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ACQUISITION REFORM:
INCREASING COMPETITION, CUTTING COSTS, AND OUT-INNOVATING THE ENEMY

Washington, D.C.

Monday, April 13, 2015

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Panelists:

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P R O C E E D I N G S

MR. O'HANLON: Welcome to Brookings. I'm Michael O'Hanlon with the Center on 21st Century Security Intelligence in our Foreign Policy Program. And we are thrilled today to have Undersecretary of Defense, Frank Kendall, to speak with us about DoD Acquisition Policy and various aspects thereof.

As you know it's the beginning of an afternoon full of Acquisition Reform Fund, we will have a second group -- two very distinguished Panelists, Former Deputy Secretary of Defense, Bill Lynn; and my colleague here at Brookings for the year, Jason Tama, who is Coastguard Fellow, who has been researching Silicon Valley and its role in the broader Defense Enterprise, afterwards.

So, Mr. Kendall will be here to give his remarks, and then we'll have a brief discussion up here on stage before opening up for questions in the time, in the hour that he's with us. As you probably know Secretary Kendall has had a distinguished career of public service, in a number of aspects. He is a West Point Graduate, he spent a decade in the Army, he is an Engineer, taught Engineering at West Point in part of his career; various stints in the Department of Defense.

Also, decided to get a Law Degree at one point, and did a lot of pro bono work in Human Rights Law, among other things. And so, a remarkable display of variety and range, and obviously a lot of interest, and the current portfolio that he's held at the Pentagon since 2012, Undersecretary for Acquisition Technology and Logistics, is a bit of a mouthful. And you can imagine, for those of you who don't do this full time, all the things that come under that rubric, it's a remarkable range of extremely important matters.

And along with people like Bill Lynn, who, in his job, is Controller and

Deputy Secretary, these are the people who, in many ways are, "running the building" and running the entire Defense Enterprise, which is, of course a huge business in addition to being a remarkable and potent military force.

And so Mr. Kendall is noted for his various Better Buying Power directives which are among the things we'll talk about today. We'll, again, grant the podium to here to him in just a moment to say whatever he wishes, and then broaden the conversation from there.

So if you could, please join me in welcoming, Undersecretary Kendall to Brookings. (Applause)

MR. KENDALL: I see a lot of friendly faces around the room. Former colleagues, U.S. and international, and I think a lot of you are not strangers to Better Buying Power, but I'm going to talk about that nevertheless.

We just rolled out the implementation instructions for Better Buying Power 3.0 last week, and we are now into the phase which the last one was a couple of years probably of actually doing the things we've been talking about, monitoring our performance, and making whatever corrections and adjustments we need to make, but also I have no doubt, to come upon some other ideas that we'll want to implement as we go through that process.

Underlying all of the Better Buying Power initiatives has been the idea that the way you try to improve acquisition is through a process of continuous improvement, and through doing a number of things simultaneously, because it's a very complicated area which has an awful lot of different aspects to it, and the way to make progress, is to make incremental progress in lots of different areas all at the same time.

I've seen a lot of -- I'll call them "fads" for lack of a better word, ideas and

acquisition reform that have tried to do one or two or three maybe big things, and think that that will make a huge difference. And history doesn't suggest that that's a success. In fact, it suggests that when you try to move everything in the same direction, and try to adopt a uniform policy, you tend to do as much breakage as you do fixing of things. And you have to be very careful about that.

So that's been the idea from day one, when Dr. Carter, who was then Undersecretary, and I rolled out 1.0, about five years ago, I'll go through some of the things that we are doing. I will say that there is an enormous amount of discussion right now in this town of acquisition reform such as here today.

Congressman Thornberry is taking the initiative to do acquisition reform from the outside of things, and I think Senator McCain is interested in doing the same things on the other side of the Hill. I applaud all of this. I think there are things that can be done this way. I do think that legislation is a limited tool in terms of what it can do.

And we were talking about my background earlier. I'm fundamentally an Engineer, and I've been a Technical Manager of some type for most of my life. And there is very little that you can do from the point of view of legislation that will make somebody a better engineer, or a better program manager, or a better contracting person.

And at the end of the day, whether you're in industry or government, that's the sort of thing we have to have. We have to have people who are very, very good at what they do. And one of the fundamentals that I'll talk about in "Better Buying Power" is the increased emphasis on professionalism and on building professionalism within the workforce.

There are things we can do to certainly help. I applaud all of the things that are going on. We work very closely with Congressman Thornberry, in particular we

are working with the (SA) STEP as well, to try to see to it that we can all go in the direction that will be mutually beneficial and work out for us. There's an awful lot that I can do with existing legislative authorities, but there are some things that I can't do. I can't, for example, remove some of the things that burden our program managers.

And one of the things, the initiatives, that we shared with the House, many of which they are implementing, and Congressman Thornberry's Bill are designed to remove some of the overhead and replacing our people, the kind of -- actually distracts them from doing what is their real job.

So I'm all for all of this. The other watchword right that's become popular is innovation, and you will see a lot of that in Better Buying Power 3.0. That's, I think, part of a growing recognition that we do have a problem with technological superiority, and the thing that motivated me more than anything else to do another edition, another issue of Better Buying Power was that concern, and that's all the way through it.

Now the way the Better Buying Power Initiative is set up in the short version, and I can spend at least an hour talking about all of these things, but I'll try to be briefer than that so we'll have time for questions. It talks about -- it has a punch line, if you will, at the top, or a bumper sticker which is achieving dominant capabilities through technical excellence and innovation. That's a return to focusing attention on the products that we build, and the superiority of those products relative to potential adversaries.

Now, earlier editions of Better Buying Power were very much about efficiency, and productivity, and 2.0 about professionalism. You know, this is the change back toward thinking about our products, and focusing particularly on the results we are trying to achieve. Not just how we get there, and what it costs to get there, but we actually produce.

There is a cultural aspect that has run through every edition of -- every version of Better Buying Power. The first version emphasized cost consciousness, and trying to get our work force to think about itself in terms of having a goal of spending the money well, and getting as much value as possible for the money we are spending. That's the whole idea of better buying power, and opposed to a culture, whose mission was, was to spend the money, and to get it out the door as quickly as possible to industry so that they could do the work.

That's not the right way for us to manage, it never has been, but there are some built-in incentives from the government to push you in that direction. But then in 2.0 we move in the direction of professionalism and judgment. And 1.0 was largely about best practices, it wasn't intended to get people to do the same thing every time, but it was intended to identify some good things that worked a good fraction of the time. What we saw with the workforce was the tendency to say, okay, that's the cool solution, that's what I should do.

So in 2.0 we pushed people in the direction of thinking, and using professional judgment and the tools that they would need to make better judgments. And now, in 3.0, it's a focus on a culture of technical excellence, which is the fundamental thing underpinning of 3.0. I want to emphasize more than anything else this is more about continuity than about change.

All those efficiency, productivity and things that we started, they are still going on, some of them aren't finished by a long shot, and we are still working on them, but the idea here is a shift in emphasis -- not a fundamental break with what we've been doing in the past, it's a realignment and a slight shift in direction, but not a fundamental change.

But let me walk very quickly through these now, and I'll highlight some of the things that are new in this edition. The major headings, and there are about seven or eight headings, are fundamentally unchanged. We tweaked them a little bit, but the first one is achieving affordable programs. Now, the idea there is very straightforward, don't start things you can't finish. Don't let your reach exceed your grasp.

I've got Bill Lynn down here, he's going to talk later, Bill, remember well, a number of programs that Secretary Gates cancelled during his tenure, largely because they turned out to be unaffordable. You know, the most recent version of that was the expeditionary fighting vehicle for the Marine Corps. You know, very ambitious technical goals, and as it turned out the Marine Corps was not going to be able to afford that program, but we should have figured that out much, much sooner.

So achieving affordable programs is not about cost reduction or cost cutting, per se, it's about setting goals that are reasonable and attainable, when we set out to build a program and constraining our reach to be within that parameter.

Achieving dominant capabilities while controlling lifecycle cost, it's the next major heading. A core value in Better Buying Power is the idea of should cost, and should cost management, which basically simply means that our managers have to understand their cost structure, they have to identify opportunities to reduce their cost, that will set targets for themselves, then go after those targets. That's very basic.

That was in 1.0, it was in 2.0, it's in 3.0, and it will be in anything that we do, that's just because that's so fundamental. The change in this category is about brining in the intelligence community more to our process, and having a more continuous dialogue with the intelligence community and anticipating response to threats, and responding to threats when we do see them, when we are surprised, as efficiently and

quickly as possible.

And that ties in to some other things that, later on, that will relate back to this. That's building that partnership, and it expands upon the partnership between requirements and acquisition that was a part of 2.0 adds the intelligent community to that.

There is also an item here which is new from the draft that I released last fall, which is in cyber security. Cyber security is a pervasive problem for us. Again, Bill Lynn knows that very well. It was one of his fundamental things he worked when he was Deputy Secretary. Cyber security is a concern from earth to death in our programs.

It's a concern for all aspects of the program, whether it's the logistics system that supports it, or the design that starts somewhere and engineers -- computer, or whether it's in the products that we buy, in the supply chain that supports us, or operationally, when the system is filled, and we know how it can be assessed by cyber threats.

All of these things have to be taken into account, so there is new emphasis on that, which I think is very fundamental to securing potential superiority as we go forward. It's one thing to invest and gain technology superiority, it's another thing to hand on to it, and if you going to have (inaudible) through cyber techniques you are not going to be able to manage for very long, we have to prevent that.

Incentivizing productivity in industry and government, the next major category; we have always been about aligning profitability with performance, that's fundamental and it's always been a part of Better Buying Power, and always will be. We've never been after people's profit as a way to cut cost. We are after a better alignment of performance, and profitability, so that you can get paid more for doing a better job for us. It's pretty straightforward, and we are happy to pay prior margins if we

get benefit in return, whether it's in cost reduction or enhanced performance.

Also in here is a number of things that are -- are a number of things which are designed to get at the effectiveness of our various investments and research and development. That includes internal research development by companies, includes contractor research and development, and it includes development through our laboratories, in-house investments.

In each we are going to take a look at our performance, try to understand it better, try to measure it, using metrics to understand it, and then make adjustments as needed. It's a more proactive form of management of these areas. I'm going to go down the path of putting some more constraints, if you will, or supervision, maybe is good a word as any, on our internally-funded R&D, or internal R&D as our contractors do, with their own money which is an allowable cost, they charge us back for as part of products.

