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OFFLINE AND OFF-BUDGET: THE DISMAL STATE OF INFORMATION TECHNOLOGY PLANNING IN THE FEDERAL GOVERNMENT

HEARING

BEFORE THE

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

OF THE

COMMITTEE ON
HOMELAND SECURITY AND
GOVERNMENTAL AFFAIRS
UNITED STATES SENATE

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OFFLINE AND OFF-BUDGET: THE DISMAL STATE OF INFORMATION TECHNOLOGY PLANNING IN THE FEDERAL GOVERNMENT

THURSDAY, JULY 31, 2008

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

The Subcommittee met, pursuant to notice, at 9:33 a.m., in room SD–342, Dirksen Senate Office Building, Hon. Thomas R. Carper, Chairman of the Subcommittee, presiding.

Present: Senator Carper.

OPENING STATEMENT OF SENATOR CARPER

Senator CARPER. The Subcommittee will come to order. Our thanks to our guests and witnesses for being here with us today. This is the third hearing that our Subcommittee has held on the issue of poorly planned and poorly performing IT investments. This hearing will focus once again on the ability of the Office of Management and Budget to oversee and provide Congress with visibility into the $70-plus billion that agencies will spend on information technology this year.

Up until March of this year, Congress had an extremely limited ability to understand why OMB considered an IT investment to be poorly planned, and I must commend OMB and in particular Ms. Evans for finally releasing this data. Although I believe this is a good start, more complete and accurate information needs to be shared. I firmly believe that in order to hold agencies accountable for their investments, Congress and OMB need to work together as partners. The American taxpayers demand it.

Information technology investments, if planned and implemented properly, can increase productivity, improve efficiency, and reduce an agency's cost, and also enable us to provide better service to our constituents. However, some of these projects can be extremely difficult to manage and mistakes may be made along the way.

In fact, I think it was Richard Nixon who said the only people who don't make mistakes are the people who don't do anything. So we know if we try to do something in these complex areas, we are going to make mistakes. That is to be expected. The key is, I think, to make sure that we don't continue to make the same mistake

over and over again. However, the mistakes that we do make, we learn from them.

I experienced this firsthand when I was privileged to serve as Governor of Delaware. Sometimes we bit off more than we could chew and the IT project would eventually spiral out of control. When this happened, sometimes we came to the conclusion that the best course of action was just to finally pull the plug. It was a tough decision a lot of times, but it was often the right thing to do in certain cases.

Unfortunately, many agencies in the Federal Government are allowed to spend billions of taxpayer dollars on investments that are duplicative, that lack clear goals, and that are managed by unqualified individuals. In fact, according to recently-released GAO data, some $25 billion in IT investments are poorly planned, poorly performing, or both. Even worse, some of these projects have been delayed up to a decade and are costing us billions more than was originally expected. This is simply unacceptable and it makes me wonder whether it is time for Congress to pull the plug on some of these failed investments.

Regrettably, Congress still does not have the information necessary from OMB to hold agencies accountable and to choose where we want to invest scarce resources each year. With risky investments such as IT, it is important to increase collaboration and visibility, not hinder it. And so far, this has not always been the case.

Since 1994, Congress through legislation called the Federal Acquisition Streamlining Act has required agencies to keep costs, delivery dates, and performance goals of major acquisition within 90 percent of the originally proposed plan. OMB then was required to annually report to Congress on agency progress.

Unfortunately, despite this requirement in law, OMB has, I am told, only issued three reports in the last 14 years. Although my staff tells me we may have received a report around midnight last night. Someone here was staying up late and I think may have received a fourth report in 14 years in the midnight hour.

Moreover, agencies are required to create an investment baseline that takes into account potential risks that could lead to increased costs, delayed delivery dates, and reduced performance. Agencies then use this baseline to track whether an investment is progressing according to plan.

There are obviously some legitimate reasons why an agency may change the original baseline on a given project, but I am disappointed to say that some agencies have used rebaselining to hide the cost overruns or schedule delays from Congress.

We are about to hear an extremely troubling report from the Government Accountability Office today revealing that almost 50 percent of all Federal agency IT investments are rebaselined. Even more disturbing, some agencies, such as the Department of Agriculture, the Department of Commerce, Veterans Affairs, have rebaselined, I understand, more than five times on a single investment.

Although agencies are responsible for the excessive rebaselining, there is one thing in common between all of these investments. Every baseline and rebaseline was approved by OMB. Someone, somewhere, in my view, is not fulfilling their responsibility to en-

sure the taxpayer dollars are spent only on those investments that are well thought out and truly needed.

Using the information that was provided to our Subcommittee in March, we have created a report card for agencies that take into account several criteria related to the planning and implementation of IT investments. In fact, we have two report cards side by side. I say this as a parent whose children have both now graduated from high school and who is used to getting report cards. Sometimes my children aren't anxious for us to see these report cards. But on the report card on the left, we have a list of agencies who received a passing grade, and on the right, those who receive a failing grade. If anybody in the audience is able to read those, I take my hat off to you. We have copies of the report cards that are provided to our witnesses and I hope to the press.

As we can clearly see the Federal Government is miserably failing. In fact, half the 28 agencies received an F. Let me go ahead and list some agency grades starting with the Department of Labor, whose score was about 64 percent. The Department of Treasury, 56 percent. Office of Personnel Management, 55 percent, all the way to the bottom of this chart on the right,[1] down to the Department of Defense with 37 percent, followed by the Department of Agriculture with a 36 percent score.

About half of the 28 agencies received an F. In total, these failing agencies are overseeing $57 billion in IT investments, and from what we can tell right now, we are getting too little in return for those enormous investments.

In addition, you might notice on the left, we have a number of agencies who receive a passing grade. Several received scores of A-plus. They included HUD, the National Science Foundation, the Smithsonian Institute—they all got 100 percent—the Social Security Administration, 99 percent, Department of Energy, 93 percent, all the way down to the bottom of the chart, coming in at a 69 percent for a D-plus, and that is the Department of Justice.

However, and while we are encouraged by the passing grades in the report card on the left, we want to temper our joy by a couple of things. HUD received their A-plus partly because they reported that every project was being delivered on cost, on schedule, and performing as planned. However, as GAO will testify today, HUD rebaselined at least one project seven times, possibly to mask spiraling costs, and GAO has consistently testified that data provided by agencies to OMB is oftentimes inaccurate or even incomplete.

