

**INNOVATING WITH LESS: EXAMINING
EFFORTS TO REFORM INFORMATION
TECHNOLOGY SPENDING**

HEARING

BEFORE THE

FEDERAL FINANCIAL MANAGEMENT, GOVERNMENT
INFORMATION, FEDERAL SERVICES, AND
INTERNATIONAL SECURITY SUBCOMMITTEE

OF THE

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HOMELAND SECURITY AND
GOVERNMENTAL AFFAIRS
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THURSDAY, MAY 24, 2012

U.S. SENATE,
SUBCOMMITTEE ON FEDERAL FINANCIAL MANAGEMENT,
GOVERNMENT INFORMATION, FEDERAL SERVICES,
AND INTERNATIONAL SECURITY,
OF THE COMMITTEE ON HOMELAND SECURITY
AND GOVERNMENTAL AFFAIRS,
Washington, DC.

The Subcommittee met, pursuant to notice, at 10:02 a.m., in Room 342, Dirksen Senate Office Building, Hon. Thomas R. Carper, Chairman of the Subcommittee, presiding.

Present: Senator Carper.

OPENING STATEMENT OF SENATOR CARPER

Senator CARPER. Our Subcommittee will come to order.

Welcome, one and all. Thanks to our guests, including the ones that are standing in the back. Standing room only—we do not always have that over here. You guys are a big draw, I guess. We are glad everyone is here.

This hearing will examine the Obama Administration's progress in implementing its plan to transform the management of our Federal information technology (IT) assets.

In a time when we are fighting to create jobs and grow our economy while also grappling with historic budget deficits, the American people are rightfully skeptical of a government that continues to squander too many of our tax dollars that they entrust to us. They want better results from Federal programs, as do I. It's our job to ensure that we get those results, and that they are delivered in a cost-effective manner.

When it comes to the information technology investments that agencies rely on to provide services that Americans need, the Federal Government has consistently thrown good money after bad. We built an IT infrastructure that is bloated, inefficient, and actually makes it more difficult sometimes for the government to serve its citizens.

With more than \$80 billion spent each year on Federal information technology, can we say that we are getting what we are paying for? Can we say that we have looked at every nook and cranny of our IT investments and say to all Americans that we have man-

aged their money effectively? I am afraid that the answer to those questions is no and no. However, having said that, all is not lost.

Nearly 18 months ago, President Obama directed our Nation's first Federal Chief Information Officer (CIO), Vivek Kundra, to embark on an ambitious effort to bring the Federal Government's use of technology into the 21st century and to ensure that we are operating in the most cost-effective manner possible. I commend the President and Mr. Kundra and his team for the sense of urgency and the attention that they brought to these problems. We are now on a path, I believe, to cut what we cannot afford and nurture an environment in which innovation and more cost-effective technologies are being deployed throughout our government.

As we approach the June 2012 deadline for the implementation of 25-point plan that Mr. Kundra developed, I am reminded of what Vince Lombardi once said. He said a lot of different things, but one of the things that he says is "If you are not keeping score, you are just practicing." It is important that we have a good game plan in place, but we must also be clear in keeping score and tracking our progress.

In keeping score, there are a number of areas that we can look to in order to measure the progress of the Administration's plan. For example, before President Obama and his team came into office, the Federal Government did not know how many data centers that we had. Since then, we have found out that there are over 2,000 data centers bleeding energy and money throughout the Federal Government.

I am happy to hear that between now and the end of 2012, nearly 500 of these data centers will be shuttered, saving us \$3 billion per year according to the Office of Management and Budget (OMB). That is \$3 billion, with a B. That leaves us with several hundred more to go if we are to reach the President's goal of closing nearly 1,000 of these by 2015. But, these first few rounds may be the low-hanging fruit or maybe even the fruit already on the ground. So, we need to continue pressing hard to achieve our goals and the savings that will come from them.

As we shut down these unnecessary data centers, one of the ways we can get more efficient IT spending is by moving the government to the cloud. The cloud is an example of the innovative tools available to the government that offers an efficient pay-as-you-go approach to IT. In it, a low initial investment is required to begin, and additional investment is needed only as use increases.

Many Americans already use cloud computing in some form for email and when using social networking sites. It is also used often by private businesses that are looking for cost-effective IT solutions. According to OMB, Federal agencies have moved almost 70 services to the cloud, with many more likely to migrate as well.

Another important area where we have a plan and are now keeping score is with the Administration's launch of TechStat Accountability Sessions, also known as TechStats, in January 2010. TechStat sessions have enabled OMB and agency leadership to turn around, halt or terminate IT investments that do not produce dividends for the American people. According to OMB, approximately 300 TechStat sessions have taken place since 2010, with ap-

proximately \$4 billion in cost savings, cost avoidance or reallocation of funding for major investment project.

Of course, no plan is perfect. In a report released today by the Government Accountability Office (GAO), the government's watchdog, it provides a number of areas in the reform plan where more work is to be done. GAO's concerns are ones that I want to examine so that we do not risk losing momentum and can continue the progress that has been made so far. Very good progress, I think.

As we move forward, a vital component of reforming the Federal Government's spending on IT involves learning from the private sector. IT has transformed how the private sector operates and has revolutionized the way in which it serves its customers, who also happen to be our customers. The Federal Government has missed out on some of these transformations in the past due in part because we often pay more for old technology that agencies no longer need. In addition, we have seen chronic poor management of large technology investments.

I hope our private sector witnesses on the second panel are able to share with us some lessons from their organizations and give us some insights on how we can implement even more innovative tools at lower cost to the Federal Government and to our taxpayers.

As I said at last year's hearing on information technology, the President's reform goals are ambitious. He and his team should be commended for taking on this task, and I commend them.

While there is more work to be done to improve efficiency and effectiveness in the Federal Government's IT spending, we must not overlook the important action taken over the past 18 months by OMB to address many of these problems. The reforms are being implemented now, coupled with initiatives that the Administration has underway or will undertake in the near future under the direction of our Federal CIO, Steven VanRoekel, who will help put us on the path to a more effective and, I hope, a more efficient Federal Government.

It is important to remember that the Administration cannot do this alone, and those of us in Congress have work to do on our part to achieve success.

Last year, I introduced legislation along with Senator Susan Collins—and others that will give OMB, agency leadership and decisionmakers in Congress the information that we need to know whether our investments in new technology are on the right track. Our bill is called the IT Investment Management Act. I am sure there is an acronym there somewhere. The IT Investment Management Act requires agencies to plan investments correctly, up front, and alert Congress regarding failing IT investments before millions of dollars, or maybe billions of dollars, have been wasted.

I hope that our witnesses today will provide some thoughts and comments about our legislation, and we look forward to working—with our colleagues and with the Administration, and folks in the private sector too, on these efforts and other cost-saving measures soon.

Again, our thanks to our first panel of witnesses and those who will succeed you for taking your time to be here today, for the leadership that you are showing, for sharing also your perspectives on these important issues.

And now, my script says now I am supposed to recognize our Ranking Member Senator Scott Brown for his opening statement, but I think he will be brief. [Laughter.]

But, knowing Scott, I know he will be here, and we will look forward to him saying whatever is on his mind once he arrives.

Now, I get to introduce Steven VanRoekel who was appointed as the second U.S. Chief Information Officer by President Obama on August 5, 2011. Prior to his position in the White House, he served in executive positions at the U.S. Agency for International Development and the Federal Communications Commission.

Before joining the government in 2009, Mr. VanRoekel spent his career at Microsoft Corporation where he worked closely with the corporation's co-founder, Bill Gates.

And, he comes to this position, succeeding Vivek Kundra, who has been here many times, and this is someone who helped really build, lay the foundation on which our new CIO stands.

I said it when I was Governor of Delaware, that I stood on the shoulders of those who came before me and people like, Mike Castle and Pete du Pont and others.

And, you have some pretty good shoulders to stand on as well.

David Powner. I was kidding David before the hearing started. I said if we paid him on a per diem basis for the times that he has testified, we would probably have a bigger national debt that we already have.

But, we are glad to see you again, David, and thank you for your help and that of your team.

But, David is the Director of Information Technology Management Issues at the U.S. Government Accountability Office. He is currently responsible for a large segment of GAO's IT work that focuses on development and acquisition, on governance and reform initiatives. He is no stranger, again, to this Subcommittee. He has over 20 years of experience in information technology in both the public and the private sectors, and as a result, he has received many GAO awards during his tenure.

I now want to recognize Mr. VanRoekel to begin his opening statement.

Your entire statements will be submitted for the record. If you would like to summarize those, that would be fine. If you want to use a little bit more than 5 minutes, that is OK. If you want to use a lot more than 5 minutes—that is probably not OK, so we will have to rein you back in.

But, we are glad you are here, and we look forward to hearing from you. Thank you.

Please proceed.

TESTIMONY OF STEVEN VANROEKEL,¹ FEDERAL CHIEF INFORMATION OFFICER, OFFICE OF MANAGEMENT AND BUDGET

Mr. VANROEKEL. Thank you, and good afternoon, Chairman Carper, and thank you for the opportunity to testify on the Administration's efforts to continually improve the management of Federal information technology.

¹ The prepared statement of Mr. VanRoekel appears in the appendix on page 44.

From my nearly 20 years in the private sector, I know firsthand the enabling nature of technology to increase mission efficiency. Great American companies look for ways to use IT strategically and to do the seemingly impossible—improve and expand core services while also cutting costs.

The Federal Government is no different. Through the 25-Point Plan to Reform Federal IT, we have jump-started a set of discrete actions that have augmented our larger efforts and helped turn the corner on advancing the culture of Federal IT.

As we look forward, we must build upon our work to date and look across agency IT portfolios in their entirety to eliminate duplication and shift spending from the costly maintenance of outdated systems to more efficient technologies, as you mentioned in your opening statement. By doing so, we can improve the delivery of mission-critical services as we work together with Congress to hold agency IT budgets in check and reduce the cost to the American people.

Today, I would like to highlight three elements of our approach to innovate with less.

First, we are optimizing our IT infrastructure by consolidating Federal data centers, shifting to more efficient technologies such as cloud computing and rationalizing the use of commodity IT.

We have accelerated our data center consolidation effort significantly, increasing our goal by 20 percent from the original set in February 2010. To date, 267 data centers have been decommissioned, and by the end of 2012, we plan to close a total of 429.

In addition to consolidation efforts, we are also improving the quality of service for the data centers that remain in our inventory. Ultimately, this allows us to support more efficient IT solutions while also creating a more secure Federal IT footprint.

Our consolidation work reflects a larger shift in the government's mindset from a capital-intensive, asset ownership model to more service-oriented models. Under the Administration's "Cloud First" policy, there have been many successful migrations of services to the cloud, which have led to the elimination of more than 50 legacy systems and met our initial goals on cloud migration. To accelerate the safe and secure adoption of cloud computing, we launched FedRAMP, which leverages a "do once, use many times" framework to more efficiently conduct agency security assessments related to cloud procurement.

In addition to working to optimize the Federal IT infrastructure, we are focused on maximizing the overall return on investment of Federal IT and are providing agency leadership with tools to help them look across their IT portfolios and take the necessary actions on which investments to fund and which to cut.

Building on our TechStat reviews, which have resulted in the identification, as you mentioned, of \$4 billion in cost savings and implications, we recently launched PortfolioStat to provide tools for agencies to identify and eliminate low-value IT investments and adopt shared services.

Whereas TechStats target individual investments, PortfolioStat takes a broader view across the entire IT portfolio for opportunities for consolidation and optimization to further support agencies in reducing duplication and optimizing service delivery, the Federal

IT Shared Services Strategy provides direction for agencies in moving services to this shared approach. Our ultimate goal in eliminating waste and duplication is to free up resources to reinvest in the future, to help us build a more efficient and effective digital government.

The aim of the Digital Government Strategy that I released yesterday is to transform how the government connects with, and provides services to, the American people by enabling direct access, high-quality digital government information and services anywhere, anytime, on any device. And, as we implement the strategy, we will help provide the Federal workforce with 21st century tools to carry out agency missions more effectively and at a lower cost.

We must use IT to improve government productivity and lower barriers to citizen and business interaction with the government, all while bolstering cybersecurity. With threats evolving daily, cybersecurity must be a focus of everything we do.

The steps we are taking to optimize our IT infrastructure, maximize the return on IT investments and build a digital government will allow us to innovate with less and achieve our goals of improving service to the American people while driving down cost.

I appreciate the work this Subcommittee has done in this area. Thank you for the opportunity to appear today, and I look forward to our discussion. Thanks.

Senator CARPER. Thank you so much.

And, Mr. Powner, you are now recognized. Please proceed.

TESTIMONY OF DAVID POWNER,¹ DIRECTOR, INFORMATION TECHNOLOGY MANAGEMENT ISSUES, U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Mr. POWNER. Chairman Carper, I would like to thank you for your leadership in overseeing Federal IT spending. Your many hearings and oversight over the years have led to major improvements in the transparency of IT spending, with the IT Dashboard and to the reform efforts currently underway.

I would also like to commend Steve VanRoekel as he continues to push important reform initiatives like data center consolidation, consolidating commodity IT, improving governance across the Federal Government through TechStat and PortfolioStat sessions and, just yesterday, his announcement of the Digital Strategy.

Solid progress has been made on IT reform. I would like to highlight this progress and also discuss areas where even more attention is needed.

The December 2010 IT reform plan is an excellent roadmap to position the Federal Government to spend the \$80 billion it invests in IT annually. It is an aggressive plan that focuses on 25 specific areas and has very clear 6, 12 and 18-month deliverables. Basically, it sets out to achieve operational efficiencies for the dollars being invested in live systems and to better position the government to manage large-scale IT acquisitions.

An area where progress has been made in operational efficiencies is data center consolidation. All major departments and agencies have a dedicated and accountable program manager and plans that

¹The prepared statement of Mr. Powner appears in the appendix on page 52.

continue to evolve. This area is also guided by excellent performance metrics. Specifically, 1,000 centers are to be closed by 2015, and OMB estimates that this will result in \$3 billion in savings.

Regarding managing large-scale projects better, progress has been made on strengthening investment review boards through TechStat sessions. OMB claims that they have saved \$3 billion by canceling and restructuring investments through their reviews, and agencies are reporting another \$900 million in savings through nearly 300 TechStat reviews. Again, each area has solid progress. However, our review shows less progress than what OMB reports.

Mr. Chairman, prematurely declaring victory in areas where more needs to be done will have the wrong consequences. I would like to highlight some of these areas.

On data center consolidation and the “Cloud First” policy, plans need to be solidified so departments and agencies have clear cost-saving targets to work toward. The ultimate measure with these initiatives is dollars savings. If the government is to reach OMB’s \$3 billion goal, individual agency plans need to better target specific savings. Likewise, in the area of cloud computing, agency plans need to focus on what systems will be retired and what the resulting cost savings are.

The government spends nearly \$55 billion of the \$80 billion spent on systems in operations, and freeing up funds from these initiatives to have more to spend on modernizing the government’s antiquated systems is critical.

Turning toward better managing large-scale IT acquisitions, we now have better transparency and governance. But, according to the IT Dashboard, the CIOs have rated nearly 200 projects, or 25 percent of the major IT projects, as red or yellow status. This equates to about \$13 billion that are at risk.

In addition to improving project management and governance, other areas where additional reform is needed include using the improved governance to reduce duplicative IT spending. We recently reported on duplicative IT spending at the Departments of Defense and Energy. OMB’s PortfolioStat initiative can help root out duplicative spending.

Contracting guidance needs to support modular development. This area needs to be more aggressively tackled by OMB’s Office of Federal Procurement Policy.

Budget models need to align with modular development. Multiyear funding and funding by portfolio instead of by project are areas that OMB, agencies and the Congress need to continue to pursue.

And, CIO authorities need to be strengthened. Many CIOs in the government still do not have the appropriate authority to effectively manage IT portfolios at their respective agencies.

Our report being released today highlights the areas where more action is needed and also highlights the importance of having solid performance metrics to measure progress.

Overall, there has been solid momentum, and the reform plan is a great start. But, to truly reform, meaning substantial operational savings and even less IT projects at risk, means that reform must continue beyond the 18-month horizon.

Executing the plan through the next month is important, but even more important is continued diligence in achieving the billions that are at stake with data center consolidation and other shared service efforts and in turning around the performance of about 200 major IT projects that total \$13 billion.

This concludes my statement. I would be pleased to respond to questions.

Senator CARPER. Thank you both.

I am struck by as I go home, and even around the country, when I run into people who said, well, we saw a hearing that you were holding with others of your colleagues about how to get better results for less money. And, people just say, thank you for doing that.

As it turns out, with the kind of budget deficits we have today, it is hard to believe that we had three balanced budgets in a row in 1999, 2000 and 2001. We had a change of Administration, and all we had for as far as the eye could see were surpluses. And, 8 years later, all we could see as we looked ahead were deficits. The deficit ballooned a couple of years ago to about 1.5 trillion, and we have been reining it back in.

My hope is that by the end, at the end of this year, when the elections are behind us, that we will be able to enter into a comprehensive deficit reduction agreement, bipartisan, along the lines of that proposed by the Deficit Commission led by Erskine Bowles and former Senator Alan Simpson, that incorporates three dollars of savings on the spending side for every one dollar of new revenues. That is something I hope, that when we get to the end of the year, that we will actually do something very much like that.

In the meantime, it is important for us to use every day in the interim to find ways to get better results for less money or better results for the same amount of money, with respect to the way we provide health care, whether it is Medicare or Medicaid or other programs, with respect to the way we fund our defense and pay for the development of new major weapon systems, whether it is the way we help ensure that our agricultural economy is strong and vibrant, to ensure that support our exports to other countries, the way that we clean our air and our water in a cost-effective way, the way we have real solid return on investments, the way that we look after the least of these—the people that do not have a place to live, the homeless and folks that are hungry—all those ways, to try to make sure that we meet our needs but do so in cost-effective ways.

A great tool for realizing this goal of better results for less money, or the same money, is information technology. The potential is just terrific, and I am encouraged that we are beginning to realize that potential.

And, as we all know, it was not always that way. And, for years we spent a lot of money on IT investments for any wide variety of purposes, and we did not always get the kind of results that any of us wanted, with some notable exceptions. With some notable exceptions.

I think we are on the right track.

And, Vivek Kundra, if you are out there somewhere, listening, bored to tears and wondering what is going on here in this Subcommittee, you have done good work and I think you got us on the

right track, with the help of, frankly, our friends at GAO and a lot of other people as well.

I love to go visit schools. We are going to have a Memorial Day recess next week, and I will probably end up in a school or two in Delaware. I like to go into elementary schools, and I have been in a number of colleges lately with several commencements in the last couple of weeks.

But, I was in a middle school and spent some time with some sixth graders, and among the questions they asked is, what do you do anyway?

And, I explained that they have rules in their school, rules on their school buses, rules at home. We have rules for our country. And I, along with Senator Coons, Congressman Carney from my State and a lot of other men and women across the country—the President, the Vice President and the people who work for them—we get to help make the rules for our country, and the other thing we do is we try to help people in a wide variety of ways.

But, when folks that are watching us today from around the country, or tonight, and they are saying what is this all about, and they are hearing about dashboards and TechStat, and they are hearing about commodities, and they are hearing about the cloud computing.

Would you just take a couple of minutes, Mr. VanRoekel, and for those people, just make this real and make it relevant in their lives?

Mr. VANROEKEL. Absolutely, and thank you.

You are spot-on in that I think a lot of IT in the past was viewed as just a sort of discretionary spend. It is just part of the pie, one slice of the pie that we implement to do the work of government.

And, I like to think about IT really as the pan. It is sort of the mission of government is sitting in that pan, and it is a tool for us to enable us to do better service in the work we do in government and, more importantly, service to the American people.

What the Federal CIO does and the CIO community in government is really about enabling the mission of government—providing tools and resources to better service Americans, to get benefits to veterans in a better way, provide public safety resources, information to citizens on where they live, where they work, public and other safety things, economic benefits, job training. All the resources of government can be manifested in this way.

And, I am delighted you are meeting with school members because I think they embody our future in a way that we do not normally see in Washington, which is using technology in such a fundamental way to live their lives.

And, I think it is our obligation as a government to really provide the tools and resources for those people because they will be the next taxpayers of the future, the next Congress people of the future, the next warfighter, the next employer, and their government needs to keep pace with that.

Our goal is really about providing accountability and driving down costs and focusing on doing more with less and innovating with less. But, at the end of the day, it is about really enabling the mission of government through, I think, the work we do.

Senator CARPER. I like that—enabling the mission of government.

Mr. VANROEKEL. Yes.

Senator CARPER. I am going to use that, if you do not mind.

Mr. VANROEKEL. Please do.

Senator CARPER. The first time I use it, I will attribute it to you. After that, it is mine. [Laughter.]

Let me ask Mr. Powner, if I could; you have been complimentary, and rightly so, in terms of the work done within the Administration in recent years and working in these vineyards.

And, we also know that today GAO released, I think, a report that provides a number of areas in which—and you have alluded to this in your testimony—in areas of the reform plan where there is more to be done, acknowledging that a good deal has been accomplished.

I think GAO and OMB seem to disagree to some extent on the progress made on the IT reform plan though, and I would just ask, if you would, just to comment on that.

Mr. POWNER. Yes, Mr. Chairman, I would say for the most part—and Steve and I have had plenty of discussions on this—I think we are in agreement that there has been really solid progress across the board. To the extent of that progress and what remains, there might be some differences.

One tangible example is data center consolidation. I mentioned in my oral statement there is great progress there, where we have accountable individuals; we have plans in place, but we also know that the inventories and plans are not where they need to be yet. And, we need to get those inventories and plans where they need to be so that we can ultimately accomplish this goal of \$3 billion in savings.

So, we push real hard, and that is the role we play in making sure that we have the solid plans in place so that ultimately we can get those results. That is kind of where we disagree a bit.

I know Steve had a great line, where he said he is on the 10-yard line and getting ready to drive it into the end zone. That is the goal we want.

I do not know if we would——

Senator CARPER. He is on the other team's 10-yard line, not his own.

Mr. POWNER. That is right. He is in the red zone.

I do not know if we would agree that he is in the red zone right now, but he is clearly over the 50. That is OK.

Senator CARPER. Oh, OK.

Mr. POWNER. But, that is OK. That is kind of the disagreement that we might have.

Senator CARPER. Does he have any timeouts left? [Laughter.]

Mr. POWNER. But, clearly, we want to commend the initiatives to date and all the progress that has been made.

But, now is not the time to take the foot off the accelerator. We want to keep that momentum going forward. Data center consolidation is a prime example.

Senator CARPER. I like that. I will use that one too—this is not the time to take the foot off the accelerator. That is good.

Why don't you just respond a little bit, if you would, Mr. VanRoekel, to what Mr. Powner has said?

There are areas of maybe some disagreement, but there is a lot to agree on. But, just go back to where there might be some disagreement.

Mr. VANROEKEL. Yes, I think there is less disagreement than there is agreement on progress and things we have done. Every time, I think Dave and I always open our meetings with talking about our shared goals—the opportunity we have as a community, I think, working with Congress, GAO and the White House, working together on the important task of driving forward IT and efficiencies into Federal IT. The disagreements are typically, I think just mostly in my perspective, a scoping kind of disagreement.

The 25-point plan is a discrete set of actions. If you read through the 25-point plan, it lists a very discrete set of actions that need to be undertaken. At the end of the day, that strategy was really about shocking the system. It was applying a change, a tactical change agent to really wake people up and to realize here are a set of things we need to go do.

Federal IT reform does not begin or end with the 25-point plan, and we are taking a very broad approach to, and going above and beyond, most of the elements of the 25-point plan. I think if you look at our work on CIO authorities and PortfolioStat and some of the additional things we have done to build models and plans around data center consolidation, none were listed in the 25-point plan. They are all above and beyond.

And so, we think that we are carrying that great momentum that happened before. And, I think at the end of the day we will all look back on this time and say incredible progress has been made.

The semantics of the line items are up for discussion, and we are certainly having those discussions. At the end of the day, it is about the score on the scoreboard, I think, and we are focused on that result.

Senator CARPER. Thanks.

Both of you have a fair amount of experience in the private sector, and you bring that experience to the public sector. How is that helping you? Maybe, how is it less helpful? And, is there anything the private sector could learn from the public sector in this regard?

Mr. VANROEKEL. Yes, I lived every day in the private sector with the mentality that you had to keep costs low and keep value—or in the case of the private sector, profit—high and you had to grow the profit line up and to the right and focus on results that were going to drive the delta between those things and think about that.

In the public sector, we have sort of an ingrained culture of entropy where it is just a shifting cost line, to some effect, where people sort of wrap their arms around things they have done in the past and are not willing to really change that.

We have been able to add new value to Federal IT over, I think, the prior 15 or so years, really by growing the budget. We were growing prior to 2009. Federal IT spending was growing about 7 percent on a compound annual growth rate.

In 2009, that stopped. Vivek Kundra and this Administration came in and flat-lined Federal IT spending.

Under my watch in the budget that was recently passed for 2012, we are actually in the negative territory. We are going down in the negative territory.

But, stepping back out of those, the budget line items, you have to ask yourself, have we innovated? Have we done innovative things in the last 3 years? And, I think we have, and it sort of proves out the ability for us to bring this private sector mentality of keep that cost line flat or declining while you innovate.

Had we kept growing Federal IT spending, we would be at about \$103 billion right now if that average, that line, had been growing. And so, we have produced amazing value in that delta, I think, in the past 3 years by innovating with less.

I think what the private sector can learn from the public sector is we tackle very unique things in the public sector. We are leading the way, I think, on cloud, with FedRAMP, and looking at security and the different aspects of cybersecurity as they apply. We are the stewards and champions of privacy and security for American citizens. I think there could be a lot of that brought into the private sector to learn from.

And, I think a lot of the international aspects—computing and the consumerization of technology and cloud computing—are driving this sort of international dynamic that we have never seen before where the world, when your servers may be in some far-flung place and you do not know it, creates unique dynamics.

And so, the private sector working hand in hand with the public sector to really foster the next wave, I think, could be an important thing that we do together.

Senator CARPER. All right. Thank you. David.