And what I'm seeing there is a need for government to be more closely engaged with industry with these, so I'm asking for something I think is very basic, and not a very high bar, which is that before somebody starts a project in their corporation which they are going to try to recover as a liable cost, that they get somebody in the government in the appropriate technical field to come say, yes, that's a good thing to do. It has benefit to the government ultimately.

I'm all -- I have no objection to people getting intellectual property out of their IR&D investments, that one of the motivations to do it. I'm happy with that. But I also want to get some meaningful progress in technology that the benefit -- that can benefit, ultimately the government as well. So that's the idea behind that one.

The next major category is incentivized industry and innovation industry in government. One of the key things we are doing here, and it's something we started

under 2.0 is to use monetary versions of best value. The idea here is that we won't get better performance unless we tell people what we are willing to pay for it. Traditionally, the Department gives out and would ask for a system, let's say a weapon system with a certain level of performance, which we call threshold performance.

It also puts out something called an objective level of performance, which is the thing that's better than the threshold than we would like to have but we would accept the threshold level. So what industry does in reaction to that, almost uniformly, is bid to the threshold level, because invariably it's cheaper.

So, if you bid to the threshold level, the government will accept that, and for the lowest cost for that level, and you are probably going to get pricked in the competition. What we are trying to do is tell industry how much more we'll be willing to pay for that better performance, so industry then can make an informed judgment about whether to go after that a lot, and to offer to us or not.

And I've had some very unpleasant experiences in the industry where we thought very certainly that we had we end up with great confidence that we had a better product that was above the threshold performance, but we had no way to give credit for that in selection. I want to end there. I want people to have a way to credit for that, I want the government to be able to define in monitor returns as much as we can, what that performance is worth to us, some people will know whether to bid it or not. And we'll get much more -- we'll get much better performance, much better innovation out of that as a result.

I want to share information more closely with industry and earlier. Ask industry for help and their ideas on new products before we write our requirements down and finalize it.

Now this is the traditional path that we would follow years ago, and in my earlier days in acquisition. The first thing is, get out to industry what our draft requirements are as early as we can. Don't wait till they are finalized, give industry a chance to (a) understand them, and start to make some of their own investments to try to meet them, but also give us some feedback, on whether they are feasible or not, on whether we are going to be able to do even better if that were the case.

And then as industry to do some concept definitions with the of course, ask industry to do some early preliminary design work to inform our requirements process, and to inform our analysis of alternatives. This is another traditional practice that's kind of fallen by the wayside. In general, I think we have not been as communicative with industry as we should be. We haven't listened to industry as much as we should have, we haven't asked them to contribute as much as we should earlier on in the programs, before we finalize our requirements.

We'll continue to emphasize minor designs, and open systems. I think this is a great way to do technology insertion as you go forward, so we are going to continue to emphasize that, and we've gotten better at that, and requires good managers, good technical managers on the government side to make sure you define the interface as well, so you can then give industry the information they need to bid against.

And so that you are not caught in a situation where, because somebody wrote their software you can't control that interface, and you therefore got the proprietary sole source position forever. And that has happened to us too many times. Again, it's about good management, and effective management, effective management on the government's part to make sure that doesn't happen.

The next major category is eliminating unproductive processes and

bureaucracy, this has been a category since day one, and I haven't given up on this, we are going to continue to fight here, I think we've made some progress. We have worked with industry on this. My Assistant Secretary for Acquisition, Katrina McFarlane has just finished over a year-long interaction with industry on this, and we've identified a number of things that we'll be introducing in implementing under Better Buying Power.

One or two of them are legislative and we've asked -- well, we'll be working The Hill to try to get those passed as well. But in general, we are trying to streamline our documentation; we are trying to emphasize the chain of command. I just did an exercise which I found to be very, very useful. I asked all of our ACAT 1 Program Managers to give me a one to three-page assessment of their programs, and I had them say this at the bottom of their assessment. No one has reviewed this assessment in draft or final form, period.

Because I didn't want something staffed, I didn't want institutional product, I wanted a personal product from the program managers, and it was said to me and to the program executive officer in the service acquisition executives simultaneously when it was submitted. And I've been working my way through these or over 100 of them, but I'm learning an awful lot about our programs, I'm learning an awful lot about our program managers, and I can tell you that I'm very impressed.

I'm seeing some terrific products, but I want to emphasize that chain of command for particularly the people that are out there, on the front line, just the line managers, if you will, for us, and this was a great way to learn about that, and I'd like to do that. I guess to institutionalize that in the 3.0.

Promote effective competition. I won't say much about this, other than that competition works, it's the most effective thing we can do to reduce cost, to control

cost. It was a part of 1.0, and 2.0 and 3.0, and like a few other things, it would be any addition to Better Buying Power as far as I'm concerned.

Tradecraft during acquisition services; we are continuing our emphasis on services. We spent as much on services as products. In fact, we spent more. We've made some progress on this. Again, this is core. We've got to do a better job of managing those pots of money. There are about a dozen different types of services that we require, and each one has its own best practices. We now have managers in place for each of those, in the services and in OSD, and we are starting to identify best practices, to promulgate them and train people to do a better job.

And this includes reaching out beyond the normal acquisition community. A lot of these things are done at the installation level for example, they are done at the unit level, they are done through our IT infrastructures, both through our acquisition infrastructure, and all those cases where we are spending some money, there are some basics we have to understand and implement.

And then last on my list, the last major category, again, is professionalism, and improving professionalism. The emphasis in 3.0 is on our technical professionals, it's on our organic engineering capabilities, it's on the technical management capability of our program managers. In an ideal world all of my program managers, particularly for development programs, would be engineers. And it's not just because I'm an engineer, it's because the job that those people are doing is managing and supervising engineering. And if that's what you are going to be doing it helps enormously to be an engineer.

I also have an item on here that I'm mention, this will be my last one, for science, technology, engineering and math education, which really looking longer term,

but for the sake of the contrary for our economy, for our quality of life, as well as financial security, it's very important that this country develop and nurture people who are going to go into these fields and contribute to our society.

So the Department has a limited role on that, but it has the role that matters. You need to capture people when they are young, or you are not going to capture them. It's too hard after you've gotten through high school to go back and start out. It's not impossible, and if somebody wants to do it, then I welcome them to try. But it's best if you start out and get those courses that you need to put you on the track to be in the technical field early on.

I'd like to say that the most important professional decision I ever made when I was in junior high school, and I had the choice between going into honors math and science or honors English and history. And I chose math and science. And if I had not made that choice, I don't think I would have been an engineer. And I don't think I would have ever gotten to do the sorts of things that I've done.

And that's what we are after, that's when we have to capture people. So, again, it's more continuity in exchange, I look forward to your questions. I'm just beginning this part of the journey. Somebody asked me the other day about 4.0, what 4.0 is going to be like. I will be consumed with doing 3.0 for quite a while now, and we'll see in a couple of years, if there's a 4.0 or not, but right now, we've got plenty to do.

All right. Thank you. And I'll be happy to take some questions.

(Applause)

MR. O'HANLON: Thank you. That was remarkably wide-ranging. In fact, at the end you even gave me advice on how to handle my school-age kids. I just wanted to ask a couple of questions, we've got about a-half-an-hour for the broader

discussion, and I want to get other folks involved fairly soon.

But just a couple of things to give you a chance to drive home a couple of points, and a couple of issues I'd like to ask further about -- let me start with acquisition work force, that towards the end, one of your -- I think your next to last point was about them, and professionalism and desirability of having engineers, but I also know from reading my colleague, Jason Tama, who you'll hear from in a little bit, and from other studies, that one concern you must have now, is that you are going to lose a lot of the good people in the coming years, because they are going to retire, and it's a challenge in the modern era with the way people have had evolving views towards government service, to recruit.

So I wonder what your strategy is there, to make sure that you actually don't lose ground in the quality of your acknowledge and the engineering workforce.

MR. KENDALL: There is a -- almost all of our career fields have a Double-Hump profile, with people nearing retirement, a lot of people are nearing retirement, and a relatively -- a large number of relatively new hires. Under DoD if we were -- and in sourcing we were able to bring quite a few people in for a few years.

The acquisition workforce, would (inaudible) a lot for whatever reason, in the late '90s and early 2000s, and so starting about, I want to say, 2009 or so, we started trying to bring people back up. We are flattened out. The acquisition recourse, the designated acquisition workforce, is about 150,000 and it's staying there, and there are about a dozen career fields in that.

We are encouraging people to come back as part-timers to help mentoring younger people, we are trying to give people as much broadening and career-enhancing experiences as we can, as early as we can, we are looking for programs, like

trading with industry to get people out in exchange programs. I realized a few years ago that the Department has a fundamental problem in that if we lose our expertise in a certain area, let's just say program management, that it's very hard to reconstitute that because we can't do what industry can do.

Industry, at least we traditionally haven't been able to do this. Industry can hire people from within industry at any level, at any point in their career basically, where our government program managers are mostly officers, for example, they had to be developed over a period of a long career. Civil service tends to stay civil service. One of the things that I hear Congress is interested in doing is what he calls increasing the permeability of DoD, which means that people can come in and contribute at mid-career more than they have historically.

And I'm very encouraged by that, and we've got to find some creative ways to do that. And we do have some tools that we are underutilizing, highly qualified experts, individual program (inaudible), for example. And I think we need to figure out how to get past whatever bureaucratic barriers are in the way of that, and do more of that, because expertise matters, and I think growing that young workforce, and a lot of confidence might work for us, but it needs experience, it needs mentoring, and it needs a number of things. And bringing people in at mid-career by whatever means will be very helpful, particularly highly qualified people.

MR. O'HANLON: Thank you. That's helpful. And before I go the next topic, just because the Brookings audience here is often a little more general than some of the Defense oriented audiences around town; if I could ask you to break down that 150,000-strong workforce, not in great detail, but just in a couple of chunks to give us some greater texture about who is in that. How many civilians and how many military

roughly, for example, and one or two or three of the biggest most important agencies, or specializations within that field?

MR. KENDALL: The vast majority are civilians. The numbers that are military are in the order of 10 percent or less. It includes large groups of people in engineering, as you would expect, further large group of people in contracting, testers, program managers, as people move up to the career they tend to move from especially (inaudible) off into management. There are business people in there that are cost estimators, and they are about -- I think a total of about (inaudible) or so.

MR. O'HANLON: And in Defense Contracts Management Agency, is going to be one of the key agencies, but that's 20,000 or so, right.

MR. KENDALL: That sounds about right. A lot of those are quality control people, yeah.