So we don't really have the complete picture, even for those agencies that are reportedly doing a better job than others. That is why I plan on introducing legislation today, along with Senator Lieberman, Chairman of our full Committee, and Senator Collins, the Ranking Republican on the full Committee, which will give Congress and OMB the information we need to make better decisions about which IT investments should continue and which should be shut down.

Our bill, called the Information Technology Investment Oversight Enhancement and Waste Prevention Act, would make agencies report regularly on significant deviations on cost, schedule, and per-

[1] The chart referred to appears in the Appendix on page 135.

formance. But we don't just want better information. Our bill also helps OMB take a crucial step aimed at preventing IT investments from drifting toward failure. Recognizing that agencies may not have the skills necessary to manage complex IT investments and may have trouble recruiting qualified managers, our bill would set up a team of experts from inside and outside of government that agencies may use as a resource. This team, which my staff and I regard as something of an IT strike force, would have the skills and background necessary to make sure that agencies are focused on the right things, making the right decisions, and spending the money wisely.

I again want to thank our witnesses for joining us today. We look forward to hearing from you. We look forward to your testimony. We look forward to the discussion that will follow it and hopefully to the better IT performance, for the money that our taxpayers are investing in those projects today. Taxpayers expect us to be good stewards of their money. In fact, they demand it, and I know that everyone here in this room wants to see that become a reality.

Before I introduce Mr. Denett, Ms. Evans, and Mr. Powner, none of whom are strangers to this Subcommittee or to this room, I realize these are tough issues. These are not easily done. If they were, somebody would have done them a long time ago. The problems were recognized not just in this Administration, but in the last Administration, as well. While we appreciate that the problems are being identified, what is really important is that we identify them more quickly and that we fix them. I believe that we need good information here in the Legislative Branch so that we can be better partners with the Executive Branch.

We are going to see a new Administration coming in in 6 months. It is going to be President McCain or President Obama. But these problems and these challenges will still be before the next Administration and the next Congress.

As Governor, I used to say the reason why we invested money in these IT projects was to enable us to provide better constituent service and to do it more cost effectively, and that is really the case here, too. In some areas, we are doing a pretty good job. In too many areas, though, we are not. In too many areas, we are masking mismanagement, misallocation of resources and cost overruns in ways that make it look like we are doing a better job on some projects than we truly are. We have to get beyond that.

With that having been said, on that cheery note, we have a couple of panels before us. In the interest of time, I am just going to move right to the first panel for their testimony. Biographies of our witnesses are provided and will be submitted for the record.

Our first witness is the Hon. Paul Denett. Mr. Denett serves as the Administrator of the Office of Federal Procurement Policy at the Office of Management and Budget. Previously, Mr. Denett served as counselor to Clay Johnson, who is now the Deputy Director for Management at OMB. Mr. Denett is a retired Senior Executive from the Federal service and has received many prestigious awards, including a Presidential Rank Award. When did you receive that?

Mr. DENETT. I received that in the late 1990s.

Senator CARPER. Did you really? Who was President then?

Mr. DENETT. President Clinton.

Mr. DENETT. Yes, it was.

Senator CARPER. All right. Some of us are lost in the 1960s. [Laughter.]

Some days, I would like to be, but not today. [Laughter.]

All right. Our next witness is the Hon. Karen Evans. Ms. Evans, welcome. She is Administrator of the Office of Electronic Government and Information Technology at OMB. Ms. Evans oversees the implementation of IT throughout the Federal Government, including capital planning and investment control. She is a 20-year veteran of government service and has testified before this Subcommittee on a number of occasions. It is a pleasure to have you join us again today. Thank you.

Our final witness is Dave Powner, Director of Information Technology Management at the Government Accountability Office. I am glad that Mr. Powner doesn't charge us for each visit that he makes and each time he testifies before this Subcommittee, because we would be owing him a lot. But in the private sector, he has held several executive level positions. In the telecommunications industry, Mr. Powner has been instrumental in helping this Subcommittee provide oversight of risky IT investments, along with other things. I know he has appeared before us on several occasions, including as we try to address our current challenges involving conducting a good Census for the year 2010.

We are going to lead off and ask Mr. Denett to lead off. We will ask you to keep your statements to roughly 5 minutes. If you go a little bit beyond that, that is OK. If you go a lot beyond that, that is not OK. So we will turn to you now. As you present your testimony, just keep in mind that your full statements will be entered into the record.

TESTIMONY OF HON. PAUL A. DENETT,[1] ADMINISTRATOR, OFFICE OF FEDERAL PROCUREMENT POLICY, U.S. OFFICE OF MANAGEMENT AND BUDGET

Mr. DENETT. Thank you. Chairman Carper, Ranking Member Coburn, and Members of the Subcommittee, I appreciate the opportunity to appear before you today. The Administration places a high priority on working with agencies to mitigate cost overruns, schedule delays, and performance shortfalls in their major acquisitions.

This morning, my colleague, Karen Evans, will discuss the initiatives the Administration is pursuing to effectively manage the government's IT portfolio. I would like to briefly summarize agencies' progress in implementing performance-based management for their major non-IT acquisition programs. I have also prepared written remarks that I ask the Subcommittee to enter into the record.

Similar to IT, major acquisitions of non-IT capital assets must be justified in terms of agencies' strategic goals and reflect sound acquisition and capital planning decisions. The law requires agencies to apply performance-based management principles by establishing cost, schedule, and performance goals and achieving 90 percent of these goals, on average.

[1] The prepared statement of Mr. Denett appears in the Appendix on page 39.

OMB guidance for meeting these requirements is set forth in Circular A–11, which provides guidance to agencies on preparing their budget submissions, and the Capital Programming Guide, which is a supplement to A–11. The guide was substantially revised in 2006 to emphasize the importance of key steps in the acquisition planning process, such as needs assessment and alternative analysis.

To assess the use of performance-based management, my office directed agencies to provide information on their new and ongoing non-IT major acquisition projects. We look for several indicators of progress, including the existence of capital planning and investment control policies, cost schedule and performance goals for new and ongoing projects, use of performance-based management systems to monitor progress and success in meeting goals.

