps
22 somewhat unconventional this year but is

1 nonetheless laudable. And it's actually
2 important. And I think increasingly people are
3 looking at it that way, as something we need to
4 do.

5 But second, I did want to build on just
6 your comment and then the prior comment. It's
7 interesting to see how much the future of commerce
8 depends on the nature of labor. One's reminded --
9 or at least I'm reminded by the fact that when
10 this department was first created, it was the
11 department of commerce and labor and then they
12 were split. And I think we really only have three
13 choices.

14 We either create a new model for the
15 21st century or we fall back on the model of the
16 20th century or we fall back on the model of the
17 19th century, because if there's no labor law at
18 all and there's no Social Security at all, we're
19 back in the 19th century. The truth is neither of
20 those outcomes make sense.

21 And I think one of the disconcerting
22 things for those of us who work in the tech sector

1 is the degree to which right now the debate seems
2 to be about the application of 20th century law to
3 21st century practices. It's like watching people
4 trying to pound a round peg into a square hole.
5 And when it doesn't go in, they just pound harder.

6 And the truth is I don't think anybody
7 really knows what the new model should look like.
8 I think we can start by asking ourselves what
9 values and principles exist that we really regard
10 as timeless. You know, we want, I think, people
11 to work in a safe environment, be healthy, get a
12 decent day's pay for a decent day's work, to have
13 the ability to retire at the end of their careers.

14 But we have to ask how we apply those in
15 this new age of work. And you know, I think that
16 is a very good question for us to think more
17 about.

18 MS. BAKER: And I have one quick
19 question, and it is on the encryption debate and
20 your comments about the tech industry in
21 particular. I'm from Mozilla, by the way. And it
22 occurs to me, on a practical level, in this trust

1 bucket here, we might consider whether we --
2 whether it's possible and how one might build an
3 at least more trustable or working relationship
4 between the tech industry and government.

5 But I think there's no question that the
6 Snowden episode really fractured that in a deep
7 and dysfunctional way. So it might be a topic.
8 Again, I'm not sure if it's in the purview or if
9 it's the most effective. But within that trust
10 bucket, the issue you raised is probably important
11 to progress on many of them.

12 MS. BAIRD: We're going to need to move
13 on -- thanks -- because we have planned to use the
14 rest of our time before public comment period to
15 dig into three possible areas that we may want to
16 have on our agenda, shape our agenda around.

17 I think we'll revisit all of this
18 obviously after today as we think about how do we
19 form up the work that we take forward. But we've
20 asked some of our members to lead off the
21 discussion. And the three that we've highlighted
22 because of the conversations that we've had with

1 people before the meeting are, first, this
2 question of measurement.

3 What do we need to measure to understand
4 what's happening in the economy, to inform
5 policymaking? What kind of data and information
6 does the government have that can be useful to
7 businesses as they grow, to small businesses, to
8 individuals to understand the economy, to
9 policymakers? And what other information ought
10 the government to be looking at, whether it be in
11 the context of the Census or standard setting
12 processes or otherwise. So the whole issue of
13 what the measurement metrics for the economy,
14 we're going to take up in the first session.

15 We're going to take up the question of
16 the labor force and skills and how do we develop
17 the talent for the work of the future and how do
18 people think about their place in the work of the
19 future.

20 And we're going to take up, third, the
21 question of how do we enable -- how do we avoid a
22 digital divide between small and large businesses

1 and enable small- and medium-sized businesses,
2 which often are just individuals, to grow and
3 participate in the benefits of data for business
4 growth and benefit in engagement and global trade
5 and the global economy.

6 So to kick us off on the measurement
7 point, let me ask Austan to start. And we only
8 have, unfortunately, because of where we are in
9 the schedule, we only have about 10 minutes for
10 each of these topics. So Austan, I'll turn it
11 over to you to begin the discussion. Thank you.

12 DR. GOOLSBEE: Okay. It works out well.
13 I was only going to talk, you know, for three to
14 five minutes so we could have some discussion.
15 It's either a curse or an opportunity to have gone
16 after -- James has already, you know, presented
17 some fairly detailed information.

18 So I was just going to make a few
19 points. The first is, if you didn't know already,
20 the Commerce Department is in the pantheon of the
21 greatest data agencies of the world and the BEA
22 and the National Accounts run out of Commerce.

1 You've got the Census run out of Commerce, both
2 the individual Census and all of the economic
3 censuses, ESA. There's a whole -- there are a
4 whole bunch of functions. So I think it's totally
5 appropriate that we would think about that topic
6 of how could we give some contributions, some
7 advice, as it were, to these data agencies.

8 I think the existing structure we have
9 now, in a weird way, in the data world, we have
10 the same thinking as in the labor world or as in
11 others. Our systems are designed really with the
12 20th century economy in mind in what we track and
13 what we measure. And that's becoming increasingly
14 wrong. And in a way that makes it hard for both
15 industry and for policy to do what they need to
16 do.

17 So at a fundamental level, we basically
18 try to measure the standard of living through the
19 GDP and output and we kind of measure outputs and
20 we measure inputs. And both of those are getting
21 complicated. So I would think we might be able to
22 give some help on identifying what are the correct

1 outputs, what are the correct inputs and how to
2 measure them.