MR. O'HANLON: So what's another -- just one or two other big agencies that we should --

MR. KENDALL: Missile Defense Agency has quite a few. Each of the major buying commands, each of the major service, in AFC and they are there, for example, the Navy, Airport Systems Command, Army Material Command, yeah.

MR. O'HANLON: Good. You mentioned that despite all these initiatives and you are trying to make gradual incremental ongoing progress in a number of areas, so you are working very hard at it, and yet you are trying to preserve continuity and not suggest that the system is fundamentally broken. This is a crude way to ask the question, but what grade do you give the current acquisition -- I don't mean workforce -- but the acquisition process in the United States?

Because we hear a lot of people throw out phrases like, it's broken, it's

dinosauric, it's, you know, too slow, it's too expensive, are very dismissive in pejorative terms that quite often is part of the broader lexicon. That's not the way you spoke to day, but I'm just sort of curious, how do you assess where we are, starting in 2015?

MR. KENDALL: I think when people make those comments, and looked at the fact that we have cost overruns, and scheduled (inaudible) in some of our programs, in some cases pretty demanding for us. And I also have to look at the fact that we have the dominant military in the planet, and have had the dominant military in the planet for decades. So I don't think I would trade our system for anybody else's out there.

If anybody wants to do that let me know, put your hand up. Tell me who it is, because I don't think we should do that. I think at the end of the day we do a good job of equipping the Military, much better than I think we are often given credit for.

Where we have problems, most frequently, is in development programs. That's where the in-house engineering capabilities matter so much. That's where managing the risk of any development program matter so much. You know, understanding the risk and doing the earlier -- build a plant in the Air Force is, introduce something within the Air Force, only in the technical baseline.

Which basically is that his managers, he wants them to really understand what they are doing, and that's why I made the comment earlier about engineers should go on engineering development programs. And those are the things that get noticed, when you big overruns on those parts of the programs. But development is only 10 or 15 percent of the cost of most of our weapons systems. The vast majority of the cost is in production and in sustaining, and if you look at those numbers we are not doing that badly there at all.

Our average overrun of production cost is less than 10 percent, our average on the development program is pretty high, it's about 30 percent, but if you compare the Department of Defense's performance to, say, Public Works programs, we are much better than civil -- engineering construction projects of large -- passing around. So, overall grade, I'm going to say, B-plus. I think, maybe even A-minus, but I think we can do better. We can do a lot better.

And given the situation we are in, I didn't get a chance to rant about sequestration before but, you know, with the pressure on our budget, with the pressure on our country, with all the global commitments that we have, and the things we are trying to simultaneously do, as well as modernize a force and keep it ahead of other people in the future, we are really squeezed right now. So it's very important that we do this now.

MR. O'HANLON: Just two more questions for me, one is, how will you know if better buying practices, as a concept, as a set of initiatives is working. It's a little bit of an unfair question of course, because obviously you are doing so many different things, some of them will work, and you will always be able to argue by anecdote that you've had some success. But in terms of the -- in terms of the overall thrust of what you are doing, and whether, you know, you are basically on track, whether you need a 4.0, et cetera, how will you evaluate how well you've done?

MR. KENDALL: We started publishing a volume, about two years ago, called the -- three years ago, the Performance of Defense for Acquisition System, and the first one was just a continuum of data. How are we doing in terms of cost, and schedule overruns? How are we doing on things like Nunn-McCurdy breaches which are large-scale overruns? How are we doing in operational test results? How many programs

were getting cancelled before they actually go to production, and we are sort of tracking that.

So we've got a big body of data now. We were looking for correlations, you know, what makes a difference in acquisition, and we -- the data unfortunately is very noisy, so we publish another volume last year, last year we were able to get a better sense of some trends. We had some more prescriptive information and we are working on this year's.

One of the -- so we are using data, is the bottom line to answer the question. I don't like anecdotal evidence because there are so many different things out there, it's very hard to draw conclusions for that. If you look at the data, I think it is possible to infer that things are getting better. It's very hard to see that in the noise.

One of the things we found in the first iteration trying to do this, was that once we started funding programs to the independent cost estimate, there was a better result in terms of program performance. Now, that's somewhat of a self-fulfilling prophecy. One of the questions you always have to ask yourself is, was the cost overrun you experience pre-ordained, or was it the result of something you did?

There was a big difference. Okay. If you just got the number wrong, and it was going to be bigger anyway, that's one kind of mistake. If you could have had a smaller number, if you had done a better job, that's another -- and sorting out the difference can be really tough. I do think I'm seeing some trends that look positive. We've been at Better Buying Power in one form or another for five years, and we've been trying to build up the workforce's capability and try to help them make better decisions.

And I think we may be seeing some trends in the right direction. In this report I tracked what has happened under programs for all the different acquisition

executives, for different companies, for different buying commands, to try to see if there are some things in there that stand out. And you do see some places where there is better performance, in one institution than another, and you have to look at that and say why is that, what's different about that institution?

I will point out one thing, and I'm going to publish it, I'm going to borrow from IDA, Institute for Defense Analysis, and publish it in this year's volume. And that's the story that Dave McNichols did at IDA. Dave used to run the cost analysis independent group in -- what was then PAE, our Program Analysis and Evaluation Shop which is now called CAPE.

But Dave's study looked at -- first he looked at the correlation between the acquisition approaches, and program results. And he looked at the point at which you make a decision to commit to a program, which is essentially what we call Milestone B; it's a point at which you start development for production. And he said, okay, let's look at what happened to all the programs under these different acquisition approaches, and how they played out from the original baseline, which is when you write down for the first time, here is what I expect us to caution, how long they'll take, and so on.

And there is an area of total assistance performance, there is an area of fixed-price development, there is an area of kind of more *les affaires*, you know, lead system integrators. You can identify different areas in terms of how we organize in DOD and how we do business. And Dave didn't find any correlation, none; so all these different acquisition ideas and practices seem to have no impact on the results.

And he had all this data, and he said, you know, there is another way I could look at this data, let me look at the budget environment over these different periods, and he identified about six maybe or seven different budget climates, where the

money was really tight and budgets were coming down, where money was relatively loose and budgets were going up. And he was able to explain 70 percent of the cost growth with that primer. When budgets are tight, people set up programs to fail, or they have much worse results, I'll put it that way, in terms of failing, so they have much worse results.

The difference is starting. What he was looking at was production cost. How far off were we on unit production cost, when we stated what we thought something would cost in the time of tight money, versus the time of loose money. It's a factor of three. When money is tight, we underestimate production cost by 30 percent. When money is loose we underestimate production cost by 10 percent.

Those were averages over a statistically significant number of programs. The message in that for me is that everything else is washed out by that. The climate and what's going on in terms of people's motivation and incentives and behaviors in tight money, has a much bigger impact than anything else we can identify. And then you are going to ask yourself, what's behind that? What made that true?

Well, I've got a team looking at that now, trying to understand much more specifically through these programs, what happened. You know, the things that I talked about earlier, was it bad estimating, was it bad contracting, what's going on. One of the things, I think, has to be a part of this, is that in times of tight money, people are motivated to take risks, they don't want to let things go, so they try to cram more into their budgets, and they convince themselves, that more estimates are valid, even there's -- you know, history would say that they are not.

The other thing that may change is industry's behavior. When money is tight winning a given contract is a lot more important to industry, they've got a lot of things

to bid for, and you can be betting your company on specific wins. So you are going to bid much more aggressively. Now, how that ripples back into the baselines we establish, is something we are going to take a look at. But I thought this was a very fundamental result. I think it says much more about how we actually behave and what actually matters than anything else.

MR. O'HANLON: My very last question then, and it's a big question, but you can give a very, you know, limited answer, if you wish, because it's sort of foreshadowing where we are going to go in the second Panel today, but it has to do with the issue of who is in the industrial base, and whether we need to broaden that community? And of course, both you and Bill Lynn are proud alums of Raytheon, a fantastic company, but there also a lot of other companies that we need to think about how we, potentially, invite into the Defense Acquisition System.

So of them are more part of the current population than others, and there are lot of barriers to entry, there are issues, everything from the FAR Guidelines and whether you use, you know, a simplified commercial contracts, to paperwork, intellectual property rights. You've touched on a lot of this already today, but if I could ask you, what's the most important thing the DoD can do to broaden that population of potential providers, what would it be in your mind today?

MR. KENDALL: I think we do reach out to commercial providers more than people may recognize. The problem with the large-scale commercial providers is that we don't have enough business to make them very exciting. And there are some barriers to entry. The smaller businesses, the startups, the innovators, if it's not a defense application directly, then they may be much more interested in the commercial markets because it's -- you either make the transition there, and there tends to be a lot

more money there.

We are doing a number of things, and the Secretary is thinking about some things he may be announcing before too, too long, to kind of reach out to those communities and get them more engaged with DoD. I think at the end of the day we have to provide them with an incentive to do business with us. And to think about how we do that, and one of things we do, is we remove some of the barriers. So things like other transactions authority which is a non-far away of contracting, the DARPA uses extensively we could do more of that.

We can help people at earlier stages. I mean, if you are starting a business I mean, you will want to make money, that's why you are in business for, to a large extent. So sources of investment earlier on can be helpful, and try to shape things to go in our direction. The more we have competition, even at our prime levels, the more our competitors are motivated to go to the commercial world, to find technologies to make themselves more competitive.

And that's how a lot of things come in to us now, a lot of electronics, for example, come in to us through our major suppliers when we have competition. It's one of the reasons I'm stressing competition so much. It's a self-motivating system that really works.

So we are looking at various ways to do that, and broadening it. I think our technology people have a pretty good understanding having contact with the commercial world and what's going on. They keep up with that, they are watching them closely, and they are looking for opportunities. It's getting things into props that we really need, getting it across that gap, and finding ways to make that happen more quickly.

I didn't mention it, I don't think, but the modular design is one way to do

that, so that you can have more frequent technology insertion. Because of the complexity of our products, if you take 35 it's the worst example I could come up with, probably because it's a 20-year development program basically. But a lot of our products are inherently very complex, and they have a lot of functions that they provide for us, our platforms in particular.

So it's going to take time to develop them, and it's going to take time to test them. You have to go through and verify all those things. While they are going through that process which you can accelerate up to a point but not dramatically, there is this commercial stream of technology that can be moving much, much more quickly.

And the question is, how do you tap into that, how do you bring that in? So we've already done three technology refresh cycles under 25, and it was in development, we are just doing -- completing one for the process, and we have to plan for others as we go through. So that's one way, that's probably the easiest way, you make the two compatible so you get technology in.