Results were mixed. While many agencies demonstrated progress, we found that capital planning policies for non-IT are often not as well established as they are for IT investments. In addition, performance-based management systems are not always being used to track cost schedule and performance. We can and must do better.

A number of steps are being taken to strengthen the application of performance-based management to non-IT investments. First, the Chief Acquisition Officers' Council created a Project Management Working Group to help OMB evaluate the appropriate application of performance-based management to different types of major non-IT investments, such as construction and aircraft.

Second, OMB and GAO are partnering with DOD, DOE, and NASA, each of whom is on the GAO's High-Risk List, in the development and implementation of corrective action plans to mitigate risk in major acquisitions and evaluate success against clear goals and metrics.

Third, the Office of Federal Procurement Policy and the Federal Acquisition Institute launched a Federal Acquisition Certification Program to provide civilian program and project managers with standardized training on competencies critical to successful performance-based management. These include requirements analysis, cost estimating financial management, risk management, and quality assurance. Program and project managers that are assigned to major acquisitions will need to be certified under this program.

Finally, OFPP created a standardized approach for agency self-assessments of the acquisition function based on a framework that was created by GAO. Self-assessments of major acquisition functions will address issues to help agency managers understand if planning is effective. If a material weakness is identified, it will be addressed during corrective action monitoring and reflecting on the agency's statement of assurance prepared under OMB Circular A–123, which lays out management's responsibilities for internal controls.

In accordance with the Federal Acquisition Streamlining Act, OFPP issued a report—I think it was a little before midnight, but it was late—discussing civilian agency progress in implementing performance-based management——

Senator CARPER. Actually, I am told it was 12:04. [Laughter.]

But who is keeping time. [Laughter.]

Mr. DENETT. OK. For both IT and non-IT investments. We will be happy to answer any follow-up questions the Subcommittee may have. Thank you.

Senator CARPER. Right on the money. Thank you. Ms. Evans, welcome.

TESTIMONY OF KAREN S. EVANS,[1] ADMINISTRATOR, OFFICE OF ELECTRONIC GOVERNMENT AND INFORMATION TECHNOLOGY, U.S. OFFICE OF MANAGEMENT AND BUDGET

Ms. EVANS. Good morning, Mr. Chairman. My remarks will focus on the Administration's strategy and continued progress in performing oversight of agencies' capital investments and information technology. Specifically, I will address the topic of OMB's ability to effectively analyze, track, and evaluate agencies' major capital IT investments.

The President's budget request for fiscal year 2009 includes approximately $71 billion for IT and associated support services government-wide. Of the $71 billion in the President's budget request, $22 billion, or 31 percent, represents proposed funding for development, modernization, or enhancement of new or existing information systems, infrastructure, or services. Projected expenditures on existing systems, operations, and maintenance is $49 billion, or 69 percent.

As I have discussed in previous testimony on the topic of OMB's oversight of IT investments, the Clinger-Cohen Act of 1996 established processes for executive agencies to analyze, track, and evaluate the risks and results of major capital investments for information systems. The operative means by which OMB evaluates agency capital asset plans and their associated budgetary requests is a business case, or Exhibit 300, for individual investments.

Agencies develop and submit business cases with their annual budget requests to OMB and we, in turn, evaluate each business case in terms of its ability to support a given investment proposal, including factors such as alignment with IT architecture, plan performance, improvement goals, cost-benefit analysis, and eliminating costly, duplicative, and outdated systems. OMB also evaluates the capability to manage the investment as demonstrated in the business case and planning process, including factors such as having a qualified project manager, acquisition planning, systems security, risk management, and the use of earned value management to track and manage costs and schedule goals.

Last year, I came before this Subcommittee to explain two specific tools OMB uses to track and review agency IT capital investments, the Management Watch List and the High-Risk List. I am pleased to report that we have since expanded upon our criteria for evaluating investments and improved upon the transparency of how investments and projects are placed on either or both lists. My written statement includes the details regarding these lists.

GAO's report on project rebaselining points out weaknesses in agencies' policies in terms of specifying all of the elements of rebaselining according to best practices. We acknowledge more should be done in this area in the future. In particular, OMB needs

[1] The prepared statement of Ms. Evans appears in the Appendix on page 45.

to clarify expectations for when an original baseline should be established and elaborate upon process steps for agencies to submit to and receive feedback back from OMB on rebaseline requests.

OMB, Congress, and the agencies must work collaboratively to address weaknesses in IT program and project performance. We are all vested in a common interest, delivering results for the American people.

How can we best do this going forward? I believe OMB has the foundational processes in place to perform program and project investment oversight at the macro level. These core processes—capital planning, architecture alignment, the Management Watch List, the High-Risk List, and the E–GOV scorecard—have been and can continue to be further enhanced and incrementally improved to provide better visibility into program performance before a project is in major trouble.

One improvement for OMB would be to leverage the efforts of the budget formulation and execution line of business to ensure the use of analytical tools and the collaboration environment to improve on our own information management capabilities. The various data sets collected by OMB from the agencies can and should be better integrated into a more comprehensive knowledge base.

I have brought a display of an example of how we could better integrate and expand upon information on the agency's IT investments. This is one potential snapshot of project performance at a point in time. We would like to work with Congress to improve transparency and the ease of use of this information. With the transparency into departments' and agencies' performance will come improved accountability and results which the American people deserve.

Thank you for this opportunity to discuss the Administration's strategy and progress to date. With this foundation in place, we can continue to work together to achieve the outcome we both desire, which is successful implementation of information technology for program and mission results. We have accomplished a lot in the last 8 years and there is much more that we can continue to do in this area.

I would be happy to take questions at the appropriate time.

Senator CARPER. Thank you for that testimony. Mr. Powner.

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

Mr. POWNER. Chairman Carper, we appreciate the opportunity to testify this morning on poorly planned and performing IT projects and the results of our rebaselining review completed at your request.

Mr. Chairman, I would like to thank you and Dr. Coburn for your oversight of the Federal IT budget, which now exceeds $70 billion. This is the third annual hearing, and your oversight, along with the leadership of Karen Evans, has resulted in a clear picture of exactly what projects need work and the specific weaknesses that need to be addressed. That is the good news. The bad news

[1] The prepared statement of Mr. Powner appears in the Appendix on page 50.

is that we have nearly $25 billion in IT investments that are currently at risk of being wasted and that this figure is likely much higher.