Mr. POWNER. A couple key areas, I would say with my experience in the private sector. I think accountability in the private sector is much stronger. And, I think some of the initiatives in the Federal Government now with, for instance, the IT Dashboard, where we have clear accountability for all 800 major IT projects, is a step in the right direction.

I think one other area in the private sector, based on the experience I had, was modular incremental development. In fact, Steve and I were talking a lot about the move toward Agile. And, years ago we were doing extreme programming and that type of thing where you had deliverables within 90 days. I mean, we were not talking about months on delivery, but it was days in terms of our software deliveries.

And, I think the more the government can get in that cycle, and clearly, that is in the IT reform plan. There is a lot that is in there, and I think some of the initiatives that Steve has in place are pushing government to be more agile when it comes to software development.

Senator CARPER. All right. One of the questions I often ask at a hearing like this; basically, we are interested in knowing what in this case the Administration is doing and asking them to tell us what they think they are doing well and what the to-do list still is.

And, we always like to ask GAO if they agree and where they agree and maybe where they do not, and then we like to have a conversation like we are having just now.

But, what I always like to ask is, how about us? The people that sit on this side of the dais, how are we doing and what can we be doing?

What are we doing that is constructive and helpful, and what could we be doing that would even be more enabling—to use your term, Mr. VanRoekel, to be even more enabling?

So, you can turn the tables on us here.

Mr. VANROEKEL. Yes, thank you for that opportunity.

I think your opening statement captures a theme that I would love to see in the broader context of Congress, which is really the ability to view IT as the strategic asset.

I mean, one comparison to the private sector that we use is that innovative private sector companies pretty much as a norm view IT as one of the most strategic aspects of their operations. They invest in it. Senior management reviews it. And, we see that.

I think there is a bit too much of looking at IT as just a discretionary piece of the equation and viewing IT as just the simple ability to print a document or check your email on your BlackBerry, or things like that, when IT is so much more of what we need to embrace to drive the future forward for this country.

One of the stats I love to quote is that over 50 percent of the Fortune 500 companies founded in this country's history were founded in the worst economic times in this country's history. And, if you trace many of them back, including my alma mater of Microsoft, founded it in 1975 during a very big recession, many of those companies were founded on the premise that they could seize on some new, emerging technology that would catapult them forward.

I think many of them, if you trace back, have that and follow that similar line. It was that ability to seize on that inflection point in technology to really push ourselves forward.

We are in one of those inflection points now. With mobile technology, cloud computing and other things, we can do so much more for less than we were able to even 3 years ago. And, I think it is our time; it is our opportunity now, to really seize on that as a country and to foster the private sector to do the same that we saw back in those times as well. Government is a very powerful enabler of that.

Senator CARPER. Thank you. Mr. Powner.

Mr. POWNER. Mr. Chairman, a couple areas. I know when you hold these hearings we see a spike in activity within the Federal agencies, so clearly, your oversight on issues. And, one tangible example is the IT Dashboard.

And, I know Vivek Kundra gets a lot of credit for the IT Dashboard, but I am not certain we would have the IT Dashboard if it was not for this Subcommittee. That work started where we were looking at OMB's watch lists and high risk lists and trying to raise the level of transparency with IT spending, and I think your continued persistence was a major factor in why we have the IT Dashboard.

Now, in terms of using the data on that dashboard—and I know we have a report coming out in a couple months where we are going to talk about what that dashboard data shows, by agencies—I think we need to continue to raise the accountability through

your hearings with this Subcommittee. You have already achieved a lot. There is still a lot of money that is on the table.

And again, I think data centers—I will focus on that one also since there is a potential \$3 billion in savings, at least, that is out there, and we have a report coming out for you on that in the near future too. It is going to identify some of the holes so that we ultimately get to the goals that are on the table.

And, I do think Steve and I share—we have common goals trying to move the ball forward.

It is important that the money that we are spending on these large IT acquisitions, that we really deliver on that, because one of your prior questions about what do we get in return. I mean, we get better air traffic control, more efficient air traffic control. We have better routes through a lot of our technology acquisitions.

You look at IRS right now. IRS is processing tax returns this filing system much quicker than they ever have in the past because of a key delivery that they just delivered in December this year.

So, there is a lot of good things happening. We just need more of that.

Senator CARPER. Good. I love to quote Abraham Lincoln, and he used to say, among other things, the role of government is to do for the people what they cannot do for themselves.

The role of the government is to do for the people what they cannot do for themselves. And, that is a paraphrase of what he said, but I really think that is a big part of our role, not our only role, but it is a big part of it.

As we come to the end of this panel's appearance here, I am trying to put it together and just say how do we relate what we are talking about here today to Lincoln's view of the role of government. And, what I wrote down was information technology should be seen as a strategic—I think that was your term—strategic asset, enabling the mission of government. Enabling the mission of government.

What is the mission of government? To do for the people what they cannot do for themselves, and given the kind of fiscal crisis and challenges that we face today, to do for the people what they cannot do for themselves in more cost-effective ways going forward. So, that is a pretty good mission statement for all of us.

Do you all have anything you want to add before we excuse you and turn to the second panel?

Nothing at all?

Thank you so much. Keep up the good work. Much obliged. Thank you. [Pause.]

I am going to ask the Subcommittee to come to order, please.

We welcome our second panel. You heard the warm-up act. They were pretty good, were they not?

I think they provided some good groundwork for us to go forward and accomplish some more here.

I want to briefly introduce our witnesses, and we are glad you took time to be with us. For some of you, this is not your first visit, and we appreciate your return engagement here.

First, we will lead off with George DelPrete.

Mr. DelPrete is a Principal with Grant Thornton and the Chair of TechAmerica's Chief Information Officer Survey Task Force Group.

So, you are a chairman as well, Mr. Chairman.

He brings more than 20 years of experience in strategy and technology consulting. He has a record of assembling, of supervising and leading effective teams and advising executives on how to solve complex business challenges and use information technology to improve operational performance. Mr. DelPrete is a frequent speaker on topics ranging from shared services to portfolio management.

So, welcome, sir. Nice to see you.

Molly O'Neill, how are you today.

Ms. O'NEILL. I am good. Thank you.

Senator CARPER. Nice of you to come. Vice President of CGI's Federal Civilian Business Unit and also serves as a fellow on CGI's Initiative for Collaborative Government. Before her work with CGI, she was Assistant Administrator and Chief Information Officer at the U.S. Environmental Protection Agency (EPA) from 2007 to 2009. In the role of CIO, she was responsible for the EPA's information technology infrastructure and policies. Ms. O'Neill is a champion of innovation around data transparency, around sharing and collaboration. Welcome.

Ms. O'NEILL. Thank you.

Senator CARPER. Mr. Nick Combs, how are you today?

Mr. COMBS. I am fine, Senator.

Senator CARPER. Good to see you. Currently, Chief Technology Officer for EMC Federal and serves as a senior corporate evangelist—I like that, evangelist—on cloud computing, big data and information security issues. He has more than 26 years of experience managing, leading and developing information technology solutions for the Federal Government. He also serves on the Executive Advisory Committee of the Government Information Technology Executive Council. Nice to see you.

And, batting cleanup in this lineup is Jennifer Morgan, the President of Public Service for SAP America. She is responsible for the company's Federal, civilian, defense and State and local higher education customers. Ms. Morgan has more than 18 years of experience in helping to develop, sell and implement enterprisewide solutions and has worked with most Federal agencies, including the U.S. Department of Agriculture, the Department of Homeland Security and the U.S. Postal Service, over which we share jurisdiction and we have spent a lot of time in this room trying to figure out how to put them on a path that is fiscally sustainable and providing the kind of services that we need in our country.

And, recognizing Mr. DelPrete to begin his remarks, I would just say try to stay within 5 minutes in your remarks. Your entire statements will be made part of the record. If you go way beyond that, I will have to rein you in.

But, we are happy that you are here, and we look forward to hearing from you. Thanks so much. Mr. DelPrete.

**TESTIMONY OF GEORGE DELPRETE,¹ PRINCIPAL, GRANT
THORNTON, LLP AND ON BEHALF OF TECHAMERICA**

Mr. DELPRETE. Thank you very much. I want to thank the Subcommittee for giving us the opportunity to testify this morning.

As you mentioned, I am a Principal with Grant Thornton, and I have the honor to talk to you today about the 22nd Annual TechAmerica CIO Survey. Grant Thornton and TechAmerica worked together to produce this survey, providing insight on the issues and challenges facing the chief information officer community for a number of years. TechAmerica is the leading voice for the U.S. technology industry, representing approximately 1,200 member companies.

I will briefly summarize the five issues that were cited in the survey this year. There are copies of the survey for folks that are interested, in the back of the room this morning.

I know it is not a focus of the survey—not a focus of the session today, but cybersecurity is the top concern among Federal CIOs. This is no surprise, as so many security issues are handled through cyberspace today, from controlling an elevator to moving money to storing confidential data on citizens. Outside threats are on the rise. I think we can look into our spam filters every morning and see the kinds of things that are trying to get us to provide private information to them.

CIOs are very focused on preventing those external threats, but one of their primary challenges today is focusing on the internal threats. One CIO recently referred to the internal issues around cybersecurity as stupid human tricks—folks sharing passwords—

Senator CARPER. I am sorry?

Mr. DELPRETE. Stupid human tricks—folks sharing passwords inadvertently with one another, putting personally identifiable information onto networks where it should not be and also, potentially, losing laptops. This is an area of focus for them.

CIOs also cited cybersecurity as one of the primary issues that needs to be resolved to make mobility a reality. Those barriers will come down with a consistent, high quality, governmentwide security framework, with sound performance metrics and processes for sharing threat information.

CIOs also talked about human capital. Seventy percent of survey respondents say the pay and hiring freezes are really hampering their abilities to recruit and retain the folks they need to fulfill the mission of the CIOs. It is also having an impact on their ability to create successful succession plans, to ensure that the right kinds of people are in those roles.

One of the biggest challenges in the IT workforce was IT acquisition skills. Folks feel that the skill set is extremely lacking and look forward to having an opportunity to try and build that skill set.

Central agency policy was also a key issue that was focused on. Survey respondents gave the 25-point plan a C+ on feasibility and a C on value to their organizations. Despite the mediocre score, CIOs felt like it served as a good cookbook of ideas; it spurred a lot of wonderful action and pushed some very good thinking and

¹ The prepared statement of Mr. DelPrete appears in the appendix on page 68.

helped centralize some decisionmaking around the important IT reform initiative.

In terms of the improvements, they would like to see it more flexible. One size does not fit all. And, there were a number of things for them to try to initiate in short timeframes, and it placed a large burden on them in being able to accomplish that.

So, they would like to see a clearer statement of central agency priorities and overall strategy. They would also like seed money for some of the innovations called for in the plan.

Mobility was also one of the things that is really an enabler and game changer for CIOs right now. There are some exciting pilots and things happening out in the Federal marketplace.

One of the challenges they see is there needs to be better control over the stovepiped proliferation of mobile applications. One CIO referred to it like mushrooms sprouting after a rainstorm. There are pilots that are happening and lots of stovepiped duplication around this area. Great ideas, but there needs to be better control and governance around that.

They also want a framework for development of mobile technology because demand is surging and changing quickly. The mobility strategy released by OMB yesterday is a positive step in bringing mobility further into the forefront of IT reform.

And, the last issue was on controlling costs. As we heard about in the initial panel, IT budgets have remained flat and declined for some agencies. The positive thing about this is it is forcing some exciting innovations that we have seen in the community. There is more centralization of IT duplicative infrastructure. Folks are, I think, looking at better ways to reduce that cost. The data center consolidation is a wonderful example.

Asked what they would do in the face of 10 percent budget cuts, it is the least effective method of cost control. They would eliminate services or lower performance, stop or slow down modernization, cut staff or contractors.

IT can be a multiplier of cost savings and effectiveness—investing more now in order to gain greater benefits in the future. Congress should hold managers accountable for return on that investment, and the Federal Government should collaborate on, and share, IT development and assets, simplify IT's management framework and replace duplication with central solutions to ensure we stretch our IT dollars and maximize the benefits they bring to a more efficient and effective government. Thank you.

Senator CARPER. No, we thank you. Ms. O'Neill.

**TESTIMONY OF MOLLY O'NEILL,¹ VICE PRESIDENT, CGI
FEDERAL, INC.**

Ms. O'Neill. Yes, thank you, Chairman Carper, for this opportunity to appear before you today.

My name is Molly O'Neill. I am the Vice President of CGI Federal, a global information technology and business process services firm. Prior to rejoining CGI in 2009, I served as the Chief Information Officer at the U.S. EPA. On behalf of my 31,000 colleagues at

¹The prepared statement of Ms. O'Neill appears in the appendix on page 73.

CGI, I am honored to provide some thoughts today around ongoing efforts to reform IT spending across the Federal Government.

CGI applauds the Administration and congressional initiatives in not only eliminating wasteful IT spending but also to encourage Federal agency investment in the new technologies.

In particular, CGI thanks you, Chairman Carper, as well as Senator Brown, Chairman Lieberman, and Senator Collins, for your introduction of the Information Technology Investment Management Act of 2011.

The “Cloud First” initiative, the 25-point plan and the “Shared First” initiative—all represent positive steps forward in this area. However, Federal agencies do face challenges as they look to implement new technologies.

In October 2010, CGI was selected to provide cloud services on the governmentwide Infrastructure-as-a-Service (IaaS) contract vehicle. Over the next 10 months, CGI’s cloud computing environment underwent a very rigorous evaluation, resulting in a permit authority to operate, allowing CGI to begin providing certified cloud services to the government. In September 2011, CGI was awarded the first competitively bid task order by DHS to move all of its public Web sites to the cloud. Since then, CGI has won a number of other additional task orders, including projects for GSA and the National Archives and Records Administration (NARA).

Based on these projects and discussions with other Federal agencies, we offer up some of the following observations: First of all, the cloud helps deliver real cost savings. There are two major drivers that lead to the cost savings.

The first is the speed at which new systems can transition and go live in the cloud. For instance, CGI worked with the General Services Administration (GSA) to bring 30 systems live in less than 90 days. As a result, the agency has reduced its server footprint by 50 to 70 percent. In the case of NARA, Archives.gov was live 10 days after contract signing, and the site was able to handle the crush of 65 million visitors when the 1940 census data was released.

The second is that agencies only pay for the capacity that they need. Instead of running data centers continuously at peak capacity, cloud clients have lower day-to-day costs and only pay for additional capacity when they need it.

When migrating to the cloud, agencies can also have confidence in strong security. The No. 1 cloud question Federal agencies ask us is: Is the cloud secure? CGI can answer yes because we built our cloud designed to meet the Federal security requirements. Specifically, our cloud provides the Federal Information Security Management Act (FISMA) compliance for low and moderate impact systems, which represent 88 percent of Federal agency systems. To date, agencies across government have migrated only a tiny fraction of these systems to the cloud.

But, significant acquisition challenges also exist. CGI agrees with GAO’s assessment that statutory changes are necessary to adjust IT budget models. However, the existing tools should also be used more widely.

Agencies have struggled to modify their procurement methods for cloud services. The notion for paying for IT services in a more elas-

tic fashion is very different from the traditional way that government contracts and the models that they use. Many agencies are still also pursuing lengthy procurement processes rather than using some existing contract vehicles.

There are a number of new technologies that also can provide significant cost savings and springboard the Federal Government into this new era of efficiency and transparency. Although investment in the cloud, mobility and analytics surely will result in cost savings, it is the convergence of these technologies that will have the greatest impact on transforming government.

Just imagine a day when a Member of Congress, like yourself, can search real-time data to analyze the effectiveness of a program anytime, anywhere, because the liberated agency data is stored in a secure cloud and made available to any device. It certainly beats how things are done today.

Technology alone can produce savings, but how the Federal Government procures and delivers IT can offer savings too. Cloud computing demonstrates that IT systems can be developed and hosted anywhere in the United States.

The model is not new for CGI. Through three onshore centers of excellence—in Belton, Texas; Lebanon, Virginia; and Troy, Alabama—CGI provides clients with high quality IT services at costs significantly below the average for metropolitan U.S. cities, delivering cost savings at approximately 20 to 30 percent while providing meaningful job growth and economic development in those communities.

In closing, the fundamental shifts in technology can enable more effective, efficient and transparent Federal Government. Movement to the cloud will result in lower IT costs and the ability to share software and services more widely across the Federal enterprise. However, the cloud only represents a part of what is possible. Congress and Federal agencies must capitalize on other ways to save money and maximize the benefit by ensuring discipline in spending, leveraging existing investments and embracing new technologies.

Thank you once again for the opportunity, and I look forward to any questions that you might have.

Senator CARPER. You are welcome and thank you. You are right on the money there.

Mr. Combs, please proceed. Thank you.

TESTIMONY OF NICK COMBS,¹ FEDERAL CHIEF TECHNOLOGY OFFICER, EMC CORPORATION

Mr. COMBS. Chairman Carper, my name is Nick Combs, and I am the Chief Technology Officer of EMC Federal. On behalf of EMC and our 54,000 employees, I would like to thank you for inviting me to testify today.

Included in my written comments are many ways that the Federal Government can take advantage of capabilities and technologies to run much more efficiently, and I encourage the Subcommittee to look at those written comments.

¹The prepared statement of Mr. Combs appears in the appendix on page 80.

Prior to joining EMC 4 years ago, I served for more than 25 years in the Federal Government, including time as CIO of the National Media Exploitation Center and senior positions within the Defense Intelligence Agency. Over the course of my career in government IT and commercial industry, I have had direct experience resolving many of the IT challenges facing the IT industry today, particularly as enterprises transition to cloud services, dealing with this massive amount of data, and to improve trust and cybersecurity within our architecture.

Within the Federal Government, all Cabinet-level departments and agencies utilize EMC's innovative capabilities to deliver transforming IT initiatives within their agencies.

We are also a leader in the private technology, in the private industry, with technology and services to support the private and financial industries, with many of our largest customers' headquarters in Delaware and Massachusetts.

Enterprise IT leaders in both government and commercial industry are consistently telling us their systems are too complex; they are too inefficient; they are too inflexible, and they are costly.

As the leading cloud infrastructure provider, EMC is consistently looking for ways to improve its own IT. And, through data center consolidation and cloud computing, EMC has saved more than \$80 million in data center equipment costs and another \$12 million in power and space cooling, making it 34 percent more efficient overall in energy efficiency. Imagine if we could apply that across the entire government.

We believe the lessons from EMC's journey to the cloud, as well as many of our other customers and partners, are equally relevant to the course being chartered by our Federal IT leaders. IT transformation within the enterprise can be accelerated by aggressively consolidating data centers, transitioning legacy systems to cloud-based infrastructure and services, and building security into the cloud architecture.

While Federal agencies are beginning to make critical investments in these areas, budget cuts could stifle the Federal transformation underway if they are misdirected. A plan for up-front costs associated with IT transformation is an important issue for Congress. There have to be some investments if you want real savings, and we need to make sure we are making those investments in the proper way.

Unless agencies can rely upon realistic, detailed plans to acquire technologies to help them do more with less, data center consolidation and cloud computing goals may not fully gain the traction and Federal savings could remain lower than we anticipated.

Congress has placed Federal IT spending on a diet. In my view, diets are only successful if you make smart choices with what you consume. While we should buckle down and reduce redundant and unnecessary expenditures, we should invest strategically in the technologies, services and processes that will enable the Federal Government to do more with less over the long term.

Congress, including this Senate Subcommittee and the OMB, should be commended for the ongoing efforts to meet these challenges head-on. In a recent GAO report, OMB efforts listed data center consolidation incomplete due to a lack of agency detailed re-

porting. The good news is we have a lot more work to do in this environment. So, let's keep the pressure on in that environment.

Agency CIOs should have budget flexibility in order to aggressively shift resources toward cloud computing and away from the legacy systems that exist today. As noted in the GAO report released this week, Congress and the Executive Branch must identify budget models that will allow increased budget flexibility through working capital funds or other centralized IT operations and maintenance. Last year, the TechAmerica CLOUD2 Commission also made this recommendation.

Cybersecurity is clearly one of the biggest concerns of Federal CIOs as they move toward IT transformation services. Security must be risk-based and driven by a flexible policy that is aligned to the business or mission need. This is one of the principal reasons that EMC supports updating the Federal Information Security Management Act. Enacting updated FISMA legislation that will enable continuous monitoring is essential to address today's threat environment as well as to provide an effective operational risk management framework for tomorrow's cloud computing needs.

In conclusion, the Federal Government has many unique environments, but these diverse organizations can benefit greatly from the successes the commercial companies and organizations have already achieved through the adoption of cloud computing and data center consolidation.

I believe that now is the time to double down on IT investments and efforts to incentivize these cloud transition initiatives that improve the security and delivery of our government's systems.

Mr. Chairman, thank you for the opportunity, and I look forward to your questions.

Senator CARPER. Thanks so much for your testimony. Thanks for your presence and the work that you all are doing in Delaware too.

Ms. Morgan, nice to see you. Please proceed.

**TESTIMONY OF JENNIFER MORGAN,¹ PRESIDENT, SAP
AMERICA PUBLIC SERVICES, INC.**

Ms. MORGAN. Thank you, Chairman. Chairman Carper, Members of the Subcommittee, thank you for the opportunity to share SAP's perspective on the Federal Government's use of information technology.

My organization, SAP Public Services, serves more than 3,800 public sector agencies in almost 50 States. Like you, we believe passionately that IT is part of the solution because we know from experience that IT enables faster, more intelligent decisionmaking, higher performance, meaningful efficiencies and cost savings, and greater transparency and accountability.

We see several megatrends that are reshaping the role technology is serving in government agencies and citizens. One is called in-memory processing. From the beginning of time until 2003, humanity created an estimated 5 exabytes of data. Today, we create that same amount of data every 12 hours. In response, industry has created powerful new tools for managing and analyzing big data.

¹The prepared statement of Ms. Morgan appears in the appendix on page 93.

For example, SAP's in-memory technology allows organizations to analyze massive amounts of unstructured data thousands of times faster than traditional disk-based systems. Using this technology, one of the world's leading medical research hospitals has reduced the time needed to analyze the DNA in cancer tumors from 3 days to 2 minutes. Not only does this mean patients and their families receive diagnoses much faster; it means that therapies can be tailored to each patient's particular condition.

Another megatrend is mobility—our growing ability to make data and applications accessible to anyone, anytime, on any device. Obviously, the mobility trend raises challenges for Federal CIOs, such as enabling Federal workers to use their favorite mobile device securely. Most companies do this for their workers. We can do it for the government as well.

A third megatrend is cloud computing—fast, flexible, cost-effective IT services on demand. We believe there is enormous potential for cloud computing to save the U.S. Government money while improving mission performance and creating good jobs in our economy.

Across all of these trends, there is a consistent success factor. It is co-innovation with industry partners and government. Vendor lock-in is out; co-innovation and teamwork is in. Let me give you one example that illustrates the power of these trends.

When Congress and the Obama Administration created the Recovery Accountability and Transparency Board (RATB) in 2009, to help ensure accountability in Federal stimulus spending, the Board had to determine how to manage huge quantities of evolving data from a variety of sources and how to best represent that information to the public in an easy, understandable way on a device of their choosing.

The Recovery Board turned to SAP and other companies to launch a Web site known as Recovery.gov to overcome these challenges. We worked with industry partners such as CGI to base a solution in the cloud, which was the first Federal Web site to launch in the cloud, in the public cloud, and we made the data accessible on a variety of devices. Perhaps most remarkably, Recovery.gov was launched in 11 weeks when many said it could not be done.

So, how can Congress and the Executive Branch make the most of these new technologies and reap the benefits for U.S. taxpayers?

Well, first, we want to recognize and applaud the work that is being done by Steven VanRoekel and his colleagues across government, who are improving the way the public sector obtains and uses technology. The new Digital Strategy announced yesterday is another helpful contribution.

Progress is definitely being made. Still, as the GAO has reported, there is more work that can be done.

For example, the government's IT procurement process often takes longer than the technology modernizations themselves. This is a real problem when technology innovation cycles are getting shorter and the costs of technology are going down. The government's acquisition process must be accelerated to address this new reality. Faster, more agile IT development is possible using commercial, off-the-shelf, repeatable technology.

Second, Congress and the Administration should encourage open dialog and co-innovation between the government and its private sector partners. This is not always possible under current procurement rules.

And, third, we would encourage Congress to begin systematically building performance and accountability metrics into the legislation governing all agencies. IT can be an enabler of these accountability measures. You can only improve what you are measuring. You have to inspect what you expect.

In closing, the rapid progress of technology makes it possible for government to improve its performance while saving money and increasing accountability. SAP appreciates the opportunity to be a leader and a partner in this effort.

Thank you, and I am happy to answer any questions.

Senator CARPER. Thanks so much.

Was everybody here for the first panel?

Ms. MORGAN. Yes.

Senator CARPER. Yes. Just react to it. Just react to what you heard from Mr. VanRoekel and what you heard from Mr. Powner—what you agreed with, maybe what you did not agree with. Just your reaction to it and things that you think that people in my job—Senator Brown and others, Senator Lieberman, Senator Collins—that we should be mindful of, but just react to it for us in ways that would be constructive, please.

Do you want to go first, Ms. Morgan?

Ms. MORGAN. Sure. I think that the statement that was made that IT is more than just allowing neater technology or just the fact of having a mobile device or being able to do more electronically. IT is an enabler, but IT has the ability to truly change lives.

IT has evolved rapidly over the last 5 years alone, and it is not about organizations and government agencies and companies who really drive the requirements of what is needed. It is people like us. We, the individuals, the citizens, are really driving the technology needs and demands.

And so, I think IT can become a huge enabler when you are talking about farmers, our veterans, students, way beyond, I think, what people's perception may have been about IT maybe 3, 5 years ago.

Senator CARPER. Thank you. Mr. Combs.

Mr. COMBS. Yes, I would agree with Jennifer's comments, and I really liked Mr. VanRoekel's comment, or view; IT is a strategic asset.

One of the challenges in the government—and I spent 25 years there—is how do you keep up with the evolving innovation that is taking place. Every 18 months, there is some new creation that really changes the dynamics of IT.

In the government, we were building stovepiped silos of excellence for the last 40 years. How do we build this innovation? This is where I think the public-private partnerships really come into play and to create those relationships, break down the barriers to communication that exist within acquisition.