MR. O'HANLON: Excellent. Let's go to you good folks, so let's start here with the gentleman in the second row. Please wait for the microphone and please identify yourself before asking your question.

MR. BERTUCA: Mr. Kendall, Tony Bertuca, InsideDefense. There is a section of Better Buying Power 3.0 of the Implementation Guidance that talks about a Skunk Works approach. Sort of, you'll pick an ACAT 1D program that the service chiefs will recommend and you'll have that accelerated acquisition pilot program. When do you expect that -- when do you expect to commit to ACAT ID Program for that?

MR. KENDALL: I'm going to get ahead of one of my services, but I think we are going to do that for Next Generation Jammer. And the conversation with Sean

Stackley, last week, did a pre-DAB review of the program with the Program Manager, and I think that's going to be one of our Skunk Works projects. We haven't worked out all the details yet.

The idea of the Skunk Works is, in part, to reduce the overhead that higher headquarters imposes on the program. You basically have all the fine requirements, you have a very professional team on both the government and the industry side, drilling a cost-plus development situation, where they are working together very closely. A kind of set of guidelines in terms of how are you are going to work. And then you kind of withdraw the outside supervision, and lot of the work site and so on.

And the way we are going to do the major decisions going forward on that, my model for this, and we haven't run a test case yet, is that in lieu of the 30-odd documents of people at the right force, that people review on the staff, it's we will do it all odd site without documents. We'll do it with presentation material basically, and things -- products that the program is actually using to manage the program as opposed to things we impose so that we can inspect.

So that's the idea behind the Skunk Works, it's that combination of things. And I wanted something, it was going into final full-scale development, and it had all those other characteristics, we just hadn't identified one. So I think we are going to do Next Generation Jammer, that's the first one.

MR. O'HANLON: Over here in the front row, please. And then we'll work our way back.

MR. BRODSKY: I'm Mark Brodsky, Retired Physicist and Engineer.

MR. KENDALL: Hi, Mark.

MR. BRODSKY: And CEO, Retired. You emphasize continuous

improvement, so why don't you have 1.1 and 1.2, and 2.3 and 2.5.6, you have to jump up to the next one without perpetually weekly, monthly reexamining what you are doing?

MR. KENDALL: We actually do, we just don't call them that. We are continuously -- I have a group called the Business Senior Integration Group that meets once a month roughly; and that's myself, my senior staff, and the service acquisition executives, and others like DCMO, the contract management organization, and the contract (inaudible) Agency.

And basically what we do is we track progress, and we look for other things that we need to do, so through that process we are pretty constantly finding best practices and brining them in, so there are these mini 2.15s or whatever you want to call them, and they kind of happen over the course of that. As far as -- the reason there's been a distinct 1, 3 -- 1, 2 and 3, has been that I've come to a point where I've said, okay, I've got a bundle of things now, that is significant enough, that's kind of making a bigger deal about it, and putting it all on the table.

I thought, after we had done about a year of 1.0, a-year-and-a-half maybe, we were seeing some cases where the workforce was trying to take it as a checklist or, you have to do this, as opposed to, we want you to think about it, and there were a number of initiatives that came along I thought should be added, and so that was why we did 2.0, and we felt we had -- I felt we had missed on the professionalism piece.

We didn't include that in 1.0, I thought was just very, very fundamental to what we were doing. So we got all that into 2.0. And then in 3.0 basically it was growing concern about technology superiority some of the things that kind of popped up as we were going through, executing 2.0, and so it was another opportunity to kind of say, send a message that was consistent about where we were trying to go.

MR. O'HANLON: There was one more question in the front and then work back. Right up here.

SPEAKER: Hi. Sean Lingus, with Federal Computer Week Magazine. You mentioned, I believe last week that one of the -- on the whole you welcomed the Representative Thornberry's -- Chairman Thornberry's Bill, there were a couple things that you were maybe taking issue with on the nuance, and one being the involvement in your view, perhaps over-involvement of the service chiefs in the acquisition process. Can you elaborate on that disagreement you had, and then you also alluded to a couple others that you might --

MR. KENDALL: I actually agree that I would like to -- I would welcome more involvement of the service chiefs. There are just certain aspects of acquisition that I don't think are really their purview because they don't have the expertise on it. The service chiefs should be deeply involved in the requirements, they obviously can -- with the Service Secretary's control their budgets and they have an awful lot to do with personnel management.

So, I need their help in maturing and protecting the acquisition workforce, I need their help in making sure we have reasonable requirements that are doable, but also give us some military advantage. And there is an iteration of give and take that has to happen there, and at the end of the day, for the major programs anyway, the service chiefs have a very important say. And then of course the budget. Making sure programs are funded adequately and they don't get -- which I can do to a certain extent for major programs by myself.

The thing that I'm a little hesitant about the service chiefs being too involved in, is things like program schedules. I have seen some very disastrous cases,

where frankly, service chiefs have said, that I want it by this date, and they just pick the date because they didn't -- thought we were taking too long, usually.

That can lead to a lot of people taking huge risk and disasters, and I've seen some really big disasters, and I could name a couple because of that. So I want to be careful about that, so I'm just -- I just want to be careful about how far we go in that direction, that's all.

There is a provision in there for people who have 50 percent operation, and 50 percent acquisition backgrounds, that's kind of a career track where you do a mixed career track. I've talked to Sandy Winnefeld about that, the Vice Chairman of the Joint Chiefs, and he and I agree that that basically, because he's somebody who is not really great at either one.

I think every acquisition person, particularly every uniformed acquisition person, should have at least one operational tour so they have a real understanding of the operational environment and that perspective, but to have somebody spend half their time -- if somebody were, you know, half a doctor and half a lawyer, you wouldn't expect them to be terrific at either one. And the same is true of an acquisition versus an operator.

I think you are depriving them of the opportunity to be really good at either one by trying to have them do both at once. I mean they are -- no doubt there are exceptions to that, right, but I think in general that's true.

MR. O'HANLON: Okay. Further back, so the gentleman here in the third row, please?

SPEAKER: I'm Chen from China Daily. One question related to China. How does --

MR. KENDALL: I don't get many questions from the China Daily. Go ahead.

SPEAKER: My question is: how do you see China's role in this reform? And will that reform influence the China U.S. relations for cooperation in the future?

MR. KENDALL: I'm hoping we can work together with China in the future. I know China has watched us very closely in terms of some of the operational things we've done, I wouldn't be surprised if they weren't watching us very carefully from the acquisition things we are doing as well.

MR. O'HANLON: Right here.

MR. CALLAN: Sure. Byron Callan, Capital Alpha Partners. Can you talk about commercial pricing? You mentioned it briefly in the Thursday Press Briefing, a memo. Where are we with this, and how important is it to get commercial companies into the Defense business is there (inaudible)?

MR. KENDALL: There are two aspects of that, and one is the commercial pricing. So it's a little bit different than commercial sources of technology, if you will, okay. And the sources of technology, I mentioned some of the things earlier that were reaching out, ways we can reach out and try to establish better relationships with that community and get them in more effectively.

On the commercial pricing that's -- it's an issue that comes up a lot with regard to things like spare parts. That's probably the most frequent situation I can think of. And the Department has got a kind of dilemma there. We want commercial providers to offer us their wares. If they are truly commercial, we get competitive prices, we get prices set by the marketplace, we get, you know, inefficiencies that go with that.

If things are purely military, then they are in a different category and we

are often in a sole-source environment there. It's things that are in the middle that are hard for us, and helicopter parts came up recently. We had an issue a few years ago, that made 60 Minutes on a drip pan for 860 helicopters, where we were buying it as commercial, but it turned out to be anything but commercial, and we were paying way too much for it.

We all know that when we buy a part for our car, that we are paying a huge markup. We just accept that, and we often buy "genuine" whatever company parts, because it gives us a little more confidence that the parts are good quality. We don't ask how much it cost to make that part, we decide whether it's reasonable for us to pay that much, and then we do or we don't, we do it on a value basis.

If the Department is willing to buy that way for truly commercial things, and we'll let the marketplace establish the price. It's the things where, there's either very limited marketplace or we are the only people buying it, and where it's like a commercial part, but it not quite the same. Then we have an obligation to go and make sure we are paying a reasonable price.

We are spending the taxpayer's money, and the taxpayers do not want us to pay markups of times 10, they want us to pay a lot less than that. So, we need some assurance that the price we are paying is reasonable. What we do is we basically put the burden on the seller to show us that it's a reasonable price or not, and I can do it by analogy, can do it by obviously selling exactly the same thing, on the commercial at the same price. There are other ways.

I mean in the extreme we would like to see cost data. But we would prefer not to do that. What we are doing to -- we are doing a couple of things about that, one is, we are trying to make the rules clear, but I don't think the rules are the problem, I

think the problem is the implementation of the rules, and our buyers ability to implement them.

We are trying to set some timelines for people to determine whether something is commercial or not, which is sort of the stat of this process. And we are trying to set up some people, which will probably be at Defense Contract Management Agency, whose job it will be to help our buyers understand what something should cost.

You know, they'll have the technical expertise to look at something made out of titanium or case-hardened steel, or whatever, aluminum, and say, yeah, that should probably cost about this much, and that price is not crazy. So with that, we are going to try to expedite the process and be more flexible. But we are never going to get out of the fact we had this grey area, and where we had this tension between trying to act like a commercial buyer, but also protect the taxpayer's interest. We are going to have to definitely sort that out. And it ends up coming down to case by case judgments on thousands of different things that we purchase.

MR. O'HANLON: One last question; and it will be the gentleman here, a couple rows back. Yes, please.

MR. HABER: Alex Haber, Censeo Consulting Group. You spoke in your remarks a little bit about incentives for your program mangers, making sure that they are able to take necessary risks when appropriate, but also to have good judgment. I did speak with a Mr. Jim Gernstein at SOF AT&L earlier in January, and one of the things that he highlighted in terms of success of his organization, was the ability or the encouragement to take productive failure risks, that's what he called.

Do you feel like your program manages have the incentives in place to take those healthy risks throughout the development of their programs?

MR. KENDALL: It depends on what they are doing. If you are doing, more of the experimentation side, I hope so. Most of our projects have what I would call a risk profile. And in the early stages of technology development, there are signs on the technology side of the House, and even in terms of our Pre-EMD parts I think, we want to stretch things. You know, we want to try to go further than people have gone before, and demonstrate that something can be done. You know, expand the technology, push the envelope.

In those cases I hope we are taking risks, that's what those people are supposed to do. Then you get to a stage where you are committed to a product, if you want to go get it in the production, get in the field. Now you've got to manage risk as you go through all those transitions. At that point it's okay, what do I still have to do to make -- to convince myself these things are ready to go into a product.