This morning, I have three points to make. First, over 400 IT projects totaling nearly $25 billion are currently not appropriately planned for or managed.

Second, the number of projects reporting issues with cost and schedule variances is understated because rebaselining is occurring excessively without adequate guidance or transparency.

And third, additional oversight from both OMB and agency CIOs is needed to address project weaknesses and to bolster accountability.

Expanding on each of these, first, currently, there are about 350 projects totaling $23 billion on the Management Watch List, and nearly 90 projects totaling $5 billion that are being reported as high-risk projects with shortfalls. Common to both lists are 26 projects totaling about $3 billion, meaning that these projects are both poorly planned and performing. For example, DHS's Secure Border Initiative project continues to be on both lists.

In addition to the 26 projects on both lists, of particular concern are the repeat offenders, namely 32 projects that have been on the Management Watch List since September 2006 and 17 high-risk projects reporting shortfalls in each of the last four quarters. My written statement highlights each of the projects on both lists and those that have been on either list far too long.

Mr. Chairman, having so many projects with longstanding planning and performance problems is unacceptable and requires more attention from both OMB and agency CIOs. Key reasons why projects remain on the Management Watch List are poor cost and schedule performance, poor security measures, poor privacy planning, and poor project management, while cost and schedule variances continues to be the primary performance shortfall associated with high-risk projects.

Despite cost and schedule performance being a major reason why so many projects are highlighted here, our rebaselining report being released today raises significant questions about whether we are getting an accurate picture of project cost and schedule performance.

First, I would like to mention that rebaselining is needed at times to reset realistic cost and schedule targets. However, this process should not be used to mask cost and schedule overruns and should be transparent and approved by both OMB and agency management. Our survey of nearly 200 projects showed that about half of all IT projects had been rebaselined, and of those that are rebaselined, about 50 percent are rebaselined at least twice, and 10 percent are rebaselined four or more times. Clearly, these projects are operating nowhere near the desired 10 percent cost and schedule threshold.

Because of the amount of rebaselining occurring across the Federal Government, we reviewed each of the major 24 departments' rebaselining policies to ensure that it included basic items like specifying when a rebaselining is warranted, how a new rebaseline is validated, and who approves the new rebaseline. Agency policies were weak across the board and we recommended that OMB issue

rebaselining guidance and that each agency develop rebaselining policies that address the weaknesses we identified.

Although we have more data than we have ever had historically, we still need better information so that all projects requiring attention are highlighted. For example, OMB could publicize high-risk projects with shortfalls as we have in our written statement. And we still need more transparency on rebaselining efforts so that we have a true picture of cost and schedule performance from all agencies.

Put more simply, Mr. Chairman, do we think that of the 472 high-risk projects only 70, or 15 percent, have cost and schedule issues? No. That number should clearly be higher.

Now turning toward solutions, the Federal Government needs to focus on addressing root cause problems: Security, project management, risk management, and cost and schedule performance. We are encouraged by OMB's efforts to address some of these weaknesses, like requiring techniques like earned value management to improve agencies' cost and schedule performance, but there is much more work ahead. Agency CIOs and OMB from a government-wide view need to aggressively attack these problem projects by starting with those that have been on OMB's radar far too long.

Next, longer-term improvement efforts need to be pursued and these, at a minimum, need to focus on bolstering the IT workforce and addressing root causes more aggressively. I look forward to suggestions from our second panel of experts on other approaches.

In summary, Mr. Chairman and Dr. Coburn, knowing what to fix is the first step, and we wouldn't have this information without your leadership. Thank you. Keeping the current momentum and energy and focusing more on solutions will be essential as we transition to a new Administration.

I would be pleased to respond to questions.

Senator CARPER. Good. Thank you for that testimony. Thanks very much for the work that preceded it. On behalf of both Senator Coburn and myself and our Subcommittee and staff, thank you for the very good work that you have done.

What I hope we focus on more today—yes, the sun is coming up. I don't know if it seemed dark to the rest of you, but it seemed dark to me. I just asked my staff to brighten the lights. So if you are not awake, wake up now. [Laughter.]

I was wondering, who are some good models on the public or private sector for the Federal Government? Who out there is managing IT projects well? Not just in planning and developing them, but implementing them on time and fairly close to budget without rebaselining six or seven times on a single project? Do we have any idea who is doing an especially good job and why?

Mr. POWNER. I can tell you from our focus on some of the high-risk modernization efforts that we look at, even though some of these organizations received low department grades, if you look at pockets within the Federal Aviation Administration, if you look at IRS, recently there have been successes with delivering more projects on time and within budget. And if you look at what has resulted, there has been an extreme focus on improving their processes, executive governance over those projects, and one other technique that seems to have worked at some of those agencies is put-

ting in place Centers of Excellence where project offices can go for help, where there is best practices and things they can emulate across the board. They are not perfect by any means, but there are pockets of success in both of those agencies.

Senator CARPER. Thank you for that response. In the National Governors Association, all 50 governors are members of that, we had a Center for Best Practices and if they had a particular State that was doing a good job in early childhood, the rest of us could learn from them. If we had a particular State that was doing a good job in reducing recidivism in the prison population, or if a State was doing an especially good job in providing better outcomes in our schools, we had the opportunity through the Center for Best Practices to see who was doing a good job and learn from them. Do we have that kind of ability in the Federal Government?

Ms. EVANS. Yes, sir. Through the CIO Council, we have a Best Practices Committee where we do take on topics such as these specific areas, like who has implemented earned value management really well and can people learn from that. We need to do more in those Best Practices Committees, and I would also like to build off of what Mr. Powner talked about.

What we have been doing from an OMB perspective is really zeroing in in particular areas. The two areas that Mr. Powner mentioned are also on the GAO High-Risk List. So there is a lot of work that we have done in conjunction with the agency, in conjunction with GAO, so that we could then cross-pollinate the expectations, the best practices in those areas, and then the intent is to take that and then share it back across the board with other agencies.

So we have done that in the area of, with NARA and the Electronic Archives Initiative. As they go forward, what we have learned from FBI on their Sentinel project is they have improved. We have then partnered them up with other agencies as they are going forward on major investments so that they make sure that they don't make the same mistakes.

Senator CARPER. Mr. Denett.