3 So on the output side, we've -- we have
4 largely interpreted for all the time when we've
5 been keeping the data, we'll estimate the value,
6 the contribution, the standard of living by how
7 much you spend on it. And now, we've got a bunch
8 of things that are free that we spend a lot of
9 time on but we don't pay any money for.

10 There's an active and contentious debate
11 over -- from Hal Varian and others, if we spend a
12 lot of time on these things and they raise our
13 standard of living, is it best to think of those
14 as productivity enhancing and we're just
15 mismeasuring it or is it best to think of that as,
16 no, that really is a productivity slowdown.
17 You're not doing anything. You're not selling
18 anything. And so, that's an area that we want to
19 think about.

20 On the input side, we talked a little
21 bit last night about the changing nature -- and I
22 loved the comments as regards to AT&T, the

1 changing nature of what our investments -- you
2 know, what are we going to be buying equipment
3 anymore?

4 We've seen a big shift to software as a
5 service and other capital goods that our
6 conception of let's go out and buy a thing for a
7 lot of money today, which we depreciate and we get
8 these payments over a 10-year period, that's not
9 really the model anymore. And so, I think some
10 measuring what the new assets are -- if you just
11 look at market value to book value of assets, it's
12 gone way, way up.

13 So you know, in Bill's phrasing from
14 last night, it used to be the most valuable
15 companies were those that had the most assets.
16 And now, it's increasingly not. The most valuable
17 companies, they have very few physical assets and
18 measures. So how do we measure the existence of,
19 size of intellectual property, human capital,
20 things like that I think is another great area.
21 It's going to spill over into our discussion of
22 the labor force.

1 The other major input, you've got
2 capital input, you've got the labor input.
3 Increasingly, the labor input is not just bodies
4 but a bunch of skills. And how we work with the -
5 - how we get the Commerce Department to work with
6 Bureau of Labor Statistics and work with the
7 private data providers on an inventory or a census
8 or something, if you will, of skills and the
9 economy and what are being used and what are
10 important I think could be good.

11 And we've increasingly seen that the
12 more measured it is, the better off -- the better
13 we are able to deal policies towards it,
14 industries towards it. I wonder if we could talk
15 about the measurement of drones, automated cars,
16 the Internet of things. We really have no
17 conception of how big these truly are, except
18 through private surveys that, you know, we try to
19 be representative. But I wonder if the department
20 could go through that.

21 Monitoring the international treatment
22 of digital goods coming from the United States and

1 the flows -- you know, tracking the flows is the
2 beginning of that. But the tracking the
3 equivalent of tariffs and regulatory restrictions,
4 tracking security violations, tracking things that
5 have to do with cybersecurity. I think the
6 senator's right. All of those are going to be
7 major issues.

8 So I just highlight those issues as
9 being of critical importance to several of the
10 other things we're going to be doing, to several
11 of the things that the Commerce Department does
12 and I would just end with one plea. For six
13 years, I was on the Census Advisory Commission.
14 And with the origin of electronic commerce, there
15 were a lot of pressures on the Census Bureau to
16 start keeping track. See, you've got a census of
17 retail trade. You've got to start keeping track
18 of electronic commerce. And Census felt, and not
19 wrongly, that so much pressure was on them to
20 track electronic commerce from Congress and
21 others, but nobody gave them any money.

22 So they -- to inherently tell them we

1 need you to track A, B and C was forcing them to
2 say we're going to stop. We're going to have to
3 stop or cancel program D, E and F, which actually
4 were important for tracking the economy. I would
5 hope that we don't do that. We can have a lot of
6 suggestions. But let's not -- let's not tell them
7 abandon all the stuff that you have been tracking
8 because this is so important, we only want you to
9 pay attention to it.

10 MS. BAIRD: (Off mic, inaudible) --
11 sorry. This is going to become a digital economy
12 agency.

13 MR. MANYIKA: If I could, sorry, two
14 quick comments. Austan, I thought that was
15 terrific. I mean, you covered pretty much many of
16 the questions on my mind. I think two quick
17 comments. One is I think on your question about
18 tracking assets and which ones should we track,
19 one suggestion would be to also consider data as
20 an asset.

21 And in fact, one of the things --
22 because if you were to include things that look

1 like software and data as assets, that probably
2 more closely correlates to, you know, the
3 evaluations you often see of entities and
4 companies. It's much closer to that. Even in the
5 assessment that we tried to do of the economy, we
6 did try to include data in the asset group of
7 things we measures. So that's one suggestion.

8 And then the other comment is, I think,
9 one thing that we'll have to think through on all
10 these measurement questions is that one of the
11 things that's changed is that much of the
12 information about the digital economy is actually
13 not in the hands of the government. It's actually
14 in private places and private sources.

15 I mean, we've found that even in our
16 work when we try to understand global data flows,
17 most of the sources for that are actually in the
18 private sector. You know, whether that's
19 companies or a whole set of -- so the question is
20 how do we work through where the sources of data
21 for a lot of these things are no longer going to
22 be surveys. And we know the flaws with surveys.

1 But there's actually now a lot of behavioral data
2 that actually exists. How do we work that
3 question, access to the data?

4 MS. BAIRD: Yeah, that's huge. I'm
5 going to have to move us on to the next topic. So
6 if I could call on Mindy to jump in on the skills
7 and labor issue?

