

THE BROOKINGS INSTITUTION

POWERING ADVANCED INDUSTRIES:
A BIPARTISAN DIALOGUE ON STATE STRATEGIES

Washington, D.C.

Thursday, February 20, 2014

Welcome and Introduction:

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Framing Remarks:

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Moderated Dialogue:

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NPR

THE HONORABLE BILL HASLAM
Governor
State of Tennessee

THE HONORABLE JOHN HICKENLOOPER
Governor
State of Colorado

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P R O C E E D I N G S

MR. KATZ: Good afternoon, everyone. So, we're going to get set.

Thanks, everyone -- it's everyone but Governor Hickenlooper, right? So --

I'm Bruce Katz. I'm a Vice President of Brookings. I'm a Co-Director at the Metropolitan Policy Program here. I just want to thank everyone for coming for an afternoon event.

I particularly want to thank Governor Hickenlooper and Governor Haslam for coming here -- really, at the beginning of the National Governor Association meeting.

I think this is going to be a really important conversation today, because we are going to focus on the role of advanced industries in spurring American competitiveness. These are really the critical R&D-intensive sectors that concentrate the nation's science, technology, engineering, math workers -- or STEM workers.

And we believe at Brookings -- and at Brookings metro -- they're absolutely critical to our future prosperity and competitiveness.

I want to thank particularly the Rockefeller Foundation, and a joint project we have with them on state and metropolitan innovation, because they supported the work we did in Colorado and Tennessee.

So, I'm going to provide some remarks on the importance of advanced industries in a moment. First, I want to introduce a partner in crime, Daniel Pachtod, the Director of the Advanced Industries and Aerospace and Defense Practice at McKinsey.

McKinsey has worked very closely with us over the past couple years, and has really provided just unique industry insights and phenomenal analytics on the role and function of advanced industries.

For everyone in the room, for everyone watching, #AdvIndustries as you listen to Daniel, and then, ultimately, the rest of the forum.

Daniel Pachtod.

MR. PACTHOD: So, thank you, Bruce. It's really on behalf of McKinsey & Company. It's an honor to be here, with Governor Haslam and Governor Hickenlooper.

We've been, as firm, passionate about advanced industries for the last several years. Three years ago, we decided to make a significant investment as a firm, to build the capabilities. And we had a chance to actually partner with Brookings, kind of on a *pro bono* basis, providing a little bit of private-sector expertise on both accelerating the competitiveness of space in Colorado, and then accelerating the competitiveness of automotive and assembly in Tennessee.

We actually are passionate about advanced industries because we think it's a very important sector in the economy.

Some key facts that we keep staring at: you know, 12 percent of GDP, 45 percent of U.S. exports, 1/3 of the productivity growth -- that's what that sector represents.

It's also interesting to notice that that sector has generated a lot of innovations that have spilled over in other sectors of the economy -- naming, you know, just GPS, for example, LASIK surgery, advanced materials -- which actually comes a lot from defense; has spilled over in other sectors.

We often talk about manufacturing. We actually think that manufacturing's only 10 percent of the total jobs. It's actually a lot of engineering-intensive, knowledge-intensive -- so we actually think that when you look at the engineering capabilities of that sector in the U.S., the opportunity for innovation and accelerating competitiveness is massive. And so that's another area that I think we have a lot of passionate energy.

And then, most importantly, I think I would just say closing, when we looked at space in Colorado, for example, where, you know, to some extent, the U.S. has put the space industry on the map in the '60s -- we actually got very excited when we

looked at opportunities to create more funding, to bring in more investments.

And, frankly, same thing in Tennessee. When we actually had a chance to look at the automotive industry in Tennessee, and how to actually create, you know -- attract more investments.

And so perhaps we'll leave the introduction at that. I think it's been a great partnership with Brookings. We have been, you know, trying to provide more of a private-sector view on this. And, again, it's an honor for us to be here, and have had a chance to facilitate this debate with you.

Thank you very much.

MR. KATZ: Okay, so we're just going to do a little sound and light show here, so we can all get on the same page, so to speak.

So, for the past several years, Brookings Metro has really been boringly consistent about the challenges before us in the United States.

At one level, we just need to grow more jobs -- 7.8 million jobs to make up the jobs we lost during the downturn, and to keep pace with population growth and labor market dynamics.

We also, as everyone in this room understands, need to grow better jobs, because we have seen a spike in the number of people living in poverty and near-poverty -- from 81 million in 2006 to 107 million in 2011.

So, we believe that the economy -- and this is really the work we've been doing with McKinsey -- is undergoing a slow, gradual shift -- a restructuring -- from an economy pre-recession that really was characterized by excessive debt and consumption, to one that, again, can get back to fundamentals -- driven by innovation, exports, human capital, and advanced industry.

We think these forces -- or we see very disruptive forces happening, both at home and abroad: declining energy costs, shifting wage dynamics, and the changing

nature and location of manufacturing. These forces really do make for an advanced industries moment, so to speak.

Advanced industries, as you see on the definition, are the high-value, R&D-intensive industries that concentrate our STEM workers -- but, more importantly, as Daniel was saying, are really at the vanguard of commercialization of innovation.

So, this is a kind of a super-sector, right, that includes 23 industries from on the manufacturing side: pharmaceuticals, medical equipment, aerospace, and motor vehicles, just a few -- as well as high-value services: software, computer systems, design, telecom. They're really often tightly linked with production.

So, in the past, we've always talked about manufacturing and services -- the physical and digital -- as if these were separate things. The reason why we're so productive, the reason why these industries matter is because they're coming together.

Good news: Industries tend to pay well -- average wages well above the national average. And these are industries that are accessible to people with a wide range of skills. About half of the advanced industry jobs require less than a four-year degree.

The other thing -- and, really, Daniel is getting to this point -- these are industries that punch way above their weight. Only about five percent of the jobs, 11 to 12 percent of the GDP -- you see the numbers of engineers, and architects, exports, patents, private-sector R&D -- I mean, this is a platform for national competitiveness and national growth that is significant.

Interestingly enough, in the post-recession period, even though they're only five percent of the job, their share of job growth since 2010 is about 10 percent. But they're only 11 percent of private-sector GDP. They're about 21 percent of GDP growth since 2010. And that's why we're beginning to talk about this possible restructuring.

They matter, obviously, because they're on the leading edge of

innovation. They literally are developing technology that are transforming lives, particularly in the life science sector. But they're driving productivity in other sectors, they're supporting long supply chains, and they're stimulating local economies. They're driving job growth.

So, the radiating effect, the multiplier effect of these advanced industries is really quite remarkable.

Now let's come to the states, because, you know, we all understand that, at this particular moment in our country's evolution, so much of the policy innovation that's going to happen in this country is really going to be led by cities, metropolitan areas, and their states.

We've had the pleasure of working with Governor Hickenlooper in Colorado, Ken Lund, who's the Head of Economic Development for that great state, is here, and business and regional development leaders, to focus on the importance of leveraging supercharging of the aerospace sector.

We've also had the pleasure of working with Governor Haslam, Bill Haggerty, the Commissioner of Economic Development -- a great team there -- and business leaders, to talk about how to move advanced automotive to the next level.

Just a few framing points before we turn it over to the conversation: Tennessee's auto industry, you know, is much bigger than people think -- 94,000 workers. It's not just about Nissan, GM, and Volkswagen, the big automakers. 80 percent of the workers are employed in small and medium-size firms, spread all across that state in the supply chain. They're the ones providing the parts, the know-how, the technologies, and, as a whole, this sector contributes close to \$5 billion to state GDP.

When we get to Colorado, we are also looking at a very powerful sector - - about 66,000 jobs. They pay over \$90,000 on average. It's about a \$9 billion business for the state, and, obviously, we all know that it's really very much of a private-sector

industry that looks like it's got great growth opportunities.

Now these states are not just taking their position for granted. As you'll hear in the conversation, there's a lot of smart policy innovation that is going on at the level, to drive the continuous industry development, to really get workers prepared for these advanced industries -- not just in the four years, again, but in high schools, in community colleges, and then to commit to innovation at all level of the supply chain.