And what are the things I can do if I do want to gamble a little bit, and take a chance on something maturing, is there something I can do in parallel with that, which is a lesser capability that I have ready to go and step in if I don't make it? So we've got to manage risk, and I'm more interested in helping people learn how to manage risk and mitigate it appropriately, and be proactive about it, than I am by just taking risk.

Okay. They are different things. And what's more appropriate in the earlier stages, you know, once I commit to -- let me just take the F35 again, once I commit $20 billion I don't want to be taking huge risks, I want to be pretty sure I'm going to get there, or at least get to something close to where I'm headed out to. If I'm going to spend $100 million and build a new type of missile that's never been built before, so see if I can do it, that's a whole different thing.

MR. O'HANLON: So, before we thank the Secretary, let me remind you,

we are going to go straight into our next Panel without a break so we'll finish up promptly at 3:30 and then you can go out and have one last bout of cherry blossom viewing. But we are not going to take a break now.

So I will Jason and Bill to come, up, but please, as they come up, join me in thanking Secretary Kendall. (Applause)

We have remarkable talent now in this second group. Bill Lynn is one of the most accomplished defense intellectuals, business executives and officials in the United States today, frankly, with a remarkable résumé, that I think as many of you know began, well a number of iterations and past jobs, including with Senator Ted Kennedy from Massachusetts.

Bill also worked in important jobs in the Clinton Administration, Pentagon, as PA&E, and also as Controller. He was an Executive Raytheon, he was Deputy Secretary of Defense in the first term of the Obama Administration, and now he is the Head of Finmeccanica, USA, as well as DRS technology here in the Washington, D.C., area. And he wrote a very influential and very well done, clear persuasive article in Foreign Affairs magazine last year, which is part of what we'll pick up her in just a moment, about the need for a broadening of how DoD reaches out to companies that might help with technology development.

Jason Tama is a Coast Guard Officer who has been with us here at Brookings this year working on the issue, specifically, of how do we try to get Silicon Valley and other information technology companies more able and willing to work the Department of Defense. And I think we'll hear from Jason, some texture in that discussion today. It's not as if all companies out in California are -- in Northern California are against working with DoD but there are a lot of barriers.

And we just heard Secretary Kendall say, I believe, if I heard him correctly, that getting this population of companies better into the modularity and gradual product improvement cycle is one of his top priorities, to the extent that he wants to expand on the supplier base. So, Jason has also worked in his Coast Guard career in planning at the Coast Guard Headquarters, and in various jobs in port security around the United States, and we are glad to have them. So if you would, please, join me in thanking them both for being here. (Applause)

And, Bill, if I could begin with you, because your article was, I think so helpful, but it's also been a few months, and many of us can be a little forgetful. I was hoping you could taka minute just to remind folks of some of the big themes in the article.

And there two in particular that I wanted to ask you to speak about. One is your -- you know, your history of the U.S. Defense Industrial Base, and the three big periods that you document and you are sort of calling for us to evolve into a fourth. And if you could just briefly explain what those were, and then I'm hoping you can remind people of -- sort of the challenge of today's defense industrial base being able to develop new technology.

You talked about the limited research and development budgets for many of the companies that are involved, and now it's, I think, part of your argument about how other companies, including overseas, foreign firms, also other technology firms, like the ones that we'll be talking about with Jason, need to get more into the game. So, if I could just ask you to begin with a couple of words of explanation on those two points, I'd be grateful.

MR. LYNN: Sure. Happy to do that. Thanks for having us, Michael, and it's great to follow Frank and his continued leadership and the acquisition, we are very

lucky to have him, it's a big sacrifice for him to do this. With regard to the history, as you said, in the article I tried to layout the -- we've gone through three areas of the character of our Defense Industrial Base.

The first which lasted most of our history, from the dawn of the revolution through World War II, was an arsenal shipyard system where we really had very small industrial base, largely in government hands, in terms of the control, and during conflicts we would ramp up commercial capability to provide things that the arsenals and shipyards couldn't provide. And then, just as we did with the Army when the conflict ended, we would basically demobilize that commercial enterprise.

World War II changed all that, both in terms of the scale and in terms of the depth and the change, the nature of the technologies that were required to wage an industrial scale war, and in that we very quickly, actually mobilized commercial industries into the Defense efforts, starting with the auto industry, but then expanding beyond that so that we ended up with the industrial might of the United States providing the backbone of our Military capability.

And at the end of World War II we did what we've never done before, we didn't demobilize, we didn't demobilize either, eventually the Army, nor did we demobilize that industrial capability, and it led to the second era which is really conglomerates. It was major industrial companies that had significant defense. So as I some of the auto industry for General Motors, but it expanded to General Electric, IBM, most of the major U.S. industrial companies had a significant defense component.

That lasted from World War II to the end of the Cold War, and then with the end of the Cold War, and the significant change in resources, that led to a famous evening in the Pentagon, actually it was when I was there, Bill Perry, then the Deputy

Secretary of Defense, called industry and basically said there was not going to be enough to go around. We could not maintain the industrial structure we had.

And he urged industry to consolidate. Industry followed his advice and when -- followed with a decade of consolidation. Well known -- less observed is it changed the character of industry too. We went from this conglomerate to really an era of defense specialist. So, at least most of the conglomerates, or a couple of exceptions, got out of the defense business, sold their defense, and the remaining defense companies consolidated around a-half-a-dozen, or so, major companies.

Several existed but they were in the Cold War era, but they were not nearly as significant as they are today, and that's the era that we are in today. The article I'm suggesting, that's worked very well for us today, but the article suggest that that period, too, may be coming to an end. And you can see, there is an acceleration, the first period of 150 years in length, the second one was 50.

We've been in this current era about 20, and I think there are several forces that are starting to move us away from that era. One Frank talked a fair amount about, is the increasing commercial sources of our defense technology. It was through most of the Cold War, Defense Technology was sourced heavily in the Defense Industrial Base, and indeed it was defense I think, arguably, was a net exporter, you know, think GPS, the internet itself.

Technology's defense -- developed inside the Defense Industrial Base finding commercial purposes, and then exporting into that world. I think more and more it's not going exclusively this way but we are becoming a net importer, here I think 3D printing, nanotechnology, IT, even the whole information technology, more and more the key to maintain technological superiority in the military is pulling those commercial

technologies in the defense industry, operationalizing them, and then using those to continue our military advantages.

I also think he also alluded, there's a globalization trend that we've seen heavily already in the supply chain. I mean, all the defense companies over the last 20 or 30 years have moved from really exclusively U.S. supply chains to very much rely on some of the global supply chain. I think we are -- more and more need to expand that into the area of primes, into the area of technology itself, if we are going to maintain that technological edge.

And then finally, there's the third thing that's influencing this change in our industrial character is we are entering, or we are in the middle of another era of budget consolidation. Frank didn't get a chance to rant about sequestration but the overall constriction of the Defense Budget is not alone enough to change industry, and the structure of Industry, but when you combine it with commercialization and globalization, I think we are likely to see some fundamental shifts in the defense industry, and in my mind the challenge for both government and industry, is how do you manage that shift.

We actually have two good examples, we managed it extraordinarily well in World War II, and actually I think, you know, Bill Perry and the others managed it well in the -- at the end of the Cold War in the early '90s, and so I think the challenge is, can we manage these globalization, commercialization, consolidation trends as well now as they managed the trends back then?

MR. O'HANLON: One follow-up if I could. You know, in your article you also talked about some of the foreign companies that have helped us, or could have, and you were very humble and didn't brag a lot about Finmeccanica, although you could

have, but you talked about how the Army might have bought a German artillery system, but chose not to. Thankfully, we do now have VAE systems playing a role in being a second potential provider of ground systems.

And also how Airbus might be willing to provide certain kinds of tanker or transport aircraft, and that's potentially useful competition for Boeing. If you could, lay out sort of a couple of examples of where this process might go next. In other words -- and also what barriers do we need to get beyond? Is it just cultural that either DoD or the Congress don't want to think about more foreign suppliers, and so they tend to avoid a level playing field? Is there some other kind of dynamic that's preventing this that you believe we can directly tackle head-on and address?

MR. LYNN: I think the -- there is always some, you know, buy America tendency, but I think the way to direct that is the way the automobile industry has dealt with, is you end up cross-building plants, so that the jobs, it doesn't really matter whether it's a foreign-named plant or an American-plant, there are plants here in the U.S. that are building the equipment that the U.S. Military is going to use. Whether the shareholders are foreign or domestic I think it's less important to the political side of the equation.

And I think we are already moving down that path. I think a cultural challenge, it's not foreign or domestic, it's we have a tendency to want build our technology from scratch. We want to start with our requirements, develop the technology to do that, and then develop a system that would meet those requirements. That has worked for us very well. It works in many cases, but it's also an expensive way to do it.

If you find a piece of equipment, military technology that somebody else has developed, they've already paid that upfront cost, and it gives us 80 or 90 percent of what we need for, say, 30 or 40 percent of the cost, we should want to do that, but there's

a desire some ways to get 100 percent of the capability. Unfortunately that tends to double or triple the cost, and I think it's that cultural tendency we need to overcome.

That's, by example, with the artillery piece, I think that was the failure there. Is that we couldn't -- that German piece wasn't as capable as what we were going to develop with Crusader, but then again, we don't have Crusader now, do we? It ended up being too expensive.

MR. O'HANLON: Before I go to Jason, one last thing. You know, I was being a little playful with Secretary Kendall, when I asked him to grade the acquisition system as it is today, but I couldn't resist and he was willing to play the game. I'm not going to require you to do so, obviously you could opt out of grading the acquisition process in the U.S., but I'd be curious.

He was a bit bullish, he was a bit more optimistic and positive, but I might have guessed giving the grade of a B-plus, maybe even an A-minus, I don't know if you see thing quite that happily. I'm pretty sure Jason doesn't, but I'll let him speak for himself in just a moment. Do you want to say anything about how well you think the current system is compared to what's a realistic set of expectation?

MR. LYNN: Well, and then Frank set the realistic expectation. I mean, I think his comparison to Public Works projects is fair. I think his parsing of the -- you know, our biggest challenge is in development that we do much in production, we do much better in sustainment. Those are fair points. I would parse it one step further, and that's where I do the grade. I would say the B-plus grade is fair for major platform acquisitions.