Mr. DENETT. We also have the Chief Acquisition Officers Council, and this past year to try to respond to the problems in the program project management area formed a new working group. It is chaired by Bill McNally, who is the Senior Procurement Executive of NASA. But all the major departments send representatives and they are sharing best practices and we are going to post them on the Federal Acquisition Institute website.

Senator CARPER. All right. Mr. Powner.

Mr. POWNER. I would just like to add that I agree with the comments that were made here, but one important thing that I think Ms. Evans made, an important comment, is the implementation of those best practices. Earned value management, a very good technique when used appropriately. Our preliminary work on earned value management implementation across the government is that it is rather immature, and I will give you an example.

We just completed a review of FAA. It is likely one of the better agencies when it comes to implementing earned value. There has been a lot of focus and attention. But I can tell you there that a quarter of their projects don't use earned value. Not everyone is

trained. And when you start looking at the data, the earned value data—and we did, we dove deep on a couple projects—we saw quite a few problems that we pointed out.

Now, granted, that is probably one of the better Federal agencies, but when we look at the cost and schedule problem that we have in the Federal Government coupled with rebaselining, we have to get much better at using these techniques like earned value to make good management decisions to get early warning indications.

Senator CARPER. All right. Thank you. The next question I want to ask, and I have touched on this already, but we started this hearing off with a little broader context than I think we had originally planned to discuss, but it is something that I am troubled by and I just want to come back to it again and discuss it.

One of the Subcommittee's purposes is, as you know, to prevent waste, fraud, and abuse. In order to do that, we need information on how agencies are managing our investments. Mr. Denett, in 1994, Congress directed your office to provide a report on agency progress in delivering on their capital investments, including IT investments. However, as I stated in my opening statement, in 14 years, OMB has only provided this report on three separate occasions, now maybe four. Let me just ask, why is OMB not fulfilling this critically important statutory requirement?

Mr. DENETT. It was a mistake on our part, for sure. When I became aware of this, we have had the staff work diligently, go out to departments and pull it in, and I don't have a good explanation as to why some years were not submitted. However, there is the annual budget process under A–11 where a lot of the data that is included in the report is submitted with the President's budget each year, so that contains some of the information we sought. But it should have been wrapped up, put into a formal report, and provided to you each year. We have now put steps in to make sure that this doesn't happen in future years.

Senator CARPER. What can you do? Who is responsible for making sure this statutory requirement is met?

Mr. DENETT. The Office of Management and Budget, so we are.

Senator CARPER. All right. What assurance can you provide for us that it is going to be met in the future?

Mr. DENETT. We have added it to a follow-up list that OMB has so that the new Administration will have it as a reminder before them. We have told the staff the importance of it, and it is not our prerogative to decide what years to submit it and what not, that we all need it as a tracking tool. This one will be stronger. We are going to have our own baselines on which ones are—just as you are having your report card, we are going to have that kind of method in there, and I believe in the future, you will get the reports each year.

Senator CARPER. All right. I certainly hope so.

Ms. Evans, this is the third hearing during which you have testified how billions of taxpayer dollars are wasted on bad IT investments. I want to commend you for all the progress that you and your team have made over the past several years. However, I believe that there is still more that needs to be done. I am sure you do, too. In fact, you said that.

Specifically, in 2006, GAO first recommended that OMB ensure agencies are accurately and reliably reporting on their investments. Also, GAO recommended that OMB provide Congress a single aggregate list for troubled IT investments that can allow us to track progress and performance government-wide, and it is now 2 years later.

Just revisit with us, if you will, what specific progress since 2006 have you and your colleagues made toward ensuring that agencies are reporting complete and accurate information to OMB. And second, why doesn't OMB publish the list of high-risk projects with shortfalls as GAO highlights in their testimony? I am just asking, don't you feel that Congress would want to know whether projects are over-budget and behind schedule?

Ms. EVANS. Sir, I actually would like to answer the first question first——

Senator CARPER. Please.

Ms. EVANS [continuing]. Which would be what we have done to increase the transparency in this. And I would say, first off, with the hearing and everything and the several hearings along this line, that I was hesitant at first, which I think you would admit, to releasing all of this information because we were concerned about some of the effects that it would have.

Senator CARPER. What do you mean——

Ms. EVANS. I was going to go into this a little bit. And some of it, you are talking about and we have kind of gone around it a little bit, which is driving compliance versus actually achieving the results. And so things happen like the grades, not that this is not great because OMB has an A, so I am pleased that we have an A. But it is an A-minus. I would have preferred an A-plus, but I know why it is a minus. But what this will do is drive——

Senator CARPER. I asked my staff if we were grading on a curve here. They said, no, we are not.

Ms. EVANS. No, but I don't have as many investments as everyone else, so——

Senator CARPER. We are calling them as we see them.

Ms. EVANS. But part of the issue is, one, that there is a part of us that love to see the grades, and so we strive for this. This is how our society is built. But the other part then drives compliance, where people will do just enough in order to get to the next level of the grade and they are focused more on the grade than actually achieving the result or getting the project implemented.

And so this is a balance that my office has really been struggling with, about how much information do we release, how much shame and embarrassment do you bring upon an agency, because we are really supposed to be helping them. We are supposed to be there to help the agency achieve success. We are supposed to take areas in our knowledge that we see across the government and go in and help an agency achieve results.

So I agree that all this information should be out there. I don't necessarily disagree that we could provide better reporting, not necessarily along the lines of GAO, because I don't view OMB as an auditor. I view OMB as a facilitator to help the Executive Branch achieve results.

So I would like us to be able to provide the information in a way that you would find it useful as an oversight entity the same way that we find it useful so that we could get to the solution for the agency and for the taxpayers.

So we have done a lot to put all this out here. We have not put together the comprehensive list the way that GAO does or the way that it was written. I brought two examples, which are also in the written testimony, and if we want later on, I could go into a couple areas of how it could be done. We put a lot of effort into this so that we could match and cross-reference and make sure that all of this is reliable data, and then we could work with you in a way similar to the way that we have done with USA Spending and even release some of the raw data so that as you go forward, you guys could manipulate and do things with the data, as well.

So I am always very cautious as we go forward on this because I am always really cautious about driving compliance versus trying to get to the result.

Senator CARPER. All right. A related question. You may have spoken to this, but is there a reason why OMB hasn't provided Congress with a single aggregate list that will allow us to provide proper oversight and track progress? Just try that. I think you have answered that question, but I want you to take another shot at it.