8 MS. GROSSMAN: Sure. We've talked a lot
9 about this throughout the morning. And if you
10 take James' comment that most jobs will change and
11 then Brad's about who are going to fill them, I
12 think it's imperative that, given the shift to the
13 digital economy, that we really focus on training,
14 educating and certainly developing a workforce
15 that has the skills to serve the needs of business
16 in the future.

17 So I think no matter where we think our
18 businesses are headed, the pace of innovation
19 certainly is not going to slow down nor is our
20 expectations or imagination. And if you look at
21 the facts today, there really are no lack of jobs.
22 There's a lack of unfilled positions in the

1 workforce. I was talking to Penny last night. I
2 think that number is about 5.8 million. And that
3 actually bests the record set before the
4 recession.

5 So I think new technology cycles are
6 going to bring new requirements and the cycles are
7 actually getting shorter, which relates to a
8 skills mismatch. So I think the magnitude of
9 training and re-skilling is critical. I think the
10 mismatch also is driving up the price of labor and
11 the competition for workers in this world. And
12 what contributes to that are things like education
13 policy, immigration policy and also the inability
14 to keep up with new economy industries.

15 So Bill was talking about that, you
16 know, from GE earlier. And how -- are we creating
17 greater inequities if we don't address the
18 workforce training currently and future and are we
19 also jeopardizing our own competitiveness if we're
20 not supporting the business needs?

21 So you know, I think there's some
22 seismic shifts in where our investments and talent

1 will be focused. So for example, working with,
2 you know, my role at the National Retail
3 Federation, which covers businesses from small,
4 independent retailers to large mass to digital, we
5 represent one in four jobs in the U.S.

6 So if you think of the type of jobs that
7 are going to be required and the skills needed are
8 shifting dramatically, so need for data
9 scientists, analytics, engineers, programmers,
10 videographers, content creators, IT professionals,
11 security experts, social and even digital sales
12 professionals and people who can actually use new
13 technologies even in a selling environment. So
14 this utilization of tools, it's actually
15 permeating the length and breadth of every
16 function.

17 I do think though, to James' earlier
18 point, the one thing we also can't forget is that
19 technology can't replace creativity. So how do we
20 merge the skills that are needed in a digital
21 world, but still foster the creativity needed to
22 utilize those skills and move them forward?

1 We recently polled a very broad group of
2 CEOs and asked them what keeps them up at night.
3 And certainly, the typical things like security
4 and other things came up. But I will say that the
5 number one thing on that list was talent and
6 making sure we're attracting, retaining and
7 developing the talent that we need for the future
8 of the business and having a robust pipeline of
9 talent within the industry to make it competitive
10 in growth.

11 So certainly working with educators on
12 curricula or academia and business and academic
13 partnerships are important, what are broad-based
14 training programs, whether it be for our industry
15 and others, as well as certifications to reflect
16 new talent needs. How do we certainly work
17 industry- wide, but how do we bridge that, because
18 it's not an industry-specific issue? It's
19 relevant to our ability to be competitive.

20 So I think the big questions that come
21 up is, you know, how do we enable the people to
22 get the skills they need to participate? And I

1 think the word participation has come up quite a
2 bit this morning. And then, where are the biggest
3 gaps in that. And what training and educational
4 institutions and curricula -- and I said before,
5 even early on, in early education, but certainly
6 critical now to get these jobs filled.

7 And if we don't, what impact is that
8 going to have on American competitiveness? And
9 you know, then what can we do, certainly
10 government and business, to be able to prepare the
11 workforce?

12 MS. BAIRD: (Off mic, inaudible)

13 MR. CICCONI: I could just underscore
14 what Mindy said there. I mean, we're -- at AT&T,
15 I mean, we're dealing with a lot of this right
16 now. The biggest challenge I think we have going
17 forward is reskilling of the workforce. We're
18 actually doing a lot of it ourselves because there
19 just aren't really good ways of doing it out
20 there, with the exception of some experimentation
21 with Georgia Tech that we've done between them and
22 Udacity. Much of this we're doing ourselves.

1 And I think one of the things that we
2 ought to be looking at is how our educational
3 system in this country is really not meeting this
4 challenge currently. And it's not, as far as we
5 can tell. The cost of higher education is
6 dramatically rising. Access to higher education is
7 being limited by that. People come out with
8 incredible loads of debt, which, you know, burdens
9 them further.

10 But we have all these midcareer people
11 who we are talking about who are in midlevel jobs
12 that they're not necessarily going to go away, but
13 they're going to change. But we have to give
14 these people the capability of doing it. And
15 we're finding in our company, when we make it
16 available, the uptake rate is huge, is huge.
17 These are people in their thirties or maybe early
18 forties and they see their jobs changing in the
19 course of their career and they want to develop
20 the skills to be able to meet those challenges and
21 adapt so they have a good career.

22 But it's one thing when you have a

1 company your size that, you know, maybe has the
2 capability of developing that internally. But not
3 everybody can do that. And a lot of that really
4 should be falling to the higher educational sstem
5 in this country and it's just not designed for
6 this at all.

7 MS. BAIRD: (Off mic, inaudible) -- I
8 apologize. The notion of employers training their
9 employees has a very long tradition in this
10 country. But it is something that we've gotten
11 away from, as people haven't had lifetime
12 employment with the same Fortune 500 companies as
13 they used to.