I would give us a much lower grade in information technology, probably C, C-minus; I think our whole acquisition system isn't set up well to do acquisitions where

Moore's Law is involved. We are just not agile enough, we are not fast enough, we are modular enough, we are incremental enough. So I think I'd give a reasonable good grade as he did for the conventional things, I think for the newer, the information technology-based, I think we have a lot of work to do.

MR. O'HANLON: Well, that's excellent. That's also a perfect segue, Jason, to you, and of course to a lot of the conversation that I'm sure a lot of you want to be part of hearing in just a few minutes. But let me ask Jason, how do you the lay of the land? First of all, in general, how well are we doing with information technology with the Silicon Valley world that you've been studying? And then, you know, sort of naturally from that, the most important reform or two or three that you believe we need to consider.

MR. TAMA: In one or two or three?

MR. O'HANLON: You can do what you wish. But I love the priorities, you know, it's the top ones at first.

MR. TAMA: Thanks, Mike, for the opportunity. Thanks, Bill, it's an honor to be here and share the stage with you. I think Bill set up the issue beautifully in terms of the focus of my research which, for the last several months, I've basically been speaking with technology executives, and venture capitalists in Silicon Valley talking about this issue.

I think, you know, and I guess I'll start with a couple points. First is, I think Bill hit the nail on the head which is the traditional sort of separation of public sector -- purely public sector goods, the traditional military industrial complex is focused on with what are traditionally private sector goods, that boundary is blurring rapidly as we move into the Information Age.

And we are seeing a situation where not only do you get sort of cost and

schedule overruns, but in the Information Age you may deploy a capability that has already been eclipsed by the same commercial ability that's running on a parallel path. And that, of course, frames the challenge. I think if the Department of Defense were to ask themselves, and look at themselves as, are we a good customer?

I think that's how I would frame the issue. It's, are they a good customer for those potential and new entrants from places like Silicon Valley? And I won't give a grade, but the answer is they are not a good customer; they are decidedly a bad customer for a number of reasons. And I think, you know, we -- there are sort of three main issues, there is culture, of course, which we all talk about, but it's easy to understate the cultural differences; one, being a culture of trying lots of things, failing fast and failing often, and a way to weed out different potential designs, versus investing in all your requirements upfront moving forward.

Another area is, of course, the market differences themselves, and Undersecretary Kendall referenced that, which is yes, the Department of Defense in many respects is a smaller market, than some of the global commercial markets, but it's still a good market for a startup company that's interested in cash.

One of the other problems that doesn't get talked about as much in the market is the specialization needed to compete, because of the RP process and strict, strict requirements development make the Department of Defense less attractive.

And third, is just the process in general, and I think it's easy to understate how formidable those barriers are, because -- but I think from a Silicon Valley early-stage company, early-stage startup perspective, it is a beast attempting to break in to do business with defense, and they see no viable way to win. The path is very difficult and it's just way too much effort to get a sale.

Now, I think on the positive side, the vast majority of executives that I spoke with were not ideologically opposed to doing the Department of Defense and I think a lot of it gets talked about in the media, that OTEC just doesn't want to business in Defense, because of Snowden and NSA, there's an element where that's absolutely true, absolutely. And if your business line is business to consumer technology, if you deal with massive amounts of personnel data, you are concerned about all those potential repercussions for your customers.

But for everybody else in that ecosystem that I spoke to in my research, which is a huge volume of companies, outside of the B to C realm, there is no ideological opposition doing business with the Pentagon. These people are interested in solving problems, making money for it, and applying the best possible technology.

One more thing on culture, and then I'll get to some potential solutions, as I see them, workforce is a huge issue, and when I hear Undersecretary Kendall speak of culture I think it's great, it's positive, but without any accompanying effort to look at your workforce fundamentally, I think it's very difficult to move cultural change.

And I think some of the demographic challenges can't be overstated. If you look at the 150,000-person Defense Acquisition workforce, which is 90 percent civilian, and Undersecretary Kendall did mention the double hump. The double hump is huge. We are talking to the tune of almost 60 percent of that workforce is between the ages of 40 and 60.

Now before all those between the age of 40 and 60 jump all over me, and I'm one of them by the way, the point is, that the demographics are out of step with the rest of the economy, and very significantly out of step with tech, and this emerged during the research for those that had attempted to do business and perhaps discussed

new ideas or new ways of doing business.

And this is a problem government-wide, less than 7 percent of the civil service right now is under the age of 30, and it's very, very difficult to break into the civil service as a young person, extremely difficult for a number of reasons. So as far as potential solutions I'll just mention a couple. Three big ideas, civil service reform, are not going to happen really, anytime soon. The second is more stability and predictability in the budget process, which I think is huge and has to be in the context in the discussion for any reform.

Third, and I feel like Defense is perhaps somewhat missing the boat on this, and perhaps all of government is, if all else fails, the number one thing we have going for us, is we have the most economy of the world, in the United States, and within that location if you look at the generation of intellectual property the number one spot, is by far, Silicon Valley. If you look at venture capital it's being invested there as well.

We should be doing everything we can to preserve that innovative ecosystem, and there are three main things that the policymakers generally talk about. One is patent reform because it's a big, big deal for that ecosystem. Two, is immigration reform because they can't get the number of workers, high-skilled workers that they need. And third is STEM. So we are pushing STEM on Defense but we should be pushing the other two as well, because for our long-term technological superiority, it's critically important.

Lower-hanging fruit, I would suggest a couple of things on the human capital side. There are a lot of very creative authorities out there that aren't used for a variety of reasons. Undersecretary Kendall mentioned one other transactions authority. There is a reason DARPA has such a great reputation as being an innovator and industry

likes to work with them, it's because they use other transaction authority which is a very, very flexible vehicle for doing business with commercial entities.

Two, they use term employees, which is, nobody goes to DARPA and stays there for a third year of civil service career, they go there for two, to four, to three, maybe one year even for a specific project.

You get this ebb and flow, you get the permeability that Undersecretary Kendall spoke of, Secretary Carter looking for, because if you want top talent on a technical level, you are not going to build that inside the infrastructure of the U.S. Government, you are just not. You want to bring those people in on a project-by-project basis, send them back out and let them continue to be an expert in their field and bring them back in.

That ebb and flow, the authorities are there to do it, not many agencies take advantage of because there are some risks associated with it. Another group that's doing that is the U.S. Digital Service, which many in this room may not have heard of, but they've managed to attract some really tremendous talent to help across the Interagency on some innovative IT problems. Those are just a couple ideas.

MR. O'HANLON: So I've got one follow-up for you on civil service reform, and then a question for both of you on contracts on the OT concept, on JIEDDO, systems like that, the Joint Improvised Explosive Device Defeat Organization, the different ways to work around some of the cumbersome bureaucratic requirements, and whether we should do more of that. But before I get to that big issue, Jason, you mentioned that, I think you said 7 percent of the Federal workforce, or was it the DoD workforce?

MR. TAMA: The Federal, the Federal.

MR. O'HANLON: The Federal. But it was interesting how you put it. You suggested that the main reason that number is so low is because people can't join. It wasn't so -- you said it's very hard for them to get in, and my presumption was more that they didn't necessarily want to join because they saw it as such a -- you know, sort of straight-jacketed way of building a career, they didn't want to sign on for 30 years with one employer.

So, can you shed a little more light on -- maybe, Bill, you want to get on this too in a second. But can you shed a little more light on, on what it really is that's constraining us from hiring young people into the Federal workforce.

MR. TAMA: Great question. I think there's two pieces, if it were easy to get into the Federal Government, I'm not suggesting that there be droves of buses from Silicon Valley trying to do it. I think there are some ideological barriers to doing that, and there are some fundamental cultural barriers. I mean, I think, rewind 20, 30 years when I was a kid, if you wanted to do really cool stuff with technology you saw the U.S. Military as a path to do that.

If you wanted to fly a fighter jet, or drive a submarine, or whatever, you saw the Military as a great path to do that. Those avenues are still there, but if your thing is dealing with the latest and greatest in information technology, or perhaps some other types of innovation, the Military doesn't have that reputation. You don't see that path, and the government in its entirety -- I asked the question during every one of my interviews. I said, describe the state of human capital flow as you see it from places like Silicon Valley to government, and vice versa.

And the general answer was: East to West doesn't happen very often because, you know, the pace and the cultures just don't match with the sort of startup

community. West to East happens a little bit if, generally, what we call political poaches, you know, you grab a senior person from Google and bring them in to be the CTO, like Megan Smith is now.

But entrepreneurs recognize that what drives their talented engineers, is working with the best technologies, working fast, being nimble in solving really cool problems. And they don't necessarily see the government as a way to do that. That said, there's an element out there that's mission-driven, and wants to work and solve tough problems. And who is the biggest sink of problems is the Federal Government of the United States.

And I don't mean that in pejorative way, we really have big, tough problems to solve, and you have huge sinks of problem-solvers like Silicon Valley and other tech systems in the country, and if we can figure out a conduit to connect those there's a potential synergy.

Now, to my original comment why it's tough for people to get in, and I say this as an officer in the armed services who may one day benefit from this. The Veterans Hiring Preference, and I'm not suggesting that it be removed or done away with, but it's -- we put a very social priority on hiring veterans in the United States, but if you look in 2014, 40 percent of the new hires going into the civil service were veterans.

It does two things. I think it contributes to your age demography problem because you are bringing older people, and two, it makes it much, much harder for those that don't have that veteran's preference to even compete to get in the door. And that's why, I think, the term positions are an opportunity to different competition framework, it attracts a different set of people. And also things like direct hiring authority that some agencies have, don't use it very often, to really go out and attract specific skill sets that

you need for certain projects.

MR. O'HANLON: Bill, do you wish to comment on that issue.

MR. LYNN: Sure. I wouldn't actually be as pessimistic on civil service reform, and we had a false start at the end of the Bush Administration where they developed a reform system that didn't sell well, frankly, and we tried to make changes to it but were unsuccessful in persuading Congress to keep it. I think you could -- I think another -- it probably would have to be a new administration at this point, but I think there is hope there.

I think that we need to move more to a pay-for-performance ethic. I think there is -- as I said, I think there were missteps more than a fundamental aversion to moving in that direction. I also think the -- Frank Kendall used the phrase permeability, I think we do need more of a permeability. It tends to be start and stay in a career, in the Federal civil service, that isn't the way that most of the commercial side works nowadays.

I think we need to track more what commercial does. I think it's all possible to do that. I think it's possible to do that even within, always fairly emotional politics of Federal service. I still think you can come up with basically what people would perceive as fair and equitable changes that would improve the structure. And would, I think -- as I think Jason is suggesting, it's kind of a foundational move for any of the reform efforts that you want to do, is to make that kind of step change in terms of the personnel system.