Ms. EVANS. I was hoping you didn't realize I didn't answer that part—— [Laughter.]

But I will tell you, the reason why, and this is our first—the tables that you have are our first attempt at aggregating the data together. The short answer is that based on what we had previously to provide the aggregated report, we believe would cause more confusion than actually bring clarity to the result. And then the other piece was we had to work a little bit more with the agencies to get better quality data in order to establish the relationship to do an aggregate report. I believe we are there now and what we would like to work with you on is how to actually provide that information in a way that would be useful for your use.

Senator CARPER. Why not just provide the same information as GAO?

Ms. EVANS. Because I would say that right now, we have several pieces of that, but we don't go in and do full audits the same way that GAO does. So some of the information, for example, like the number of times that a project has been rebaselined, we would have to modify some of our A–11 guidance. Right now, we just capture that information as a yes and no, and I have not captured that information on an ongoing basis so that I could go down and map all the records and say that this investment has been rebaselined several times, X, Y, Z, and this year, those types of things like that.

I have not kept the information at the micro level. The agencies are supposed to keep it at that level. And what we are trying to do is make sure that there is better quality as we start putting it forward. So I would be hesitant to publish the information because I do not feel that we have the quality still at that real detailed level because we haven't conducted the audit as GAO has.

Senator CARPER. I am going to ask Mr. Powner to comment on some of what Ms. Evans has just said.

Mr. POWNER. A couple thoughts here. One, first of all, I think Ms. Evans and OMB, they deserve a lot of credit for all the information we have on the Management Watch List, which are poorly planned projects. OK, you want to fix the planning up front.

But the High-Risk List is not that important. What is important is Figure 4 on page 19 in my testimony, which shows those projects that have shortfalls and the reasons for the shortfalls. So the No. 1 reason why we have shortfalls, and this is about performance now, it is not just about planning, but we are expending funds and we have shortfalls. We are not meeting cost and schedule goals. There are 70 projects. What I am hearing is I think the Administration—I am going to cut right to it—they are reluctant to highlight projects with shortfalls.

Senator CARPER. Why do you suppose that is?

Mr. POWNER. I think the discussion was along the lines of embarrassing agencies and that type of thing. You can't fix problems——

Senator CARPER. There is a reluctance to embarrass them?

Mr. POWNER. I believe so, but I don't want—I will let OMB comment further on that. I don't think you can fix shortfalls without fully disclosing all your problems, so you need to take those shortfalls—we have 10 percent—we have 70 projects that aren't meeting the 10 percent threshold. That number is greatly understated, and I will tell you why. Earned value implementation is weak at many agencies, so some of that data is not based on reliable information coming from the agencies, and then the point about rebaselining, OK.

If we had transparency on rebaselining—that number right there says that 85 percent of the high-risk projects are meeting the 10 percent cost and schedule threshold. It is likely—that 85 percent, you are walking on water if you are a private, public organization, 85 percent of your projects are meeting within 10 percent. You are doing very well, extremely well.

So we need accurate data there, but we need to disclose all that information in order to fix those shortfalls, so that is why we, in our testimony, highlighted the important bit of information here are the high-risk projects with shortfalls so that we can fix performance. I actually think this is very consistent with the Administration's President's Management Agenda and their E–GOV scoring. One of their criteria to get to green is you operate within 10 percent of costs and schedule using earned value techniques. So we are all talking the same thing here and we have the same goal. It is a matter of disclosing all the weaknesses and then fixing it.

Senator CARPER. Ms. Evans.

Ms. EVANS. I would like to respond to this.

Senator CARPER. Please.

Ms. EVANS. First and foremost, as the Administrator of this, I think it is my responsibility to make sure that I have done everything that I can for the agencies to make sure that the guidance, the policy, everything is clear, and what GAO has highlighted is that there is a systemic problem throughout the government. So we could be focused on the one-offs and let us zero in on this one particular project or let us zero in on this. But the tenets of the President's Management Agenda is getting good management foundation processes, with these types of things in place, so that no mat-

ter what the project is, no matter what the investment is, the agency is going to succeed.

So when you start looking at the GAO report and you look at Table 5, which talks about who is consistent with the best practices, and going across and looking at that, what you want—I am looking at, what is the problem across the board, and right now, what I have gotten from all of this is that I need to do a better job of clarifying what is a baseline. How do you do integrated baselines? How do you set certain things up? What are the best practices, so that the agencies have the tools to succeed.

If I am going to sit there and highlight one or two projects and say, Agency A is a real screw-up and they are not doing PDQ, we are going to drive behavior down underground and these issues of rebaselining are going to continue on and on and on because they are going to want to hit the mark of being at the 90 percent because grades are coming out. So I think it is my responsibility to do the things that I can in the first place to make sure that it is clear to the agencies.

Now, once I believe that I have done everything that I can, that we have put everything in place, that it is totally clear in the agencies, the bulk of the agencies are producing, then I have no problems providing all the information, putting the transparency out there, having accountability, because that now becomes a different issue and that is a leadership issue within the agency itself.

But right now, Mr. Powner has made it very clear that it is an immature process, at best, what we have in the agencies, and so they should be rewarded for moving forward and being forthcoming in the information that they have so that we can address and fix the problems, not that I feel passionately about this.

Senator CARPER. Well, I would be disappointed if you didn't.

Mr. Powner, do you want to say anything else? Go ahead.

Mr. POWNER. Just to piggyback off of what Ms. Evans was saying there, I think the point, too, about the accountability at the agency level, agency CIOs are accountable for these fixes. I mean, we need to highlight them, and it is not just all in OMB's lap, but the agency CIOs are accountable here.

Senator CARPER. Has OMB issued guidance on rebaselining?

Ms. EVANS. The policy memos that we have in place are high-level. They refer back to the Capital Planning Guide. They also refer back to A–11. But I, in preparation for this hearing, have gone back all through those, and maybe it is because I live and eat and breath this, it seems clear to me, but when I am looking at all the results across the board, I think there are other things that we can do like putting together a framework document that would show them how to do certain things the same way that the CIO Council put together a framework for project managers and made it very clear what a tier one project was, what a tier two project was, and those types of things. I think we need to go down now to another level and give them another set of tools in order to be able to improve their performance.