So, in Washington -- which, you know, rarely seems to have a good news story -- this is a good news story of very powerful industries in critical states of our country, where public leaders, private, university, civic are working together to leverage their distinctive strengths.

Now we get to the main event. This was just a warm-up, right? You know, otherwise, there's just no sort of buildup.

So, we are really privileged to have Yuki Noguchi here. For those of you who are NPR addicts -- I count myself as one -- you will hear on *Morning Edition*, *All Things Considered*, *the Weekend Edition*, you know, what she excels at is really very clear, very smart reporting on business and economic development stories at the national and sub-national level.

Again, I want to thank both Governors for coming. I'll invite Yuki to the stage, and let's have a great conversation.

Thank you very much.

MS. NOGUCHI: Great. Thank you to Brookings, and thank you all for being here. Thanks to our honored guests.

The gentlemen before you today have a lot more in common than their party affiliations might suggest. Both are former businessmen who've done quite well. They're apparently friends.

Would you like to dispute that?

GOVERNOR HASLAM: Guilty.

MS. NOGUCHI: Both are former Mayors who took office in 2003, and worked there until they became both Governors in 2011. Both have worked in the oil industry, it turns out, and both appear to be fans of baseball, if I'm not mistaken --

GOVERNOR HASLAM: That's true.

MS. NOGUCHI: -- which is something I have in common with them. Both have some background in the industries they're about to talk about -- arguably, anyway.

Governor Hickenlooper started his career as a geologist. Is that right? And Governor Haslam started pumping gas at 13, which I think counts as being part of the auto industry.

GOVERNOR HASLAM: Long supply chain.

MS. NOGUCHI: Long supply chain -- right. Governor Haslam was born and raised in Knoxville, Tennessee. He grew up in a prominent business family and helped the family business pilot corporation grow.

Upon election, Governor Haslam has set job creation and long-term economic growth as his top priority, along with education and workforce development.

So, please welcome Governor Haslam.

And Governor Hickenlooper can talk about STEM education, because he has one. His geologist career was stopped short in the oil industry in Colorado when the industry collapsed in the 1980s. But some would say --

GOVERNOR HASLAM: There was no connection there, was there?

MS. NOGUCHI: Well, he recovered. He recovered.

He cofounded the Wynkoop Brewing Company, which got him involved in the redevelopment of Denver.

In his latest state address, Governor Hickenlooper also talked about jobs

and the economic health of Colorado.

So, please welcome Governor Hickenlooper.

We will be taking audience questions later in the program. But I thought I'd start off with a few questions myself, and, hopefully, we can keep this a lively conversation -- because one thing I know from radio is that droning is boring, and boring is bad. So, we will try to avoid that collectively.

GOVERNOR HASLAM: I think we just got lectured.

MS. NOGUCHI: So, just to open, Governor Haslam, you are talking mostly about how to expand the auto industry in Tennessee. And Governor Hickenlooper, you're focusing on aerospace today. And we have gotten some background on why advanced industries are important economic drivers.

But maybe each of you could discuss why you're focusing on these industries in particular -- how they fit into your economic vision, and maybe a little bit about your state's history with those industries.

So, Governor Haslam, would you like to start?

GOVERNOR HASLAM: Yeah. Our state's history with auto business goes back to the late '70s/early '80s when then-Governor Lamar Alexander -- now Senator Alexander -- went to Japan, to try to talk Nissan into building a plant in Tennessee. The response was predictable: "Where's Tennessee?"

And so Governor Alexander prepared for that, and he came up with one of the great props of all time. He took a nighttime photo of the U.S., showing population density by the lights that showed up on the map and said, "See the center of all the population there? That's Tennessee." And that got their attention, and Nissan ended up building a plant in Tennessee, which became the first of three manufacturers.

Later, GM built what was originally their Saturn plant in middle Tennessee, and then, several years ago, Volkswagen built down in Chattanooga.

For us -- you know, as you come in as a new Governor -- I don't know if you remember this; when we were both elected Governor at the same time, we had been friends as mayors, and several of us were standing outside in the hallway during one of the -- they send you to new Governor school when you're elected.

And we're standing outside talking, and somebody would, kind of after a while, say, "Well, how close was your primary? Did you have a tough general election?" And then, "What'd you run on?" We all kind of, after a while, sheepishly admitted that we were going to be the jobs Governor -- until we realized that all 30 plus new Governors at that point in time were going to be the jobs Governor.

The point of that is, it's obviously a very competitive world out there. In a competitive world, you try to figure out, what are your strengths? And so you can go try to be all things to all people, or you can say, you know, "We're not bad at this."

And so I came in and saw that we had developed a solid auto business with a great supply chain. Like you said, about 70 percent plus of our jobs in the auto industry are not from the three manufacturers, but from all the related suppliers.

And so we decided to renew our focus there. Again, I think you compete where you have an asset and an advantage that you can use, and where there's a lot of continuing benefits. And Mayors and Governors love to, you know, trumpet job creation announcements, but the truth is, all 500 job announcements -- or 1,000 job announcements -- are not the same. Some of those come with -- as you all call it -- a long supply chain that is of great benefit. And we've seen that played out in Tennessee.

MS. NOGUCHI: Mm-hmm. Governor Hickenlooper?

GOVERNOR HICKENLOOPER: Well, first, I do want to point out -- we also share, in addition, to having been Mayors for the exact same eight years, and got elected Governors on the same day, we also share Peyton Manning. Regardless of the outcome of the Super Bowl, he is one of the great human beings on Earth, and I think we

share that deep respect.

GOVERNOR HASLAM: That's true.

GOVERNOR HICKENLOOPER: So, we did go to --

GOVERNOR HASLAM: We'll take the Broncos.

GOVERNOR HICKENLOOPER: No way.

GOVERNOR HASLAM: It's orange; it all works.

GOVERNOR HICKENLOOPER: So, the new Governor school -- one thing you see -- and no different than Congress -- Governors come from all different backgrounds, but there's only a handful. I think last time I checked, there were five, maybe six, who were actually entrepreneurs, who built a business from scratch, and really created something significant. And so Governor Haslam is one of those others.

So, we are not only Mayors for the same period, and did work on the same kinds of things -- education, infrastructure -- as Mayors, but then, when we became Governors, did both kind of elbow our way towards the front of the line in terms of how we're going to create jobs.

And Bill's exactly right: It is a function of taking what your assets are and saying, "How are you going to leverage those, and magnify them? What's the transition points where you can really take the existing assets, and grow them?"

And we did a thing we called the bottom-up economic development plan. We went out to all 64 counties in Colorado, and asked the local county economic development folks, "What do you see in the future, and what do you want to have happen?"

And we found, you know, there are six basic things that we saw all over the state, right? They wanted the state to be more pro-business -- you know, get rid of red tape. They wanted the state to have better access to capital, better training of the workforce. They wanted us to market the state -- brand it not just as a tourist destination,

but as a place for entrepreneurs and businesses to grow. And they also wanted us to focus on technology and innovation.

And almost all of that kept coming back to -- of those, when we looked at advanced industries, that was the place where all those came right to the forefront -- and especially aerospace.

And we are so grateful, not just to Brookings, but for McKinsey to come and give us the horsepower. It's one thing to have an idea and demonstrate it; it's another thing to have internationally-respected organizations come out and validate what you're really trying to put your effort behind. And we are sincerely grateful for all of your efforts on that.

And we saw, you know, that notion of going out and taking what you've already got existing -- and we have a very strong -- if you look at our per capita basis, we're either first or second in the country in aerospace -- but it has all the accessory benefits, right? So, the people, the engineers and the scientists that are involved in aerospace, and GPS, and all the support -- these long tales that, you know good industries have -- they're also involved in our schools, they're involved in our nonprofits.

You know, we have the -- in Denver, our Museum of Nature and Science has 65,000 paid family memberships, right? That's more than any other museum on Earth. If you go back and look at it, a lot of that is connected to people and industries that come out of aerospace. So, there's just a tremendous benefit from that.