MR. O'HANLON: Before I get to my last question, which is on these different mechanisms for different kinds of contracts, and more simplified approaches, I want to have a follow-up. You've all talked about Mr. Kendall's point, 150,000-strong acquisition workforce. Is it right-sized today? Is there a way to -- a lot of better buying

power is about improving it, and he focused more on empowering it, on having more engineers, on better education, in career training.

I'm just curious as to whether it's roughly the right size, whether there's certain kinds of contracts or production processes within DoD for which we don't need it as much as we are currently using it, and it could be reduced in scale or streamlined. Any comment on that? Starting with Bill?

MR. LYNN: I mean, at the beginning of the Obama Administration we went through a period where we upsized particularly the acquisition workforce. I think that was appropriate then. I think at the end of the '90s through a variety of both, congressional and executive branch efforts, we outsourced too much of our expertise, and we found that that made us poorer buyers.

That we didn't have enough technical understanding of what we were buying, and we were unable to be smart about what we were buying, and so I think we added some more technical talent, added some more contracts, managerial talent. So I don't know whether we were at exactly the right size or not, but I wouldn't -- I'd be worried about shrinking these, I don't want to go back to where we were short before. I haven't, at least, seen any data that suggest that we need to expand more either.

So I don't want to say everything is perfect, but I think that the emphasis of Better Buying Power 1, 2 and 3 on improving the performance, the professionalism and the capability, the efficiency of the existing workforce rather than shrinking or expanding it is right.

MR. O'HANLON: Right. Any comment there?

MR. TAMA: I would just -- you know, it's difficult to say that it's too big or too small. I think just a couple statistics. I mean if DoD has got about 750,000 civilians

and 150,000 are acquisition, I don't know -- it would probably be another great research project to look at sort of that --

MR. O'HANLON: On that mixture?

MR. TAMA: Yeah. And relative to a similar, you know, large corporations or other agencies. But I think, you know, it's important to remember that is the largest engineering workforce in the world, period, hands down, and should be leveraged as such, as sort of an opportunity, in my opinion, to kind of drive some of these innovative ideas, new things that can be done in terms of civil service reform.

And I'm glad to hear Bill, Bill is more optimistic on that, because I think fundamentally we are still in the sort of Post World War II Industrial construct. Not just how the industry is structured, but how the workforce is structured. And buying a ship and managing that acquisition is fundamentally different than managing an agile software development project or dealing with, you know, thousands of small drones, lightweight drones to be used on the battlefield.

I mean, fundamentally different, and takes a completely different skill set to do. And if you look at where commercial industry is going, looking at software much -- looking at big, big enterprise IT purchases are fraught with risk, I mean fraught with huge risks, and they box out so many players, because it's only a very small number of limited established big companies with few solutions to do this. They are just fraught with risk.

So a lot of commercial companies are doing smaller, more modular purchases, including purchasing power actually in the hands of business unit leaders to say, here is your money, go out buy your cloud-based software system solution, try it out, if we can get some critical mass, maybe we can take it to scale. I mean, this is the software as a service model.

A bazillion reasons that a lot of smart people in this room would say that would never work in DoD, but the idea of breaking purchases up into smaller packets and cloud-based purchasing, the U.K. has a great model, but I've heard a lot of things positive about it, it's called the UKG Cloud, where they've basically an app store for cloud services specifically tailored to the Federal Government.

And by the way, I just have to qualify, these problems are not unique to the Pentagon, there was no distinction from the Silicon Valley crowd on Pentagon versus, frankly, EPA or anybody else in terms of having a challenge.

MR. O'HANLON: And I'm glad you mentioned IT because that allows me now to frame my last question, and it's a two-parter, but it has to do with the issue of, which, if any, kinds of contracts we should be using more as we think about DoD Acquisition Reform?

And so, Bill, we talked earlier today about trying to broaden the supplier base in various ways, but also of course there is a discussion about whether DoD can use more commercial contracts. Whether it should use the so-called FAR-12 Regulations which allow for that, or whether it should have more contracts following a model like the JIEDDO that I mentioned earlier, most of you know that is, but against, the Joint Improvised Explosive Device to feed organization that was allowed to buy weapons more quickly because we had acute security threat in Iraq and Afghanistan that necessitated more rapid acquisition process.

Also, it's worth pointing out the technology there was not always quite as, you know, *avant-garde*, as in certain other realms, so maybe it was more feasible, people have talked about this TO construct that DARPA uses, and then modularity. Trying to buy in smaller contracts, or buy systems that can then have more frequent upgrades. So,

it's a little bit of an alphabet soup. It's a little bit hard to track for amateurs like me in this field.

I wondered if therefore -- again, a two-part question, I hope both of you can shed a little light on which if any of these vehicles can be used in a significantly more helpful way, it there is any. Maybe there is no silver bullet, but if anyone of those vehicles should be used, and to what extent is all this talk of the Thornberry legislation even help. In other words, are there already legislative vehicles that would allow this if the department would go ahead and do it, or does it really need to be pushed through new legislation? So, Bill, if I could begin with you.

MR. LYNN: First, I don't think there is a silver bullet. I don't think I'd seen Dave McNichols' research, I was interested in what Frank talked about. That there is no correlation between these areas of different contract types, these different approaches to the ultimate result that we are getting in terms of cost and schedule, I think the approach here is going to have to be one of customization, and I think you have to start with the fundamental fact is, we are somewhat getting what we asked for, right, more than somewhat.

What we asked for is dominantly performance, I mean, and we've gotten it. I mean, as Frank said, we've had the dominant military for decades, and that's because, at least, I mean it's partly the good part, the training and quality of our people, but it's also partly the quality, the superiority of our equipment, so in that sense he system has performed, it has given us the best equipment, bar none, for decades.

What it hasn't done, and what we've valued less is cost and schedule, but we've -- as I said, we are getting what we asked for. We've put performance up here, we've put cost and schedule down here, and you see it at the macro, but you see it in the

micro as well. Every program manager given the choice between a little bit more money, and a little bit better performance, chooses better performance.

And why will -- you know, you have better performance fewer people die. It's not a -- that's obviously what you are trying to do, so we are getting what we ask for. I think the question then is: can we customize this so that we don't lose that performance, and we get better cost in schedule? And I think we can start to, and I think some of it is contract type.

When I was in the Pentagon we did something that industry frankly hated. It's we used a fixed price, or a fixed-price incentive contract for a development program that was the Tanker. And the theory then was, we knew how to build tankers, this wasn't cutting-edge technology, both Boeing and Airbus had very good technology, had very good planes, and what we wanted was the cost and schedule to deliver that technology, and so they went on a fixed-priced incentive.

That works, I think, for technology that's at that stage of maturity. If you are trying to buy a hypersonic missile, fixed-price contract is not going to work, nobody knows what it's going to cost, and you can also pretty much count on that when you do a development contract for that hypersonic missile, it's going to overrun, and for both of the areas, Frank said.

But one, we are probably not going to do it quite right, and we are not going to be able to estimate what the cost is because nobody has ever done it before. I think we'll want to customize. I use the area of IT, I think that's probably the biggest area. We want to move away from the normal acquisition to move more to other transaction authority. Move away from that a big set piece, you know, Milestone A, Milestone B, and so on, if we are going to get and maintain that technology edge.

MR. O'HANLON: And then there's Mr. Thornberry's legislation pushed this along very much, or Congress inherently limited in what it can do?

MR. LYNN: I think Congress is limited in what it can do. I'm impressed though by at least what I've seen of Mr. Thornberry's legislation, he seems very cognizant of not adding additional burdens, additional cost, to taking things out as much as putting things in, and that's a very big -- there is, I think, a tendency in some legislation to just add -- to make things better by adding more structure and more process.

And we've got plenty of structure and process. I think he's now taking the -- if we've got the right structure and the process, and should we substitute one thing for another rather than just add. And I think that -- so I'm encouraged by that -- I think that fundamental insight that he's had.

MR. O'HANLON: Jason, your thoughts on it?

MR. TAMA: Yeah. I would just say a couple things. I think, you know, to segue off what Bill said, I mean, the proverbial schedule delay, now there's a fundamental cost, in my view, in the Information Age. The cost of that schedule delay gets greater in the Information Age, and the private sector gets this, I mean, that's why they are so fast, why there's so much speed, because if your technology has been surpassed by another technology you are dead on arrival, no pun intended.

And I think there are real potential consequences for that in Defense. And just on, you know, and I'll get to the specifics of your question, but the process, the rigid sort of processes we have that are designed to retire risks at every stage, kind of end up, instead of the sort fail fast, fail often paradigm that places like Silicon Valley run off of, you get this slow-fail process, and you end up with the presidential helicopters that are cancelled, and you've spend $4 billion in the process trying to do it.

That's a huge, slow, difficult failure. And I even had on CEO who had a ton of experience in the Valley said, look, you guys in the government you have all these steps in place to retire risks, you end up with the slow-fail process, at the end of the day your risk is just as risky as mine. Meaning, you know, if you talk venture capital guys, they'll tell you, between 75 and 90 percent of the companies they invest in fail, they go nowhere. That's money that's lost down the drain.

But at the end of the day they are trying a lot more things. So the answer is nuanced on that, and in terms of vehicles, I think the success in JIEDDO was fantastic, but the problem from my perspective it's those big, heavy pushes, take leadership, take all the politics to come together, and it's really an unsustainable end around, in my view. A great, great process and they should keep it in place, but an unsustainable and a round that requires sort of people in strong political leadership.

And I think as for Thornberry's Bill, you know, I love name, Agile Acquisition to Sustain Technological Edge Act, because it finally kind of frames the discussion, it's not about acquisition reform, it's just, you know, you might as well be Morse Code to people in Silicon Valley to talk, you know, Better Buying Power, bending the cost curve for whatever. It talks about, really, what's at stake.

So I like that. I like that in his rollout he forecasted the need for more difficult human capital and budget reforms, but from my particular issue, my purpose, my research, there isn't a whole lot in that Bill that's going to, you know, break down barriers to bring new entrants all of a sudden, but great initiative on cutting through red tape, and he recognizes that the previous reform efforts have somehow sent us in the wrong direction.

MR. O'HANLON: So, very last question. So on your focus, the Silicon

Valley world, can you just conclude this discussion with a specific point of either what Mr. Thornberry's Bill could do? Or, what the Department could do that would actually break down barriers to entry? And you've talked about some of the general themes, but I'm just asking you to sort of bring us back and drive the point home with one or two specifics.