Senator CARPER. Mr. Powner, should OMB issue guidance on rebaselining?

Mr. POWNER. Yes. There clearly is some clarification that needs to occur so that agencies have clear direction going forward. Our

report highlighted very simplistic items that the policy should cover. For instance, when you establish a new baseline, how do you validate it? That is very consistent, Ms. Evans, with the integrated baseline reviews that you require and those types of things. So it is not inconsistent with things that OMB is already endorsing.

But the other key part of their policy is it has to be approved by management. We found that a lot of policies didn't even require when agencies rebaseline an approval from key managers. That is all about the transparency thing so that, in fact, we are getting accurate data on costs and schedule performance.

Senator CARPER. Mr. Denett, does your office collect information on capital investments?

Mr. DENETT. That is through the A–11 process, through the budget. So we get these 300s and the budget side, the Resource Management Office culls through those and looks at them to see which ones are using earned value management and which ones are behind or doing well on cost and schedule.

Senator CARPER. OK. What do you do with that information?

Mr. DENETT. The Resource Management Office looks through them and goes back, challenges them, sometimes sends them back, asks for more data, asks them what they are doing to fix it, and it all rolls up into the budget process. But, important also is the caliber of people we have working with this, and as I mentioned earlier, we are real pleased that we now have certification requirements for the managers and people assigned to this, contracting officers, program managers for the first time have to meet certain experience levels and they have to take mandatory training. All of that will also assist in doing a better job in this area.

Senator CARPER. All right. Let me just ask you what Congress' responsibilities are, Ms. Evans and Mr. Denett. I think we understand that GAO is our watchdog to help us better ensure that you are doing your jobs well. What do you see as the appropriate role for Congress in our oversight responsibility as the Legislative Branch? We don't pretend to be experts on these hundreds of different IT projects or capital investments. At the same time, we have an obligation to authorize and appropriate monies to fund these projects. If we don't have information that is timely and that is understandable, we are not able to do a very good job as legislators in our oversight capacity. What do you see as our appropriate role that would enable us to be constructive?

I think part of it is to embarrass. I am a person who believes in rewarding behavior. I am a big positive reinforcer. But I think the time comes when people need a swift kick in the pants and there are times when folks just need to be embarrassed. Sometimes, I think that is an appropriate role for us. Sometimes, it is an appropriate role for OMB, and certainly for GAO.

But let me just ask your thoughts about how the Congress, including this Subcommittee, can be more constructive. Mr. Powner, any thoughts?

Mr. POWNER. Well, I would agree that you need to shine a spotlight on the problems. That is very helpful at times and perhaps it is public embarrassment, but it gets action. Hopefully, over time with the oversight, we can move down the road here and focus more on the solutions. I mean, we know all these projects, we know

the agencies, the projects, and the problems with specific projects. We know what the issues are. Now we need to put the fixes in place to look at how we implement things going forward. I think your second panel is a good start, where we start looking at that. But again, we are going to probably continue to need to step back to make sure that you are getting accurate information because I contend that there is still some information here that is understated.

Senator CARPER. We have talked about some of it, but just be more specific. You say you contend that some of the information is understated. Just elaborate on that some more. I just want to stay on this point.

Mr. POWNER. Out of 800 major IT projects, reporting 70 that have performance shortfalls on cost and schedule is an understatement.

Senator CARPER. All right. Fair enough. Ms. Evans, my first question.

Ms. EVANS. If I could point to——

Senator CARPER. No, I want you to come back to my question what——

Ms. EVANS. Well, I am. I am going to give you an example.

Senator CARPER. We spent plenty of time telling you how you ought to do your job.

You have a chance to give us some advice on how we can better do our job so you can do your job better.

Don't pass up this opportunity.

Ms. EVANS. I know, and so I do believe that there would be indicators off of the information that we provide to you that by having hearings, and I don't disagree that having public hearings ensures transparency and accountability, and you can use this set of hearings as an example because there is a particular area when we first came up here you had no information. You just had gross numbers of what we were saying and you kind of had to trust us that we were telling you the right thing.

So I think that if the agencies come up here with the mindset along the lines that you are there to achieve the same goal as ourselves, that then it becomes a partnership. And I think that the hearings themselves and the way that you have approached the hearings has allowed for that partnership to happen, and so that is why we are at the point with all the information that is out there.

But to your point about—and on one of the charts it has the Census project, which we can all talk about. By having those hearings, it does have the agency very focused on it. The way that the policies are set up, there are indicators on there that you could see it before they have to do a budget amendment. There are things that you can do based on pulling this information out that if you had a particular area that you were interested in, you can request the more detailed information. GAO can request the more detailed information from the agency themselves.

We have set up everything that way so that you can get those quarterly reports, the monthly reports, everything that goes behind the high-level numbers, and by talking with the agencies or having your staff work directly with the agencies without a hearing—I

mean, a lot of the work that we have done under the GAO High-Risk List in conjunction with GAO and staff up here, those aren't hearings, but the whole idea of having meetings with the staff and having to present their goals and their plans and then us reporting out on it on a quarterly basis and a 6-month basis really keeps agencies on focus, and that is not even a hearing. That is just saying what you are going to do in the next 6 months and then come back up here and present what you have done.

Senator CARPER. All right. Let us talk about solutions. We have talked a bit about information technology projects that are making it or not making it, how we can get better information, more timely information on a regular basis, and information we can understand. In terms of solutions and solving these problems and moving forward, a long time ago, when I was a Naval flight officer, when I was on active duty on the West Coast, our job was to hunt for Red October. We flew airplanes, 13-man aircraft that tracked Soviet nuclear submarines in all the oceans of the world and we had a number of squads. We flew an airplane called the P–3.

We would all go through a training command to be prepared to be assigned to our respective squadrons and then we would get to our squadrons and we were assembled into 13-man crews and fly out our missions. But our respective squadrons didn't always do an especially good job and we had some squadrons that were better than others and we had some crews that were better than others.

And the admiral that was in charge of our operations came up with an idea. I think he called it a Tactical Training Team, and established it in the basic training squadrons in which we all initially were trained. These Tactical Training Teams would be deployed to squadrons that weren't doing a particularly good job throughout the Pacific and Indian Oceans. They would work with us for a while and then they would go back home or deployed to assist other squadrons on an as-needed basis. There was always plenty of work for them to do because we weren't always uniform—just like these IT projects. You have pockets of excellence. We had pockets of excellence in the work that we did.