Major-General Jay Lindell's here, from down in Colorado Springs -- but represents a connection between this industry and our military presence. We have a strong Air Force presence, a strong Army presence in Colorado, and that nexus, you know, in terms of everything from cyber-security -- a lot of emphasis on that in the U.S. is based down in Southern Colorado -- to, you know, the notion of, actually, how do we make this stuff?

So, a lot of the GPS space imaging -- it's not just manufacturing and launching satellites and various spacecraft -- although I should make sure that I point out that Mark Sirangelo is here, who's the President of Sierra Nevada's Space Systems -- just if I'm plugging Colorado companies, I got to make sure.

Mark is not only the President of Sierra Nevada's Space Systems, but in his spare time -- which, I'm telling you, I get at least 10 or 15 hours a week out of him -- he is our Director of Innovation -- and has really been a great, great benefit to us.

Anyway, you put all that together, and you see when you put in the same amount of effort in a bunch of different places, you're not going to get the same results. And we feel that by really emphasizing and focusing on our aerospace industry, that the accessory benefits are, you know, orders of magnitude greater than if we focused somewhere else.

MS. NOGUCHI: Mm-hmm. Now the task of growing these industries has many challenges, also. The economy posed a big one for the auto industry, and federal spending cuts poses one for defense and aerospace businesses. And there are other, more perennial, issues of science and technology training and education.

So, the next section -- I wanted to talk a little bit about money and challenges -- attracting investments, workforce development, and how you stay competitive.

And, Governor Haslam, perhaps you could talk a little bit about how your state intends to compete with Mexico and other states that are also looking to do what you're doing in your state.

GOVERNOR HASLAM: There's no doubt I think the recession of six years ago was a wakeup call to everybody, in terms of realizing that the game was going to look different going forward. And even though we're, you know, arguably coming out of that recession, I think most people would agree, it's still a very different world than it

was five to ten years ago.

It's a much, much more competitive world. The factors that influence things -- in the slideshow you had, you talked about some of those, in terms of labor rates, energy costs. I would argue currency fluctuations play a role in that, as well.

And so what we've found out -- in the old days, when you were competing to grow industries, it was about who was going to put together the biggest incentive package, or if you happened to have the right physical piece of property for someone. Those haven't gone away. The companies still want incentive packages.

But they're adding to that the impact on their total logistics cost, which is a big issue. So, the ability to attract suppliers close to the plants is, I think, more important than ever.

But then, bottom line, it's having the trained workforce that really matters. So, we've tried to really go back and say, "That's not something that starts when somebody's 19 or 25; it needs to start back at K." We don't talk about K-12 anymore; we talk about K-J, to having a job, and trying to realign education to recognize the realities of how competitive the world is today.

One of the initiatives that we've just announced -- or I've announced -- we hadn't passed it in the legislature yet -- is to what we call the Tennessee promise -- to have a promise to every Tennessean who graduates from high school that we'll provide two years of either community college or technology college absolutely free.

And we say that because we have a challenge that of the jobs that are going to exist in Tennessee 10, 11 years from now, over 55 percent of them will require a degree or certificate. And we're in the 30s now when it comes to number of people who have a degree or certificate. So, we felt like we had to do something to shock the system, if you will, to have people say, "Hey, I never thought I could go to school beyond high school, but I can."

And I thought your slides were great. It said of the people in advanced industries, that, you know, about 50 percent don't require a four-year degree. Well, that means that about 50 percent do require at least a four-year degree. So, if you're talking about those that would add a two-year degree commitment to it, the number goes way up.

And the STEM disciplines are a piece of it, but I think a lot of that -- and we can talk about it later -- is important is, where we, as government -- where we decide to focus our assets, to make certain that we're recognizing what industry is asking of us.

MS. NOGUCHI: Right, right. And, Governor Hickenlooper, with the fiscal challenges in Washington -- and, of course, a general movement toward commercialization of space -- I wonder how you think about where and what kinds of investments of state dollars makes the most sense. And perhaps you could talk a little bit about your long-term outlook for federal money and for tracking private investment.

GOVERNOR HICKENLOOPER: Well, I think the federal government, rightfully, should be just as rigorous in how they invest their dollars as any private-sector business. And, you know, we compete. We all compete, right, and that's a good thing, right? The states are the laboratories of democracy.

And within that context, we argue strenuously with the federal government that when we think that we've got a research chain or a direction we're taking that has real potential. And we try to integrate our efforts. We've worked real hard to make sure our Congressional Representatives, our two State Senators, all of our state legislators are all on the same page, and recognize that an industry like aerospace has potentially great benefits.

And certain times -- like a couple years ago, when ITAR -- you know, there were limitations on how you exported some of the new technologies coming out that were ridiculous in terms of the practical application, right, that we were allowing our

international competitors to take away jobs and manufacturing from this country.

So, again, we use that organized approach and really focus on -- again, not just for Colorado, but for the whole country -- how can we be more pragmatic about exports, and push the kinds of research dollars that come out of Washington into those places that are going to more rapidly generate real products and real services?

Again, we do a lot of remote sensing, a lot of GPS. Right now, there's some issues about the resolution of some of that GPS, that we have laws against or regulations against how clearly our companies in the United States are allowed to resolve images from space.

Well, our competitors in Europe don't, and so, suddenly, they're getting an advance on us, because we're worried that people see too much on the ground or, you know -- well, someone else is already seeing that, right? And that's part of progress, right? Science is moving forward. Technology is moving forward. We can either stand on the side, or we can be part of it.

And I think that's a big part of -- when we think about federal investments, we should look at what the outcomes are. And, again, sometimes, you're doing pure science. You don't clearly see what the accessory benefits are. But, oftentimes, you've got at least an idea of what the potential is.

GOVERNOR HALSAM: Let me jump in. I'll give you a concrete example.

Tom Mason, who's the Director of Oak Ridge National Lab in Tennessee -- arguably the best national lab in the country --

GOVERNOR HICKENLOOPER: One of the best -- certainly, one of the best.

GOVERNOR HALSAM: I have the microphone right now.

But they're working on carbon fiber technology there -- the ability to

make products lighter. And as we look at increasing fuel mileage in this country, that's obviously of huge interest to the automotive industry.

I think folks in the automotive industry would say, "We know how to use carbon fiber, and how to make the numbers work in a \$100,000 car. We haven't figured out how to make it work in a \$20,000 car." Tom and the folks at Oak Ridge National Lab are a piece of that, to say, "How do we use that?"

So, that's a place where you have a federally-funded laboratory that is having direct application to what we think can really accelerate a needed advancement in the industry. We're trying to learn how to take advantage of that more, and we're using their partnership on a frequent basis as we recruit people.

MS. NOGUCHI: Right. Governor, would you like to hit back?

GOVERNOR HICKENLOOPER: Sure, no. Well, we have 24 federal laboratories in Colorado, so if I hit back, it really wouldn't be fair.

GOVERNOR HALSAM: Obviously, a quantity versus quality argument.

GOVERNOR HICKENLOOPER: You know, one of the things that we've focused on -- and we have a kind of advanced industry accelerator program. We passed legislation last year that's going to allow us to, over the next 10 years, put \$150 million into, again, moving companies more rapidly into embracing these innovations and patents that come out of our laboratories -- whether they're federal, or state, or, you know, University of Colorado, University of Tennessee -- we're agnostic.

But part of that is getting matching grants. So, we want them to go out there and try and bring money from Washington, try and find independent foundation money, and then we want to be part of that, so they can move faster.

And I think, to a certain extent, that kind of public-private partnership -- I mean, we talk about it more frequently, in terms of building roads or, you know, other types of infrastructure -- but it's also going to be a bigger part of research, right?

And I think that's something we both agree on, that we want to just make sure that that research goes as rapidly as we can, whether it's, you know, a big company, like Lockheed Martin, or a smaller company, like Sierra Nevada's Space Systems, Ball Aerospace.