14 And there's an interesting
15 experimentation going on in the Labor Department
16 and Commerce I think have been engaged in, in
17 looking at the models of some other countries and
18 thinking about how to do apprenticeship programs
19 or internships or other kinds of programs like
20 that, get encouraged. Also, there's a lot of
21 research. We've done some of it. But there's a
22 lot of research showing that employers are looking

1 for skills that cut across the board in who
2 they're trying to hire.

3 So soft skills, creativity skills,
4 skills of capacity to work in teams. And so, one
5 of the things we may want to look at is how can
6 the Commerce Department really contribute to
7 collections of employers collaborating on skills
8 development and creating new innovations in that
9 regard, as well as encouraging employers like your
10 own.

11 MR. CICCONI: Yeah. One thing I'd put
12 on that list is alternative certifications. I
13 mean, we actually -- if you get a -- you know, a
14 computer science certification from AT&T, you
15 know, that's probably portable. And as you think
16 more about the contingent workforce that we were
17 talking about earlier, you might be able to
18 develop that across the board. But make no
19 mistake, that is something that we have to
20 consider simply because our traditional sources of
21 higher education aren't meeting that need
22 themselves.

1 MS. BAIRD: Please.

2 SEC. PRITZKER: So we've been -- at the
3 Department of Commerce, as you rightly point out,
4 we used to be the department of commerce and labor
5 before the Department of Commerce. But we did
6 make workforce training a priority because -- from
7 every single employer that I met with, since day
8 one, that this is an issue. So the way that we've
9 tried to influence is two or three ways. And one
10 is to work with the Department of Labor so that
11 there's now a federal checklist.

12 We work not just with Labor but with the
13 administration. There's a federal checklist so
14 that in order for federal grants, there's about
15 \$1.4 billion of funding that requires certain
16 criteria, including a business-driven, job-driven
17 criteria so that the federal money is pushing out
18 principles as opposed to pushing out solutions.

19 Second is the president's committed to
20 double the number of apprenticeships. That's a
21 focus. But third is the Department of Commerce,
22 we have a partnership with the Aspen Institute

1 called Communities that Work. And we're working
2 with seven different communities that are
3 focused, you know, on different sectors of their
4 economy. And the concept is to bring together the
5 business leadership, the educational leadership.

6 So that's K-12 plus community college
7 plus university, in a community, local government
8 in some instances -- and those that are working
9 best, the social service organizations because
10 often you have to help somebody bridge from one
11 place to another. And what we're finding is -- and
12 that -- we'll have results of that effort towards
13 the end of the year, the goal being not only
14 learning from each other, but to come up with best
15 practices.

16 And what we're finding is that
17 communities where the local leadership takes hold
18 of this and recognizes here are the six or eight
19 or five or seven sectors of the economy we're
20 really going to focus on. And they come together
21 and they break down. And what the federal effort
22 is doing is helping them break down their own

1 siloes and really address this.

2 There's enormous positive -- enormously
3 positive things that are happening for the
4 workforce and for the employer, getting the
5 workforce to meet the needs of the employer,
6 getting the whole apparatus to begin to work
7 towards the jobs and the way jobs are training,
8 trying to get the ed system to start much younger
9 to address this, the challenges that communities
10 are going through. These communities range from
11 Dalton, Georgia, you know, to San Francisco. So
12 there's a different variety.

13 But the point being there's a bunch of
14 work we're doing. You should get briefed on that
15 so you know kind of what we're doing and how to
16 build on that as well because I think what we're
17 trying to do is, with limited resources, come up
18 with best practices and then how can we use our,
19 let's say, economic development grant dollars to
20 make sure they're being used to support workforce
21 training, even though the mandate is really public
22 works out of EDA.

1 So just a few thoughts about what you're
2 doing. You should make sure you guys are aware of
3 that so we can build on that.

4 DR. TELLADO: Thank you, Mindy. That
5 was terrific. And I just wanted to applaud the --
6 in the framework, how closely you tied our
7 conversation around skills with access and I don't
8 want us to lose that. I think both need to be
9 braided together and to the extent that in this
10 third bucket that you pulled out, Zothat we don't
11 -- we don't forget that. I think that the two
12 working in partnership is essentially.

13 MS. BARTLESON: There's a piece of
14 skills that's very important in industry right now
15 and that's diversity and inclusion. It's a really
16 big thrust. And if there's a way that we can,
17 through Department of Commerce and through this
18 board, if we can make that a reality rather than
19 just lip service, I think we'll make a huge
20 difference. And the digital economy is giving
21 underrepresented groups a huge opportunity that
22 they never had before.

1 MS. BAIRD: (Off mic, inaudible) -- I'm
2 sorry. I'm not very attentive to that. I'm going
3 to move us on now, if I may --

4 SEC. PRITZKER: Unfortunately, I'm going
5 to have to leave in a couple of minutes. So I
6 don't want to interrupt the next discussion. So I
7 will sneak out. I'm going to try and circle back
8 before you all wrap up during your lunch period or
9 after that. But I just want to say thank you.
10 This is unbelievably -- I can tell this is going
11 to be an incredibly productive and useful and I
12 really appreciate the commitment all of you are
13 making.

14 MS. BAIRD: We're very grateful to you
15 for inviting us here. And as you leave, listen
16 carefully, because Bill is going to take on a
17 topic that I know you care about a lot.