MR. TAMA: Yeah. I think overarching 10,000-foot level, preserve the innovation ecosystem, I know that's not the answer you wanted but I think it's an opportunity for DoD, with their buying power, with the size of their workforce to get out in front and push that along, and that builds goodwill within that ecosystem as well, in terms of reducing drag on patent reform, on immigration, et cetera.

Specifics relating to Thornberry, the most promising thing I saw was his making other transaction authority permanent. Which, when you talk to people in DoD they say, yeah, it's nice it's a great tool, but we are not going to change the world with it. Some think you may, but I think what's particularly promising about that, and granted they've had the authority for a long time, up to $100 million, up to I think, the Undersecretary level approval.

They've have the authority for a long time, it's limited for R&D prototyping, but it's designed just for that purpose to bring non-traditional people, which, oh, by the way, I really dislike the term "nontraditional" because we are calling the other $16.5 trillion of the U.S. economy nontraditional.

And it really reinforces the kind of end source system we have, but that other transaction authority, if you can spread it to other programs, might actually move the needle a little bit, and by making permanent it sort of sends the signal from Congress that says, hey, we like this authority, we know there are some risks associated with it, because there are risks, because whoever signs on that dotted line for DoD, doesn't

necessarily have the protections of the FAR and the entire acquisition system backing them up. But it shows that there are some opportunities to take risks there.

And then the second point I would drive home, and it's not in Thornberry's Bill, is to use some of those existing authorities on human capital. You can get limited permeability in the workforce right now with creative uses of authorities.

MR. O'HANLON: Thank you. Let's go all to you, and see who would like to ask a question. Again, please wait for the microphone, and identify yourself, and you could direct your question to one or both as you wish.

MR. FERRARO: Larry Ferraro, Defense Acquisition University. This is primarily for Secretary Lynn. Finmeccanica, of course sells to a number of nations, and I wonder if can speak to some lessons observed that you've seen from other ministries of defenses, department of defenses in your dealings as what AT&L can learn to be a better customer?

I'm thinking specifically about the fact that most other nations or big partners, France, Britain, especially, are constructed so their acquisition organization is a single organization and the services set the requirements, as opposing to -- as opposed to having individual services do their acquisitions, so when you are selling to them, you are selling one radio to one organization, and not one radio four organizations. But as lessons for the AT&L, can you suggest things that we might take from some of our foreign partners?

MR. LYNN: I think you hit one. I think there are two things that we can find, at least that I can think of in -- examples, one, as I said -- as Frank said, he wouldn't trade our system for anybody else because of the result, so I think that's still true. He also said we can improve it.

The two areas I think we could improve, are one, the one that you said, is that we still are -- we don't buy jointly very well, we buy individually, radio is a great example, but vehicles, you know, training aircraft, you name it. We don't take advantage of the instances where we could buy a single piece of equipment, and not only do we lose savings of scale, but it actually add costs, because trying to get the interfaces, and the connections where it actually additional cost in addition to just not getting economic order purchases.

The other one I think people -- other countries do better is budgeting. Almost everybody has a longer-term more stable budget than we do, and that's even before. I mean, sequester is as crazy as you can go. It's going to be hard to think of something crazy, although we'll see. But even our normal kind of annual system is very, very tough on an acquisition where you change -- particularly in areas where the budget is going up or down and you are changing production quantities, you are changing budgets for development programs, cause enormous perturbation, and that you need to go back again to Dave McNichols research. You'll find a significant cause of cost overruns, is just budget changes, externally-driven budget changes in there.

And I think other countries generally, partly they have a parliamentary system, it's part of that, but almost everybody does a multi-year budget. I can't think of anybody else who does a single-year budget that they decide to change, first in the Pentagon every year, and then in Congress every year. It's not a design for acquisition efficiency.

MR. O'HANLON: Questions. Yes, ma'am? Here comes your microphone.

SPEAKER: Meg Kandolski, formerly of JAIDOM, and so I'll just provide

a little color. JIEDDO's rapid success -- success with rapid acquisition was, I would say, is more as a result of having uncolored money, and the money was attacked in that -- defeat the device and train the force, not RTD or on procurement, or whatever. So it allowed you great flexibility in terms of the administrating program.

And then also just to (inaudible) in the announcements in terms of your requirements; so the requirement process is next to nothing and you get the technology that you are seeking as it walks in the door, and you decide whether in fact that's going to be your -- the requirement that you have and off you go. The contracting was actually done by service PMs, so the technology was identified and then handed off to a service PM and then contracted.

So it wasn't so much countering, so I just wanted to -- So I'm just -- given that, can you think of some other, you know, now looking at IT, could we use some of that same model to solve some of these other challenges, perhaps, in cyber world, for example. Maybe we use JIEDDO-like model to attack the cyber world. Thank you.

MR. LYNN: It's I mean -- and the other one people related is MRAP as a success.

SPEAKER: That's exactly (inaudible).

MR. LYNN: Yeah. But I man MRAP, you know, work the way it did, because you made the Secretary of Defense, Program Manager. And when you do that, things move a lot faster, and it was, given the purpose of what we were doing, it was incredibly important, incredibly important to the Secretary that this happened, that this happened with speed. It was Brookings, you know, know -- there was no objection that it wasn't going to be overruled.

You can do that for every program, you can't do -- frankly in the absence

of that kind of urgency, a war where people were losing lives and limbs, as a consequence of any slowness in getting this equipment into the field. That said, I think you can learn some lessons, there are others that people like to look at the classified as an area of -- now that's not -- I mean, generally classified it's just less looked at.

It's not a -- there are some very bad satellite programs in the satellite area, and there are some, you know, submarine launched ballistic missile, the initial Polaris, seen as a big success. Although I think the first eight ones blew up, so it wasn't an early success but it eventually was -- I think the theme that you are going to get there, is if you can reduce bureaucracy, if you can reduce layers, if you can get a streamlined process, it is going to improve. You are not going to, as I say, be able to make the Secretary of Defense the Program Manager of everything.

You are not going to get everything into a classified arena, where there is very little public knowledge and oversight, but I think you can aspire to taking out some of the layers, some of the levels, some of the oversight, you know, Frank Kendall talked about Skunk reviews, where we are going to take away the 30 reports and just have them do an onsite presentation. I don't know whether he's doing the quarterly yearly or whatever. That's going to take layers and process out. I think that has some promise.

MR. TAMA: I would just, and you know, thanks for your service on that was a great project by a lot of measurements. I think, you know, Secretary Carter wrote a piece on his experience with MRAP in particular and said, you know, the reaction by the rank and file in the Pentagon was, we'll never get it funded or built in time within our existing system, and therefore we shouldn't do it

Which kind of shows some of the inertia and antibodies in place, and I think it's -- the positive, the downside is yes, it would take massive leadership and energy

to sustain it, but the positives are, it involved being flexible and coming up with innovative ways to do it. And I think relaxing on the requirement side, getting as broad as you can to sort of frame, here is our problem, we need solutions, we want to attract as many ideas as possible, to me that's a real positive takeaway that kind of all programs can look at in terms of how you frame requirements and how you advertise those.

Because there are some really, really cool problems out there that would get a lot of people really fired up, like building the invisibility cloak, I think was like the coolest one that that ever came about.

MR. O'HANLON: A good project for you, if you ever come back to Brookings too. Any follow up question. Okay. We'll, make this the last one, the gentleman --

SPEAKER: Steve Parad, I'm the Coast Guard Fellow over at (inaudible). For OTA, it seems like it strips away some of the bureaucracy, and some of the budget cycle problems we have, does it also give us any impact as far as addressing more of the other problems, which is contracting officer, so it seems like there's a big risk aversion piece in there for legality and available funds, and that type of thing. Does OTA help with that all, or would it address that problem, as far as the (inaudible) go.

MR. O'HANLON: Before you go ahead, Jason and Bill, feel free to also add in any other final comments if you wish.

MR. TAMA: I think based on how it's being used in the organizations that are using it, I think there's just less risk aversion in general, culturally, in those places. Like DARPA for instance, and I think that goes to -- it goes to some of the things we talked about, about permeability, we bring people in for term employment, where they are just kind of less risk averse in general, because they view their role as pushing along

a particular project.

I really can't answer the question based on any research, but I will say the folks that I talked to that are really pushing it, indicate that there is some risk aversion to adopting it more broadly, because it's associated with a pretty high-profile failure, which is basically army feature combat system which were done with kind of an OT framework. And a lot of people talk about that and say, hey, you see it didn't work, we shouldn't do it, but that's really just kind of anecdotal.

But I think the idea -- for me the promise is, Congress takes action as I said before, makes the authority permanent, sends a signal to say, we want this to be used more, and maybe that's a step in breaking down some of the cultural barriers. And I think my final point is, I think the challenge of bringing some of these new players in, is the barriers are more formidable than most people realize and talk about in Washington. I think that's the first takeaway.

But in my view the imperative is there, and the potential opportunity is really exciting as well. Because if you can figure it out, you can get your technological refresh by leveraging the full breadth and depth of the U.S. economy, then it doesn't matter if you get the third offset right, whatever it is, because you'll just continually offset, and you'll be able to innovate and respond in a much, much, quicker fashion. Thank you.

MR. LYNN: And then quickly on OTA, and it's just the biggest user, the most successful user is DARPA but it's not because they use OTA, they have a different culture of how to develop things, and how to pull technology into the military sphere, and OTA fits that culture. I think if you are going to have more success with OTA, you are going to have to have more organizations that have that culture, and that OTA will be a tool, I don't think you can go the other way around.

I guess, a final comment, going to the -- I think the importance of this is where Jason went at the end there, as I said at the outset, I think we are entering this kind of fourth industrial-based era, and I think the challenge and thereat for us in that, is, are we going to be able to maintain the technological edge that we've had through the -- particularly the last two areas, in this fourth area?

And that, in my mind, that's where I was going. We need to manage this area, just as effectively as the prior two transitions were managed to maintain that. I think that's possible, but I think it's only possible if you do the kinds of things that we've talked about here, to be able to pull more commercial technology, and you are not going to be able to develop as much organically as we did.

I think we are going to need more than just a global supply chain, I think we are going to need globs sourcing of all of our commitment. And I think we are going to have to deal with restrained budgets. I don't think the budget is going down that much more, but I don't think it's going up either. And so I think if we are able to manage that, I think we'll have -- we'll be here in five or 10 years talking about that successful transition. If we don't, I don't want to come to the meeting.

MR. O'HANLON: Well, thank you all for being here. And please join me in thanking Commander Tama, and Secretary Lynn. (Applause)

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Expires: November 30, 2016