Again, they're all going to compete with each other, but we want them to be kind of working together, to bring as much monetary resource to research as possible. Obviously, in a competitive environment, as much to Colorado -- despite our limited quality.

MS. NOGUCHI: Well, so this is kind of a good segue, actually. Research and development is, of course, very critical.

GOVERNOR HALSAM: Would somebody please tweet that he just said there was limited quality?

MS. NOGUCHI: R&D is, of course, very important to advanced industry. And it's also, very, very expensive. But both of you mentioned your intellectual capital in your respective states -- or accredited national laboratories -- 24 quantity laboratories.

And maybe could you talk a little bit more about, like, concretely, specifically, what you are doing to attract more private monies -- how you're approaching that, and --

GOVERNOR HALSAM: Yeah, we're trying to do several things. We started something this year called the INCITE Fund, which took some of the federal grants that we got, and did that to incentivize more innovation from our local and state-based companies.

Like I said, the example I used with Oak Ridge National Lab -- we're trying to say, "How do we take people that have a lot of horsepower, both mental and fiscal horsepower, and how do we partner with them on things that we're doing?"

We're trying to do a better job of working with our universities. There's

an incredible amount of research capacity. Learning how to introduce that to the private sector hasn't ever been really easy.

I think the final thing is, a lot of our large manufacturers are beginning to work with each other on some things, and there's some places where we can build a bridge to make that happen. And our economic development folks are out there. We can say, "We're talking to, you know, X company about this, and Y company's already ahead. They're not head-to-head competitors. I wonder if there's a way we can work together."

MS. NOGUCHI: Could you give an example in the auto industry?

GOVERNOR HALSAM: Well, I mean, I'll give you an example. Since I already talked about Nissan, they actually have allowed us to put a technology college at their plant. They're using it to train their workers, but they're also using it to train outside workers who are coming in to take classes, you know, with, like I said, a world-class manufacturer.

And so we have some manufacturers who are looking, saying, "We wouldn't mind getting in on that for some specific skill training that we need and the exposure to another large manufacturer."

MS. NOGUCHI: What is the challenge to commercialize the intellectual capital that you have in the state, and how are you tackling that challenge differently than you've tackled it before, Governor Hickenlooper?

GOVERNOR HICKENLOOPER: So, then you get back down to the value of the entrepreneur, to a certain extent. It's a small scale. We put on something every year. We created what we call the Colorado Innovation Network -- COIN. We use the "Co" from Colorado, and then the Innovation Network.

And we do a summit every two years. And we've tried to take all that research that's coming out of our incredibly high-quality research laboratories, such as the National Renewable Energy Laboratory and NOAA -- you know, oceanic atmospheric

research -- not to mention CU, and CSU, and the Colorado School of Mines, and University of Denver -- all those places -- and put them into a two-day summit with some large companies and small companies.

The idea -- how do we get capital and mentoring to those small companies, those small entrepreneurs? We attracted, a couple years ago, the global headquarters of Arrow Electronics -- a \$20-billion-a-year company that loves to acquire another businesses, is not above investing in those companies when they're very small. I mean, the COIN Summit is a perfect place where that happens.

This summer, in August, we'll have the third COIN Summit. Jeff Immelt, who's the Chairman and CEO of General Electric, is going to come. And we kind of are in the process of putting together a fund that would be a lot of large companies involved in it, but, you know, raise \$15 million that would specifically try to give investment to these very small companies that are providing specific solutions to issues.

We're going to pick a different industry each year, but this one will be the oil and gas industry. So, cleaner air, how do we recycle the water, how do we make a \$250 gauge that can measure methane if it's escaping from an oil well? All those kinds of things -- we want to have those possible solutions funded, and, hopefully, we'll have enough large companies, you know, that would be able to -- you know, if the solution works, they'll be able to take it to scale very rapidly.

So, trying to, again, convene, bring people together. I mean, government -- we're never going to create the jobs, right? Our job is to bring together the different industries and the research, and then, really, the entrepreneurs, right? I mean, I think that's one of the big things we lack in the country. We know when a kid's 17, whether they're going to play in the NBA, the NFL, whether they can go to Stanford or Harvard, but we're pretty clueless in terms of who are going to be the great entrepreneurs.

And part of this COIN Summit -- these kinds of activities are really focused on, you know, supporting them, those young entrepreneurs.

GOVERNOR HALSAM: I think the other thing -- and Charlie Brock is here, who runs an initiative of ours called Launch Tennessee -- and one of the things they did, they had a competition this year to award some people, some entrepreneurs, but the catch was -- I think there was a slight financial price to it, but the real catch to it was that, if you won that, you were going to get to go spend time with Fred Smith at FedEx, who started FedEx, and the folks who run Hospital Corporation of America, and the folks who run Eastman Chemical.

A lot of entrepreneurs -- like I said, finding the capital is one thing, but having the ability to have somebody else come in and say, "Hey, will this scale? What would that idea look like at the scale that we're talking about here?" which is a lot of what John was talking about, as well.

That kind of access to folks is something that we can do, because, like I said, they have great corporate citizens; we do, as well. And we've always called on them to give your dollars to this community event, et cetera. Now we're asking them to come share your view of reality, because that's what a lot of young entrepreneurs don't have, is an accurate view of the real world that they're going to move into.

MS. NOGUCHI: Mm-hmm, mm-hmm. On the workforce question -- Governor Halsam, you know, because the auto industry's becoming more highly technical -- I mean, cars are more like computers --

GOVERNOR HALSAM: Right.

MS. NOGUCHI: I imagine it creates more demand for high-skilled technology workers, and this is, of course -- you know, there's a shortage of technology workers around the country. But can you talk a little bit about how your state is investing in that? You talked a little bit about it earlier, but how you intend to track those workers --

and feel free to mention the recent failed vote to unionize EVA -- if you want to or not.

GOVERNOR HALSAM: I figured that might come up at some point.

MS. NOGUCHI: And, Governor Hickenlooper, perhaps you could just follow up after.

GOVERNOR HALSAM: Yeah, I think a couple of things -- most of you have probably been -- I bet everybody in this room has spent some time in an advanced manufacturing facility of one type or another -- but if you did, your first impression would be that, "This isn't what I thought it was going to be. It's much more highly automated. And then you go talk about what the job requirements are, and you'd hear, you know, "We need these kind of workers."

So, I think one of the things that we started doing is this: When John was starting his chain of brewpubs, I'm betting that one of the most important things you did was decide, how are you going to allocate capital? And you had some stores that were growing well, so you figured out how I'm going to add onto that, and others that you didn't. But you made critical decisions about allocating capital, based on what the market was telling you.

In government, we haven't done that very well. When we looked at allocating capital to higher ed, it was just kind of whatever was next in line. And one of the things we're having to do is to say, "What's the market tell us?"

And the market's being really clear. It's telling us we need more engineers, and we need more welders. And I can go on down the line of doing that.

We're working really hard to make sure the alignment happens. One of our State Senators, Mark Norris, is here, and he's worked real hard with us on a program called LEAP, which is basically making certain we're aligning the workforce needs with the employees that we're producing. And like I said, we historically haven't done a good job of that.

I'll go ahead and jump in. You mentioned the Volkswagen situation. We had a highly-watched situation in Tennessee that was last week -- of what are called the foreign transplants that operate in the U.S., none of them had been organized by the United Auto Workers. And UAW had come in, working with Volkswagen, to have a vote to unionize the plant.

Unique situation, because Volkswagen's a German company, where half of the members of the management board come from their Works Council in Germany, and, actually, then, some of the other half is ownership. But some of that ownership is actually state-owned. And so it's a fairly unique position that came into it.

The vote was close. There's 1,600 workers who were eligible to vote. 90 percent of them voted, and the vote lost by 85 or 90 votes -- caught some criticism for weighing in on that.

People say, "Well, you're an outside interest. Why are you weighing in?" I would argue, actually, the State of Tennessee has a huge investment in that plant, both fiscal -- but we also -- in long-term. Volkswagen's been real clear to us, saying -- they're getting ready to add another SUV line somewhere -- either Chattanooga or Mexico -- and they've been really clear and direct about that.