The other thing is GAO made the comment of do not take the foot off the accelerator, and I liked Mr. VanRoekel's comments that we have the bigger end game in sight. And, I do not think that we

need to stay focused just on these initiatives, right, because it is about more efficient, effective, cost-saving environments, and I applaud them for the additional work they are doing outside the 25-point plan to drive those efficiencies.

Senator CARPER. All right. Thank you. Ms. O'Neill.

Ms. O'NEILL. Yes, and I agree with colleagues over here that have just spoken.

I think one of the key things is getting over the notion that IT is a support function. It really is something that is totally integrated with the mission of government now.

And, there is a lot of talk about cost savings, rightfully so, but sometimes to the public that means that it is extra added support. And, I think efficient, more strategic, better investments kind of thing may be some of the better words to use because I think, putting my hat in from when I was working in the Federal Government. I think there is still a lot of push-down from the missions and the programs, thinking that technology is still just a support thing; it is just your email. Well, it is not. It is just so much more.

And so, I think those statements earlier today about everyone understanding it is a strategic asset. We need to be smart about how we purchase it, right, which will help reduce costs, but we also need to continue to invest in it so that we can put those services out there to the citizens much better.

The other thing is between the two witnesses, between GAO and OMB, there was some disagreement in terms of where they are in progress, but the reality is I think OMB put some stretch goals out there on purpose. And so, they were pretty out there in terms of what they were trying to get done in 12 months.

And, if you think about the Federal Government not being a battleship, to turn a battleship, it is more like an aircraft carrier. That is what my friends from the Navy say.

Senator CARPER. I am a Navy guy.

Ms. O'NEILL. OK.

Senator CARPER. When we talk about really hard things to do—

Ms. O'NEILL. Right.

Senator CARPER [continuing]. We talk about having to turn an aircraft carrier.

Ms. O'NEILL. OK. Right.

Senator CARPER. In naval aviation, when we had a really hard thing to do, we would describe it; a really hard thing to do was like changing an aircraft engine when you are in flight.

Ms. O'NEILL. Right. So, battleship is easier, right?

Senator CARPER. It is.

Ms. O'NEILL. But aircraft is harder. So, this is like turning an aircraft.

So, I think if you do not put stretch goals out there, right, you are never going to get the momentum and the drive toward doing that.

So, from the outside looking in, from the private sector, I think those were great stretch goals, and I think there is momentum out there. We need to keep the foot on the accelerator but at the same time know there is momentum, not just between the Federal agen-

cies but also in the public sector and sort of the commercial world that is pushing these things down.

So, the flavor of cloud and mobility and things like that are not going to go away, and they should not go away. We need to keep the accelerator on, understanding we had stretch goals for a reason because we are trying to move that big aircraft carrier. And, I think that is why there is a little bit of difference between the two.

Senator CARPER. All right. Thank you.

When I hear someone talk about keeping the foot on the accelerator, I think, well, the first thing we have to do is find the car. [Laughter.]

We have to get in the car, turn on the ignition and engage the transmission and then find the accelerator.

Ms. O'NEILL. We found the car.

Senator CARPER. We have found the car. We are in the car. We have the ignition on. We turn on the radio, have some good music, and now we are heading down the road.

Ms. O'NEILL. But, there is a caution—if you put the accelerator too far, if you have a lead foot, right, and you are going to get picked up for speeding.

I mean, one of the few things in terms of the cloud itself, where maybe we have missed a couple goals, but the reality is—and I think some of the testimony here—to say we actually spent some time between public sector and the government really elevating security too.

So, there are benefits associated with some of the slowness, but now sort of the waterfall is opening. The accelerator is on. Now, we can sort of push a lot harder.

Senator CARPER. Good. Thank you.

That is what we call stretching an analogy, I think, or a metaphor. OK, Mr. DelPrete.

Mr. DELPRETE. Yes, I think one of my key takeaways from the discussion was the shared goals that both organizations have. And, I think they identified that the dialog around IT reform was really started by the 25-point plan, and there is not much in there the chief information officers do not agree with.

So, whether we have finished 70 percent or 30 percent is not really the key point. The key point is that it is forcing CIOs to think about important ways to innovate and save money.

We see a number of outstanding examples through our work, through the CIO survey, but also through my work at Grant Thornton with our customers, in trying to help them figure out ways to reduce the data center footprint. We do not provide the data center solutions on the back end. We are a trusted advisor.

We are looking for ways to help them reduce the number of firewalls. In one organization, we are taking those firewalls from 132 down to 124 to strengthen security but also reduce that administrative footprint.

So, I think there are a number of examples in the 25-point plan about how we can use data center consolidation and cost control as ways to really improve what CIOs are trying to accomplish.

I think one of the things that is a big challenge—it struck me from my work as the chairman of the survey task force, and I see it through my work at Grant Thornton today, I guess, the lack of

authority that many central CIOs have over the purse strings. Government as a whole, I think, knows the budget of everything but the cost of nothing, and that is extremely true for Federal CIOs that we speak with.

In our discussions of large federated agencies, CIOs control as little as one percent, 7 percent, 20 percent of the overall budget, yet they are supposed to be accountable for making sure that the money is being spent effectively. I think that is a conundrum that we all need to work together—industry, Congress, OMB and the Executive Branch—to figure out how to resolve that.

Senator CARPER. The next question, I would ask you to think back on what our first two witnesses said and reflect on what they have said.

Some of you know each other. I suspect some of you know each other pretty well and have spent a fair amount of time together, maybe testified together, but worked together. Just in terms of your statements here today and what you have said in response to my questions so far, just react to one another and where you find particular agreement or maybe where you see things a little bit differently. Would you do that?

And, we will just start with you, Mr. DelPrete.

Mr. DELPRETE. Sure. Absolutely. Again, my role is a little bit different than each of the folks here in that they provide technical tools to run a data center, provide software, provide a storage solution or virtualization solution. I am generally working on the front end, to help CIOs figure out how to apply these kinds of technologies on the back end to save money. And, I agree wholeheartedly with what they have said before.

We run program manager's offices. We are overseeing some of the work that CGI does. We have partnered with a number of these folks. I agree with everything they are saying.

We need to make an investment in order to save money right now. We are really at a critical crossroads. Although cost control is creating innovation, I think most CIOs feel like there are too many balls up in the air and they are going to start to hit the ground and crash and burn. So, we need to step back and figure out how we can use these kinds of tools to make those investments to actually save money.

Think about something like health IT. You need to invest millions to save billions. It is not going to happen unless you step back and think about how you can improve and automate a lot of what is happening in those spaces.

I agree that data center consolidation, cloud computing, virtualization are critical technologies that are going to help further drive change, improve efficiency, create more sustainable environments for all of us.

So, I concur with the comments, and I will open it up to my peers here.

Senator CARPER. Please, Ms. O'Neill, just react to what you all have been saying to one another.

Ms. O'NEILL. Yes, I think there is a lot of agreement on this panel in terms of there are opportunities to save. We all have solutions to bring to the table. I think we all want to work with the

government in more of a partnership, to look toward a lot of this innovation out there.

And, I think the other thing, sort of a theme—and maybe my colleagues can react to me—is that I think that we all believe the government is on the right path and all of these initiatives have started us there. We all hope they move fast.

And, we have all learned even within our own private companies how to use some of these technologies and have a lot of lessons to bring to the table, to sit down with the public sector. But, we also probably also see how all these things are converging.

And so, one of the things and fears that sort of it goes back to is that sometimes in government we have initiatives, right, and we tend to want to react to them and put plans in place to move them along quickly, but if we took one step back and said, how do these fit together, they might have even more of an impact.

That is probably what we are finding in our commercial lives back in the private industry—looking at things a little bit differently, to say, yes, we want to do data center consolidation. And, most of us probably do because, again, as Steve said earlier, you are looking at your bottom line and cutting the costs there.

But, how are we using that, and what are we going to do, and how are we going to support the next generation workforce?

Not singularly looking at telework or singularly looking at data center consolidation, not singularly looking at cloud. We are not singularly looking at cyber. It is all of those things together that are going to make us more efficient companies, and I think that is what we are looking to help government with.

Senator CARPER. All right. Thank you. Mr. Combs.

Mr. COMBS. And, I would agree, but really, we need to focus in on measuring. We have to have measurable results in what we are doing. And, I think sometimes we get too focused on this policy or that policy or this particular initiative.

And, we need to move to cloud, but what are the results that you are actually getting from coming to cloud?

And, that is my concern. I like to call that term cloud-washing, and it happens not only—

Senator CARPER. What do you call it?

Mr. COMBS. Cloud-washing, right.

So, you have all this buzzword, cloud, out there. And, everyone in the industry—you will see the same old legacy technologies coming in as cloud-ready. Nothing changed in the architecture.

I have seen it on the government side where a 10-year-old service-oriented architecture (SOA) projects are defined cloud so that they can move the budget from one place to another.

So, it happens on both sides of the street—the industry and the government.

So, let's stay focused on the measurable results that are taking place. We all bring technologies, and we work together. We compete in places, and we work together, to deliver the best capabilities. And, if we stay focused in on the measurable results and not just these terms that come up and down, like big data or cloud, let's stay focused and make some success.

Senator CARPER. All right. Good. Thanks for that commonsense advice. Ms. Morgan.

Ms. MORGAN. So, it is interesting because I think if you had talked to this panel probably even a couple years ago we would say we never work together; we competed against each other. And, the terms I used was co-innovation and teamwork, and over the last couple of years I have seen industry, certain partners, really coming together on behalf of government.

And, that gets people's attention because we are thinking differently. We are coming with new ideas, and we are doing things we have not—it usually means we are doing something new. And so, that is a trend that I think has brought a lot of new ideas and innovation that sometimes we do not even expect. Sometimes the government helps us see what the use cases are for the convergence of our technologies.

Likewise, we work together in the private sector. EMC and SAP are huge partners. We are each customers of each other on the private sector side.

So, now we say, how can we take the great results that we have seen in industry and within our own companies; how do we take those and apply those and reuse them in public sector, because all these topics we have talked about today, whether the example Molly used of imagine if you could see on an iPad at any time, real time, information about what is happening in your congressional district. You can look into it. You can dive down into the very detailed piece of information at that exact moment.

Well, that is the convergence of mobility. That is the convergence of big data. And, likely, it is the convergence of pulling that information from the cloud. So, it is all of those together that really bring out the true power of what is in front of us.

Senator CARPER. Good. Thanks.

Thank you all. That was good.

I have about two or three more questions, and I think I will just ask these of the entire panel if I could.

Each of you represents a company, if you will, that has had success in working with the Federal Government in implementing information technology projects. Could you take just a couple minutes to provide maybe one—at least one, maybe two—examples, not too complex, if you will, but of the type of work that your organization has done or is currently doing with the Federal Government?

Do you want to go first, Ms. Morgan, please?

Ms. MORGAN. Sure, happy to.

So, the example I used in my testimony was what we had done with Recovery Board, and what was exciting about that was everybody said: Oh, you cannot stand up a Web site. It is going to just cost so much money. It is going to take months and months and months.

And again, working with kind of a motley crew of folks who we had never worked with before, coming together and getting that done and showing you can make things happen for a lot cheaper than you think it takes to get it done.

So, I think that the measurement and the accountability of getting that done and also what the result of that is doing and what it is showing in terms of it is a platform that is repeatable across government. What they are doing is they are providing measurement and accountability for the stimulus funds. That is no different

from other programs across all agencies within the Federal Government.

That same capability, that same approach is something that could be reused to look at higher programs as an example. If you shine a light on something, fraud and transparency really tend to have better results when it comes to accountability.

That is one example.

I think another example is a lot of times when we talk about technology we assume it is solely the role of an IT individual or CIO. And, while that is very true—those folks really own that—we have found that the best successes and modernizations come when the business owner takes responsibility for understanding what it is that they want to deliver, what their customer—their constituent, needs to get out of that capability.

We have worked very closely with USDA on that, and we found that the ownership at the business levels within the Office of the CFO and the partnership that they have with the CIO creates much better communication, much better governance and allows things to happen more effectively.

Senator CARPER. Those are good. Thanks.

Mr. Combs, maybe an example, if you would.

Mr. COMBS. Yes. I am very fortunate in my job. I get to travel around the country and talk to most of the CIOs in the government, and I would like to use a couple of examples. EMC is helping these companies build their cloud strategy, their transformation strategy in moving forward.

If you look at the Postal Service—and I would not want to be the CIO of the Postal Service—\$7 billion deficit, 38,000 post offices around the Nation, 80 percent of those post offices are losing business. We want to move toward technology services, but you have rural America that wants to get their mail every day. You want to cut down Saturday mail, but to save two billion dollars one day. Yet, the bulk mail carriers want that—those ads—to be delivered Saturday morning, and it drives the economy because people are going out and spending. So, it is a very complex situation.

So, EMC is working with them to develop their strategy forward. And, they have two major data centers—in San Mateo and Eagan, Minnesota—and I spent a lot of time out there helping to modernize those facilities to make them more efficient.

I just got back last month from Stennis, Mississippi, with the Navy's Meteorology and Oceanography Command. And, we talk about consolidation and shared data services, and most of that is taking place within the department. But, if you look at what the Navy is doing there, they have to work with NOAA; they have to work with Department of Air Force, to bring in all of this meteorology data in a shared services architecture and to keep our ships safe at sea.

So, we are working on some very great projects across the board. We are actually working with SAP on NASA and data center consolidation. They have 115 data centers that they need to consolidate down.

We rolled out a system architecture that is being replicated across—it was started at Marshall in Alabama, and now it is being rolled out in Kennedy and Johnson.

So, we are building the reference architectures to make things a lot more efficient in our government.

Senator CARPER. Again, those are great examples as well.

And, you pretty well nailed the postal—some of the challenges we face in postal. I like to say, though, that the situation is dire with the Postal Service, but it is not without hope. We can fix this, and we appreciate your help in doing that. Ms. O'Neill.

Ms. O'NEILL. Well, I already mentioned the fact that we are providing the cloud service. So, we are proud of our investments there, in the future there and the opportunity.

The other thing that I know that you are aware of that we work with the Recovery Audit Contractor (RAC), and we are looking at fraud, waste and recovering fraud, waste and abuse, the monies associated with that for the Medicare program. And, we are doing that, not just for the Federal Government but also for some States as well.

Senator CARPER. Oh, good.

Ms. O'NEILL. So, we are very proud of that work.

So, I will pick a third, if that is OK, since you are aware of those—

Senator CARPER. Sure.

Ms. O'NEILL [continuing]. Which is we also run the Central Data Exchange.

Senator CARPER. RAC, for people who do not know, deals with the Recovery Audit Contractor. Where we have overpayments, mispayments, improper payments, sometimes fraud, we go out and try to recover that money.

Ms. O'NEILL. Right, and that is interesting because that is a benefits-based contract.

Senator CARPER. Tell folks what benefits-based means.

Ms. O'NEILL. So, for benefits-based contracts, instead of us doing things on time and materials and having the government spend the money on the infrastructure to put the automation and the tools, to look for and identify areas where there has been fraud, waste and abuse, CGI actually invested in that, and the only thing that we get paid out is a portion, a very small portion, of whatever is not just identified but actually recovered. And so, it is a benefits-based model and a very unique kind of project—

Senator CARPER. One of the benefits that flows from this, we have found, is not just recovering some of the money that has been misspent or overspent, but we actually get good ideas for how not to make those same mistakes, especially on health care, like pay and chase. We pay money for claims—in some cases, dead doctors providing services for dead patients. You get the drill. But, one of the things we have learned is how do we do that less frequently so that we will not spend all of our time chasing the money.

Ms. O'NEILL. Right. So, we do not look at the back end. Now we have been able to take what we are learning from that and put it to the front end. We do not pay it out to start with.

Senator CARPER. There you go.

Ms. O'NEILL. So, a fantastic project, and we are very proud to support the Federal Government in that.

Senator CARPER. Thank you.

Ms. O'Neill. So, I will give you one more—

Senator CARPER. Go ahead.

Ms. O'NEILL [continuing]. Just because I think it demonstrates the shared services aspect of some of the things that Steve VanRoekel was talking about.

So, we actually run something called the Central Data Exchange for the U.S. EPA. Of course, it's—

Senator CARPER. It is your old shop.

Ms. O'NEILL. Right. So, I am very proud of it as well, having been part of that for many years even before I was at EPA.

Senator CARPER. How many years? Twelve? Thirteen?

Ms. O'NEILL. The Central Data Exchange has been up since 2003.

Senator CARPER. OK.

Ms. O'NEILL. But, it has formed—what is interesting, originally built for the Federal Government to exchange information, to get environmental data, with industry. Now, all 50 States are moving electronically into CDX. And, we were able to take CDX and now it exchanges data within the Federal Government. So, it is a shared service on environmental information exchange between State government, Federal Government, industry.

And then, we were able to repurpose it for FederalReporting.gov, which we are working with our partner over there on the other side, which we mentioned earlier—to repurpose it so that we are not building something fresh again to support FederalReporting.gov.

So, if you take a look at what the first panel was talking about, about shared services, we were able to get the FederalReporting up in a matter of weeks, as was mentioned here, and start receiving that data right away. So, it is something that we are very proud of.

So, we are looking for innovation and reuse. So, it is not to all of our best interest to redevelop things for the government either. It is to be able to identify those things that are already out there and that can be repurposed to support the mission and move things in government a lot faster.

Senator CARPER. Good.

Mr. DelPrete, if you have maybe one example you would like to share.

Mr. DELPRETE. Sure. It is hard to just provide one example, but, yes.

We focus on performance and accountability, and one of the things that we are doing right now is rationalize their IT infrastructure—I talked earlier about CIOs and federations not having control of IT dollars being in an environment where there are 10 help desks in one building or 15 IT contracts for commodity IT. It just does not make sense. There is duplication in spending.

One of the things we have done at the Department of Interior (DOI) is worked with them to restructure the way that the CIOs are organized within the department. Secretary Salazar put out a memo and created an IT transformation strategy that would make CIOs within various departments report up to the central CIO.

And, in doing that, we are looking at the redundancy in some of that infrastructure and architecture and laying out a transformation plan that will enable them to bring that back into the

department. And, we have a target savings goal of \$100 million by 2016. So, we are the trusted advisor helping them through that challenge.

We also do a lot of work with the Recovery Board, using a combination of software and human analysis to look at grants money and where it is going out and try to identify instances of improper payments, as was mentioned by others before.

We are also working with Patents and Trademarks right now to lay out a series of templates to enable them to do Agile development and keep track of that Agile at 90-day intervals.

I think that was more than one example.

Senator CARPER. We will let you slide.

I think maybe my last, or next to last, question is this. I asked this to the first panel too, and I oftentimes ask this question. If you were in our shoes, if you were sitting up here and you were serving your State in the U.S. Senate and you were on this Committee, or Subcommittee, what would you do differently, more of or less of, to make sure that the Legislative Branch of our government is doing its share as we try to, among other things, use IT as a strategic asset in enabling our government to do its work, its job?

Do you want to go first, Ms. Morgan?

Ms. MORGAN. Sure.

Senator CARPER. I would just say—let me just add, everything I do I know I can do better. And, I like to say, if it is not perfect, make it better.

And, it is not just for me; it is not just for us in my office and our Subcommittee, but everything we do in government we can do better. So, give us a thought or two, how to do our job better in this regard.

Ms. MORGAN. I think just the more that we can bring successes to the forefront for you to see.

And, many times there will be a success out there. But then, it is, OK, how do you take that and how can it be reused in other agencies? And, that is where the complexity begins.

Just from a procurement perspective, a policy perspective, it is hard to take the vision that we all know is out there and actually put it into action.

So, I think it is helping us take these ideas that we have and take many of these—many of us do some of these small proof of concepts or pilot projects to prove out a concept. But, once it is proven out, how do we then unleash the power within that?

And, I think that is where, unfortunately, bureaucracy tends to get in the way, and that is where you can help us understand how we can maybe move some of those barriers and get the technology and get the innovation out further in government.

Senator CARPER. OK. Thanks. Mr. Combs.

Mr. COMBS. Thank you for the question, sir.

The first thing is the financial reform needed to allow the flexibility in the budget process. As a government civilian and retired Army personnel, working on an annual budget—in research and development you can have 2-year budgets. Working on a single-year budget makes it difficult.

The establishment of these funds that transcend Fiscal Year (FY) boundaries would allow organizations, as long as they are targeted

toward efficiencies with measurable results, all right, and you can put the caveats in there. I think the ability to establish those funds really needs to be driven by Congress.

The other one is we have to protect our infrastructure. General Alexander identified a billion, or a trillion, dollars as leaving the U.S. economy every year because of cyber criminals. All right.

I think our biggest risk to our Nation is the exodus of intellectual property that is taking place, and I will give you an example.

General Motors does their auto design on our system, and it is a completely closed network. The minute that design hits the internet, it is rolling off assembly lines overseas, and they did not have to do any of the research and development that took place to drive that innovation.

We have to move to continuous monitoring so that we can infect it. If we cannot get agreement on all the cyber bills that are out there, let's look at what we can agree upon and move those bills forward to better protect our Nation.

And, the last I would say is make it easier for the commercial industry to work with the government. We have the capabilities out there.

In your home State, we have worked with the financial industry for years on financial crimes. Those capabilities can easily be pulled in to deal with cyber criminals or health care payment issues, right—to develop those, to take those commercial capabilities and adopt them to military. We have to be able to work closer together, public-private relationships, to move forward.

Those are three areas that I think that you guys could provide a lot of benefit.

Senator CARPER. Those are great points. Thank you. Ms. O'Neill.

Ms. O'NEILL. Yes, three, very quickly. Continued oversight is great because it brings—it not only makes the government and private sector accountable but also brings attention to the importance of IT. And, I think all of us would agree that is something that this Subcommittee is very helpful with.

The other thing—and it was just mentioned, but to push and foster and help us bring private and public sector together more, especially as we go down this road—is this very important inflection point, as Steve VanRoekel said, right now that we are in, with this convergence of technology to make sure that we do not go down the roads of siloism and that we learn from each other, whether it is on the security because the government is doing a lot with security around the cloud that the public sector has not gotten to yet and the commercial sector has not gotten to. But, to provide those opportunities for us to share ideas in a much more collaborative way would be very, very helpful.

And, the other thing is to help push accepting different models for delivery, and I mentioned that in both my written testimony and my oral testimony, to say we have to break down some barriers and reeducate on the acquisition side in terms of looking at models for delivery that are different, that are much more cost-effective, so that we can save some money in core business that we have been doing for a while and invest more in the technology—in the new, emerging things that are going to transform government.

Senator CARPER. Good. Thank you.

And, the last comment from Mr. DelPrete.

Mr. DELPRETE. I absolutely concur with what my colleagues have said today.

I think we need to continue the dialog on this very important issue. Eighty billion dollars is not a drop in the bucket, and we need to make sure it is spent in the right ways.

Reform the IT acquisition rules. We do not have the right people there, and we do not have the right rules. They are much too restrictive for us to take advantage of the great technologies that are out there.

We need to change the IT budget process. Working capital funds, multiyear money—there are lots of creative ways to give CIOs more flexibility and accountability for how those IT resources are spent.

We also need to continue to take steps to reduce the redundant infrastructure and centralize where it makes sense, but we should only do that if we have a real good business case and we know what we are getting into, with clear performance metrics of where we are going to end up, and we continue to measure that each step of the way. Thank you.

Senator CARPER. I thank you.

My wife would like to, at some point in her life—she has a bucket list. I think most of us do. One of the things on her bucket list is to go to the Olympics, and the Olympics are in London this summer.

In some of the Olympic competitions, they are competing against like the stopwatch, in swimming or track or whatever. And, in some cases it is how high they can go over a hurdle. Sometimes, the judges actually give scores, and you know how they raise their score cards and give scores.

Sometimes I have thought about asking our staff, both Democrat and Republican staff, just to hold up their scores for the panels and tell you how you did. This has been a really good one. I am not going to embarrass them to do that today.

This has been a very helpful panel, and certainly the folks, the two folks, who preceded you, just did an exceptional job.

And, what you have done is to make relevant, not just to folks in my job, but I hope for the people who may have been watching us from other places around the country, to make relevant what we are trying to get done here, to maybe explain in ways people can better understand and to better explain what our responsibilities are on the legislative side to be a partner here, a good partner, but at the same time to hold folks accountable for getting the work done.

I like to say, in adversity lies opportunity. That is Einstein. That is not me, but in adversity lies opportunity.

And, we face plenty of adversity in our country and certainly in our Federal Government, but there is real opportunity as well, and there is real opportunity in the way that we harness information technology to really serve the people of this country better.

I think we are getting—we are in the car. We found the car. We are in the car. Got the key in the ignition. The ignition is on. The motor is running. The radio is on. And, we have the car in gear.

And, we have got the foot on the accelerator. And, we are going to go some place. In fact, I think we already are.

Thank you very much.

With that, we are adjourned.

[Whereupon, at 11:42 a.m., the hearing was adjourned.]

A P P E N D I X



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U.S. SENATE COMMITTEE ON HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS

SUBCOMMITTEE ON FEDERAL FINANCIAL MANAGEMENT, GOVERNMENT INFORMATION, FEDERAL SERVICES, AND INTERNATIONAL SECURITY

HEARING: "Innovating with Less: Examining Efforts to Reform Information Technology Spending "

Opening Statement of Senator Tom Carper, Chairman *As prepared for delivery*

This hearing will examine the Obama administration's progress in implementing its plan to transform the management of our Federal Information Technology assets.

At a time when we're fighting to create jobs and grow our economy while also grappling with historic budget deficits, the American people are rightfully skeptical of a government that continues to squander too many of the tax dollars they entrust to us. They want better results from federal programs. It's our job to ensure that they get those results, and that they're delivered in a cost-effective manner.

When it comes to the information technology investments that agencies rely on to provide the services Americans need, the federal government has consistently thrown good money after bad. We've built an IT infrastructure that is bloated, inefficient, and actually makes it more difficult for the government to serve its citizens.

With more than \$80 billion spent each year on federal information technology, can we say that we're getting what we paid for? Can we say that we have looked at every nook and cranny of our IT investments and can tell Americans that we have managed their money effectively? I'm afraid that the answer to both questions is "no." However, all is not lost.