18 SEC. PRITZKER: Yeah. So I'm going to
19 be quiet.

20 MS. BAIRD: So I'm going to pass it over
21 to Bill.

22 MR. RUH: Thank you very much. Look, I

1 think we all know the digital economy is here
2 today. It's just not evenly distributed inside the
3 U.S. or even globally. The thing that seems to be
4 at the cornerstone of this distribution are these
5 technology platforms that become the cornerstone
6 of the ability to scale and deliver and enable
7 people, small businesses, individuals as well as
8 large businesses to participate domestically and
9 globally.

10 But -- and a good example, the Internet
11 itself is a basic platform. But it is not the
12 digital economy platform. It's the
13 connectivity/communication platform. So we
14 certainly need greater access even to start there.
15 Without that, you can't participate in the digital
16 economy. But above and beyond that, we've got to
17 encourage platforms.

18 The examples in the world today that are
19 successful, the consumer app economy, is built on
20 a number of different platforms from a number of
21 different players. And that has allowed a lot of
22 small, innovative companies to build and deliver

1 products on a global basis like never before. And
2 you know, certainly we see things like Bitcoin
3 emerging as new kinds of platforms.

4 So the point that I would make here is
5 there's not going to be a platform. There will be
6 lots of platforms. We have to encourage them.
7 And this has to be encouraged across all
8 industries. But they can also be barriers. We've
9 seen discussion about single digital markets
10 globally. I think we have to be cognizant that if
11 these become platforms, that they could in fact be
12 inhibitors to having a true digital global
13 economy. And we have to make sure we think about
14 that in policy.

15 I think that if we look there -- what
16 we're trying to accomplish is fairness,
17 competitiveness, the ability to be global and
18 allow people to innovate simultaneously. I think
19 these things have to be built into policy. And if
20 I look at the agenda and activities, I think this
21 is awesome. I think it covers quite a bit.

22 I would just make, with regard to

1 platforms, three points to consider. One is I
2 think data is like -- data rights and data
3 protection are like water rights of the valley.
4 If you don't have data and you don't have access
5 to the data, you can't compete effectively. And I
6 would -- I really applaud the cross-border data
7 initiative.

8 But I think it almost has to be a first
9 tier player, not embedded in free and open
10 Internet. It's so important that we think about
11 data both in terms of what the government needs to
12 do with its data, but how we enable data within
13 the U.S. and outside. And it can't be buried in
14 sort of just a single activity.

15 I think the second thing is we've got to
16 lead on global trade and ensure that platforms are
17 open for scaling outside. We already are starting
18 to see barriers put in place and countries making
19 decisions about not allowing platforms to play.
20 And I think that will not enable our small and
21 medium businesses as well as our large businesses
22 to compete effectively.

1 The last thing has got to be ensuring
2 there are standards so these things are not built
3 in a way that becomes a barrier. And there has to
4 be an open way for everybody to participate in
5 these kind of things going forward so we can all
6 compete. Things in the industrial world, like the
7 industrial Internet Consortium have been put
8 together to try to lead in this. But I think
9 we've got to enable these more and more.

10 So I would just say that I think
11 platforms are not something you dictate or
12 legislate. The market decides on winning
13 platforms. We have to though enable fairness,
14 standardization, competitiveness, the ability to
15 compete globally and allow them to be innovative
16 and not stop people from innovating.

17 MS. BAIRD: (Off mic, inaudible)

18 MR. DAVIDSON: I might just throw at you
19 - - because I know our time will get short -- like
20 a meta-comment about all three groups, which is
21 just to say I think these are three terrific
22 topics where this group could add a huge amount of

1 value, which is partly why we're really glad that
2 they came up organically from your conversations,
3 particularly with the co-chairs.

4 In each of them, there's -- as you heard
5 from the secretary -- a fair amount of work that
6 we're doing. We're doing a lot on this
7 measurement project. But there's a lot more help
8 we could use in thinking about it. We're doing a
9 fair amount -- this is coming out of the economic
10 statistics -- BSA or ---- bureau on this. The
11 issue of skills and education that you heard the
12 secretary talk about all the work that we're doing
13 there.

14 But I think also there's a -- there are
15 additional thoughts about where we could direct
16 our efforts and what role Commerce particularly
17 could play. That'd be helpful. And on this one,
18 this is a huge -- we have a Commerce Data Service
19 that we've stood up, data itself, but also this
20 issue of how we interact with SMEs is a big topic
21 for our International Trade Administration. We
22 have an e-commerce initiative there. We've got

1 our attachout in the field.

2 So pulling these things together in the
3 way that you've talked about could be really
4 helpful. And the only thing I would add is I also
5 don't -- I wouldn't want -- I think there's a
6 little probably bit of conversation to be had
7 about, you know, are there things that we're
8 missing in these sets of buckets. This is plenty
9 of work to do.

10 I guess if I had to pull out one other
11 thing, I would say I heard about the trust agenda
12 today, whether it's, you know, Marta's comment
13 about the IoT or the cybersecurity conversation
14 we've had. It's come up a lot and whether there
15 was something productive for us to do there.

16 And I sort of leave it to the chairs
17 also to think about whether we could have three
18 small subgroups, four subgroups, whether we want
19 to pick and choose, whether we want to do all
20 these things. But that would be my sort -- I would
21 just say this is really productive stuff that we
22 could really -- I think could add value here very,

1 very easily in the next six months.