And they've said, "We're going to decide that, but if we decide on Tennessee, you have to do two things for us. We got a cost gap in the car that we can produce in Chattanooga and Mexico. You got to shrink that cost gap. And then number two, you need to bring more suppliers around us."

And I was really honest with them. I said, "Doing either of those, I think, will make it -- if the plant does unionize, I think doing either one of those will make it more difficult."

For us, it's a practical decision about wanting to be able to track industry, and thinking if that vote happened, it would be more difficult.

MS. NOGUCHI: You mentioned earlier -- you know, working with industry, to try to figure out what their --

GOVERNOR HALSAM: Right.

MS. NOGUCHI: -- workforce training needs are. Can you be more specific about certain programs, or things that have come out of that partnership?

GOVERNOR HALSAM: It really start -- I guess about a year and a half ago, I spent time going around to every part of the state, and bringing together kind of representative group of employers -- large, small, all different industries -- to just listen and say, "What are we not giving you that you need?"

If our job in our, you know, K through higher education network is to provide the work -- it's one of the -- it's not the only purpose of K through higher ed education -- but one of those is to provide the workforce -- where are we falling down on the job?

And we had some very specific feedback about what we're doing. There was a lot -- I mean, it was all around the STEM disciplines, and the message was clear: That's not something that we're talking about you need to just start in postsecondary education.

So, we've ratcheted up the requirements in Tennessee to graduate from high school. You need more math and science than you used to. We're changing, again, how we allocate capital dollars to school.

And then we're also trying to take away financial barriers for students, because we have a whole lot of families in Tennessee that have just said, "I never thought I could afford postsecondary education," and we want to take that barrier away.

MS. NOGUCHI: And, you know, it comes at a time, obviously, when your budgets are hard. And I wonder -- so what are some of the priorities that you've changed? And, you know, what have you taken the money away from and what are you

putting it specifically into?

GOVERNOR HALSAM: I think we're moving toward a path where we're putting more money into places where job demand is higher. And so that does mean -- well, okay, are you saying, specifically, you're funding less humanities programs or something?

It's really not that. We're just trying to make certain that -- we're going to postsecondary institutions and saying, "What's your cost per degree awarded for each one of your programs?"

Well, every business knows, you know, "Okay, in this part of our business, it costs us X to produce a unit." We have a lot of institutions of higher education which are spending a whole lot to produce a very few degrees. Everything's not equal, before everybody jumps on me. I realize that.

But that's one of the factors we need to look at.

MS. NOGUCHI: Mm-hmm. Governor Hickenlooper?

GOVERNOR HICKENLOOPER: Well, I think there's a paradox in the way we do higher education. And I think it's not arguable. I mean, the United States still has the single best system of higher education in the world.

But you take a state like Colorado, where we are either first or second in terms of the amount of people with either a four-year degree, or even a post-high school degree, or a postgraduate degree -- and yet, we don't do that great a job with our own kids, right?

So, there's a paradox. You know, coincidentally, of our 20 largest companies, three of the CEOs grew up in Wisconsin. They went to the University of Wisconsin. They've, you know, graduated from there. Two of my cabinet -- two of the most talented people we have -- came out of Wisconsin.

So, there's five people that the citizens of Wisconsin probably invested

\$150,000 worth of subsidies in their education. There's \$750,000 that's come, and now is helping create jobs in Colorado and make Colorado a better place.

GOVERNOR HALSAM: Scott Walker will have an invoice on your desk in the morning.

GOVERNOR HICKENLOOPER: Yeah, I talked to him about it. He was thinking.

But I think that there is a -- at the same time, if you're really trying to attract entrepreneurs, you better invest in your K-12 system and your K-J system, so that your kids have a place to go -- because no young entrepreneur's going to want to raise their family in a place that doesn't have that kind of soup-to-nuts educational system.

And somewhere out here, Ellen Golombek -- she's here for a different reason, but she stopped in. She runs our Office of Labor and Employment. And one of the things we're trying to do is take our Labor Department, and put it much more intimately connected with our community colleges and our four-year colleges, and dramatically shorten the amount of time between when industries and businesses see specific jobs that they're going to need, and how fast we have people trained.

In other words, instead of just saying, "Well, in the next five years, we think we're going to need these kinds of jobs," and what this looks like, we want to have that down to a matter of months -- that in six months, how many jobs have -- how many nurse practitioners, or how many, you know, analytical tool and die workers do you need, and where are they going to get trained, and how do we make sure they have real jobs?

Lockheed Martin's working on a great program now, where we take returning vets, and we set them up through a fairly rapid three-month, four-month program, but they are learning exactly the skills that they need to run some of this, you know, very technical manufacturing equipment.

And so far, we're hiring 90 to 95 percent of the individuals who finish that

four-month program, and making sure that they have jobs that aren't just jobs. They're careers, right? They'll lead to more high-paying jobs, and they'll be able to have a real career out of it.

MS. NOGUCHI: And is that funded by the state, or is it funded by Lockheed Martin?

GOVERNOR HICKENLOOPER: A combination, right? Again, we get back to these public-private partnerships, but it's trying to take the government and state government arm of it, and getting a lot closer to the training. In this case, it's a training company that does the training from outside the public sector -- and then tie it in with what Lockheed Martin is saying, "All right, here's what we need."

The training organization does the training, and we pay for it in a combination of federal and state dollars.

MS. NOGUCHI: And, presumably, you nail them down to Colorado soil after that.

GOVERNOR HICKENLOOPER: Well, they're not going anywhere near Tennessee; I'll tell you that. Just kidding.

GOVERNOR HALSAM: I was getting ready to say something nice about -- no, I still will.

Left in the midst of all of our technical talk, there is a reality that quality of life matters. And if you look at the gains that Colorado's made -- despite our teasing, he's too nice to brag about the fact that Colorado does have a high quality of life.

And that's one of the things that Mayors and Governors have to look at. Are we helping to create a place where people want to live and raise their family? That's a really big deal. And, like I say, so they're a net gainer of people with degrees, which is a great thing for a state.

And I think -- you know, as we're out recruiting companies, I tell this story

a lot. There's one company that we worked really hard to recruit to Tennessee, and they were in California. We finally got them to come, and they moved, et cetera.

And we went to dinner afterwards, and I asked the CEO, "So, tell me now that it's over -- how'd you decide on Tennessee? Was it our incentive package? Was it the incredible winsomeness of the Governor? What was it?" And he said, "Honestly?" And I said, "Yeah." And he said, "My wife and I saw a place we wanted to live." So, "You could have saved us a lot of money. We'd have bought the house," you know.

But the point remains -- in the midst of us talking about, you know, STEM disciplines and everything else, one of our primary jobs is to create a place where people want to live.

MS. NOGUCHI: Right.

GOVERNOR HICKENLOOPER: Right. And more and more, that's where young people want to live, because they are the workforce of the future, and they attract those companies and entrepreneurs who we're looking for.

So, I mean, I talk all the time -- when we're out recruiting headquarters to come to Colorado -- or even, you know, an entrepreneur who's got a small business, but you think it's going to really grow. I mean, they ask questions like, how many miles of bike path do you have in your metropolitan area, right? They ask questions -- how's your music scene, right?

And I, you know, brag all the time that 2009, 2010, 2011, more 25 to 34-year-olds moved to metropolitan Denver than any metropolitan area in the country -- not per capita, but in raw numbers. And part of that is that we've got a vibrant music scene. We've got -- as great as Nashville is in terms of music, we have enough more live music venues in Denver than we do in Nashville. As great as it is --

GOVERNOR HASLAM: Where's that organization who does fact

checker?

This would be a good time to ask him about -- since you asked me about VW, to ask him about legalized marijuana, I think.

GOVERNOR HICKENLOOPER: With some of those young people, that's not as big a negative as you and I might think.

GOVERNOR HASLAM: I won't go there.