Nearly 18 months ago, President Obama directed our nation's first federal Chief Information Officer, (CIO) Vivek Kundra, to embark on an ambitious effort to bring the federal government's use of technology into the 21st century and ensure that we're operating in the most cost-effective manner possible. I commend the President and Mr. Kundra and his team for the sense of urgency and attention they have brought to these problems. We are now on a path to cut what we can't afford and nurture an environment

in which innovative and more cost-effective technologies are being deployed throughout government.

As we approach the June 2012 deadline for the implementation of the 25-point plan Mr. Kundra developed, I'm reminded of what Vince Lombardi once said: "If you're not keeping score, you're just practicing." It is important that we have a good game plan in place, but we must also be clear in keeping score and tracking our progress.

In keeping score, there are a number of areas that we can look to in order to measure the progress of the Administration's plan. For example, before President Obama and his team came into office, the federal government didn't know how many data centers it had. Since then, we've found out that there are over 2,000 data centers bleeding energy and money throughout the federal government.

I'm happy to hear that, between now and the end of 2012, nearly 500 of these data centers will be shuttered, saving us \$3 billion per year according to the Office of Management and Budget (OMB). That leaves us with several hundred more to go if we are to reach the President's goal of closing nearly 1,000 by 2015. But these first few rounds may be the 'low-hanging fruit' or perhaps the fruit already on the ground. So we need to continue pressing hard to achieve our goals and the savings that will come with them.

As we shutdown these unnecessary data centers, one of the ways we can get more efficient IT spending is by moving the federal government to the 'cloud'. The cloud is an example of the innovative tools available to government that offers an efficient pay-as-you-go approach to IT. In it, a low initial investment is required to begin, and additional investment is needed only as use increases.

Many Americans already use cloud computing in some form for email or when using social networking sites. It's also used often by private businesses looking for cost-effective IT solutions. According to OMB, federal agencies have moved almost 70 services to the cloud with many more likely to migrate, as well.

Another important area where we have a plan and are now keeping score is with the Administration's launch of TechStat Accountability Sessions, also known as "TechStats," in January 2010. TechStat sessions have enabled OMB and agency leadership to turn around, halt, or terminate IT investments that do not produce dividends for the American people. According to OMB, approximately 300 "TechStat" sessions have taken place since 2010 with approximately \$4 billion in cost savings, cost avoidance, or reallocation of funding for major investment projects.

Of course no plan is perfect. In a report released today by the Government Accountability Office (GAO), the government's watchdog, it provides a number of areas in the reform plan where more work is to be done. GAO's concerns are ones that I want to examine so that we don't risk losing momentum and can continue the progress that has been made so far.



As we move forward, a vital component of reforming the federal government's spending on IT involves learning from the private sector. IT has transformed how the private sector operates and has revolutionized the way in which it serves its customers. The Federal Government has missed out on these transformations in the past, due in part because we often pay more for old technology that agencies no longer need. In addition, we've seen chronic poor management of large technology investments.

I hope our private sector witnesses on the second panel are able to share some lessons from their organizations and give us some insights on how we can implement even more innovative tools at lower costs in the federal government.

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STATEMENT OF SENATOR SCOTT BROWN, RANKING MEMBER
SUBCOMMITTEE ON FEDERAL FINANCIAL MANAGEMENT, GOVERNMENT
INFORMATION, FEDERAL SERVICES, AND INTERNATIONAL SECURITY
COMMITTEE ON HOMLAND SECURITY AND GOVERNMENTAL AFFAIRS

Hearing on

“Innovating with Less: Examining Efforts to Reform Information Technology Spending”

May 24, 2012

Senator Carper, thank you for holding this important hearing today. I welcome Mr. Vanroekel to his first visit to our subcommittee and look forward to working with him on these important issues. During times of economic hardship, the private sector innovates and finds new ways to operate smarter, faster, and cheaper. Yet responsible fiscal policy demands the government do the same in good times or bad. Accordingly, federal agencies and departments have increasingly looked towards information technology (IT) to modernize and enhance their administrative and operational functions. As the government has become more dependent on technology to conduct its daily business, the proportion of the federal budget going towards IT has risen in kind. In just the last ten years, government spending on IT has risen from just over \$46 billion in 2001 to nearly \$80 billion in fiscal year 2012. Yet, agencies government-wide have continually struggled with effectively planning, developing, and deploying IT investments successfully. Administrations present and past have struggled to keep up with the need to provide effective oversight and issue timely policy and guidance to meet the constant evolution of technology and innovation. New initiatives to address these problems are given priority for a time, but accountability is lost with the turnover of new leadership or a focus on “the next big idea”.

Take for instance Data Center Consolidation efforts – an important initiative for reducing costs and optimizing federal IT infrastructure. The Office of Management and Budget (OMB) took notice of the gross inefficiencies and duplication in federal IT assets within agencies and across the federal government. As a result, it issued guidance with the goal to - quote - “reduce the total number of agency data centers [over] 24 months, by closing many currently operating data centers and concentrating their operations into a smaller number of physical locations.” As part of this initiative, agencies were required to –again quoting --“develop an inventory of agency data centers and cost of operations of each data center, develop a data center consolidation strategy, and develop a detailed implementation plan for that consolidation.”

One could be excused for thinking I’m referring to OMB guidance as part of the current Administration’s Data Center Consolidation Initiative (or DCCI). Unfortunately these quotes come from an OMB memorandum dated October 1995 -- more than 15 years ago. This illustrates that data center consolidation is clearly not a new concept. In 1998, presumably after the 1995 data center consolidation effort was complete, there were 432 data centers. By 2010, there were again over 2,000. Clearly the lessons learned from the previous efforts were lost over time, did not develop into long term best practices, and attention was diverted elsewhere as time passed and economic conditions changed.

As happens often in the federal government, leadership, budget priorities, and policy considerations change over time both within and across Administrations. OMB has obviously faced these same challenges, so the purpose of providing this example was not to cast blame on OMB, but to point out a significant concern in light of the GAO report issued today. We must ensure that important initiatives started by OMB over the last couple of years develop into truly a

new way of doing business for agencies in how they prioritize the management of their IT investment portfolio.

The 25-point plan was a positive step in addressing some long-standing problems the federal government has had in developing and acquiring IT. The original goal for achieving all 25 action items in that plan is next month. As GAO has pointed out in its report, however, only a third of the items GAO reviewed were fully complete. I am fully on board for pushing federal agencies to take advantage of innovations long since adopted by the private sector including cloud computing and mobility solutions. These innovations have a real chance to provide significant return on investment, reduce redundancy, increase efficiencies at agencies, provide accountability and transparency and improve access to government service to taxpayers. I get concerned, however, that as time goes on, constant promotion of new initiatives, while all have their individual merits, simply give agencies the opportunity to take their eye off the ball. I'm afraid of a time where a future Senator may sit in my chair and point out an OMB memo from 2010 as yet another example of the federal government's inability to learn from the past and solve some of the fundamental problems GAO has long since identified in federal IT. As the Administration promotes Cloud First, Shared First, Mobility First, Future First, etc.-- if everything is first then eventually nothing is actually first and priorities are difficult for IT managers to identify and prioritize. It's clear that more work remains to be done, but I appreciate Mr. Vanroekel's efforts thus far and appreciate his commitment to getting the basics right while making a valiant attempt to drag the federal government finally into the 21st century.

To our industry guests, there is no doubt that government can leverage the expertise of the private sector in better ways. More attention can be focused on lessons-learned and using best practices both inside and outside government. For our part, I, along with Chairman Carper

and Senators Lieberman and Collins have been working on legislation, the *Information Technology Investment Management Act* to help with these efforts and to ensure that some effective oversight measures last beyond the current Administration. Considering the amount of money being spent on IT, senior leadership accountability and ownership over these projects must be a continuing top priority. This legislation will go a long way to make certain it is, now, and into the future.

I am amazed by the potential for new technologies not only to streamline government operations, but also expand citizen participation like never before. No doubt, there are both many opportunities and challenges associated with bringing the federal government into the 21st Century. Both our government and industry witnesses today play a big role in pushing us ahead. Their efforts do not go unnoticed. I thank them for their service and look forward to an engaging discussion.

Thank you Mr. Chairman.

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

May 24, 2012

STATEMENT OF STEVEN VANROEKEL
FEDERAL CHIEF INFORMATION OFFICER,
ADMINISTRATOR FOR E-GOVERNMENT AND INFORMATION TECHNOLOGY
OFFICE OF MANAGEMENT AND BUDGET

BEFORE THE SENATE COMMITTEE ON HOMELAND SECURITY AND
GOVERNMENTAL AFFAIRS
SUBCOMMITTEE ON FEDERAL FINANCIAL MANAGEMENT, GOVERNMENT
INFORMATION, FEDERAL SERVICES, AND INTERNATIONAL SECURITY

"Innovating with Less: Examining Efforts to Reform Information Technology Spending"

Good afternoon, Chairman Carper, Ranking Member Brown and members of the Subcommittee. Thank you for the opportunity to testify on the Administration's efforts to improve the management of Federal Information Technology (IT). Agencies today face unprecedented pressures – a rapidly evolving technology landscape, rising public expectations, and the need to operate securely in an increasingly interconnected world – all while we are driving toward flat or declining budgets. To meet these challenges, we need to shift investment away from the costly maintenance and operations of legacy IT systems, to 21st-century solutions that enable us to innovate with less.

When the President appointed me to the position of Federal Chief Information Officer last August, I was charged with carrying forward the Administration's efforts to harness advances in IT to make Government work better and more efficiently for the American people. From my time in the private sector, I know firsthand the enabling nature of technology to increase mission efficiency. Successful organizations focus on continually looking for ways to shift investment from support activities to those mission functions that generate the most value for their customers. In a lean fiscal environment, leading companies look for ways to use IT as a strategic asset and to do the seemingly impossible: improve and expand core services while cutting costs.

It should be no different with the Federal Government. Nearly everything that we do as a Government depends on IT -- from health care, to education, to homeland security. Yet the way we fund IT, program-by-program and agency-by-agency, has led to a proliferation of duplicative systems, hinders our ability to share services Government-wide, and impedes our ability to adjust to the fast pace of technological change and corresponding adjustments in funding levels. For too long, this inflexibility has caused even the most highly visible IT projects to fail after significant investments in time and money.

Efforts to eliminate waste and duplication must be made on both ends of Pennsylvania Avenue, collaboratively, as our individual work will only get us so far. By eliminating duplication and reining in IT spending, the Federal Government can increase its focus on delivering mission critical services to the American people.

To deliver on the President's commitment to create a more effective and efficient Government, we are leveraging the latest advances in technology to save taxpayer dollars. We are working aggressively to meet the challenge of innovating with less, and we are seeing real results.

We have capitalized on the Administration's *25 Point Plan to Reform Federal Information Technology Management (25 Point Plan)*.¹ Already we have realized billions of dollars in cost savings and avoidance as a result of this Administration's aggressive IT reforms, while improving service and accelerating delivery. When the plan is complete, we will carry on the work of continually improving Federal IT as our efforts do not begin or end with the 25 Point Plan.

Our approach to reducing duplication and increasing efficiency in our IT spending is as follows:

- ***Maximizing the return on our investment in Federal IT*** by providing the tools to help agency leadership look across their IT portfolios and take the necessary actions so that common business functions and services are not duplicated time and again, and make the right decisions on which investments to fund and which to cut.
- ***Optimizing our IT infrastructure*** by shutting down and consolidating Federal data centers², shifting to lightweight technologies such as cloud computing³ and streamlining the use of commodity IT. Ultimately this allows us to support more efficient solutions and creates a more secure Federal footprint.
- ***Building a more efficient and effective digital government*** by enabling the American people and an increasingly mobile workforce to access high-quality digital government information and services anywhere, anytime, on any device. We must ensure that as the Government adjusts to this new digital world, we procure and manage devices, applications, and data in smart, secure and affordable ways.

¹ <http://www.cio.gov/documents/25-Point-Implementation-Plan-to-Reform-Federal%20IT.pdf>

² OMB defines a data center as "a closet, room, floor or building for the storage, management, and dissemination of data and information" under the following March 19, 2012 FDCCI memo:

http://www.cio.gov/documents/CIO_Memo_FDCCI_Deliverables_Van_Roekel_3-19-12.pdf

³ The National Institute of Standards and Technology defines cloud computing as "a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction."

Maximizing the Return on Investment in Federal IT

The first policy that OMB introduced during my tenure as Federal CIO, Memorandum 11-29, *Chief Information Officer Authorities*, shifted the role of agency Chief Information Officers (CIOs) away from just policymaking and infrastructure maintenance to encompass true IT portfolio management for the entire agency.⁴ This Memorandum directs CIOs to focus on reducing duplication and to right size and eliminate waste in their agencies' IT investments so that spending can be shifted to mission areas and innovative solutions that better serve the American people and maximize the return on our investment in IT.

TechStat and PortfolioStat

TechStat has been an important tool for enhancing and promoting CIO oversight of the large investments agencies make in IT. TechStat Accountability Sessions are reviews of agency IT programs with OMB and/or agency leadership. Using data from the Federal IT Dashboard, investments are carefully analyzed with a focus on problem-solving that leads to concrete actions to improve performance. On top of recent successes in propagating the TechStat model throughout the agencies and bureaus, we are also currently expanding our efforts to conduct more OMB-led TechStat reviews to tackle the most complex and significant IT issues facing the Government today. Using tools like the IT Dashboard, we are targeting underperforming IT investments, and then working with agencies to find solutions to address inefficiencies and to deliver better technology solutions sooner, and at a lower cost.

Through the work outlined in the IT Reform Plan, agencies identified nearly \$1 billion in efficiencies over the last year, adding to the \$3 billion found in OMB-led TechStat reviews. This brings the grand total of TechStat cost implications to approximately \$4 billion in less than two years. More information about these results is available in the TechStat Report released on December 8, 2011, and published on CIO.gov.⁵

While TechStat targets individual investments, the newly launched PortfolioStat initiative takes a broader approach by looking across entire agency portfolios for consolidation and optimization opportunities. Launched on March 30, 2012, PortfolioStat will be the primary tool through which agencies will assess the maturity of their IT portfolio management process, identify and eliminate duplication, cut lower priority investments, and move to shared solutions in order to maximize the return on IT investments across the portfolio.⁶ Agency Deputy Secretaries are responsible for the implementation and subsequent outcomes from the PortfolioStat initiative.

⁴ <http://www.whitehouse.gov/sites/default/files/omb/memoranda/2011/m11-29.pdf>

⁵ <http://www.cio.gov/techstatreport.pdf>

⁶ http://www.whitehouse.gov/sites/default/files/omb/memoranda/2012/m-12-10_1.pdf

Shared-First

The Federal IT Shared Services Strategy, released on May 2, 2012, calls for agencies to migrate two commodity IT services to a shared approach by the end of 2012.⁷ Agencies will increasingly consolidate IT-related enterprise, business, and infrastructure services and systems. In so doing, we will not only improve the scope and quality of these shared services, but through strategic sourcing initiatives, agencies will also be able to take advantage of lower prices and acquisition strategies that better support modernization as new approaches become available.

To help agencies innovate with less, we are promoting Enterprise Architecture (EA) principles that support the development of solutions along the lines of “little-to-big” (e.g., consolidating duplicated capabilities) and “big-to-little” (e.g., using modular delivery to speed results and reduce risk).

EA is a powerful tool for agency leadership and management to use in eliminating waste and duplication, moving toward shared service delivery models, and embracing new technologies such as cloud computing, mobile, and social media. EA can also support new, enhanced governance methods and subsequent changes to operating procedures, such as TechStat, PortfolioStat, and continuous monitoring.

Operationalizing IT Management

For the first time, the Federal Government has dedicated funding to operationalize and build upon these efforts to deliver most cost savings to the American taxpayers. The new Integrated, Efficient and Effective Uses of Information Technology (IEEUIT) account will augment and accelerate the early results from TechStat and PortfolioStat by providing expert resources and additional analytical capabilities like the continually improving IT Dashboard, to root out and fix or terminate poorly performing or duplicative IT investments. IEEUIT will also fund activities designed to drive down commodity IT costs, such as data center consolidation, shared incubation pilots, and a centralized catalog of commodity IT products and services accessible by agencies.

Optimizing our IT Infrastructure

When this Administration came into office, we found outdated technology, infrastructure and rampant duplication. From poorly performing projects to redundant infrastructure, it was clear aggressive reform was needed. We are attacking the problem by consolidating data centers and moving to lightweight, shareable technologies, such as cloud computing, while also directing agencies to consolidate commodity IT services and move to a shared services model.

Data Center Consolidation

Under the Federal Data Center Consolidation Initiative (FDCCI), we have accelerated our efforts to consolidate Federal data centers and now plan to close 968 data centers by 2015, pushing our

⁷ http://www.cio.gov/documents/SharedApproachMemo_0502.pdf

goal up 20% from the original as set in February 2010. By the end of calendar year 2012 alone, we plan to close 429 data centers.

To date, 267 data centers have been consolidated and we are beginning to see budgetary results. For example, as stated in the President's Budget, the Department of Defense plans to save up to \$300 million in FY 2013 by closing 100 data centers. In other cases, agencies are investing in their current infrastructure to accomplish the goals of data center consolidation. The Department of Homeland Security (DHS) is currently building its enterprise data centers and expects to reap billions in savings starting at the end of the decade. But as we decommission data centers, we must make sure we are optimizing the infrastructure we will continue to operate as the future inventory must be more efficient, secure, and better able to serve agency missions.

That is why in addition to focusing on data center consolidation opportunities to maximize savings, we must also improve the operations of the data centers that remain in our inventory. Agencies will focus on efficiency and quality of service, ensuring that they are taking advantage of current technologies, which deliver a greater return on IT investments.

Finally, as agencies optimize their infrastructure, the Government will become more secure by improving its cyber security posture, more sustainable by reducing the energy use of our total data center inventory, and more cost efficient with its use of Federal property. Data center consolidation and optimization enables the Federal Government to be more agile as we expand our use of cloud services and other innovative technologies.

Cloud Computing

As we consolidate our infrastructure, we must also shift the Government's mindset from capital intensive asset ownership to more service-oriented models, such as cloud computing, which allow agencies to pay for only the resources they need at the time of use.

For too long, the government's administrative and procurement processes did not keep pace with new technologies. To accelerate the adoption of cloud based services, the Administration launched the Federal Risk Authorization Management Program (FedRAMP). FedRAMP establishes a standardized approach to security assessment, authorization, and continuous monitoring for cloud solutions.

FedRAMP leverages a "do once, use many times" framework that produces savings in the overall cost, time, and staff currently associated with conducting duplicative agency security assessments. It also provides a uniform risk management approach that utilizes a standard set of baseline security controls so that each agency doesn't have to reinvent the wheel. An initial operating capability of FedRAMP will go-live in June 2012.

Additionally, agencies have made significant progress on cloud migrations under the Administration's "Cloud First" policy.⁸ This led to the successful migration of 40 services to cloud with an additional 39 migrations to come by June 2012. These migrations alone have led to the elimination of more than 50 legacy systems, and greater efficiency through providing shared services such as collaboration tools.

Cyber Security

As we optimize our infrastructure by consolidating data centers and leveraging innovative technologies, we must never lose sight of the fact that we need to be ever-vigilant in protecting our national assets and information. With threats evolving daily, cyber security must be a focus of everything we do.

The Administration continues to make significant investments in cyber security efforts, providing DHS with resources that will fund enhancements to our cyber programs to protect large and small agencies from cyber intrusions. We have also provided resources for a centralized continuous monitoring capability to identify and mitigate vulnerabilities on agency networks, improving the cyber security of the entire Federal enterprise.

Building a More Efficient and Effective Digital Government

Technology is fundamentally transforming how we conduct our business and live our daily lives. Advances in computing power, the rise of high-speed networks, and the growing mobile revolution have unleashed new innovations, spawned new industries and reshaped existing ones. The President has charged us with harnessing the power of technology to help create a future-ready digital government – one that is efficient, effective and focused on improving the delivery of services to the American people.

Digital Government Strategy

The Digital Government Strategy will provide a 12-month roadmap to jumpstart the use of smart mobile technology and improve delivery of digital services to the American people and our Federal workforce. We must ensure that Government information, data and services are available anywhere, anytime, on any device. The strategy will help agencies use modern tools and technologies to seize the digital opportunity and fundamentally change how the Government serves both its internal and external customers, at lower costs. It will also lay out actions to ensure that as the Government adjusts to this new digital world, we build the infrastructure needed to support digital government efforts to leverage the Federal Government's buying power to reduce costs where appropriate.

⁸ <http://www.cio.gov/documents/Federal-Cloud-Computing-Strategy.pdf>

Through the implementation of this strategy, we aim to fundamentally transform how the Government connects with, and provides services to, the American people. Through our ongoing efforts, we will help provide the Federal workforce with the 21st-century tools to carry out their mission of delivering services to all citizens. Lastly, the strategy will enable more efficient, coordinated digital service delivery at a lower cost.

Innovative Tools

In addition to providing the Federal Government with a roadmap to improve digital services, we are regularly leveraging innovative tools and technologies to create efficiencies across agencies. In January of this year, President Obama laid out a proposal to consolidate the Federal Government. His first focus is on Government's interaction with businesses and the fact that there are six separate organizations within the Federal Government that focus primarily on business and trade. Through the work and cooperation of the Department of Commerce, the Small Business Administration, and other agencies, we have been able to stand up BusinessUSA, a virtual one stop shop that makes it easier for America's businesses to access the services and information they need to help them grow, hire and export.⁹

Another tool that the Administration launched this year was the Federal Infrastructure Projects Dashboard,¹⁰ bringing new transparency and accountability to the multi-agency permitting process. The focus of the current phase is to create new opportunities for collaboration among the Federal agencies involved in a nationally or regionally significant project. For the first time, each of these projects will have a space in which the Government can answer the questions of who, what, and when for the permits and actions required to make these projects shovel ready.

Innovating With Less

The steps the Federal Government is taking to eliminate waste and duplication and invest in innovative technologies will allow us to better serve the American people. Now there are some who say we should not invest in IT in this fiscal environment, or use cyber security concerns to promote the misconception that you cannot innovate and effectively maintain security. But, the American people expect us to use technology to provide the same level of service they experience in their everyday lives. They pay bills online and buy plane tickets on smartphones. And it's not just the millennial generation – with grandparents now using social media to keep in touch with grandchildren – expectations have reached a critical point faster than anticipated.

Building on the progress of the last two-and-a-half years, my focus going forward will be to drive innovation in Government and make investments in technology that better serve the American people. We will use technology to improve productivity and lower barriers to citizen and business interaction with the Government, all while bolstering cyber security.

⁹ <http://business.usa.gov/>

¹⁰ <http://permits.performance.gov/>

As part of a broader continuous improvement in IT, the Federal Government is shifting its mindset from building proprietary and highly customized systems to adopting light technologies and shared or provisioned solutions. Eliminating duplicative IT infrastructure, reforming Federal IT management, and streamlining service delivery are at the core of the Administration's approach to root out waste and duplication throughout Government. I appreciate the work this Committee has done in this area—as you well know the magnitude of these efforts require all of us to continue to work together.

Thank you for the opportunity to appear today and I look forward to our discussion.

GAO

United States Government Accountability Office

Testimony

Before the Subcommittee on Federal Financial
Management, Government Information, Federal
Services and International Security, Committee on
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INFORMATION TECHNOLOGY REFORM

Progress Made; More Needs to Be Done to Complete Actions and Measure Results

Statement of David A. Powner, Director
Information Technology Management Issues

GAO-12-745T

Chairman Carper, Ranking Member Brown, and Members of the Subcommittee:

I am pleased to be here today to discuss the progress the Office of Management and Budget (OMB) and key federal agencies have made on selected action items associated with information technology (IT) reform. While investments in IT have the potential to improve lives and organizations, some federally funded IT projects can—and have—become risky, costly, unproductive mistakes. With at least \$79 billion spent in fiscal year 2011 by the U.S. government on IT investments, it is important to ensure the most efficient and effective use of resources.

In December 2010, the Federal Chief Information Officer (CIO) released a 25-point plan for reforming federal IT management. This document established an ambitious plan for achieving operational efficiencies and effectively managing large-scale IT programs. It also clearly identified actions to be completed in three different time frames: (1) within 6 months (by June 2011), (2) between 6 and 12 months (by December 2011), and (3) between 12 and 18 months (by June 2012).

You asked us to testify on our report being released today that describes the progress OMB and key federal agencies have made on selected action items in the IT Reform Plan and the extent to which sound measures are in place to evaluate the success of the initiative.¹ In this regard, my testimony specifically covers the progress made on 10 selected IT Reform Plan action items by OMB; the General Services Administration (GSA); and the Departments of Homeland Security, Justice, and Veterans Affairs. In preparing this testimony, we relied on our report being released at today's hearing. In that report, we evaluated progress by selecting 10 action items from the IT Reform Plan, focusing on action items that (1) were expected to be completed by December 2011, (2) covered multiple different topic areas, and (3) were considered by internal and OMB subject matter experts to be the more important items. We also selected three federal agencies (the Departments of Homeland Security, Justice, and Veterans Affairs) based on several factors, including high levels of IT spending and large numbers of investments in fiscal year 2011. We then evaluated the steps OMB and

¹GAO, *Information Technology Reform: Progress Made, More Needs to Be Done to Complete Actions and Measure Results*, GAO-12-461 (Washington, D.C.: Apr. 26, 2012).

the selected federal agencies had taken to implement the selected action items from the IT Reform Plan. In cases where the action was behind schedule, we compared plans for addressing the schedule shortfalls to sound project planning practices. We also determined whether and how agencies were tracking performance measures associated with these action items, and compared these measures to best practices in IT performance management. In addition, we interviewed OMB and selected agency officials regarding progress, plans, and measures.

All work on which this testimony is based was performed from August 2011 to April 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

Background

IT can enrich people's lives and improve organizational performance. However, as we have described in numerous reports and testimonies, federal IT projects too frequently incur cost overruns and schedule slippages while contributing little to mission-related outcomes. Further, while IT should enable government to better serve the American people, the federal government has not achieved expected productivity improvements—despite spending more than \$600 billion on IT over the past decade.