2 MS. BAIRD: (Off mic, inaudible) -- thank
3 you. I'll just leave it on. Then I won't speak
4 in between. If I may, let me go back to what Bill
5 opened up particularly because I think there are
6 others here with views about this. The capacity
7 to enable the participation of small- and medium-
8 sized enterprises -- I mean, if you look at any of
9 the data, we know that only 4 percent of small
10 businesses export.

11 But we know that of those who use
12 platforms, as Bill talked about, the number
13 skyrockets. It's something like 70 percent. I
14 don't know what the number is. But it's a totally
15 different order of magnitude.

16 And we know -- and James is one of the
17 leaders in trying to quantify this -- the billions
18 of additional middle class consumers who are going
19 to be coming online in very short order in
20 countries around the world.

21 So these are -- this is a fairly central
22 issue to the possibility of growing more good jobs

1 in this country if our small- and medium-sized
2 enterprises can really engage through the kinds of
3 platforms that Bill's talking about, with good
4 data analytics for their own understanding of
5 markets and supply chain management and all the
6 things that GE does so well.

7 Well, why can't a local business do it
8 with shared data or good analytics, as well as the
9 export issue? Are there others who want to jump
10 in on this topic for a minute here? Please?

11 MR. BECKER: So just to follow-up on
12 what Bill said since Silicon Valley Bank
13 represents about 50 percent of all venture-backed
14 companies in the U.S. So going global at an early
15 stage is so critical to their success and so I
16 agree with you.

17 I think making sure that the cross-
18 border data initiative is one of the key topics,
19 is critical to them because if they -- if they
20 don't have that free access from a global
21 perspective and global availability, it's just --
22 kills a lot of their opportunities. So I would

1 just concur with that.

2 MS. BAIRD: Any other comments or
3 thoughts? Well, we have blown right through our
4 break, as you have probably noticed. So I
5 apologize for that. But we're going to move to a
6 public comment period. Mitchell, you want to take
7 over?

8 MS. BAKER: Well, so the floor is open
9 for public comments and I will ask our organizers
10 here - - these are public comments here in this
11 room or are there other facilities as well?

12 MS. REMALEY: Yeah. So we have an open
13 phone line actually. So the public can join that
14 way. And we also have the ability for those in
15 the audience to speak as well.

16 MS. BAKER: Great.

17 MS. REMALEY: We have some microphones
18 that we'll pass --

19 MS. BAKER: And that phone line, is that
20 available? Do we need to give out the phone
21 number or is it available some other way?

22 MS. REMALEY: Yes. It was actually on

1 the agenda online.

2 MS. BAKER: Great.

3 MS. REMALEY: So it's -- or we could
4 also read it out. But it is -- it's on the NTIA
5 website, the DEBA website. I'm happy to give the
6 number as well. For the local number, it's 203-
7 607-0666 and the PIN number is 5609518.

8 MR. DAVIDSON: We are not accepting
9 donations.

10 MS. REMALEY: No, we're not.

11 MS. BAKER: No sales, no donations on
12 this set of calls. All right, and so you'll let
13 us know if there's a phone call that we want to
14 address. Great. In that case, I'll ask if there's
15 any questions from our audience here. Questions,
16 interventions?

17 DR. GOOLSBEE: One comment that I would
18 just say, given the nature of what our work is, it
19 might be worth opening the public comments to
20 something that's not a -- not required to happen
21 during our meeting.

22 MS. BAKER: Right. Yeah.

1 DR. GOOLSBEE: People could send in a
2 question and they could farm it out to the board
3 or something.

4 MS. REMALEY: Absolutely. And we
5 actually did give a call for that in our Federal
6 Register notice. So that is open and we do
7 welcome after today's first meeting -- we'll be
8 accepting written comments as well.

9 MS. BAKER: Great. And so, once again,
10 I'll just ask if there's anyone here -- well, we
11 may gain some time back in that case. And so, Zo
12 I'm going to hand it back to you.

13 MS. BAIRD: Okay. Thank you. See how
14 seamlessly we work together? We've known each
15 other for a few years. So it helps. We're
16 thinking and the Commerce Department has asked us
17 to think hard about how we can make some progress
18 in the next six months. We have a two-year
19 timeframe for the appointments to the board and
20 the standup of the board. But their hope is that
21 we will have some contribution to make in short
22 order.

1 Our thought is that we'll have three
2 public meetings within that timeframe. We're
3 looking at the first week of August for our second
4 meeting, probably in California. And the third
5 meeting will probably be in November and we'll
6 talk more about all of this, excuse me, and
7 obviously get your input.

8 As we said earlier, we are looking to
9 form up working groups. We're looking to create
10 robust public engagement. One way to get more
11 robust public engagement will be to have some
12 people participate and provide input to the
13 working groups beyond those who will draw on to
14 participate in the plenary public meetings.

15 And I just want to open up the floor
16 now, on behalf of Mitchell and myself, to get your
17 suggestions for how we move forward and the form
18 in which we meet and deliberate or any other
19 thoughts that you have about how you'd like to see
20 us work.

21 MR. RUH: Well, we are on the digital
22 economy. I assume we would have digital tools

1 that would allow us to not have to always meet and
2 collaborate in person. So I don't know how we go
3 about doing that, but we should almost start with
4 that as a center point of this.

5 MS. REMALEY: I can speak to that a bit.
6 So we do have capabilities at the department that
7 we can offer. For instance, a collaboration site
8 for the members, things like that that should make
9 it a bit more helpful to collaborate. And
10 obviously, phone bridges and things like that. We
11 we'll have those administrative options available
12 if the group would like to meet inter-sessionally
13 (sic). If we do get together as a full group,
14 that we need to do in the public.