MS. NOGUCHI: So, we've been talking about state initiatives here, primarily, and these are programs sort of without federal backing, for the most part.

I wonder if you might talk a little bit about whether this is a sort of general strategy, to go it alone, or whether you sort of are thinking about, you know, soliciting support from Washington -- will you expect support from Washington -- and whether you think that's even possible, sort of in the political climate here.

GOVERNOR HASLAM: It's more difficult. I'll give you a specific example. Two things that we think that would really help us in advanced manufacturing -- the Transatlantic Trade Investment Partnership -- TTIP -- and the Transpacific Trade Agreement -- we think are very important.

And the reason I would give that -- countries that we have trade agreements with, our Tennessee exports are 16 times those that we don't have trade agreements with. Post-NAFTA, our trade with -- if you combine Mexico and Canada -- went up five or six times out of those same industries. You know, I can go on and on with examples like that.

I think those two agreements are really important, and I think it's the right way to do business. Those are obviously caught up in some partisan battles now. Actually, some of its partisan; some of its interparty in that particular one. But that's a specific example where I think getting Washington off the dime would help us a lot.

GOVERNOR HICKENLOOPER: Well, I think that Governors have a role

there. We may tease each other, but if you go through the National Governors Association, where pretty much -- I think almost every state's a member -- we are much less partisan, and generally we tease, we compete, but we also share every idea. I mean, every good idea Bill's had, he's given me. Every good idea I've got -- both of them -- are given to him.

GOVERNOR HASLAM: He's coming out ahead, I guarantee you.

GOVERNOR HICKENLOOPER: But I think that is a better model, in terms of resolving some of these issues -- not just about export agreements, but immigration. I mean, here's a piece of legislation that's been stalled for, you know, over a decade -- a couple decades, if you measure back far enough -- and yet has a huge impact on our workforce, on our communities.

And somehow, it's become this partisan football that goes back and forth. And, you know, my gut feeling is, if the Governors were going to fix it, we'd get fixed, you know, what, a fortnight -- maybe two weeks -- maybe a little longer.

But I think those kinds of the difficult, intractable issues that have really gotten tied up in Washington -- Governors almost have an obligation to begin looking at and trying to figure out, what are the compromises, right?

And part of that -- you know, when you come from business, right -- when I was building restaurants, I never sold a hamburger once that I didn't know it was worth an extra dollar more than they paid me for. I knew it was worth more, but no one would pay it.

So, you make that compromise every day, right? And every decision, every new transaction, there's always a negotiation and compromise, and you never get quite what you want.

Well, that's the way, you know, this country used to work politically. And somehow, now, we've gotten where we're drawing lines in the sand, and even on some

of the easy issues, it becomes much more partisan than it should be.

GOVERNOR HALSAM: I think John's point's a great one. It's an advantage, I think, having been a Mayor and been a Governor -- because you live with all the consequences, it tends to make you very practical.

And, you know, when you're getting to vote on policy, but not having to necessarily live with the consequences immediately, you cannot be as solution-oriented. And, like I said, John and I, like I said, are different parties, but I bet the way we run our state is about 90 percent plus similar.

MS. NOGUCHI: So, does that mean that you do sort of think about state-only programs or state-funded programs?

GOVERNOR HALSAM: Well, it sure makes life a lot easier, I mean, to be honest with you, to not have to involve Washington.

Now that being said, there's things that the power of the federal government can do to move something faster that's really helpful. It's been controversial, but an example would be education standards, and a lot of debate about common core, and you guys are still -- I think, to me, having that started with a group of Governors, who came together, who said, "We need to figure out what should be common education standards."

Federal government came in -- not to take over, but to say, "We agree, and here's some incentive to do that." I think that's moved us down the line further, in terms of higher expectations.

Again, that's more, though, something that -- the innovation came out of the states. It was a group of Governors saying, "This is crazy. How come we're all defining proficiency in a different way? You know, the basketball goes seven feet in your state, and eight feet in this one, and six feet in this one. Why don't we all say we're playing on 10-foot goals, like real basketball?"

And a group of Governors came together and said that. It then helps if the federal government can come behind and provide some assistance in doing that. I think that's a good model: Innovation coming out of the states; federal government saying, "How can we help make it happen?"

GOVERNOR HICKENLOOPER: Well, and once you accept that, it creates an incentive for states to work together. So, in the Western states, we have an issue with the endangered species -- a number of them, but the greater sage grass -- a big issue. You talk to any Western Governor, they are committed to making sure that the habitat is improved, that we make sure we protect the sage grass, and we think we can do -- I think Republicans and Democrats think that we can do a better job of it than people in Washington coming in from far away.

And I realize that can ruffle a lot of feathers. Excuse the inappropriate metaphor.

But I think if the states can come together and find common ground, right -- Republican states and Democrat states -- and say, "We'll make the compromise. This is what's going to do the best job for making sure that we enhance the viability of any of these threatened species," I mean, that makes sense.

That should be where the laboratory begins to yield results that the entire nation can work with. And too much, I think, 10 or 20 years ago, that was less the case. Now I think -- partly because of the conflict in Congress -- the White House is looking for ways -- how can they, without having to go through Congress, help states?

If we want to build transit, or invest in infrastructure, or get more research, they're trying to say, "All right. How do we do that in a way that we can afford, and is fair, and actually gets results?" And that might, ultimately, be a good thing, again, if the Governors can continue working together.

MS. NOGUCHI: I'm just curious -- you guys alluded to talking to each

other a lot. And how often do you talk, and do you talk about these issues -- about advanced industries?

GOVERNOR HALSAM: I mean, I'll give you an example. Sometime last year, I took five or six folks in our cabinet out to meet with peers in Governor Hickenlooper's cabinet.

You know, being in states is an interesting deal. In most businesses where you do the same thing, you can't or won't talk to your competitor. Coke doesn't sit down with Pepsi and say, you know, "What are you doing about sugar prices?" You can't do that.

But with states, you can, because, like I said, if we swapped jobs, there'd be some differences, obviously, but it'd feel pretty similar. And he's dealing with human service issues, and, you know, K-12 issues, and mental health issues -- all the same things that we are -- corrections issues. The day we were there, I remember you'd had an issue at a prison the day we were out there.

So, the job feels incredibly similar. So, here's a huge incentive to go call somebody who's doing the same thing you are and saying, "What are you doing about this problem?"

GOVERNOR HICKENLOOPER: Or a set of problems. And how do we - - I think we both -- many Governors share the effort of trying to get more people from the private sector into our cabinets, into our senior positions. Ken Lund back there, our Head of Economic Development, used to run, you know, the largest -- he was the Managing Partner of the largest law firm in town, so he knows everybody, and he understands, really, how economic growth happens -- and, you know, he's not going to work forever for the state government, but for three or four years, his public service.

Mark Sirangelo, who's now our Chief Innovation Officer -- even if I only get him for 10 or 15 hours a week -- at least I'm not paying him anything -- he's well-

compensated. Do not lose --

GOVERNOR HALSAM: We'll double that pay in Tennessee.

GOVERNOR HICKENLOOPER: But I think, you know, trying to get people from the private sector in and to really try and find solutions -- and then, as you bring those people in, they have ideas from their peers and their industry from other states, and then we end up calling each other up.

And, you know, I took a group of people out to Tennessee, whenever it was -- a couple years ago. It's a funny way, you know, that there are a couple places where we're similar; a couple ways we're different, right?

Coke and Pepsi -- I talk all the time -- they compete relentlessly. They would never share all kinds of information. At the same time, they'd also never do attack ads, right? In other words, the business community's much more -- well, think about it. They do an attack ad against Pepsi, then Pepsi will do an attack ad against Coke, and they go back and forth. They depress the entire, you know, product category of soft drinks, right?

When we do these attack ads in politics, we depress the entire product category of democracy, to a certain extent. And I think we rebuild that product category when we sit down with Republican and Democratic Governors, and roll up our sleeves and say, "All right. Here's what we're doing. This worked; this didn't work." "Well, here's what we tried."