Over the last two decades, Congress has enacted several laws to assist agencies and the federal government in managing IT investments. Key laws include the Paperwork Reduction Act of 1995,² the Clinger-Cohen Act of 1996,³ and the E-Government Act of 2002.⁴ Also, the GPRA (Government Performance and Results Act) Modernization Act of 2010 includes IT management as a priority goal for improving the federal

²44 U.S.C. § 3501 et seq.

³40 U.S.C. § 11101 et seq.

⁴The E-Government Act of 2002, Pub. L. No. 107-347 (Dec. 17, 2002).

government.⁵ Each of these laws delineates roles and responsibilities for OMB and agencies regarding information technology and its management.

As set out in these laws, OMB is to play a key role in helping federal agencies manage their investments by working with them to better plan, justify, and determine how much they need to spend on projects and how to manage approved projects. Within OMB, the Office of E-government and Information Technology, headed by the Federal CIO, directs the policy and strategic planning of federal IT investments and is responsible for oversight of federal technology spending.

Agency CIOs are also expected to have a key role in IT management. Federal law, specifically the Clinger-Cohen Act, has defined the role of the CIO as the focal point for IT management, requiring agency heads to designate CIOs to lead reforms that would help control system development risks; better manage technology spending; and achieve real, measurable improvements in agency performance.

In addition, the CIO Council—comprised of CIOs and Deputy CIOs of 28 agencies and chaired by OMB's Deputy Director for Management—is the principal interagency forum for improving agency practices related to the design, acquisition, development, modernization, use, sharing, and performance of federal information resources. The CIO Council is responsible for developing recommendations for overall federal IT management policy; sharing best practices; including the development of performance measures; and identifying opportunities and sponsoring cooperation in using information resources.

Federal IT Reform Plan Strives to Address Persistent Challenges

After assessing the most persistent challenges in acquiring, managing, and operating IT systems, in December 2010 the Federal CIO established a 25-point IT Reform Plan designed to address challenges in IT acquisition, improve operational efficiencies, and deliver more IT value to the American taxpayer.⁶ The actions were planned to be completed in

⁵Pub. L. No. 111-352, 124 Stat. 3866 (2011). The GPRA (Government Performance and Results Act) Modernization Act of 2010 amends the Government Performance and Results Act of 1993, Pub. L. No. 103-62, 107 Stat. 285 (1993).

⁶OMB, *25 Point Implementation Plan to Reform Federal Information Technology Management* (Washington, D.C.: Dec. 9, 2010).

three different time frames: (1) within 6 months (by June 2011), (2) between 6 and 12 months (by December 2011), and (3) between 12 and 18 months (by June 2012). Several different organizations were assigned ownership of the key action items, including the Federal CIO, the CIO Council, GSA, the Office of Personnel Management, the Office of Federal Procurement Policy, the Small Business Administration, and other federal agencies. Table 1 contains detailed information on selected action items in the IT Reform Plan.

Table 1: OMB's IT Reform Plan: Selected Action Items, Required Activities, and Responsible Parties

Plan number	Action item title	Required activities	Responsible parties	Due date
1	Complete detailed implementation plans to consolidate 800 data centers by 2015	<ul style="list-style-type: none"> Complete consolidation plans that include a technical roadmap, clear consolidation targets, and measurable milestones Identify dedicated agency-specific program managers Establish a cross-government task force comprised of the agency program managers Ensure the task force meets monthly Launch a public dashboard for tracking progress towards closures 	OMB and federal agencies	June 2011
3	Shift to a "cloud first" policy	<ul style="list-style-type: none"> Establish a federal strategy for moving to cloud computing^a Identify three services (per agency) that are to move to cloud computing Establish migration plans for the three services that are to move Fully migrate the first service within 12 months 	OMB and federal agencies	June 2011
4	Stand-up contract vehicles for secure Infrastructure-as-a-Service ^b solutions	<ul style="list-style-type: none"> Make a common set of contract vehicles for secure cloud-based infrastructure solutions available governmentwide 	GSA	June 2011
10	Launch a best practices collaboration platform	<ul style="list-style-type: none"> Establish a portal for program managers to exchange information on best practices Require agencies to submit their experiences to the portal Codify and synthesize agency submissions to provide a searchable database that facilitates real-time problem solving 	CIO Council	June 2011
13	Design a cadre of specialized IT acquisition professionals ^c	<ul style="list-style-type: none"> Define an IT acquisition specialist position Establish the requirements, guidance, curriculum, and process for becoming one Create guidance to strengthen the IT acquisition skills and capabilities of IT acquisition specialists 	OMB and federal agencies	June 2011
15	Issue contracting guidance and templates to support modular development	<ul style="list-style-type: none"> Work with IT and acquisition community to develop guidance on contracting for modular development^d Obtain feedback from industry leaders Develop templates and samples supporting modular development 	Office of Federal Procurement Policy	December 2011

Plan number	Action item title	Required activities	Responsible parties	Due date
17	Work with Congress to create IT budget models that align with modular development	Analyze working capital funds and transfer authorities to identify current IT budget flexibilities Identify programs at agencies where additional budget flexibilities could improve outcomes Work with Congress to propose budgetary models to complement the modular development approach Evaluate mechanisms for increased transparency for these programs	OMB and federal agencies	June 2011
20	Work with Congress to consolidate commodity IT spending under agency CIO ⁶	Work with Congress to consolidate commodity IT spending under the agency CIO Develop a workable funding model for "commodity" IT services Have the CIO Council and agency CIOs identify "commodity" services to be included in this funding model as they are migrated towards shared services	OMB and federal agencies	June 2011
21	Reform and strengthen Investment Review Boards	Revamp IT budget submissions Have agencies conduct "TechStat" reviews ⁷ Have OMB analysts provide training to agency CIOs in the "TechStat" methodology	OMB and federal agencies	June 2011
22	Redefine role of agency CIOs and CIO Council	Make agency CIOs responsible for managing the portfolio of large IT projects within their agencies Have the CIO Council periodically review the highest priority "TechStat" findings assembled by the agency CIOs	Federal CIO and agency CIOs	June 2011

Source: GAO analysis of OMB's IT Reform Plan.

⁶Cloud computing is an emerging form of computing where users have access to scalable, on-demand capabilities that are provided through Internet-based technologies. It has the potential to provide IT services more quickly and at a lower cost.

⁷Infrastructure-as-a-Service is one type of cloud computing in which a vendor offers various infrastructure components such as hardware, storage, and other fundamental computing resources.

⁸While the IT Reform Plan discusses having agencies develop cadres of specialists, there is no requirement for agencies to do so.

⁹According to the IT Reform Plan, modular development is a system development technique that delivers functionality in shorter time frames by creating requirements at a high level and then refining them through an iterative process, with extensive engagement and feedback from stakeholders.

¹⁰Commodity services are systems or services used to carry out routine tasks (e.g., e-mail, data centers, and web infrastructure).

¹¹OMB defines a TechStat as a face-to-face, evidence-based accountability review of an IT investment that results in concrete actions to address weaknesses and reduces wasteful spending by turning around troubled programs and terminating failed programs.

GAO Has Previously Reported on Needed Improvements in Federal IT Management

Given the challenges that federal agencies have experienced in acquiring and managing IT investments, we have issued a series of reports aimed at improving federal IT management over the last decade. Our reports cover a variety of topics, including data center consolidation, cloud computing, CIO responsibilities, system acquisition challenges, and modular development. Key reports that address topics covered in the IT

Reform Plan include reports on data center consolidation,⁷ cloud computing,⁸ best practices in IT acquisition,⁹ IT spending authority,¹⁰ investment review and oversight,¹¹ and agency CIO responsibilities.¹² For example, in July 2011, we reported that only one of the agencies submitted a complete data center inventory and no agency submitted a complete data center consolidation plan.¹³ We concluded that until these inventories and plans are complete, agencies might not be able to implement their consolidation activities and realize expected cost savings. We recommended that agencies complete the missing elements in their plans and inventories. In response to our recommendations, in October and November 2011, the agencies updated their inventories and plans. We have ongoing work assessing the agencies' revised plans, and in February 2012, we reported that our preliminary assessment of the

⁷GAO, *Data Center Consolidation: Agencies Need to Complete Inventories and Plans to Achieve Expected Savings*, GAO-11-565 (Washington, D.C.: July 19, 2011), and *Follow-up on 2011 Report: Status of Actions Taken to Reduce Duplication, Overlap, and Fragmentation, Save Tax Dollars, and Enhance Revenue*, GAO-12-453SP (Washington, D.C.: Feb. 28, 2012).

⁸GAO, *Information Security: Federal Guidance Needed to Address Control Issues with Implementing Cloud Computing*, GAO-10-513 (Washington, D.C.: May 27, 2010), and *Information Security: Additional Guidance Needed to Address Cloud Computing Concerns*, GAO-12-130T (Washington, D.C.: Oct. 5, 2011).

⁹GAO, *Information Technology: Critical Factors Underlying Successful Major Acquisitions*, GAO-12-7 (Washington, D.C.: Oct. 21, 2011).

¹⁰GAO, *Information Technology: VA Has Taken Important Steps to Centralize Control of Its Resources, but Effectiveness Depends on Additional Planned Actions*, GAO-08-449T (Washington, D.C.: Feb. 13, 2008).

¹¹GAO, *IT Dashboard: Accuracy Has Improved, and Additional Efforts Are Under Way To Better Inform Decision Making*, GAO-12-210 (Washington, D.C.: Nov. 7, 2011); *Information Technology: OMB Has Made Improvements to Its Dashboard, but Further Work Is Needed by Agencies and OMB to Ensure Data Accuracy*, GAO-11-262 (Washington, D.C.: Mar. 15, 2011); *Information Technology: OMB's Dashboard Has Increased Transparency and Oversight, but Improvements Needed*, GAO-10-701 (Washington, D.C.: July 16, 2010); *Information Technology: Management and Oversight of Projects Totaling Billions of Dollars Need Attention*, GAO-09-624T (Washington, D.C.: Apr. 28, 2009); *Information Technology: Agencies and OMB Should Strengthen Processes for Identifying and Overseeing High Risk Projects*, GAO-06-647 (Washington, D.C.: June 15, 2006); and *Information Technology: OMB Can Make More Effective Use of Its Investment Reviews*, GAO-05-276 (Washington, D.C.: Apr. 15, 2005).

¹²GAO, *Federal Chief Information Officers: Opportunities Exist to Improve Role in Information Technology Management*, GAO-11-634 (Washington, D.C.: Sept. 15, 2011).

¹³GAO-11-565.

updated plans showed that not all agency plans were updated to include all required information.¹⁴ We discuss each of the topics in more detail in the report being publicly released today.¹⁵

OMB and Key Federal Agencies Have Made Progress on IT Reform Action Items, but Much Remains to Be Done

As discussed in our report, OMB and key federal agencies have made progress on selected action items identified in the IT Reform Plan, but there are several areas where more remains to be done. Of the 10 key action items we reviewed, 3 were completed and the other 7 were partially completed by December 2011. The action items that are behind schedule share a common reason for the delays: the complexity of the initiatives. In all seven of the cases, OMB and the federal agencies are still working on the initiatives. However, OMB and federal agencies have established time frames for completing only two of these initiatives.

In a December 2011 progress report on its IT Reform Plan, OMB reported that it made greater progress than we determined. The agency reported that of the 10 action items, 7 were completed and 3 were partially completed. OMB officials from the Office of E-government and Information Technology explained that the reason for the difference in assessments is that they believe that the IT Reform Plan has served its purpose in acting as a catalyst for a set of broader initiatives. They noted that work will continue on all of the initiatives even after OMB declares the related action items to be completed under the IT Reform Plan. We disagree with this approach. In prematurely declaring the action items to be completed, OMB risks losing momentum on the progress it has made to date.

Table 2 provides both OMB's and our assessments of the status of the key action items, with action items rated as "completed" if all of the required activities identified in the reform plan were completed, and "partially completed" if some, but not all, of the required activities were completed.

¹⁴GAO-12-453SP.

¹⁵GAO-12-461.

Table 2: GAO's Assessment of the Status of Key Action Items

Plan number and action item title	OMB's reported status (as of December 2011)	GAO's assessment	Description
(1) Complete detailed implementation plans to consolidate at least 800 data centers by 2015	Completed	Partially completed	In 2011, agencies published their updated consolidation plans and identified dedicated program managers for their data center consolidation efforts. Also, OMB established a cross-government task force comprised of the agency program managers that meets monthly and launched a public dashboard for tracking progress in closing data centers. However, not all of the agencies' updated data center consolidation plans include the required elements. Of the three agencies we reviewed, one (the Department of Justice) lacked required milestones and targets for servers and utilization. In addition, in February 2012, we reported finding similar gaps in multiple agencies' consolidation plans. ⁴ When asked why the plans were not yet complete, agencies reported that it takes time to adequately plan for data center consolidation and many found that they need more time. We have previously recommended that agencies complete the missing elements from their data center consolidation plans. ⁵ OMB has noted that agencies are expected to provide an update on their plans in September 2012.
(3) Shift to cloud-first policy	Completed	Partially completed	The Federal CIO published a strategy for moving the government to cloud computing and had each agency identify three services to be moved to the cloud. In addition, each of the three agencies we reviewed established migration plans for these services and had migrated at least one service to the cloud by December 2011. However, each of the three agencies' migration plans we reviewed were missing key required elements, including a discussion of needed resources, migration schedules, or plans for retiring legacy systems. We have ongoing work performing a more detailed review of seven agencies' progress in implementing the federal cloud computing policy underway, and plan to issue that report in the summer of 2012. ⁶ However, at this point there are no time frames for agencies to complete their migration plans.
(4) Stand-up contract vehicles for secure Infrastructure-as-a-Service solutions	Completed	Completed	GSA has established a common set of contract vehicles for secure cloud-based infrastructure solutions, and made them available governmentwide. As of January 2012, federal agencies could purchase cloud solutions from three GSA-approved vendors.
(10) Launch a best practices collaboration platform	Completed	Partially completed	The CIO Council developed a web-based collaboration portal to allow program managers to exchange best practices and case studies, and all three agencies we reviewed have submitted case studies to OMB for the portal. However, the data accessible by the portal has not yet been effectively codified and synthesized, making it difficult for program managers to search the databases and for them to use it for problem solving. For example, a general search for cloud computing best practices identified more than 13,000 artifacts, while a date-bounded search for the last year identified 14 artifacts—of which only 8 clearly provided information on best practices in cloud computing. The vice chairman of the CIO Council explained that the portal's shortcomings are due to how new it is, and noted that the council is still working to improve the portal's functionality. However, the CIO Council has not established a time frame for providing this additional functionality.

Plan number and action item title	OMB's reported status (as of December 2011)	GAO's assessment	Description
(13) Design a cadre of specialized IT acquisition professionals	Completed	Completed	In 2011, the Office of Federal Procurement Policy issued guidance defining an IT acquisition specialist, established the requirements, guidance, curriculum, and process for becoming one, and established guidance to strengthen the IT acquisition skills and capabilities of IT acquisition specialists. Because the development of the cadre is voluntary, the status of the agencies we reviewed varies: the Department of Veterans Affairs has a cadre of specialized IT acquisition professionals, the Department of Homeland Security is developing one, and the Department of Justice is still considering whether they need such a cadre.
(15) Issue contracting guidance and templates to support modular development	Partially completed	Partially completed	An official within the Office of Federal Procurement Policy stated that the agency worked with the IT and acquisition community to develop draft guidance for modular development, and has obtained feedback from industry leaders. However, the office has not yet issued this guidance, or the required templates and samples supporting modular development. An Office of Federal Procurement Policy official explained that delays were due to challenges in ensuring consistent definitions of modular development across the government and industry. The office currently plans to issue its guidance and templates in spring 2012.
(17) Work with Congress to create IT budget models that align with modular development	Partially completed	Partially completed	OMB reported that it analyzed existing legal frameworks to determine what budget flexibilities are currently available and where additional budget flexibilities are needed, and worked to promote these ideas (such as multiyear budgets or revolving funds) with selected congressional committees. Also, the three agencies we reviewed identified programs where additional budget flexibilities could improve outcomes. For example, the Department of Homeland Security proposed a working capital fund for centralized IT operations and maintenance functions. However, in response to OMB's ideas, there has not yet been any new legislation to create budget authorities as a result of the IT Reform Plan and OMB has not identified options to increase transparency for programs that would fall under these budgetary flexibilities. OMB officials noted that they are behind schedule in working with Congress, in part because when the IT Reform Plan was issued in December 2010, the fiscal year 2012 budget process was already under way. They explained that this meant they needed to wait to incorporate changes into the fiscal year 2013 budget process. However, OMB has not yet established time frames for completing this activity.
(20) Work with Congress to consolidate commodity IT spending under agency CIOs	Partially completed	Partially completed	OMB issued a memo in August 2011 that, among other things, required agencies to consolidate commodity IT services under the agency CIO. ⁹ In addition, the federal CIO has discussed the importance of consolidating commodity IT under the agency CIOs with selected congressional committees. However, OMB noted that this action item is behind schedule and that it is continuing to discuss the implementation of the memo and the development of models for funding commodity IT with agencies and Congress. Further, the three agencies we reviewed had not yet reported to OMB on their proposals for migrating commodity IT services to shared services, in part because they were waiting for guidance from OMB. OMB officials noted that part of the reason for the delay is that when the IT Reform plan was issued in December 2010, the fiscal year 2012 budget process was already under way. Therefore, they needed to wait a year to incorporate changes into the fiscal year 2013 budget process. However, OMB has not established a time frame for completing this activity.

Plan number and action item title	OMB's reported status (as of December 2011)	GAO's assessment	Description
(21) Reform and strengthen Investment Review Boards	Completed	Completed	In 2011, OMB revamped its requirements for agency IT budget submissions. OMB also developed, published, and provided training for agency CIOs on how to conduct TechStat reviews that includes accountability guidelines, engagement cadence, evaluation processes, and reporting processes. By December 2011, all 24 agencies conducted at least one TechStat review.
(22) Redefine role of agency CIOs and the CIO Council	Completed	Partially completed	In August 2011, OMB issued a memo directing agencies to strengthen the role of the CIO away from solely being responsible for policymaking and infrastructure maintenance to a role that encompasses true portfolio management for all IT. However, OMB acknowledged that there is disparity among agency CIOs' authorities and that it will take time for agencies to implement the required changes. Of the three agencies we reviewed, two CIOs reported having true portfolio management for all IT projects, and one did not. The Department of Homeland Security's CIO does not yet have responsibility for the portfolio of all IT projects. We have ongoing work assessing the department's governance of IT investments. Regarding changes in the role of the CIO Council, the council formed a committee to focus on management best practices. This committee analyzed the outcomes of agency TechStat reviews over the past year and published a report discussing governmentwide trends in December 2011.

Source: GAO analysis of OMB and agency data.

^aGAO-12-453SP.

^bGAO-11-565.

^cThe seven agencies are the Departments of Agriculture, Health and Human Services, Homeland Security, State, and Treasury, as well as GSA and the Small Business Administration.

^dOMB, *Memorandum for Heads of Executive Departments and Agencies: Chief Information Officer Authorities*, M-11-29 (Washington, D.C.: Aug. 8, 2011).

Until OMB and the agencies complete the action items called for in the IT Reform Plan, the benefits of the reform initiatives—including increased operational efficiencies and more effective management of large-scale IT programs—may be delayed. With the last of the action items in the IT Reform Plan due to be completed by June 2012, it will be important for OMB and the agencies to ensure that the action items due at earlier milestones are completed as soon as possible.

OMB Has Not Established Measures for Evaluating Results on Most IT Reform Initiatives

The importance of performance measures for gauging the progress of programs and projects is well recognized. In the past, OMB has directed agencies to define and select meaningful outcome-based performance measures that track the intended results of carrying out a program or

activity.¹⁶ Additionally, as we have previously reported, aligning performance measures with goals can help to measure progress toward those goals, emphasizing the quality of the services an agency provides or the resulting benefits to users.¹⁷ Furthermore, industry experts describe performance measures as necessary for managing, planning, and monitoring the performance of a project against plans and stakeholders' needs.¹⁸ According to government and industry best practices, performance measures should be measurable, outcome-oriented, and actively tracked and managed.

Recognizing the importance of performance measurement, OMB and GSA have established measures for 4 of the 10 action items we reviewed: data center consolidation, shifting to cloud computing, using contract vehicles to obtain Infrastructure-as-a-Service, and reforming investment review boards. Moreover, OMB reported on three of these measures in the analytical perspectives associated with the President's fiscal year 2013 budget. Specifically, regarding data center consolidation, OMB reported that agencies were on track to close 525 centers by the end of 2012 and expected to save \$3 billion by 2015. On the topic of cloud computing, OMB reported that agencies had migrated 40 services to cloud computing environments in 2011 and expect to migrate an additional 39 services in 2012. Regarding investment review boards, OMB reported that agency CIOs held 294 TechStat reviews and had achieved more than \$900 million in cost savings, life cycle cost avoidance, or reallocation of funding.

However, OMB has not established performance measures for 6 of the 10 action items we reviewed. For example, OMB has not established measures related to the best practices collaboration platform, such as number of users, number of hits per query, and customer satisfaction. Further, while OMB has designed the guidance and curriculum for developing a cadre of IT acquisition professionals, it has not established measures for tracking agencies' development of such a cadre. Table 3

¹⁶OMB, *Guide to the Program Assessment Rating Tool*.

¹⁷GAO, *NextGen Air Transportation System: FAA's Metrics Can Be Used to Report on Status of Individual Programs, but Not of Overall NextGen Implementation or Outcomes*, GAO-10-629 (Washington, D.C.: July 27, 2010).

¹⁸Thomas Wettstein and Peter Kueng, "A Maturity Model for Performance Measurement Systems," and Karen J. Richter, Ph.D., Institute for Defense Analyses, *CMMI® for Acquisition (CMMI-ACQ) Primer, Version 1.2*.

details what performance measures and goals, if any, are associated with the action item.

Table 3: Assessment of Performance Measures Associated with Selected IT Reform Action Items

Action item	Performance measures	Performance goals
(1) Complete detailed implementation plans to consolidate 800 data centers by 2015	<ul style="list-style-type: none"> Number of data center closures Expected cost savings 	<ul style="list-style-type: none"> The IT Reform Plan identifies a goal to consolidate 800 data centers by 2015. In December 2011, in conjunction with a decision to include smaller data centers in the consolidation effort, the Federal CIO increased this goal to more than 1,000 data centers by 2015. In February 2012, OMB announced a goal of saving \$3 billion by 2015.
(3) Shift to a cloud-first policy	<ul style="list-style-type: none"> Number of services transitioned to a cloud computing environment Number of legacy systems eliminated Anticipated cost savings 	<ul style="list-style-type: none"> The IT Reform Plan states that each agency will identify three services to move to the cloud and that one of those services must move within 12 months. OMB has not yet announced goals for eliminated legacy systems or anticipated cost savings.
(4) Stand-up contract vehicles for secure Infrastructure-as-a-Service solutions	<ul style="list-style-type: none"> Number of task orders issued under the contract vehicle Dollar amounts awarded through the contract vehicle Period of performance for the contract 	<ul style="list-style-type: none"> GSA established a goal of having at least one task order issued under the Infrastructure-as-a-Service blanket purchase agreement in the first year. GSA has not yet announced goals for its second year.
(10) Launch a best practices collaboration platform	---	---
(13) Design a cadre of specialized IT acquisition professionals	---	---
(15) Issue contracting guidance and templates to support modular development	---	---
(17) Work with Congress to create IT budget models that align with modular development	---	---
(20) Work with Congress to consolidate commodity IT spending under agency CIOs	---	---
(21) Reform and strengthen investment review boards	<ul style="list-style-type: none"> Number of TechStat reviews Number of terminated programs 	<ul style="list-style-type: none"> OMB established a goal of having agency CIOs terminate or turn around one third of all underperforming IT investments by June 2012.

Action item	Performance measures	Performance goals
	<ul style="list-style-type: none"> Cost savings associated with TechStat reviews 	
(22) Redefine role of agency CIOs and the CIO Council	---	---

Source: GAO analysis of OMB and agency data.

*Performance measures or goals have not been established for this action item.

Until OMB establishes and tracks measureable, outcome-oriented performance measures for each of the action items in the IT Reform Plan, the agency will be limited in its ability to evaluate progress that has been made and whether or not the initiative is achieving its goals.

Implementation of Recommendations Could Help Ensure Key Efforts are Completed and Results are Identified

In our report being released today, we are making several recommendations to help ensure the completion of key IT reform initiatives and that the results of these initiatives are measured. Specifically, we are recommending that the Departments of Homeland Security, Justice, and Veterans Affairs complete elements missing from the agencies' plans for migrating services to a cloud computing environment, and identify and report on the commodity services proposed for migration to shared services. All three agencies agreed with our recommendations and identified steps that they are undertaking to address them.

In addition, we are recommending that the Federal CIO ensure that the action items called for in the IT Reform Plan are completed by the responsible parties prior to the completion of the IT Reform Plan's 18 month deadline of June 2012 and that the agency provide clear time frames for addressing the shortfalls associated with the IT Reform Plan action items. The Federal CIO agreed with both of these recommendations and stated that OMB intends to complete the action items by the deadline. We are also recommending that the Federal CIO accurately characterize the status of the IT Reform Plan action items in an upcoming progress report in order to keep momentum going on action items that are not yet completed. The Federal CIO disagreed with this recommendation and stated that OMB has accurately characterized the completeness of the action items, and therefore, the recommendation does not apply. We do not agree with OMB's characterization of four

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action items. Specifically, OMB considers the action items associated with data center consolidation, cloud-first policy, best practices collaboration portal, and redefining roles of agency CIOs and the CIO Council to be completed. While we agree that OMB has made progress in each of these areas, we found activities specified in the IT Reform Plan that have not yet been completed. For example, in the area of data center consolidation, we found that selected agency plans are still incomplete. In addition, in the move to cloud computing, selected agency migration plans lack key elements. Thus, we believe that the recommendation is warranted.