15 But when it's subgroups working on just
16 getting together to prepare, to talk about what
17 might go into deliverables that would be presented
18 to the full group, that's okay to do inter-
19 sessionally with just the small groups.

20 DR. GOOLSBEE: Could you or Zomaybe,
21 could we talk a little bit about procedurally what
22 we think our production is meant to be? Are we

1 going to be issuing a report? Is it a -- I know
2 different committees advising the federal
3 government have different things that they do.

4 Some put out large data reports. Some
5 write a letter to the secretary saying we think
6 one, two, three. Some just give a briefing. Do
7 we have a sense of what we -- that might help us
8 figure out what we're --

9 MS. GROSSMAN: I would echo on that
10 because you mentioned that you want to see
11 specific progress in the next six months. What
12 does that look like to you?

13 MS. BAIRD: Yeah. I think -- I think we
14 have a lot of work to do to sort that out and it's
15 going to turn in part on what the working groups
16 think will be most productive. But you know, we
17 welcome your thoughts on that.

18 Our inclination is to not try to prepare
19 a comprehensive state of the world-type report
20 that recounts the kinds of things that McKinsey's
21 already done, but rather, as Alan was saying, to
22 be very targeted on where we feel we can make a

1 contribution and that the working groups will need
2 to look at to what extent are they setting up the
3 objectives or the suggestions for principles or
4 the possibilities in this timeframe and to what
5 extent do we have answers.

6 For example, if there's a group that
7 works on measurement, that group might say these
8 are things that we need to examine to see how
9 they'd best be measured, as opposed to
10 recommending what data should be collected and hat
11 the measurement should be.

12 So I think it's going to vary. Some
13 things we'll be able to make fairly quick
14 progress, presumably, based on work that's been
15 done by others or ourselves in the past to target
16 some recommendations. But on others, I think
17 we're going to be just targeting what needs to be
18 focused on. So my own inclination is to let the
19 working groups try to put things into two buckets
20 like that and see how far you think you can get
21 quickly.

22 And then, we should consider that

1 together in terms of our objectives, with a lot of
2 interim conversation through digital tools I
3 think.

4 MR. DAVIDSON: And I would just echo
5 that and say I think it's between -- as we've been
6 thinking about how to set this up, and others can
7 chime in -- I think the charge was originally to
8 provide input and advice to the secretary
9 ultimately on the, you know, important trends and
10 policy priorities in the digital economy, from
11 this illustrious group of experts.

12 And we really value that. That said,
13 that doesn't have to come, as I said, in the -- it
14 could come -- I mean, I don't think it's an
15 either/or in our minds. And all along, we've felt
16 that, yes, a paper that we could look at would be
17 valuable, seeing things like the masterful job
18 that James did with that set of slides,
19 compressing three large McKinsey talks into 15
20 minutes was very impressive and very helpful for
21 us.

22 Having that on the record in some ways

1 can be really helpful for us because it gives us a
2 chance to really ground our work in a set of
3 inputs and advice formally from people who are
4 real leaders in the field. So we're not just
5 making this stuff up ourselves. So that is really
6 valuable. But like I -- you know, there's not an
7 either/or here. Papers are welcome. But short,
8 quick interventions are also welcome and there's
9 no timeline that says all of this has to be
10 delivered in the fall.

11 I think we had contemplated all along
12 that some of this could be things -- you know,
13 could be work that happens in the fall. Some of
14 it could be work that happens faster because there
15 are probably a few of these areas where there --
16 it's clear you all have some very well-formed
17 thoughts. Some of them might even be a slower
18 burn. And I think we all recognize that.

19 And so, I'd just say I don't think we
20 come in with any hard, fast notions about how this
21 is supposed to happen. I think there is a set of
22 tools in the toolkit and it will vary for each of

1 the groups and each of the topics that the group
2 ends up taking up.

3 MR. ANDREWS: Yeah, I guess the one
4 thing I would just add to that, which I think that
5 is totally right. I would say though that also
6 just as part of this focusing on what are very
7 actionable recommendations, particularly in a
8 short, six-month timeframe and obviously of the
9 three topics laid out, all are -- none of them are
10 easy or frankly we would have solved them all by
11 now. They're all challenges and they're going to
12 be both short-term challenges and long-term
13 challenges.

14 But I do think Alan's point is right.
15 But I think very actionable recommendations is
16 helpful as well. And you know, I would use the
17 example of the president's export council, for
18 example, which has done, you know -- each year
19 does a letter to the president making
20 recommendations. That is one form that I do
21 think, particularly in a six-month timeframe,
22 would be very helpful.

1 But I think, to Alan's point, this is --
2 part of having the working groups sit down and
3 really scope out the problems, but then also
4 what's the best form to offer recommendations and
5 input on will come out of each one uniquely. But
6 I would just put towards a bias of recommendations
7 as well.

8 DR. GOOLSBEE: They don't tend to meet
9 as frequently as what you're describing. I mean,
10 meeting three times in six months, face-to-face is
11 a pretty aggressive --

12 MR. ANDREWS: Yes.

13 DR. GOOLSBEE: -- meeting schedule. So
14 if we were going to maintain that, I feel like it
15 would help us on the committee to have some
16 direction. Let's not organize meetings just for
17 the sake of organizing meetings and then at each
18 meeting, we try to decide, well, what are we
19 trying to do.