All of a sudden, you're really moving the ball down the field.

MS. NOGUCHI: When it comes to advanced industries, is there an idea that you've got from each other that you're implementing?

GOVERNOR HALSAM: I'm trying to think of one. Our sessions have been more about, I think, some of our agencies and education. I don't know if there's one --

GOVERNOR HICKENLOOPER: Well, I mean, this Tennessee promise, right -- really focusing. So, we've done a bunch of work on scholarships. We got \$30 million in this year's budget for scholarship. But what Bill's doing, he's really focusing on that first two years, right, so we can help everybody, and offer it to pretty much the same -- that missing last dollar.

We hadn't thought of that, and that has direct application to how you do aerospace. I mean, all of these kind of advanced manufacturing jobs -- so, I mean, I guarantee, within, you know, 24 hours, we'll have a couple people looking at it, and talking to your people and saying, "All right. Here's what we've been doing." Maybe we can adapt. If we don't do exactly what he's done, we're going to adapt it and use some of those ideas.

MS. NOGUCHI: Great. All right. Well, we're going to open up to an audience Q&A. There's going to be some roaming mics. Yes, just raise your hand, and please be sure to identify yourself and your affiliation. And I've been asked to also make sure that it's germane to this discussion.

Yes?

MR. MITCHELL: I think I forgot the question. I'm Garrett Mitchell, and I write *the Mitchell Report*.

And I want to ask the Governors to do a little thinking out loud for us, on a subject that seems to come right out of this conversation -- and it also happens to be something I know that our host, Bruce Katz, has been doing a lot of thinking and writing about.

And that is often called the new federalism. And what I'm struck by in listening to both Governors is the extent to which they are able to get things done at the state level, because they're in touch with reality, and they have to live with their results. We know what the story is here.

It seems that one of the possible solutions, if not in whole, is, how do we begin to think about shifting certain responsibilities, for example, that are currently at the federal level that the states could take over -- or do a more effective job with?

And I'm just curious to hear some of that thinking from them.

GOVERNOR HICKENLOOPER: So, I think that's what the National Governors Association is talking about. You know, now Brookings has been involved in that conversation intimately, and looking at where -- I mean, every state has a serious problem with transportation infrastructure.

And we all are talking about public-private partnerships, but especially as this next generation of fuel-efficient vehicles comes on board, the amount of revenue from just maintaining roads, let alone expanding and trying to mitigate some of the congestion we all experience -- that resource is going to go down.

So, one solution would be to provide more federal funding directly to states or metropolitan areas, and look at, you know, what are the local incentives for them to match and take responsibility -- and, really, take more of the federal government out of the mix?

And I think when you begin thinking in those terms; you begin looking at a bunch of different issues where that makes a certain amount of sense.

GOVERNOR HALSAM: I'll wander into dangerous territory again. You can make an argument that just the size of the task -- what we're trying to do on the national level -- is just too big. And the dangerous territory I was going to walk into was going to be the rollout of the Affordable Care Act.

Forgot what you think about the Act -- whether it was good or bad -- but the difficulty and complexity of the task, I think in, you know, foresight and in hindsight -- I mean, you're restructuring that large percentage of the U.S. economy. I would argue that there would have been more effective ways to do that involving the states. And, again,

forget the politics of it. I'm not talking about it; I'm talking about just the implementation of it.

I just think the country's so big, so diverse, and so difficult that the problems are huge. And so in some ways, it's not real surprising, all the argument that's happening up the Hill here.

MR. BARTON: Thank you. I'm Paul Barton, with *the Tennessean Newspaper*.

Governor Haslam, in particular, do you see stopping unionization as essential to advancing or growing these advanced industries?

GOVERNOR HASLAM: No, I don't, and I've been real clear about that. In that case, with Volkswagen, it was a situation -- like I said, we're doing this kind of two-fold dance with Volkswagen at this point.

Number one, they're looking at the possibility of unionization. Second, they're coming to us, talking about building another vehicle there.

And I said, "Listen, you know, if you're beating us up on one side, saying, 'You got to get the cost of the vehicle down, and you've got to bring more suppliers around,' you just need to know that that task is going to get a lot harder, in my opinion, if UAW comes in, because that's just not my opinion."

I had suppliers telling us that -- that, "If they come, we won't come." And so there was a direct link in this case. You know, we obviously have worked with General Motors, which has a unionized workforce in Spring Hill, Tennessee, and a lot of other couples.

In this particular case, because I was hearing from so many of the potential suppliers, I thought it was important to let them know the connection.

MR. ALTMAN: Hi, I'm Fred Altman.

And I'm wondering, you know, it seems there's a lot of cooperation

between parties at the Governors' level. How come the Governors don't have a larger influence on their Congressional delegations so it can be more effective?

GOVERNOR HICKENLOOPER: I'll let you answer that.

GOVERNOR HALSAM: You know, I'd answer this way: I mean, I hate to say it, but that's how democracy works. I mean, our Congressional folks -- I have a great relationship. We have nine members in the House, and, obviously, two Senators. I have a great relationship with almost all of them.

But they would also make it clear, they were elected for their own reasons, and they also would make it real clear -- because, actually, several members of our House delegation are former members of our state legislator -- and they would tell you, the culture doesn't transplant, if you will. As they've moved, the issues, and the positioning, and the partisanship is so much stronger.

I would love to tell you we could influence more than we do or can.

I don't know if you have a --

GOVERNOR HICKENLOOPER: No, I think it's -- the system is structured now, especially in Congress, where it's just very difficult. You know, I don't envy any Congressional Representative right now. They go -- the power of lobbyists has never been higher, probably going back all the way to the beginning of the country.

The transparency, all the sunshine laws -- which I'm defending, just in case the journalists out there are getting ready to tweet something -- love transparency, but when every single vote you make that decides who's a winner and who's a loser, when the world knows exactly how you voted, generally there's going to be a lot of pressure on you to say yes to everything, right, because you can't come out of the meeting and say, "God, I fought for you the best I could, but we just couldn't get you that funding." It's all transparent.

And I think that makes -- it forces our Congressional Representatives

into a more parochial situation, where they are, you know, making these decisions strictly based on survival, to a certain extent.

GOVERNOR HALSAM: In some ways, our task -- I mean, those of us in the state government love to say, "Washington, get your act together." But our task is easier than theirs, to be honest with you. I mean, it's a different environment.

When John gave his example about, you know, when he had his restaurants, and he always thought that hamburger was worth a dollar more than he could get paid for -- but, ultimately, the market said, "Well, here are the consequences. We think your hamburger's worth this" -- because we have to deal with immediate consequences, we're forced to make those decisions now.

And that's not necessarily true at the federal level. I mean, I'm in the middle. I presented a budget two weeks ago, and since that -- once you present the budget, then everybody comes and tells you what you left out of there.

And I'll be honest with you: The things they come to me aren't bad ideas. 95 percent of the stuff that people come and say, "You need to put more dollars here," I actually agree with them. I just don't have the dollars to put there.

And so there's a fundamental dose of reality in our budgets that Washington doesn't have the situation to deal with.

MR. APGAR: I'm Sandy Apgar.

One of the core industries that's missing from the Brookings-McKinsey list is construction. And although it's primitive in an industrial sense, it's very advanced in fields like energy utilization, materials science, megaproject management, and so on.

Have either of you -- or both of you -- investigated or supported innovations in the way this country's built, the way your states are built -- not just in infrastructure -- the horizontal part -- but even the verticals?

GOVERNOR HALSAM: We have. And, again, I'll refer back to Oak

Ridge National Lab in terms of the some of the materials science and things. They're helping us with that.

I guess it's almost a question I'd love to ask you back -- as Governors, I guess we look at the construction industry as being, you know, the result of the demand in other industries. Help us understand how we should look at it as an industry in its own right. That's a question, if you don't mind answering.