To address our concerns regarding performance measures, we are recommending that the Federal CIO establish outcome-oriented measures for each applicable action item in the IT Reform Plan. The Federal CIO disagreed with our recommendation and noted that OMB measured the completeness of the IT Reform Plan action items and not the performance measures associated with broader initiatives. We continue to believe that our recommendation is appropriate because there are multiple action items in the IT Reform Plan that are not aligned with broader initiatives and for which there are no measures. Examples include the best practices portal, developing a cadre of specialized IT acquisition professionals, and establishing budget models that align with modular development. Given that the purpose of the IT Reform Plan is to achieve operational efficiencies and improve the management of large-scale IT programs, we maintain that it is appropriate to establish performance measures to monitor the IT Reform Plan's results.

In summary, OMB and selected agencies have made strides in implementing the IT Reform Plan, including pushing agencies to consolidate data centers, migrating federal services to cloud computing, improving the skills of IT acquisition professionals, and strengthening the roles and accountability of CIOs. However, several key reform items remain behind schedule despite OMB stating that these items have been completed.

In addition, OMB has not established performance measures for gauging the success of most of its reform initiatives. For example, while OMB is tracking the number of services that agencies move to a cloud computing environment and the number of data center closures, it is not tracking the usefulness of its efforts to develop a best practices collaboration portal or a cadre of IT acquisition professionals.

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Overstating progress and not implementing appropriate performance measures do not position the federal IT community to leverage and build on the progress made to date. Moving forward, it will be important for OMB to continue to provide guidance, goals, and oversight to ensure that critical IT reform efforts extend well beyond the original 18-month time frame. It will also be important for agencies to aggressively pursue the completion of IT reform initiatives.

Chairman Carper, Ranking Member Brown, and Members of the Subcommittee, this concludes my statement. I would be happy to answer any questions at this time.

GAO Contact and Staff Acknowledgments

If you or your staffs have any questions about this testimony, please contact me at (202) 512-9286 or at pownerd@gao.gov. Individuals who made key contributions to this testimony are Colleen Phillips (Assistant Director), Cortland Bradford, Rebecca Eyler, Kathleen S. Lovett, and Jessica Waselkow.



Statement of
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on behalf of

TechAmerica

before the

Senate Committee on Homeland Security and Governmental Affairs

**Subcommittee on Federal Financial Management,
Government Information, Federal Services, and International Security**

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Testimony of George DelPrete on behalf of TechAmerica
 Innovating with Less: Examining Efforts to Reform Information Technology Spending
 May 23, 2012
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Thank you for inviting me to testify this morning.

I am a principal in Grant Thornton's Global Public Sector (GPS), based in Alexandria, Virginia. Our mission is to provide responsive and innovative financial, performance management, and systems solutions to governments and international organizations. I lead the firm's federal government information technology (IT) practice. I have worked in the government IT field for 21 years with a primary focus on IT investment decision making and management.

Today I report on the results of the 22nd Annual TechAmerica Survey of Federal Chief Information Officers. TechAmerica is the leading voice for the U.S. technology industry, representing approximately 1,000 member companies of all sizes from the public and commercial sectors of the economy. Grant Thornton has supported TechAmerica in this annual survey since its inception, and I had the honor to direct the spring 2012 edition.

For 22 years, TechAmerica has conducted an annual survey of federal information executives, including chief information officers (CIOs) and their deputies, chief technology officers, the heads of major information technology (IT) divisions and representatives of oversight and congressional organizations. In 2012, IT professionals from TechAmerica member firms interviewed 40 of these federal executives. The executives identified five major concerns: cybersecurity, controlling costs, human capital, central agency policy and mobile technology.

Cybersecurity

Although I know it is not the focus of this hearing, it is important to note that cybersecurity remains at the top of the list of CIO concerns. This is no surprise, as so many security issues are handled through cyberspace, from controlling an elevator to moving money to storing confidential data on citizens. Some CIOs say that most major data breaches come from inside a government organization, yet most cybersecurity resources are directed at outside threats. Outsider threats are on the rise, however, and are becoming more sophisticated. On the upside, security threat upsurges have led to policy changes and innovation driven by a renewed sense of partnership between operations and their cybersecurity offices and among government agencies. On the downside, cybersecurity threats are an inhibitor for IT centralization and mobility. Those barriers will come down only with greater trust among agencies resulting from a consistent, high-quality, government-wide security framework. The framework must have sound performance metrics and official processes for sharing threat information. Several survey respondents say that the Federal Information Security Management Act (FISMA) needs to be more dynamic. Most say they need more funding for cybersecurity.

Human Capital

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Human Capital

Seventy percent of survey respondents say that pay and hiring freezes affect their IT workforce and hiring plans. Freezes cause some key staff to leave and make attracting new, younger staff harder. About half of CIOs say there are formal succession plans to fill gaps left by their departing IT executives and senior managers (a problem as Baby Boomers retire). CIOs want a workforce with management and "people" skills. Such skills include ability to work in collaborative teams, negotiate with contractors, do business analysis and budgeting, manage change and be leaders. Needed technical skills include application development, mobility, network engineering, cybersecurity and open-source content management. IT acquisition skills are in short supply, which may be one reason that many CIOs think the IT acquisition process is "broken."

Of special note regarding the acquisition process is the increasing use of the acquisition practice "lowest priced, technically acceptable" (LPTA). LPTA is increasingly the only criteria applied to the acquisition of goods and services in the government market and it is especially troubling in the IT sector, where the practice frequently yields less than "best value" for the taxpayer. For example, instead of considering the lifecycle costs of items - acquisition, installation, operation, maintenance, upgrade and finally disposal - many acquisitions are driven only by which bid included the lowest price. Often, other important considerations are left out of the equation. TechAmerica would call the increasing prevalence of this practice to the attention of the Committee and ask that it examine the acquisition practices of the government, assess their value in the Information Age and identify more effective and efficient practices to address the new funding demands IT products and services often impose.

Central Agency Policy

The federal government's policy cornerstone for IT reform is the *25-Point Implementation Plan to Reform Federal Information Technology* issued by the White House Office of Management and Budget (OMB). Asked to rate the *Plan* as a whole, survey respondents gave it a C+ on feasibility and a C on value to their organizations, progress to date in implementation and their leaders' commitment to further progress. Despite the mediocre score they give the *Plan*, most CIOs support it - they just want to see the *Plan* improved. Positive comments include that the *Plan* is a cookbook of good ideas, has spurred action, pushed good thinking and helped centralize decision making. Policies promoted by the *Plan* might be better if they were more flexible, say CIOs, because "one size does not fit all." CIOs would like a clearer statement of central agency priorities and overall strategy. They would also like seed money for some of the innovations called for in the *Plan*.

This note on funding points to the overall status of the IT appropriations process as the major outstanding element of the *25-Point Plan* left to address. TechAmerica identified in our report

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to the Office of Management & Budget (OMB) titled *Government Technology Opportunities for the 21st Century* that funding for IT programs did not match the pace of innovation and was an outdated process for the Information Age. The multi-year cycles and agency-by-agency appropriations makes true savings from government-wide IT investment strategies difficult to achieve. OMB echoed those findings in the *25-Point Plan* and we call on the Committee to focus on ways to improve the process of appropriating for IT programs as a means of maximizing the investment in innovation.

Mobility

Mobility means smartphones, tablets and other devices, but it is not a gadget-buying exercise, say CIOs. Mobility is a technical and cultural revolution in how people access and use information and, for civil servants, in how, where and when they work. Right now, cybersecurity concerns are barriers to mobility in some organizations. On the other hand, CIOs in law enforcement, intelligence and defense organizations, where one would expect resistance, are great supporters of mobile technology. CIOs stress the need for a strong strategy for mobility governance, involving common hardware versus "bring your own device" policies, synchronization, access to data, security and other issues. They also want a framework for fast development of mobile technology because demand is surging and changing quickly.

Controlling Costs

The survey shed valuable insight into CIO views on cutting wasteful and inefficient IT spending, the subject of today's hearing. CIOs in our survey say that the most effective and feasible ways to save IT money are to consolidate redundant systems and operations and cancel underperforming projects and services. This includes consolidating data centers, which survey respondents saw as a good initiative both because it saves money and offers tighter central management of IT operations. Respondents condemned across-the-board budget cuts as the least effective method of cost control. Asked what they would do in the face of a 10% cut to their budgets, respondents said they would:

- Eliminate services or lower performance in service-level agreements (SLAs);
- Stop or slow down modernization, development and infrastructure work; or
- Cut staff or contractors.

Of interest is that most survey participants agree that cost cutting drives efficiency and innovation, plus it gives CIOs more influence. Tight budgets lead to improved planning, better IT development practices, new funding methods and a harder search for savings. Respondents also say they would save money if central agencies and Congress required them to fulfill fewer data calls or unfunded mandates.

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Testimony of George DelPrete on behalf of TechAmerica
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Respondents think there are limits to what cost cutting can do to promote innovation and modernization. To start, the always-rising tide of IT innovation has become a digital tsunami. Although Cloud-based alternatives to owning IT assets have been around for some time, a Cloud First imperative is now sweeping through the federal government. The number of mobile devices – smartphones, pads and other handheld devices – has surged past other means of communicating or using digital information, creating quandaries for cybersecurity and government IT policy. Congress has curtailed IT funding along with other investments, with little or no new money for realizing IT's potential. Financial relief is not likely for several years to come, yet during that time citizen demand for digital public service will continue to swell.

To conclude, we are about to go through a truly revolutionary time in IT innovation, one that will make many existing IT assets obsolete in just a few years. We can start up that hill now with the sole intent of saving millions of dollars, only to forego billions of dollars in benefits and savings a few years down the road. Alternatively, we leverage IT as a multiplier of cost savings and effectiveness, investing more now in order to gain greater benefits in the future. But Congress should hold managers more accountable for a return on that investment. The federal government should collaborate on and share IT development and assets, simplify IT's management framework, and replace duplication with central solutions. Solutions require robust business case analysis to confirm savings and returns on investment. This will ensure we stretch our IT dollars and maximize the benefits they bring to a more efficient and effective government.

A full copy of the TechAmerica 22nd annual federal CIO survey can be read and downloaded at www.federalciosurvey.com.

Thank you.

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**Written Testimony of Molly O'Neill
Vice President
CGI Federal Inc. (CGI)**

Prepared for
**The Senate Committee on Homeland Security and
Governmental Affairs
Subcommittee on Federal Financial Management,
Government Information, Federal Services and
International Security**

**Hearing Entitled
"Innovating with Less: Examining Efforts to Reform
Information Technology Spending"**

May 24, 2012

Chairman Carper, Senator Brown, Members of the Subcommittee, thank you very much for the opportunity to appear before you today. My name is Molly O'Neill and I am a Vice President at CGI Federal Inc. (CGI), a global information technology and business process services firm. Prior to re-joining CGI in 2009, I served as the Chief Information Officer at the Environmental Protection Agency (EPA). On behalf of my 31,000 colleagues at CGI, I am honored to provide some thoughts today around ongoing efforts to reform IT spending across the federal government.

CGI has partnered with its commercial and federal, state, and local government clients for more than 36 years on a wide array of technology projects. As a company, CGI has worked with more than 100 federal organizations, so like the members of this Subcommittee, CGI has recognized patterns across government that aren't always visible within a specific agency given its focus on a single core mission. CGI takes very seriously its responsibility, not only to its individual clients, but also to the entire federal government and, as a result, CGI welcomes this opportunity to share its observations.

Among its recent noteworthy projects, CGI was proud to partner with the EPA to support the Recovery Accountability & Transparency Board with the rapid development and deployment of FederalReporting.gov, which served as the "in box" for recipients of Recovery Act funds to report their spending. CGI also has had the honor of testifying in front of this Subcommittee about its work as a Recovery Audit Contractor (RAC), helping identify nearly \$400 million of improper payments in the Medicare program. These projects are the latest in a long line of successful federal partnerships where CGI has worked side by side with federal employees to achieve the agency mission.

Additionally, as one of three cloud services providers granted a certified-secure, permanent "Authority to Operate" by the General Services Administration (GSA) last year, CGI has now implemented cloud solutions for a number of clients under the Infrastructure-as-a-Service (IaaS) contract vehicle.

CGI applauds the Administration and Congress not only for its continued efforts to eliminate wasteful IT spending, but also for its recognition that continued investment in IT will save money, improve efficiency, increase transparency, encourage innovation, and provide better service to U.S. citizens and businesses. In particular, CGI thanks you, Chairman Carper, as well as Senator Brown, Chairman Lieberman, and Senator Collins for your introduction and support of the Information Technology Investment Management Act of 2011. This legislation encourages more active oversight of IT programs across government and also provides creative new incentives to reward individuals who help their agencies succeed with the acquisition and implementation of these initiatives.

Additionally, the "Cloud First" initiative, the 25-point plan, and the "Shared First" initiative all represent positive steps forward in this area. However, it should come as no surprise that with such significant changes also come significant challenges as federal agencies look to implement and realize the maximum benefit associated with new technologies. In my testimony today, I will discuss some of CGI's specific experiences as a service provider of cloud computing, describe some of the barriers that stand in the way of faster adoption of new technologies, and offer some recommendations for how government

and industry can move beyond the cloud to collaborate on solutions that allow us to “do both more and better, but with less.”

Cloud Computing Experience: Successes and Barriers

In October 2010, CGI was honored to be one of the 12 companies selected by the GSA to provide cloud services on the government-wide Infrastructure-as-a-Service (IaaS) contract vehicle. Over the 10 months that followed, CGI's cloud computing environment underwent a rigorous evaluation process that resulted in receipt of a permanent “Authority to Operate” (ATO), allowing CGI to begin providing certified-secure cloud services to government agencies. In addition to meeting the technical and management requirements outlined in the contract, the ATO's Assessment and Accreditation process ensured that CGI met all of the necessary federal security requirements, including the Federal Information Security Management Act (FISMA). In September 2011, CGI was awarded the first competitively-bid task order under the IaaS vehicle by the Department of Homeland Security (DHS) to move all of the Department's public websites to the cloud. Since then, CGI has won a number of additional task orders under the same vehicle, including projects for the GSA's Office of Citizen Services and the National Archives and Records Administration (NARA). In each of these situations, CGI's clients were able to quickly compete their task orders under the IaaS vehicle and move forward with a contract award. CGI is now delivering more than \$100 million in secure cloud solutions to agencies ranging from DHS to the Department of Labor and the Nuclear Regulatory Commission.

Based on these projects and discussions with numerous other federal agencies over the past year, CGI offers the following observations for consideration:

- **Cloud helps deliver real cost savings in the short-term.** There are two major drivers that lead to cost savings. The first is the speed at which new systems can transition and go live in the cloud. Traditionally, it would take at least six (6) months to launch a website or system, but with cloud, that timeframe is dramatically reduced. For instance, CGI worked with the GSA to bring 30 systems live in less than 90 days. As a result, the agency has reduced its server footprint by 50-70 percent. In the case of NARA, Archives.gov was live 10 days after contract signing and was able to handle the crush of 65 million visitors coming to the site in conjunction with the 1940s census data release. At DHS, the RestoretheGulf.gov and StudyintheStates.dhs.gov websites were deployed in CGI's secure public cloud just six (6) weeks after project kickoff. The second cost savings driver is that agencies only pay for the capacity that they need. So, instead of running data centers that continuously provide peak capacity, CGI's cloud clients have significantly lower day-to-day costs and clients pay only for added capacity when needed. For example, capacity would surge for fema.gov when a hurricane approaches the coastline. With cloud, clients also have more control over costs. Under CGI's contract with DHS, CGI notifies the Department when 80 percent of a monthly not-to-exceed dollar limit is reached and does not bill any costs beyond an approved threshold unless the contract is modified.

- **When migrating to the cloud, agencies can have confidence in strong security.** The number one cloud question federal agencies ask CGI is: “Is the cloud secure?” Having taken many agencies live in the cloud, CGI can answer, “yes,” because its cloud is designed to meet federal security requirements. Specifically, CGI’s federal cloud was built to ensure that agencies have automated security management, greater redundancy, improved disaster recovery, and simplified security auditing. In addition, CGI has found that shifting public data to an external cloud has reduced agencies’ risk of exposing internal data. As a result, considerable opportunity remains to increase government savings from the cloud while maintaining strong system security. CGI’s federal cloud provides FISMA compliance for low and moderate impact systems, which represent 88 percent of federal agency systems. To date, agencies have migrated only a tiny fraction of these systems to the cloud. This Subcommittee can encourage agencies to seize on this savings opportunity by moving beyond the security question to migrate low and moderate impact systems to certified-secure federal clouds.
- **Strong leadership and inter-departmental cooperation increase the results from cloud.** CGI commends the GSA for both: (1) its leadership role with the IaaS contract, which provides agencies with a vehicle to quickly access secure cloud solutions, and (2) the recent development of the FedRAMP model, which represents a significant and necessary step forward as the federal government looks to implement the cloud. It is critical that the federal government adopt a common risk framework for all its agencies. Without this consistency, agencies are likely to look for highly-customized solutions that often hold no real extra benefit and severely limit potential cost savings. Moving forward, CGI is hopeful that FedRAMP will have the necessary resources to operate efficiently and avoid becoming a bottleneck given the tremendous existing (and likely continuing) demand for cloud services.
- **Significant acquisition challenges exist.** In discussions with dozens of agencies on this topic, CGI has seen a wide variety of approaches to transitioning to the cloud. CGI agrees with the GAO’s assessment that statutory changes are necessary to adjust IT budget models to better enable flexible development. However, the existing tools also can be used more widely. Although many agencies have moved aggressively into the cloud and used existing contract vehicles, many others have struggled to modify their procurement methods when purchasing cloud services. Cloud computing not only represents a fundamental change to how IT services are delivered, but also in how they are procured. The notion of paying for IT services in a more “elastic” fashion is very different from the traditional “firm fixed price” and “time-and-materials” contracts familiar to most government acquisition professionals. Additionally, many agencies are pursuing lengthy procurement processes rather than using readily-available contract vehicles that could significantly accelerate cloud migration. Continued education around these tools and the “new way” of acquiring these IT services will be critical going forward. In addition, strong leadership across federal agencies, continued oversight, and encouragement from the members of this Subcommittee are also critical to reduce acquisition costs and accelerate IT cost reduction from cloud migrations.

Moving Beyond the Cloud: Technology

Although cloud computing receives most of the public's attention, there are a number of other IT opportunities that would allow for increased collaboration between the public and private sectors and push government to achieve greater cost savings and provide better service to citizens. In general, CGI and other private sector companies stand ready to respond quickly and provide the latest skills and technology around the emerging needs of federal agencies. In CGI's experience, this serves as the best complement to government staff, who remain experts in their agencies' missions.

Cybersecurity issues remain important to all current and future government technology. That said, there are significant opportunities ahead in government IT. New technology can springboard government into a new era of efficiency and transparency. The caution, based on lessons learned, is not to address these new technologies in silos. Although investment in the cloud, mobility, and data analytics will result in cost savings, it's the convergence of these technologies that will have the greatest impact on transforming government. Just imagine the day when a member of Congress can search real-time data to analyze the effectiveness of a program anytime and anywhere, because the data is stored in a secure cloud and made available to any device. The quest for such meaningful data is now within reach.

- **Join the mobility revolution** – The power and explosion of mobile devices is one of the biggest disruptions in government IT. The obvious benefit is the anywhere, anytime access. However, to unleash this power, agencies must develop data and applications to meet the new mobile world. Today, industry will say that mobile application development is not difficult. The challenge is unleashing the data from legacy systems into these mobile applications. Earlier this year, OMB engaged the public in a conversation on federal mobile strategy. This strategy should include policies for provisioning and managing mobile devices to ensure cost savings. But real success requires a focus on data quality, access, and architecture principles that will enable liberation of the data so that the information can be leveraged and used more broadly both in and out of a mobile environment. If these principles continue to be pushed, then the government can fundamentally change the way it does business. For example, CGI's application called "IQ Suite" enables clients to view the status, risks, and performance metrics of its IT projects. CGI's clients view this real-time data anytime and anywhere, replacing the need for a "monthly" progress report full of static and outdated data.
- **Liberate "big data" to harness actionable information.** The topic of "big data" and analytics is increasingly on the list of top challenges facing federal agencies. CGI sees it as a huge opportunity for federal agencies to harness their data to allow for more detailed analysis of agency operations and provide unparalleled transparency into how government spends money and what outcomes it achieves. Agencies can move from simply collecting and manipulating data to actually using the data to create actionable information. To drive results, Congress must identify and eliminate stovepipes that may prevent a broader implementation of these tools

across the federal government. These tools also can play a valuable role in detecting and eliminating fraud and identifying overlapping programs. In fact, every day, CGI sees firsthand the value in data analytics in the work it does in the recovery of fraud, waste, and abuse.

Moving Beyond the Cloud: New Ways of Procuring and Delivering IT Services

Technology alone can produce savings, but how the federal government procures and delivers IT can offer savings too. Below are just a few examples of the ideas that CGI currently deploys across its portfolio of government and commercial clients.

- **Expand the map – Diversify the geography of IT delivery.** Cloud computing shows that IT applications and systems can be developed and hosted anywhere in the United States. This model is not new for CGI. Today, through three (3) onshore centers of excellence in Belton, Texas; Lebanon, Virginia; and Troy, Alabama; CGI provides its government and commercial clients with high-quality IT services at costs significantly below the average for metropolitan U.S. cities, delivering cost savings of approximately 20 to 30 percent while providing meaningful job growth and economic development in these communities. By 2016, CGI will have added more than 1,000 jobs in these centers and plans to continue making investments in other communities around the country. Congress and the Administration should encourage agencies to seek out new delivery models when procuring IT services.
- **Encourage innovative contracting models that can help deliver more with less.** In addition to the recommendations in GAO's report regarding statutory changes to enable more flexible IT development and consolidate authority with agency CIOs, Congress and the Administration should provide agencies with more freedom to enter into innovative agreements with industry to allow government to significantly reduce its up-front costs. As you know, the CMS RAC program is funded through contingency fees. CGI and its fellow RACs pay all of the set-up costs and get paid a percentage of amounts successfully recovered. There are many other areas across government where the private sector could assume initial costs and get paid only when agencies begin seeing the benefits of reduced costs and/or enhanced revenues. However, since the 2009 sunset of the "Share in Savings" provision of the E-Government Act of 2002, agencies rarely have the ability to enter into this type of innovative agreement. If the federal government wants to do more with less, then it should embrace new methods of contracting that shift risk and up-front costs to industry partners. Otherwise, given the tight federal budget environment, there will continue to be a challenge around significant, short-term investments justified by long-term returns.

In closing, this fundamental shift in technology can enable a more effective, efficient, and transparent federal government. Movement to the cloud will result in lower IT costs and the ability to share software and services more widely across the federal enterprise. However, the cloud only represents a small part of what is possible. Whether it is how IT services are procured or where they are performed,

Congress and federal agencies also must capitalize on other ways to save money and allow for more investment in technologies to maximize the benefit to the general public. Expanded investment in data quality and broader use of new technologies aimed at liberating data from old systems represents an opportunity for the federal government to provide better and more accurate information to citizens and enable Congress to make more informed decisions around budget priorities. All of these objectives can be achieved by ensuring discipline in spending, leveraging existing investments, and investing in emerging technologies to improve government services.

Thank you once again for the opportunity to participate in this important hearing. I would be happy to answer any questions that the Committee may have.



**Written Testimony of
Nick Combs
“Innovating with Less: Examining Efforts to
Reform Information Technology Spending.”
Before
U.S. Senate Committee on Homeland Security and Governmental Affairs
Subcommittee on Federal Financial Management, Government Information,
Federal Services, and International Security
May 24, 2012**

Chairman Carper, Ranking Member Brown and other distinguished members of the Subcommittee, my name is Nick Combs and I am the Chief Technology Officer for EMC Corporation’s Federal Division. On behalf of EMC and our 54,000 employees, thank you for inviting me to testify today. I will discuss the many ways information technology can further enable the federal government to do more with less and how IT is being transformed through the adoption of cloud computing infrastructure and services.

Prior to joining EMC, I served for more than 25 years in the federal government. I was appointed as the Deputy Chief for Enterprise IT Solutions at the Defense Intelligence Agency, where I was responsible for the engineering and program management of all activities in the Department of Defense Intelligence Information Systems (DoDIIS) environment. I also served as the IT Director and Chief Information Officer of the National Media Exploitation Center (NMEC) under the Office of the Director of National Intelligence. Over the course of my career in government and the IT industry, I have direct experience resolving many of the IT challenges facing organizations today, particularly as enterprises transition to cloud services, manage unprecedented amounts of “big data” and strive to improve trust and cyber security.

Headquartered in Hopkinton, Massachusetts, EMC is a global leader in enabling organizations to transform their operations and deliver IT as a service. Fundamental to this transformation is cloud computing. Through innovative products and services, EMC

accelerates the journey to cloud computing, helping IT departments store, manage, protect and analyze their most valuable asset – information – in a more agile, trusted and cost-efficient way.

We cooperate, partner and work with various public and private sector organizations that range in all sizes and come from diverse missions and business models. Within the federal government, all cabinet level departments and agencies utilize EMC's innovative and cost-effective solutions to address issues and opportunities associated with transforming IT, transforming the business they conduct, and addressing cyber security challenges. However, we are also a leading provider of technology and services to the private and financial sector, with some of our largest commercial customers headquartered in both Delaware and Massachusetts.

As I have said in other public forums over the past 12 months, enterprise IT users in both government and industry often tell us that their current IT infrastructures are too complex, inefficient, inflexible and costly. Almost three-quarters of IT budgets are spent to “keep the lights on” and maintain existing stove-piped IT systems and applications, with only about 25 percent being spent on innovation to deliver new and improved services efficiently and securely to end users. This scenario is as commonplace in the private sector as it is in the public sector and everyone is committed to doing more with less.