20 MS. BAIRD: Yeah. We'll have some time
21 to get into this a little more too when we have,
22 you know, a working meeting after lunch today --

1 DR. GOOLSBEE: Arrangement, yeah.

2 MS. BAIRD: -- to organize ourselves. I
3 think Mitchell wanted --

4 MS. BAKER: I had just one quick
5 question related to this. When the group meets as
6 a whole and the public requirement is in play,
7 does that mean physically face-to-face with public
8 access or can we use digital tools for public
9 access?

10 MS. REMALEY: So yes, we can use digital
11 tools for public access and -- but when we do meet
12 in person, I think we will usually try to always
13 have the opportunity for the public to join if
14 it's the full group. But certainly with the phone
15 bridge, we do always try to allow the remote
16 access.

17 MR. THOMAS: One note on next steps, I
18 think Alan brought the issue of the trust and how
19 essential that is -- I think one of the unknown
20 areas, at least for me, is what are the
21 distinctions or overlap with the president's
22 commission on cybersecurity and how should we

1 think about, you know, trust as it relates to the
2 digital economy and what we can -- or what's
3 already been done, because I don't think we have
4 the need or desire to replicate work that's being
5 done. But I would hate for sort of like work to
6 be ignored because everyone else assumes someone's
7 doing it.

8 DR. TELLADO: Great.

9 MR. BECKER: Just to follow up on that,
10 I think that's true with almost everything on that
11 list, on the agenda and activities. I mean, it
12 seems like there are so many other committees and
13 organizations, the Department of Labor working on
14 skills development and then, you know, next
15 generation of workforce, the Department of
16 Education also on skills development.

17 So to me, looking at that list, what are
18 the other groups or the organizations, what are
19 they working on and how can we leverage that. I
20 always find it easier to respond to what other
21 people are doing as opposed to spending six
22 months, nine months free thinking ideas and then

1 finding out that other groups are already working
2 on it and then feeling like you wasted a lot of
3 time.

4 So whatever we can do and get from a
5 help perspective to understand what everyone else
6 is working on would be helpful, which is kind of
7 what you were saying, Corey.

8 DR. TELLADO: Great. Very helpful,
9 Greg. I was -- your comment made me think of -- as
10 well as yours, Alan, when you, I think, put sort
11 of a proposal to think about do we need another
12 bucket. And it isn't really -- I'm not suggesting
13 that. But is there something on that list that
14 isn't being pursued.

15 And then, as I thought about that, I
16 thought about your comment on the Internet of
17 things, which does bring trust to the table. But
18 it could be a valuable way to do something that
19 isn't being replicated elsewhere that would bring
20 in the trust element.

21 MS. BAIRD: Okay. So we're going to
22 break at this point. And I think we have covered

1 our agenda. So I thank everyone for your
2 patience. I apologize we didn't take a break in
3 the middle. But we wanted to keep everyone
4 together as long as we could while the secretary
5 was here. So now you get your break. And we'll
6 continue the conversation. Thank everyone at
7 Commerce for what you've done to support us.

8 MS. REMALEY: Zosorry, one thing I did
9 want to mention is that if we -- as we move into
10 the session this afternoon that is more an
11 administrative and preparatory session, we do have
12 to have a sense here in the public session about
13 what topics we want to take into that discussion
14 of where we -- how we will focus our time and
15 organize.

16 So it sounded to me like we had agreed
17 to at least pursue the three areas and maybe a
18 fourth. And do -- maybe we could just see if we
19 have consensus on that so we can feel that we are
20 able to go in and have that planning discussion as
21 well?

22 MS. BAIRD: It looks like you do.

1 MS. REMALEY: Okay. Wonderful. Thank
2 you for obliging me on that. Thank you.

3 MR. DAVIDSON: SO are we adjourning for
4 the -- we're closing the session?

5 MS. BAIRD: We're closing the public
6 session.

7 MR. DAVIDSON: Okay.

8 MS. REMALEY: Okay. Wonderful.

9 MR. DAVIDSON: -- in the audience as
10 well and the people who are tuning in and tweeting
11 as well. So we appreciate it and your input is
12 incredibly important to us and this ambitious
13 agenda we have. So thank you all.

14 MS. REMALEY: Thank you so much.

15 MS. BAIRD: That's it.

16 MS. REMALEY: And with that, I will
17 adjourn the meeting. Thank you.

18 (Whereupon, the foregoing adjourned at
19 11:35 a.m.)

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CERTIFICATE OF NOTARY PUBLIC

I, Erick McNair, the officer before whom the foregoing proceeding was taken, do hereby certify that the proceedings were recorded by me and thereafter reduced to typewriting under my direction; that said proceedings are a true and accurate record to the best of my knowledge, skills, and ability; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this was taken; and, further, that I am not a relative or employee of any counsel or attorney employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.



Erick McNair
Notary Public in and for the
District of Columbia

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CERTIFICATE OF TRANSCRIPTION

I, BENJAMIN GRAHAM, hereby certify that I am not the Court Reporter who reported the following proceeding and that I have typed the transcript of this proceeding using the Court Reporter's notes and recordings. The foregoing/attached transcript is a true, correct, and complete transcription of said proceeding.

May 25, 2016

BENJAMIN GRAHAM

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