MR. APGAR: On the demands side, the policies you pursue to create jobs creates the demand for a space. The policies that you may or may not pursue -- but that often result -- on how that infrastructure, both horizontal and vertical, is used and ultimately recycled, rebuilt for a different quality of life, a different environment -- that's the broader picture.

And I would suggest at least that states, as Bruce and others have argued, have a central role -- along with cities, too, of course -- but states have a central role in how that happens, because business, the job creators, respond directly to both the incentives you've described, but, also, the kinds of policies that you adopt.

GOVERNOR HICKENLOOPER: Well, certainly, the level of innovation that we see -- and, again, I think we compete on these innovations, as well -- the transitions between what architects do now -- and architects now -- if you look at the Olympics; great example of Populous -- which is one of the major subcontractors, an architecture firm that worked to create the Olympics -- based in Colorado.

But they are looking at more than just how you build a building, but after the Olympics is over, how this gets broken apart, how can there be other uses, you know, how do the people flow, what's the overall image and brand of that assemblage of buildings? I mean, it becomes much more a sociology and not just bricks and mortar.

We've got another company in North Denver that is now taking GPS technology to the point where you hold a rod, and that rod, it tells you exactly that's

where you put the corner of your foundation, right? So, you don't have to get out there with the tape measure, and put a little rod, and do all that stuff anymore. I mean, you're building stuff now without having to do that.

Again, people aren't using paper anymore. I mean, that is all happening dramatically and rapidly, and the companies that are more rapid in adopting those innovations are going to get more of the contracts, and bring more of that work back to our states. And, you know, our competition there is just as fierce, I'm sure.

MS. EDWARDS: Hi. I'm Julia Edwards, with Reuters.

Governor Haslam, I heard you talk about how bringing federal funding into something can sometimes just make the task too arduous, especially in advanced manufacturing.

President Obama has been touting in the State of the Union these innovation centers, where private and public partnerships come together in various states and compete for federal dollars, for these exact kind of technologies.

I wondered if that's something you would want, you would encourage your states to look into, or if that, in any way, would influence picking a winner, or maybe taking away some IP rights by bringing together different companies.

GOVERNOR HASLAM: The second two issues you brought up are real, in terms of government picking a winner or IP rights.

But we have either eight or nine business accelerators around the state who are doing something similar, focusing on certain industries. We have one called Auto Accelerate, based, again, on our auto strength.

We're using either grants that we have available or expertise that we have available to provide more opportunity and to kind of spur growth along. So, I don't actually know enough about the President's proposal to have an opinion on that.

For us, I know what that looks like. We're using that to be a lot more

targeted, rather than just say, "We're going to take whoever comes next with a good idea."

GOVERNOR HICKENLOOPER: But part of that can also be done in terms of the ecosystem you're creating. We've looked at, how do you take a few square miles, and make sure that you have the fiber -- like what Google's doing -- so that you have 100 times the speed of downloading? So, you can download a movie literally in a minute -- or a matter of seconds -- and putting that in certain areas where you want to see economic development, where you have an underserved neighborhood or community.

And then the government doesn't really have to pick winners. Geographically, we're picking winners, I guess, but you're encouraging all the entrepreneurs and all the businesses that need that kind of speed to come set up shop there.

GOVERNOR HALSAM: Right. But I would comment, that's a good example. We've talked before -- because Denver's such a great job and economic hub -- that some of the other parts of the state, it's harder to encourage growth. So, if Denver becomes one of Google's cities -- and they're looking -- I think Nashville's one of the ones being considered, as well -- that'll make it even harder to encourage the growth to happen somewhere else.

So, there are ramifications.

GOVERNOR HICKENLOOPER: And I think that's each state. I'm sure you're doing the same things we are. I mean, we have the old high-cost fund. We're kind of deregulating telecom, but as we do that, the high-cost fund -- which was originally created to make sure that every rural community got telephone service -- if they had the word "broadband" back then, they would have used it, right?

And we all share that same responsibility that we want to have, you

know, redundant high-speed broadband in every corner of the state. It's going to take a while -- probably the better part of a decade to really get everywhere -- but that's the basic building block that everyone should have equally.

MS. NOGUCHI: I think we have time for one brief question. Back there, maybe.

MR. CARLSON: Pete Carlson.

I'm just curious -- given your previous experience at the local level, how do you now think about the role of Mayors and others at the local level in doing the kind of work that we've been talking about here today?

GOVERNOR HICKENLOOPER: Boy, I miss being a Mayor. No, I'm just kidding.

You know, done properly -- and I think it's very analogous -- and we've spent a lot of time -- on my day of inauguration, right -- so I stayed being mayor right up until the day I became governor. So, I resigned in the morning. I walked across -- we have it between the City Hall and State Capital --

GOVERNOR HALSAM: You didn't get two paychecks that day, did you?

GOVERNOR HICKENLOOPER: No. No, I decided that one day, I'd go unpaid.

But we walked across what we call Civic Center Park, and then did the inaugural address. And my first executive order was to make sure that the state would do nothing to put, you know, an unsupported mandate on our local governments -- our municipalities and our counties -- that we would not burden them with something -- and expect them to come up and pay for what we decided was best for them.

It is very analogous to how we feel about the federal government, right? Done properly, the local communities, where they talk about job creation, or education, or healthcare -- somehow, there's got to be a seamless -- as close as you can get -- a

relationship between your local community and your state -- and together, then, you are navigating this with the federal government.

You know, when we had the drought, and the fires, and then we had these floods last September -- and we realized we had to get people back, connected to their homes, and their jobs, and their community before the snow came. And there's just no way the federal government's going to do that, and no way the state's going to do that, right? But we had to be part of it.

And so our fire drill there was to get out there and say, "All right. How do we get the decision process, from bottom to top, as fast as possible, right?" And whatever waivers we need, whatever we need changed -- we just don't have time to luxuriate in, you know, kind of worrying about this nit or that nat.

And it can be done. The magic of a real-life issue, where time and urgency is paramount -- you see, really, what you can do.

You know, I think Tennessee does a good job of this, as well. I'll let Bill speak, but that segregation of federal government, and then state government, and then local municipal government -- somehow, we've got to blur those lines, and make their interrelationship much more collaborative.

GOVERNOR HASLAM: My answer would be this: I believe, more than ever, that the closer to home government is, the better it is.

I mean, when people can grab you at the supermarket, or church, or a Little League baseball game -- whatever -- it's just going to be better.

And I think the other thing you see is this: You see it played out in so many ways. I called or emailed John not long ago. He's gone through a remarkable string of stressful situations -- from floods, to fires, to shootings -- to a lot of things that are high-stress and high-demand. In all of those, it wasn't just the state; you had a local government that was involved as well.

So, whether we're talking about that or recruiting advanced industry, I see it all the time. I work with local governments, and I see the ones that are prepared, and have their house in order, and have done the homework, so that when the opportunity comes, they're ready.

And leadership matters. I don't know a better way to say this. And you see the difference when you're in our office, and you deal with local leadership of all type. Local leadership is the best, and who you elect matters.

And I don't say that in a political sense; I just say, it does matter who governs, and who leads. And the opportunities and stresses are across the board -- federal, state, and local.

The local folks might make the most difference of all.

GOVERNOR HICKENLOOPER: Fair enough. And let me just add in that last thing -- sometimes, we look at the federal partners, and we don't think of, like, our military assets, especially in disasters like that.

But our National Guard -- every single state is closely and deeply dependent on our National Guard, and the more bridges -- that's why having Major-General Lindell kind of as our champion for aerospace -- because he comes directly out of the military -- and, again, helps build those bridges and add real muscle to that relationship.

MS. NOGUCHI: Thank you so much.

MR. KATZ: So, I just want to thank both of you and Yuki for an informed conversation, but, also, a civil conversation.

GOVERNOR HALSAM: He still didn't give us the Broncos.

MR. KATZ: It's a good thing your states are not next to each other, or this would have disintegrated rapidly.

Everyone, let's thank the Governors; let's thank Yuki.

And watch this space. There will be more on advanced industry from McKinsey and Brookings. We really appreciate your coming today.

Thank you.

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