EMC is no different and has worked hard to find greater efficiencies to make our own IT operations leaner. EMC's internal shift to a cloud-based infrastructure has helped the company save millions of dollars and significantly improved IT service delivery, while also improving energy efficiency and sustainability. For example, data center consolidation and cloud computing has enabled EMC to save nearly \$80 Million in data center equipment costs and another \$12 Million in power and space savings to date for an overall 34 percent increase in energy efficiency. This is equivalent to 100 million pounds

of CO₂ reduced. The other benefit of our shift to the cloud has been a 170 percent gain in storage administrator productivity.¹

We believe that lessons learned from EMC's journey to the cloud – as well as that of many of our customers and partners in the private sector and at the state/local level -- are equally relevant to the course being chartered by federal IT stakeholders. Some examples of the benefits of cloud computing and data center consolidation reflecting various segments of the U.S. economy include:

- Oregon-based Columbia Sportswear, a leading innovator in active outdoor apparel, footwear, accessories and equipment has increased the performance of its IT infrastructure using 25 percent less space after implementing a cloud computing model. At 95 percent virtualized, Columbia has reduced its storage total cost of ownership by 40 percent while enabling 50 percent more virtual machines to be supported in the infrastructure.
- Texas-based Lone Star College System, the fastest-growing community college system in Texas has deployed a private cloud to deliver IT-as-a-Service to over 90,000 faculty, staff and students at more than a dozen locations. In moving to a cloud model, Lone Star has saved more than \$600,000 in capital expenditures by utilizing virtualization and consolidating its IT environment. At 90 percent virtualized, Lone Star has reduced its energy consumption by 66 percent while increasing its ability to deliver new IT services in less than a week compared to three to four months before moving to the cloud.
- Independent Bank, a Michigan-based bank, has also achieved many benefits from moving to a cloud environment. At 70 percent virtualized, the bank has eliminated 65 servers and avoided additional server expenditures even as its environment expands. All the while, Independent Bank has reduced the time to deploy servers from at least a day to just 1-2 hours. In addition, the bank has seen server-related power consumption dramatically reduced. When it comes to backup, Independent Bank has also reduced its backup storage capacity requirements while decreasing the time to recover data of critical systems from days to just a few hours and even minutes.

¹Validated in ESG IT Audit, EMC IT – a Blueprint for DataCenter Efficiency, by The Enterprise Strategy Group, April 2009.

- At 90 percent virtualized, the City of Denton, Texas is leveraging virtualization and cloud infrastructure technologies to optimize efficiency, streamline management and transform its IT infrastructure. Since implementing its EMC-based infrastructure, the City of Denton has dramatically increased performance, streamlined administration, and developed a solid business continuity strategy.
- As a result of data center consolidation efforts, the Commonwealth of Massachusetts now uses a single content repository for all eligibility systems. This eliminates maintenance costs of multiple systems, as well as paper and manual processes. This also enabled customer service improvement by enabling content to be searched across all systems; resulting in response time improvement of four days to constituents.

IT transformation within the enterprise can be accelerated by aggressively consolidating data centers, transitioning legacy IT systems to cloud-based infrastructure and services, and building security into the cloud architecture from the beginning. But to do that, organizations have to make targeted investments in enabling technologies such as virtualization, converged IT infrastructure and scalable data storage, data analytics and information security in order to get the maximum amount of cost effectiveness, efficiency and agility over the long haul. While federal agencies are beginning to make these critical investments, budget cuts could stifle the federal IT transformation underway if they are misdirected.

As you know, Congress has placed federal IT spending on a diet due to federal belt tightening measures designed to reduce budget deficits. In my view, diets are only successful if you make smart choices about what you consume, not just focusing on a reduction of food and calories. If you don't invest in the diet, by eating healthy, exercising and having the right balance, then it is likely that you will not succeed in your overall objective. The same approach should be applied to federal IT transformation. While we should buckle down to reduce redundant and unnecessary expenditures, we should invest strategically in the technologies, services and processes that will enable the federal government to do more with less over the long term. To enable our internal shift to the cloud – in order to gain the improvements in productivity, energy efficiency,

transparency and trust – EMC had to *make investments* in technologies and converged IT infrastructure in order to achieve our savings and productivity objectives.

Agency CIOs should have budget flexibility in order to aggressively shift resources towards cloud computing and away from far more limiting and costly legacy systems and services. In a recently released report by MeriTalk, titled “Cloudy with a Chance of Savings,” federal agency savings are already estimated to be at \$5.5 billion in IT costs with current cloud computing efforts, and could go as high as \$12 billion annually.² Based on our own savings from cloud computing and other industry assessments, we believe the federal government is well positioned to save billions if efforts to utilize cloud computing are fully adopted and implemented through effective governance and federal budgets.

Congress, including this Senate Subcommittee, and the Office of Management and Budget (OMB) should be commended for ongoing efforts to meet these challenges head-on. OMB’s improvements to federal IT governance when fully implemented could help federal agencies do more with less while providing better services to federal taxpayers. OMB’s plans including the Cloud-First policy, the Federal Data Center Consolidation Initiative, and the Federal IT Shared Services Strategy are changing the federal IT landscape for the better. However, increased flexibility within the federal budget process is also needed to accelerate IT innovation.

As noted in the Government Accountability Office (GAO) report released this week, Congress and the Executive Branch must identify budget models that will allow increased budget flexibility through working capital funds or other centralized IT operations and maintenance functions.³ Last year, the TechAmerica Foundation Cloud2 Commission also specifically recommended that OMB “establish policies and processes

²MeriTalk report titled “Cloudy with a Chance of Savings”, April 25, 2012 Cloud Computing Brainstorm on Capitol Hill (<http://www.meritalk.com/ccx/chanceofsavings>).

³GAO Report on Information Technology Reform: “Progress Made; More Needs to Be Done to Complete Actions and Measure Results”, April 2012.

for providing fiscal incentives, rewards and support for agencies as they take steps towards implementing cloud deployments”.⁴

Cloud Computing

Simply put, cloud computing is about delivering applications online to users at their desktops, on laptops, tablets or smart phones. This can be done in-house, through an enterprise’s “private” cloud, or through third-party, web-based service providers in the “public” cloud. We expect most large enterprises will prefer a hybrid⁵ approach that allows them to access some applications, like payroll processing, through service providers while retaining control over their most mission-critical applications in their private cloud data centers.

As the TechAmerica Foundation Cloud2 Commission pointed out in its 2011 report,⁶ cloud computing is really based on a simple idea: “By allowing [IT] users to tap into servers and storage systems scattered around the country and around the world – and tied together by the Internet – cloud service providers can give users better, more reliable, more affordable, and more flexible access to the IT infrastructure they need to run their businesses, organize their personal lives, or obtain services ranging from entertainment to education, e-government, and healthcare.”

We agree and this shift brings new efficiencies, cost savings, and helps organizations gain more productivity from their IT systems.

EMC supports the Administration’s Cloud First and Shared Services initiatives along with the ongoing federal data center consolidation efforts. We understand that the transition to cloud computing will not occur overnight; rather it requires a journey to

⁴ Recommendation 12 (Incentives), “Cloud First, Cloud Fast: Recommendations for Innovation, Leadership and Job Creation”, A Report from the Commission on the Leadership Opportunity in U.S. Deployment of the Cloud (CLOUD2), 2011, pp 24-25.

⁵ *Hybrid Cloud*: The cloud infrastructure is a composition of two or more clouds (private, community, or public) that remain unique entities but that are bound together by standardized or proprietary technology that enables data and application portability. *Source*: NIST Cloud Definition.

⁶ “Cloud First, Cloud Fast: Recommendations for Innovation, Leadership and Job Creation”, A Report from the Commission on the Leadership Opportunity in U.S. Deployment of the Cloud (CLOUD2), 2011, pp 5.

realize all the benefits the cloud has to offer. The federal government has many unique environments, but these diverse organizations can benefit greatly from the successes that commercial organizations have already achieved through the adoption of cloud computing. The economies of scale, flexibility, and efficiencies of these cloud infrastructures will not only save significant amounts of capital and maintenance costs, but enable the application and use of information across our enterprises as never before.

One can only imagine all the ways in which information technology could be applied in the government if federal IT professionals were freed from the burdensome task of managing today's complex and sometimes antiquated infrastructures. Former OMB Director Orszag made a similar point two years ago when he highlighted the reality that government organizations are unable to match the productivity and innovation of the private sector because of archaic and complicated computing infrastructure.⁷ Cloud computing provides a mechanism to address this technology gap, enabling the federal government to unleash new innovations and improve productivity.

The adoption of cloud computing will also help improve cyber security over the long-term. While ensuring "trust in the cloud" is critical to spurring cloud adoption, there should be tangible improvements in security that come with the shift to the cloud that is underway.

Trust in the Cloud

Cyber security is clearly one of biggest concerns of federal CIOs who are considering implementing cloud infrastructure and services. When I speak to customers about their journey to the cloud, they consistently bring up cyber security and data privacy issues as possible barriers to adoption. In the same MeriTalk report cited a moment ago, 85 percent of the respondents indicated that security was the top obstacle to the cloud.⁸ However, as the current Federal CIO, Steven VanRoekel emphasized recently

⁷ Remarks by Peter Orszag, Center for American Progress, June 8, 2010, Washington, DC.

⁸ Culture issues (38 percent of respondents) was the second most identified obstacle in the report.

at a public forum that I attended in Fairfax, Virginia security doesn't have to be a barrier to cloud adoption, but can actually be an enabler.

For example, technologies and effective best practices exist today to deliver private and hybrid clouds inside federal organizations to gain dramatic improvements in IT efficiency, while also providing the security required to protect sensitive information within the government enterprise. Today, organizations struggle to have control and visibility in their physical IT environments. This challenge need not be exacerbated in the cloud. The good news is that virtualization technology creates the right conditions for organizations to improve control and visibility beyond what's available in today's physical environments.

With virtualization and cloud computing, applications have become completely disassociated from the IT infrastructure on which they run. It provides the flexibility to have the same application run in the datacenter next door on one day, in a centralized datacenter hundreds of miles away the following day, and in a service provider datacenter another day. For that reason, improving cyber security cannot solely rely on the controls of the IT infrastructure such as the network perimeter. Security must evolve to become much more centered on the users and on the information they are accessing. For example, emerging technology practices such as adaptive authentication and data loss prevention are both widely used in the commercial world and are increasingly used in federal government agencies.

We believe in the transformation power of virtualization – so much so that we are focusing our cloud-security strategy and development initiatives on making security and compliance in the cloud: 1) logical and information-centric, 2) built-in and automated, and 3) risk-based and adaptive. For years, EMC, RSA (the Security Division of EMC) and our sister company, VMware, have worked to embed security, management and compliance controls into the virtualization platform.

In addition, RSA and EMC are working with cloud providers to give them the means to demonstrate security and compliance to their customers, removing this barrier to greater cloud adoption. For example, the RSA Cloud Trust Authority gives cloud customers an easy and scalable way to ensure trusted access to multiple cloud providers, while giving the cloud providers themselves a more automated, consistent way to demonstrate compliance with cloud standards for security and confidentiality as they evolve. Over time we expect the Cloud Trust Authority to evolve to offer additional means of security and compliance for digital information and identities.

During the next several years, cloud computing adoption could enable organizations to improve information security by replacing the disparate and legacy IT systems that are so common today. Instead of having our IT and information security organizations protecting stove-piped systems, organizations are able to implement centralized monitoring, management and security solutions.

When implemented correctly, cloud environments can be much more secure than today's IT environments. The level of transparency cloud vendors provide is a critical aspect when choosing a cloud partner. The federal government must take a trust-but-verify approach. Cloud vendors should be required to provide the tools and capabilities to allow customers visibility into their cloud environments to ensure compliance with those service level agreements, or SLAs. SLAs should be clearly defined and monitored by government customers to ensure maximum service value is received for budget dollars spent. For instance, SLAs in areas of performance, availability, backup and recovery, archive, continuance of operation, and disaster recovery must be clearly stated, measured, and monitored by the government agencies. Additionally, government risk and compliance capabilities need to be deployed and dashboards provided to the customer to ensure that our information is protected and our policies are being followed.

Security must be risk-based and driven by flexible policy that is aligned to the business or mission need. The need for a common framework to ensure that security policies are consistently applied across the infrastructure is critical to success. That is

one of the principle reasons that EMC supports updating the Federal Information Security and Management Act (FISMA). Enacting updated FISMA legislation that will enable continuous monitoring is essential to address today's threat environment as well as provide for an effective operational risk management framework for tomorrow's cloud computing infrastructure. By adopting continuous monitoring practices, federal agencies will be able to more effectively address advanced cyber threats as well as save money over the long haul by moving away from costly, paper-work intensive compliance.

Data Center Consolidation

In the recent report, GAO indicated that OMB's efforts to consolidate 800 data centers by 2015 is listed as incomplete because of a lack of agency detailed reports. The good news in our view is that the federal government can save several billion more in taxpayers' dollars once these plans are fully executed.⁹ These savings could also help the government to eliminate duplication and high energy costs. Last year, the Senate Appropriations Committee report accompanying the funding bill for the General Services Administration highlighted the data center migration efforts taking place at the Department of Homeland Security. According to the Committee report, "the Department of Homeland Security has testified to the Committee that it expects to save approximately five billion dollars in taxpayer funds over the next twenty years due to recent data center consolidation efforts. Building on current successes across the Government will allow GSA to better demonstrate and measure the cost-savings potential of such activities and thus encourage other agencies to adopt such best practices."¹⁰

EMC and the Informatics Information Group have helped the Walter Reed Army Medical Center comply with its mandated closure as a result of the Base Realignment and Closure Commission (BRAC) recommendations. This effort resulted in virtualization of 99 percent of servers before migration of data and systems to two other facilities.

⁹ GAO Report on Information Technology Reform: "Progress Made; More Needs to Be Done to Complete Actions and Measure Results", April 2012.

¹⁰ U.S. Senate, Committee on Appropriations. Financial Services and General Government Appropriations Act, 2012 (S. Rpt., 112-79). Washington: Government Printing Office, 2011.

According to Daniel J. Lohrmann, Michigan's Chief Technology Officer and Deputy Director of the Infrastructure Services Administration, "Our constant challenge is doing more with less...We thought that as budgets were slashed, user demand would drop, but the exact opposite happened."¹¹ Efforts to consolidate the number of data centers helped Michigan curtail spending on data center maintenance and energy costs for a savings of \$1.4 million annually.

According to the Data Center Consolidation and Cloud-Computing (DC4) Coalition, for every \$1 customers invest in data center consolidation, they can expect a \$3 reduction in their operating costs within three years. That is exactly what happened in Michigan and is a good barometer for federal IT officials to examine further.

In order to fully implement IT transformation, data center consolidation should be aggressively adopted across the federal government. I am encouraged by Mr. VanRoekel's efforts to include data centers of less than 800 square feet in his plans as many of these data centers are poorly designed and use more energy than necessary. The Federal CIO's efforts to shutdown these data centers will push the total number to be consolidated up to 1000 by 2015 and should result in greater efficiency and overall cost savings for the federal government.

Updating Federal Budget and Procurement Processes

As mentioned earlier in my statement, budget flexibility is a critical ingredient that could help federal agencies to procure and implement IT transformation solutions to consolidate data centers and transition to the cloud. The TechAmerica Foundation Cloud2 Commission emphasized budget flexibility in one of its principal recommendations aimed at federal IT transformation. Specifically, the Commission recommended that "...Agencies should demonstrate flexibility in adapting procurement models to acquire cloud services and solutions. Congress and OMB should demonstrate

¹¹ State of Michigan Case Study, EMC Corporation (<http://www.emc.com/collateral/customer-profiles/h7277-state-of-michigan-cp.pdf>)

flexibility in changing budget models to help agencies acquire cloud services and solutions.”¹²

A plan for upfront costs associated with IT solutions is an important issue for Congress to consider in reforming how agencies leverage and invest in cost cutting technologies. As an example, The President’s FY 2013 budget request reduces overall federal IT spending by \$586 million when comparing FY 2013 enacted levels to the request level of \$78.8 billion. 2.7 percent of this decrease is from the Department of Defense’s closure of 100 data centers.¹³ The President’s budget acknowledges that the proposed plans to consolidate these 100 data centers fails to take into account all upfront investment costs.

As the GAO noted in its recent report, progress has been made but more remains to be done. Tackling upfront costs associated with data center consolidation and cloud computing probably sticks out as the most significant hurdle that agencies must clear. Federal agencies must speed development of a funding plan to implement data center consolidation and its shift of Federal services to the cloud. The Administration’s launch of PortfolioStat coupled with the IT investment reviews contained within the proposed Information Technology Investment Management Act, should help the Office of Management and Budget to surpass previous efforts to track IT spending and hopefully can help agencies to speed delivery of spend plans for data center consolidation and cloud deployments. PortfolioStat and other transparency systems will support Congress and the Executive Branch aims to eliminate duplication and spot anomalies to prevent waste, fraud, and abuse.

Unless agencies can rely on realistic detailed plans to acquire technologies to help them do more with less, data center consolidation and cloud computing goals may not fully gain traction and federal savings could remain lower than anticipated.

¹² Recommendation 11 (Federal Acquisition and Budgeting), “Cloud First, Cloud Fast: Recommendations for Innovation, Leadership and Job Creation”, A Report from the Commission on the Leadership Opportunity in U.S. Deployment of the Cloud (CLOUD2), 2011, pp 23-24.

¹³ Data source: Agency FY 2013 IT budgets, reported February 2012.

Conclusion

In conclusion, there is a wealth of knowledge within the private sector that can help government agencies identify, update, and support “best practices” based on lessons learned from both public and private sector implementation of data center consolidation and cloud initiatives.

I believe that now is the time to redouble IT investments efforts to incentivize cloud transition initiatives that improve the security and delivery of government services at significantly reduced operational costs benefitting the American people.

As EMC Chairman and CEO Joe Tucci stated in his 2012 Letter to Shareholders, cloud computing is transforming the way information technology is architected, deployed and consumed. We believe market adoption of cloud computing represents a fundamental shift in industry dynamics that will be as far-reaching and impactful over time as the adoption of personal computers was a generation ago.

EMC and I look forward to continued work with this Subcommittee to accomplish the objectives discussed within my written statement. We are committed to helping the federal government to do more with less.

Mr. Chairman and Members of the Subcommittee thank you for your attention to these important issues and I would be happy to answer any questions you may have at this time.

**Testimony of Jennifer Morgan,
President, SAP Public Services**

**Before the Subcommittee on Federal Financial Management,
Government Information, Federal Services, and International Security
Committee on Homeland Security and Governmental Affairs
United States Senate**

Thursday, May 24, 2012, 10:00 am



Testimony of Jennifer Morgan, President, SAP Public Services
Before the Subcommittee on Federal Financial Management, Government
Information, Federal Services, and International Security
U.S. Senate Committee on Homeland Security and Governmental Affairs
Thursday, May 24, 2012, 10:30 am

Chairman Carper, Senator Brown, and Members of the Subcommittee: Thank you for this opportunity to share SAP's perspective on the federal government's use of information technology (IT).

My name is Jennifer Morgan, and I serve as President of SAP Public Services, a US-based subsidiary of SAP, the world's leading provider of business software. Our mission is to help companies and governments to run better. Our vision is to help the *world* run better. Over the last 40 years, we have been innovation leaders in core business processes such as financial management and human resource management; and today we continue to lead a new wave of innovation enabled by business analytics, in-memory computing, cloud computing, and mobility.

In the United States., SAP helps thousands of organizations be more agile and competitive in the global economy. My business unit, SAP Public Services, serves more than 3,800 public sector agencies in almost all 50 states, from local school districts to statewide programs to the largest federal defense and civilian agencies.

Some of our best known customers are:

- The US Army, US Navy and Defense Logistics Agency;
- Civilian agencies including the Departments of Agriculture, Interior, State and Treasury, plus US Customs and Border Protection, NASA, NIH and CDC;
- Many state and local government agencies from Orange County Public Schools to the City of Houston to the Commonwealth of Pennsylvania; and
- Many higher-education institutions including MIT, University of Kentucky, Johns Hopkins and Boston University.

Based on SAP's public and private sector experience—and our global technology leadership—we are honored to share our perspective on how technology innovations can help address the challenges that confront the US Government.

Like you, we believe passionately that IT is part of the solution, because we know from experience that IT enables:

- Faster, more intelligent decision-making;
- Turning insight into foresight;
- Higher performance;
- Meaningful efficiencies and cost savings; and
- Greater transparency and accountability, which are essential to efforts to reform, consolidate and course-correct large government programs.

Technology Mega-Trends

Technology is evolving at a pace we have never seen before. No longer is technology being driven by large companies and governments; it is being driven by consumers, or in the case of the public sector, by citizens with higher expectations of what technology can do. Businesses and governments must adapt to these changing expectations.

We see several mega-trends that are reshaping how technology can enable the missions of government agencies.

In-memory processing. You have probably heard of the term “Big Data,” which refers to the growing volume of information produced in the course of daily life. In the United States alone, companies store enough data every year to fill 10,000 Libraries of Congress. From the beginning of time until 2003, humanity created an estimated 5 exabytes of data. In the last 12 hours, we created that same amount of data.

In response, industry has created powerful new tools for managing and analyzing all that data, in terms of both volume and speed. For example, the SAP HANA in-memory technology removes entire layers of hardware from the solution stack and allows

organizations to analyze massive amounts of unstructured data thousands of times faster than old disk-based systems.

Here is one illustration of how Big Data technologies are changing the world for the better. SAP worked with one of the world's leading medical-research hospitals to reduce the amount of time needed to analyze the DNA in cancer tumors from 3 days to *2 minutes*. Patients and their families receive diagnoses much faster; and therapies can be better tailored to each patient's particular condition. It is hard to think of a better example of the benefits of "Big Data" management than improved medical care for loved ones with cancer.

Think of how these technologies can allow government agencies to analyze huge data sets to combat waste and fraud, or to spot ways to cut spending while improving services - proactively.

Mobility. Our growing ability to make data and applications accessible to anyone, anytime, on any device is critical at a time when there are 5 billion mobile phone subscribers in the world, and more than 9 billion mobile apps downloaded to date. When we marry the benefits of anytime, anywhere, any-device connectivity with access to business data and applications, including real-time analytics—we achieve enormous gains in efficiency and productivity.

In a *GovLoop* survey sponsored by SAP, close to 60% of the federal managers who responded said their organizations would roll out between one and four new mobile applications in the next 12 months. Another 10% said they were likely to introduce five or more mobile apps in the coming year. The most commonly mentioned reasons for adopting mobility in government were:

- Reducing costs;
- Improving communications with constituents;
- Improving internal communications; and
- Linking data and business processes.

Obviously, the mobility trend raises several challenges for Federal CIOs and IT managers. For example, in the *GovLoop* survey, we found the majority of government organizations will only support one kind of mobile device for employees. Obviously, this creates a lot of grumbling for people who want to use a different kind of device. So now, many CIOs are looking at ways to enable “BYOD,” or “bring your own device.” BYOD is another example of how empowered consumers and constituents are driving these trends.

Cloud computing. Public and private sector organizations want flexible ways to deploy technology without having to maintain expensive, on-site infrastructure. They want fast, flexible, cost-effective IT services on demand. Cloud computing offers many opportunities for government to consolidate and streamline operations, just as it does for business. In fact, an independent study sponsored by SAP recently found that cloud computing could save US businesses as much as \$625 billion over five years, much of which could be reinvested in new business opportunities and jobs.

Likewise, there is enormous potential for cloud computing to save the US Government money while improving mission performance and creating good jobs in our economy. We compliment the administration on its “Cloud First” and “Virtualization First” policies and working with agencies and business partners to make them a success.

Across all of these trends, there is a consistent success factor, namely collaboration and co-innovation with partners and customers. A very large and growing portion of SAP’s business occurs in collaboration with other companies and, most importantly, with our customers. New solutions must extend the investment made in legacy solutions. Vendor lock-in is “out;” co-innovation and teamwork is “in.”

We have found that the fastest and most successful results occur when industry and government co-innovate to bring new possibilities to life through technology.

Taken together, the rise and convergence of these mega-trends – cloud, mobility, Big Data, and cross-industry collaboration – are helping IT users achieve quantum leaps in

efficiency, speed, and accountability. The kind of real-time, big-picture situational awareness and decision-making ability that used to appear only in science fiction is becoming reality in business and government today.

The pace at which technology is advancing will not slow for anyone. That is why the most successful businesses in the private sector are constantly adapting to stay relevant and competitive, and the public sector must do the same.

A Case Study in These Trends

Let me tell you about one federal agency that has led the way in innovation and illustrated the power of these trends.

When Congress and the Obama administration created the **Recovery Accountability and Transparency Board** in 2009 to help ensure transparency and accountability in federal "stimulus" spending, the Board faced several challenges, such as:

- Determining how to manage huge quantities of evolving data from a variety of sources about stimulus grants, loans, vendors employed, and jobs;
- Presenting this information to the public in an understandable way on any Internet-access device; and
- Not spending millions of dollars that the board did not have to create an entirely new infrastructure and business process to manage all this data.

To address these challenges, the Recovery Board turned to SAP and several other companies to launch a website called Recovery.gov, which takes a huge amount of program data from a variety of sources, analyzes it, and presents it to the public in a user-friendly online dashboard. The industry consortium launched Recovery.gov in just *11 weeks*. As part of that effort, we worked with Amazon to base the solution in the

cloud, a move that took just 22 days and made history as the first federal agency website to launch in the public cloud.

SAP also worked with Apple, Google, and other companies to make the data accessible on a variety of mobile devices. As a result, you can download the Recovery.gov app on your smartphone and immediately track spending in your states and local communities.

More recently, the Recovery Board leveraged these technologies to create FederalAccountability.gov, which allows agencies to evaluate the risk of each applicant seeking government funds. This solution, called FAST ALERT, was deployed in about three months. It enables federal agency personnel to analyze many large data sets in real-time and identify instances of waste, fraud and abuse *before* they happen.

The Recovery Board experience is a success story in enabling better stewardship of taxpayer dollars while enhancing the public trust. We drew on the best of many organizations, both private and public; we helped the government be more agile; and we leveraged the megatrends of cloud, mobility, and Big Data to innovate for the common good.

Here are a few more examples of how public sector agencies are harnessing these trends:

- **At the USDA**, as a result of standardizing all financial management and accounting functions – and adding the SAP HANA in-memory database and advanced business analytics – we anticipate reducing the amount of time it takes the Farm Services Agency to run critical financial reports from minutes to seconds each. In an organization that runs thousands of financial reports a year, you can imagine the savings in time and money that can be put to other uses.
- Or consider the **State Department** and the **US Patent Office**, which have used our solutions to gain a clearer picture of their costs to deliver

services and come up with better fee structures and business processes to support their operations.

- At the local level, the **City of Boston** is implementing a performance-management solution that allows managers to assign and track performance measures; generate fast reports and online dashboards; and share results with colleagues, lawmakers and the public. As part of the deployment, which is occurring in a matter of weeks, not years, SAP hosted an “Innovation Jam” bringing together a wide array of solution providers and users to develop test-able prototypes within a 24-hour period.
- Or look at the **University of Kentucky**, which is using our solutions to identify students at-risk of dropping out and intervene sooner to improve student retention.

These are just a few examples of what SAP technology is making possible for our customers; and I know there are many more like them.

Recommendations for Federal IT Management

How can Congress and the Executive Branch make the most of these new technologies and reap the benefits for US taxpayers?

Well, first, we want to applaud the work being done by the Federal CIO and his colleagues across all levels of government who are working with industry to improve the way the public sector acquires and uses technology. Progress *is* being made, and we especially applaud efforts to move forward on data-center consolidation, cloud initiatives, and the use of mobile technology.

Still, as the GAO has reported, there is much more work that could be done.

For example, the government's IT procurement processes often take longer than the technology upgrades. This is a real problem at a time when technology innovation cycles are getting shorter, and costs are going down. The nature of the new technologies means that large, complex deployments are no longer the norm. The government's acquisition processes have to evolve to address this new reality.

It does not have to be this way; we need only look back on the last quarter century of acquisition reform panels to find good ideas that still need to be implemented. One of those panels was the TechAmerica Foundation's "GTO-21" Commission in 2010, in which SAP was proud to participate. Based on interviews with more than 100 federal acquisition experts, the commission reported that program managers face very complex compliance requirements when it comes to technology purchases. Programs are often understaffed from a management standpoint, and many lack continuity of personnel. Many government systems are so complex that they are not well suited to be completed at a fixed point in time; but rather, they need to be developed incrementally with input from many sources, including the end users.

These problems are compounded by the increasing use of Continuing Resolutions to fund the operations of government, and the resulting disruptions in planning and contracting processes.

The GTO-21 Commission recommended several steps to keep federal IT acquisition moving in the right direction, including:

- **First, focus on faster, more agile, incremental development using commercial, off-the-shelf technology.** More flexible contracting vehicles could include self-service app stores like the Apple iTunes store.

Incremental change is less costly and less likely to get out of control. It delivers value in months, not years. And it helps prevent the problem of vendor lock-in and escalating costs as the government's needs evolve and grow.

- **Second, foster an open dialogue between the government and its private sector partners** and “co-innovation” of the type that is so often seen in the private sector.

Congress and OMB should make it clear that public-private dialogue and collaboration are to be encouraged, not feared. On the industry side, big government contractors can improve dialogue by including key subcontractors and vendors from the start.

- **And third, the government needs to develop more professional program management capabilities in every agency.** OMB should formalize the career track, establish a Leadership Academy, and assign capable program managers to oversee every program from start to finish.

Mr. Chairman, I am not a policy expert, but SAP does employ some of the leading experts in these issues, and along with our industry colleagues, we have been proud to participate in several panels including the GTO-21 Commission, the “Cloud2” Commission, and the new Big Data Commission, announced just this week. Each of these prior efforts has outlined a series of common-sense IT policy changes that all sides can agree on, and the new Big Data Commission is aiming to do the same. I urge the subcommittee to examine these reports and adopt their recommendations.

Closing

It bears repeating that many of these steps can be taken with no new laws or regulations needed. Using existing authority, the IT industry can help government cut wasteful spending without passing a single budget cut. We can help increase revenues without touching the tax code. We can help prevent waste and fraud before they occur. We can dramatically improve the delivery of government services in a consumer-driven world.

SAP has achieved breakthroughs like this for governments at every level in the US and worldwide, and other companies are bringing their own innovations to bear.

The rapid progress of technology makes it possible for government to improve its performance while saving money and increasing accountability. SAP appreciates the opportunity to be a leader and partner in that effort. Thank you.

END

Answers to Questions for the Record
Submitted to Mr. Steven VanRoekel
for a hearing before the

Homeland Security and Governmental Affairs Committee
United States Senate

"Innovating with Less: Examining Efforts to Reform Information Technology Spending"
May 24, 2012

From Mr. Coburn

1. According to your testimony, you have expanded the original plan to consolidate 800 data centers to now propose 968 consolidations by 2015. How well have agencies complied with the administration's 2010 plan to consolidate data centers? Can you point to any agencies that have been particularly effective or other agencies that have been slow?

In December 2011, OMB announced that the Administration was expanding the efforts of the Federal Data Center Consolidation Initiative (FDCCI) to data centers of all sizes.¹ As the FDCCI continues, the government's goal will be to close at least 40% of identified data centers, consistent with the percentage used in our original consolidation goal. Our original goal of closing at least 800 data centers was based on a baseline number of 2,094 data centers.²³ By expanding the FDCCI to include data centers of all sizes, the baseline number of data centers has increased to some 3,000 data centers. That means we'll be looking to consolidate over 1,000 data centers by the end of FY2015 -- a goal that requires us to continue aggressively rooting out duplication and waste among data centers across the Federal government.

Any large consolidation effort -- and the Federal government's effort is likely the most complex ever undertaken -- requires time to deploy technical solutions, rightsize assets, build lessons learned and craft best practices. That is why agencies are required⁴ to report on planned and actual closures each quarter.⁵ It is important to stress that the quarterly and annual numbers are expected to change, as agencies continually update their asset inventories, refine their consolidation plans and reflect lessons learned. For this reason, we have focused on a percentage goal -- as the denominator changes, we can adjust our target to meet the 40% goal. Already, we have commitments from agencies to close 968 -- we expect that to go up to our goal as we work with agencies through the budget development process to increase closure targets.

To date, more than 250 data centers have been closed, with projections to close a total of 429 by the end of this fiscal year. Overall, each agency has had its successes and continues to experience challenges. From the Administration's perspective, we will continue to collaborate with agencies to provide them the tools so the consolidation succeeds in delivering better value to the American taxpayers. One area of particular success is the use of virtualization and the adoption of cloud computing. For example, robust uses of virtualization and cloud technologies have enabled the Census Bureau to reduce the data center power consumption of all its data centers by 10 percent. In another instance, the Bureau of Indian Affairs is using virtualization to reduce its data

¹ <http://www.whitehouse.gov/blog/2011/12/20/expanding-our-efforts-data-centers>

² <http://www.gpo.gov/fdsys/pkg/BUDGET-2012-PER/pdf/BUDGET-2012-PER.pdf>. Please see section 20.

³ <http://www.cio.gov/documents/25-point-implementation-plan-to-reform-federal%20it.pdf>

⁴ http://www.cio.gov/documents/CIO_Memo_FDCCI_Deliverables_Van_Roekel_3-19-12.pdf

⁵ These updates are published on Data.gov. Please see <https://explore.data.gov/Federal-Government-Finances-and-Employment/Federal-Data-Center-Consolidation-Initiative-FDCCI/d5wm-4c37>

center footprint from 14 to 1 by the end of this fiscal year. Virtualization is a key enabling step agencies take as they strategically assess how to deploy cloud computing solutions within their IT enterprises.

Another area where the FDCCI has made progress is interagency sharing. In a 2011 report on the FDCCI, the Government Accountability Office recommended that OMB, “require agencies to consider consolidation challenges and lessons learned when updating their plans.”⁶ OMB has worked with the co-chairs of the FDCCI Task Force (Task Force), an interagency body driving consolidation within agencies, and agencies to make the sharing of best practices a regular occurrence within our Task Force meetings.⁷ Agencies are also working more closely together to find new consolidation opportunities. As required under the 25 Point Plan to Reform Federal IT Management, on June 9, 2012, we launched a Federal data center marketplace where agencies can find or offer excess data center space or capacity to other offices and bureaus. The marketplace is hosted on a platform on the MAX Federal Community and is part of the Administration’s effort to develop greater collaboration between agencies. Offerings on the marketplace provide agencies with additional options for their consolidation plans, enabling more informed consolidation decision-making.

However, through 2.5 years of consolidation work, we have also encountered challenges. One of the most serious challenges relates to funding, both the upfront costs associated with consolidation and also accounting for the savings as consolidation occurs. Since the Task Force began operating in February 2011, agencies have stressed a need for a comprehensive tool to inform consolidation decision making, model consolidation paths and assist with the development of cost savings figures and funding needs. In response, earlier this year, the Task Force released the first version of the data center Total Cost of Ownership model. It is based on agency provided inventory data, built on best practices in the public and private sectors, and tailored to reflect the realities of the Federal Government’s operational structure. Moving forward, the model will help all stakeholders optimize spending on data center facilities, network management, and IT services to help agencies realize overall IT savings from consolidation.

As we stressed in the recently released Federal Shared Service Strategy⁸, agencies should be taking a “shared first approach” toward all aspects of technology. FDCCI, in conjunction with shared services and cloud computing, seeks to change the notion that every program, component or mission, needs a unique system with a unique data center. Instead, agencies should be developing enterprise wide solutions, which server multiple stakeholders. In that way, we can deliver services to the taxpayer faster, for less money and with fewer resources. In order to break down these cultural barriers, we are putting in place mechanisms so agencies can share resources. That is why the data center marketplace is so important. The online marketplace matches agencies with extra capacity to agencies with increasing demand, thereby improving the utilization of existing facilities. The marketplace will help agencies with available capacity promote their available data center space. Sharing mechanisms like this help break down the cultural barriers so the FDCCI and enterprise-wide solutions can succeed.

2. Would it be helpful for Congress to pass legislation requiring agencies to comply with your plan for data center consolidations?

While OMB would need to analyze any proposed legislation to fully evaluate how it could impact the FDCCI, at this point, the Administration believes legislation could limit, rather than enhance, agency efforts to consolidate data centers. Legislation would codify actions which are already required by government-wide policy and are currently subject to numerous oversight bodies, including Congress, OMB, and inspectors general. Legislation could also impose a one size fits all approach, limiting the flexibility currently afforded agencies, which choose

⁶ <http://gao.gov/products/GAO-11-565>

⁷ Examples of these can be found at <http://cio.gov/fdcci>

⁸ <http://www.gao.gov/assets/600/592249.pdf>

the most appropriate consolidation path suited to unique mission, policy and legislative requirements. Any proposed legislation would need to carefully weigh the different data center needs of each agency. The ultimate outcome of any proposed legislation should be results oriented, rather than process-oriented, and provide agencies with the tools to solve the challenges within the FDCCI.

Instead of codifying data center consolidation efforts, OMB believes a stronger mechanism to enhance the FDCCI is to empower agency CIOs to eliminate duplication and rationalize their agency's IT investments, including commodity IT services like data centers. This effort was jumpstarted by OMB Memorandum 11-29 (CIO Authorities)⁹ and continued more recently with OMB Memorandum 12-10 (Implementing PortfolioStat).¹⁰ Under the latter, agency Chief Operating Officers are leading an agency-wide IT portfolio review within their respective organizations called a PortfolioStat, specifically targeting duplicative commodity IT investments like data centers, as well as investments that are not aligned to agency missions or business functions. OMB believes these tools are providing CIOs with data to build business cases for consolidation that can overcome organizational inertia and convince managers to relinquish "ownership" of redundant IT assets. Data center consolidation should be a natural outcome that CIOs and their C[x]O partners are focusing on reducing costs and improve operational efficiencies of government. The end game is not data center closures per se, but a more efficient and cost effective government that delivers high quality services in agency mission areas. In that vein, Congressional attention via its normal oversight responsibilities has been and will continue to be helpful.

3. As your Administration moves forward with data center consolidation, and toward cloud computing, can you please describe what steps the administration is taking to ensure that this transition strengthens cyber security?

With regards to cloud computing and data center consolidation, the FDCCI's strategic approach has been to work with agencies so they can figure out the best path to consolidate. This might be (a) intra-agency, where agencies virtualize existing resources, decommission assets and/or physically move equipment to another facility, (b) inter-agency, where agencies can utilize another agency's spare capacity within operational data centers and/or (c) migrating systems to cloud computing platforms. In reality, agencies often take advantage of several or all of these approaches. As agencies consolidate, they must account for the security and reliability of their data and the continuity of operations for all services, mission critical or otherwise. From the outset, FDCCI stakeholders, OMB, the Federal CIO Council and agencies have made it a central element of the FDCCI that consolidation should in no way jeopardize the government's data.

In accordance with the Administration's "Cloud First" policy, agencies are required to evaluate safe and secure cloud computing options before making any new investments. It was also noted in our Federal Cloud Computing Strategy¹¹ that the government would address the challenges posed by cloud computing. The most notable of these and the one often cited as the largest barrier to cloud adoption is security. That is why the Administration launched the Federal Risk and Authorization Management Program (FedRAMP).¹² FedRAMP will change the way the Federal government secures cloud solutions by providing a standardized approach to security assessment, authorization, and continuous monitoring for cloud solutions. It leverages a 'do once, use many times' framework that saves cost, time, and staff currently associated with conducting duplicative agency security assessments. By utilizing FedRAMP, agencies can have confidence that if they use a cloud solution to consolidate, their data will remain safe and secure. This helps improve our overall cybersecurity posture, which we noted was a key strategic goal of the FDCCI when we launched the Initiative in February 2010.

⁹ <http://www.whitehouse.gov/sites/default/files/omb/memoranda/2011/m11-29.pdf>

¹⁰ http://www.whitehouse.gov/sites/default/files/omb/memoranda/2012/m-12-10_1.pdf

¹¹ <http://www.cio.gov/documents/federal-cloud-computing-strategy.pdf>

¹² <http://www.fedramp.gov>

Post-Hearing Questions for the Record

Submitted to Mr. David Powner, GAO

From Dr. Tom Coburn

“Innovating with Less: Examining Efforts to Reform Information Technology Spending”

May 24, 2012

In your testimony, you stated that the plan to implement data center consolidation is “partially complete” based on your review of three agencies. Please discuss what factors are causing the delay in these consolidations based on your review.

There are multiple factors affecting agencies’ progress in establishing data center consolidation plans. These factors include the complexity and amount of information needed in agency inventories and plans, and how long agencies have been working on their consolidation initiatives. Specifically, agencies need to determine and validate detailed information on each data center for their inventories of existing facilities, and to assess and establish thorough cost and schedule estimates. In our July 2012 report, we note that officials from several agencies commented that some of the information needed for their inventories (including power usage information) is not available and that some of the information needed for their plans is still being developed.¹ Moreover, the agencies with fewer data centers and ones who have been working on consolidation for several years seem to have made more progress on their consolidation plans.

Based on what you’ve seen so far, do you anticipate that agencies will be able to implement the administration’s new plan to consolidate all 968 data centers by 2015?

Based on the progress that agencies have made to date, we believe that it will be challenging to consolidate 968 centers by 2015.² The 24 participating agencies had planned to close 430 centers by the end of fiscal year 2012 and another 197 by the end of fiscal year 2013. However, as of April 2012, agencies reported having closed only 268 of the data centers. Closing an additional 162 centers in 5 months may prove difficult and any delays in consolidating these centers could affect the number of closings in later years. As noted in our July 2012 report, OMB’s continued management focus on this initiative and agencies’ completion of their inventories and consolidation plans could improve the likelihood that the new goals will be met.

Do you think it would be helpful for Congress to pass legislation requiring agencies to comply with the administration’s data center consolidation plan?

Given the importance of OMB’s IT Reform efforts and the potential for up to \$3 billion in savings from government consolidation efforts, it could be beneficial to make compliance with this initiative required by law. We recently reported that, after two years of effort, most participating federal agencies have not yet completed their inventories or consolidation plans. Legislation could help direct agencies’ attention to the importance of the consolidation initiative. Moreover, we noted that agencies still have quite a bit of work to close 430 centers by the end of the fiscal year. Legislation could help ensure that agencies stay on track in completing their inventories and plans, closing data centers, and achieving the resulting benefits, in addition to providing agencies with a longer-term perspective on the importance of maintaining data center inventories and consolidation plans beyond the 2015 timeframe and continuing to look for additional efficiencies and savings.

¹GAO, *Data Center Consolidation: Agencies Making Progress on Efforts, but Inventories and Plans Need to Be Completed*, GAO-12-742 (Washington, D.C.: July 19, 2012).

²The administration’s new goal of closing 968 data centers by 2015 is a reduction from its earlier goal of closing 1,200 centers during this time.



Statement for the Record by the Project Management Institute

Thank you, Senator Carper and Ranking Member Brown for the opportunity to participate in this hearing, *"Innovating with Less: Examining Efforts to Reform Information Technology Spending."* There are several important elements of the IT Reform plan which promoted the migration to cloud computing and data center consolidation that will have a lasting impact on government IT. The Project Management Institute appreciates the opportunity to submit these comments on the IT Reform efforts to-date and the impact of effective program management in yielding the results envisioned in the 25-Point Plan.

The Project Management Institute (PMI) is the world's largest project management membership association, representing over 600,000 practitioners in 185 countries. A not-for-profit organization, PMI advances the project management profession through globally recognized standards and certifications, collaborative communities, an extensive research program, and professional development opportunities.

PMI's certification program has existed since 1984, when the PMP® was launched. Since then, PMI has continued to serve the project management profession with a comprehensive certification program for practitioners with different levels of education and experience. PMI's certifications are developed and maintained through a vigorous process. This process is exemplified through the Project Management Professional (PMP)® credential accreditation by the American National Standards Institute (ANSI) against the International Organization for Standardization (ISO) 17024. In addition, the PMP is also registered against the ISO 9001:2000 standard for quality management systems.

PMI certifications are distinguished by their global development and application, which make them transferable across industries and geographic borders. The role and tasks of project managers around the globe are researched and documented to define each PMI certification. The strength of PMI's certifications is that they are portable and not tied to any single method, standard or organization.

We see growing evidence and recognition that the strategic implementation of program management, through standardized practices and certified professionals, can deliver competitive advantage for businesses, governments and NGOs. Utilizing strong project and program management in the execution and operation of IT projects and programs along with experienced and credentialed project and program managers; wasteful spending will be reduced. We continue to be encouraged by the Administration's focus on improving program management as a fundamental aspect of IT reform as outlined in the 25-Point Reform Plan.

The proposals laid out in the 25-Point Plan to implement key reforms to program management are strongly supported by PMI and evidence that these efforts should improve government IT

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program management. PMI particularly supports the creation of a senior level program manager job classification who will be responsible for overseeing IT program budgets and the creation of a career path to ensure those program managers have the skillsets necessary to take on the responsibilities of the position will greatly enhance the performance of federal IT projects and programs. This reform aligns the federal government with best practices of high performing organizations and should yield corresponding improvement in the governments' talent management challenges.

Every year PMI publishes a look at trends in the project and program management profession. This report, *The Pulse of the Profession*, is a global survey of practitioners and project and program management leaders. This year's report showed that high performing organizations deliver more than 80% of their projects on time, on budget and having met original goals and business intent, while low performing organizations consistently miss project deadlines, run over budget and have misaligned project and business goals. Finishing on time and on budget is the goal of every project manager when they take on an assignment. Yet we see gross deviations between high performing organizations and the median project.

Overall, an average of only 64% of projects meet their original goals and business intent while the other 36% do not¹. Why? According our research, some of the most critical project success factors include:

- Talent*: Staffing the team with appropriately skilled people
- Project Management Basics*: Taking the time to create a realistic implementation plan
- Executive Sponsorship*: Ensuring top-level management support for the project
- Focus on Benefits*: Clearly defining the expected benefits from the project
- Change Management*: Effectively managing change associated with the project

Our study indicates that when a project fails, an average of one-third of that project's budget is lost for good. Taken with the analysis that shows that on average 36% of projects do not meet their original goals and business intent, organizations are putting at risk twelve cents for every dollar spent on projects. Therefore, just over US\$120,000 is at risk for every US\$1 million spent on projects.

Unfortunately, the one area that showed a significant decrease from our previous survey is one of the most important: formal "talent management" processes to develop project managers. Potentially a result of the challenging economy and popular austerity measures, some firms appear to be cutting back on developing their project management staff. This reduction in talent management reduces the level of maturity in an organizations project management

This should concern every organization. PMI's analysis shows that the reported maturity level does in fact correlate with on-time and on-budget project delivery. Those reporting high maturity levels outperform low maturity organizations by 28 percentage points for on-time project delivery, 24 percentage points for on-budget delivery and 20 percentage points for meeting the original goals and business intent of projects.

¹ Project Management Institute, *Pulse of the Profession*, March 2012

PMI has conducted significant research on the impact of two specific trends in IT, migration to the cloud and the need for organizations to embrace and utilize "Agile" methodologies. To reap the benefits of cloud projects, organizations must define strategic goals, address risks, and carefully monitor progress through implementation and beyond. Only when they follow these vital project management steps can they achieve the greatest ROI in cloud computing and communicate that success across the organization.

Keys to Managing Cloud Projects

Cloud computing is changing the way technology supports the business. Yet embracing that technology requires strong project management leadership and technical expertise to ease stakeholders and end users through the transition. Project management skills and competencies are important parts of the transition to the cloud. Organizations that attempt to move into the cloud without committing to those best practices risk failing perilously behind as the IT landscape inexorably changes².

Eight Key Takeaways for Implementing Cloud Computing

Every cloud project should include:

- A **strategic vision** of the organizational benefits, whether it is cost savings, improved flexibility or more advanced capabilities;
- **Selection and prioritization of the right projects** to move into the cloud, with an initial focus on those that deliver measurable bottom-line benefits with low security risks;
- An **implementation plan** that includes testing prior to roll-out, a transition schedule with strategies for managing the data during the crossover, and a backup plan in case the system goes down or data is lost in the transfer process;
- A **change management, or communications campaign**, to educate everyone from executives to end users about why the organization is moving into the cloud, the impact it will have on their jobs, and the benefit it will bring to them and to the business;
- A sufficiently **detailed risk-management plan** identifying privacy and regulatory concerns, as well as issues relating to data storage, protection and replication;
- Careful **vendor selection and vetting plan** that covers cost, security of data centers and IT processes, interface usability, backup strategies, regulatory compliance, reliability and customer satisfaction;

² Project Management Institute, White Paper; *Cloud Computing: The New Strategic Weapon*
http://www.pmi.org/business-solutions/~media/PDF/Business-Solutions/Cloud%20Computing_FINAL.ashx as viewed 4/7/2012

- An adequate **governance process** to assess security, and evaluate the quality and access to cloud tools and technologies;
- **Formalized metrics** of ROI to the organization either through bottom-line savings on servers or increased sustainability.

Advancing the Agile Philosophy

The use of agile as an approach to managing projects has been increasing dramatically over the last several years. It has become an increasingly important discipline for our members and credential holders. Agile is defined as a philosophy using organizational models based on people, collaboration and shared values. Characteristics of projects that utilize Agile practices are: rolling wave planning; iterative and incremental delivery; rapid and flexible response to change; open communication between teams, stakeholders and customers. More fundamentally, utilizing Agile practices on a project means breaking tasks into smaller increments, flexibility to adjust requirements with developments in technology, collaboration between business and technical staff and rapid reflection of performance. Recognizing the growing use of Agile practices, PMI launched the Agile Certification in 2011.

PMI's research has shown that the use of Agile practices has tripled from December 2008 to May 2011. The UK has already mandated the use of Agile practices for its government IT projects. The Department of Defense is increasingly mandating use of Agile practices on its IT acquisitions projects³.

Why are these trends developing? PMI's research demonstrates the value that agile can have in decreasing product defects, improving team productivity, and increasing delivery of business value. Overall, projects utilizing Agile practices when incorporated with more traditional approaches of project management are 16% more productive according to research. Projects utilizing Agile practices are also more likely to have a higher quality of the product with fewer defects; particularly important when delivering IT systems.

Recommendations for Further Action

1) Scale IT program management career path government-wide.

The role of a program manager should not come about by accident. The importance of recognizing the role of a program manager and building the skill sets to have strong program managers is critical. It is something successful organizations have recognized. PMI's research shows that 80% of higher-performing projects use a certified project manager. In addition, 50% of project failure is traceable to poor/no project management, including things we know are frequently cited in IT: bad estimates/deadlines, scope changes and poor resource planning⁴.

³ Project Management Institute; Presentation of Sethuraman & McCorkle; *PMI and Agile: Evolution of Agile within PM Community*; April 18, 2012

⁴ Project Management Institute, PgMP Credential Handbook, Revised March 18, 2011.
http://www.pmi.org/Certification/~media/PDF/Certifications/pdc_pgmp handbook.ashx

Larger organizations must extend project thinking to program and portfolio management. Organizational support of project management doesn't begin and end with hiring the personnel and implementing the practices. It is essential to retain and support project management talent by providing defined career ladders and options. Recruiting and retaining highly performing personnel is a particular challenge in the federal government. We hope to make OPM and each agency's job easier.

Scaling the IT reform plans across agencies is a logical and makes good sense. PMI encourages the expansion of the job classification and career path beyond IT to all projects and programs throughout the federal government. We believe adopting this model will improve efficiency, improve the expenditure of taxpayer money and improve morale at agencies.

2) Enable IT program manager mobility

PMI's studies of workforce trends show that the job of a program manager is enhanced by providing opportunities for increasingly complex and rewarding assignments. Providing opportunities for skilled program managers to work on increasingly complex programs, aligned to a strong career path will improve retention and create incentives for staying within federal service. Career mobility is a tangible benefit for program managers.

3) Strengthen IT acquisition skills and capabilities.

There are a variety of ways to assess the project management skills and capabilities of an organization. PMI has developed tools to help assess a project and program managers' skills utilizing PMI standards to find potential for improvement. These tools can be modified for each unique environment, and adapted to each agency's requirements. These tools help organizations deliver a career path for PM professionals that evaluate their current and relevant knowledge of PM standards and establish a baseline. These baselines provide a path for identifying individual and organization-wide training needs. The assessments can be used as part of the hiring process and as part of an integrated performance evaluation system.

Conclusion

PMI is grateful for the opportunity to submit this statement. We look forward to working with Congress and the Administration to fully implement the 25-Point Plan and to create a culture of strong program management across the federal government.