My staff in working with others has come up with an idea. It reminds me of the Tactical Training Team idea. Our folks here call it an IT Strike Force. I would like to think that it is a constructive and realistic solution, or part of the solution to what we are trying to do here. I am not sure, but I hope that it is.

But Ms. Evans, I believe you may have seen a pre-release draft of the bill that I am going to be introducing later today with Senators Lieberman and Collins that will allow your office to create, if you will, a Tactical Training Team, but really an IT Strike Force. It would be comprised of experts from both within government and maybe from outside of government, folks who can help agencies control some of our IT problems before they become even more unwieldy.

And the hope here is that we won't see a repeat performance like we have experienced with our Census hand-held devices. This Strike Team notion would help agencies control small problems before they become billion-dollar problems, as they are today.

First of all, is this a realistic proposal in your idea? Is this an idea that is half-baked? Is this an idea that has promise but needs

to be further thought out? What do you like about it? What are your concerns about it? I would just start with asking you for your comments and then I will ask Mr. Powner and Mr. Denett, as well.

Ms. EVANS. Sir, the initial reaction to it is that it is a solutions-oriented approach. It is trying to get to the goal and identifying the problems quick enough in a way that we can prevent a situation like the Census from happening again. So the initial concept, I believe, is a good concept and is a solutions-oriented concept.

We do something on a very similar basis, but it is not as formal as that process would be, now as we identify the problems, but they are not as quick. We are not getting ahead of the problem.

One of the efforts that we have underway now, which I think this particular feature would complement, is what we are calling the Policy Utilization Assessment effort that we started this year. So Mr. Powner has talked a lot about the quality of the data, and it is only as good as the agency reports to us. So what we have started is an initiative with GSA that actually looks at our policy in totality and then does an assessment.

So, for example, in the cyber security area, we have a policy, total policy going from acquisition all the way through how you accept it. If I looked at the numbers reported by the agencies, I would be at 50 percent. But what we have worked on and what we have developed is a methodology that gives us statistical certainty. I am really only at 30 percent.

So based on that, using that and then in complement with what is envisioned, I believe, in this bill, I could use this to go into an agency and say, OK, you said that you are green. You have all these things in place. You haven't rebaselined, so we are going to do an assessment of the policy, not an audit like GAO, but an assessment, and it would tell me whether they were at 100 percent, 90 percent, or 60 percent. If they were below a certain threshold, then this team could go in, analyze what the issues are, and then help the agency to move forward to really realize that 100 percent implementation.

Senator CARPER. Mr. Powner, this notion, this IT Strike Team notion, is it half-baked? Is it more than half-baked? One of the things I think you mentioned in your testimony, we have these IT projects that we know are problematic. They appear on a High-Risk List or a Management Watch List, not just once, but again and again and again, for extended periods of time, for months and in some cases for years. And maybe that might be an appropriate place or instance in which to deploy these teams.

Mr. POWNER. Yes. I think the idea is a good one from this point. Agencies need help, and if you look internally to some agencies, they set up similar—they refer to them as Centers of Excellence where they can go to for help in establishing contracts. How do we establish a baseline estimate up front? How do we define our requirements? How do we manage risk? And so you put the appropriate processes in place. And if you look at those things, a lot of those are the root causes why we have projects on this list, why we rebaseline. We got the requirements creep. Requirements creep is out of control so we have rebaselined. That was the No. 1 reason we found.

Senator CARPER. Is that right? OK. I am not surprised.

Mr. POWNER. No, exactly. So if you put this group together, I can tell you right out of the gate what some of the areas you want to focus on: Getting good estimates up front, defining your requirements well, putting in place a sound risk management program, and overseeing contractors, and there are probably some other thoughts, but those are four areas where we have major weaknesses across the board.

So I think it is a good idea because if you focus on solutions and areas where they can go for help—but what is important is that group from a central government point of view, there will be a lot of pressure on that group because there is a lot of help that is needed. What is important is to establish that group and then to have that somewhat replicated in agencies, too. And we already have some of that. I think DOD, FAA, IRS, some of the big organizations, you will see pockets of that occurring.

So it is also important to do that centrally, but to make sure that it gets replicated and not to lose sight, too, that it is about the people, also, not just the processes but the people. We need to bolster our workforce. I think Ms. Evans comes out with an annual report showing that we need help in the PM area, with architects, engineers, those types of folks.

One other item that I would like to highlight is if you look at IRS as an example, where they had some successes, they used what is called Critical Position Pay Authority, where you actually can pay above some of the Federal limits to attract some better folks. So in addition to these processes and strike forces, we need to continue to bolster our workforce through some of those existing processes.

Senator CARPER. All right. Well, I think I have probably kept you here long enough. I wish that more of my colleagues were here with us today. I know Dr. Coburn has a lot on his plate these days, but is keenly interested in these issues. He has not gone away. He is going to be around for a while. He has self-imposed a 12-year time limit if the voters of his State concur with that, and they might.

I am going to be around for at least another 4 years and my guess is that we will continue to work together on this Subcommittee for a while, so our interest in this issue, in these issues, as well as a broader range of issues that involve concerns about just how wisely we are spending our resources, we are going to stay on these, but we are going to stay on this one, as well.

I think we are making some progress, but God knows we need to make more. There is plenty of work for us to do here.

Mr. Denett.

Mr. DENETT. I agree with what my colleagues have said. I would like to tack on, we do have an initiative called the SHINE initiative, because so often——

Senator CARPER. The SHINE? Is that an acronym or what is that?

Mr. DENETT. It is just meaning shine, give people a chance to shine and look good. Too often, they are focused on, when they get behind schedule and over cost, and that is appropriate, but we don't often enough praise those that are within budget and on schedule. So SHINE is an attempt to give recognition to programs

and employees that are doing well. So we gather them in, give them some praise——

Senator CARPER. That is good.

Mr. DENETT. I think it would be helpful and would even like to approach you when we have our next round of those to see if you would be willing to participate in honoring some of those special projects.

Senator CARPER. I would be pleased to do that. I would be pleased to do that. What we used to say in the Navy, praise in public, reprimand in private. We would be pleased to join in the praise for some of these folks. But every now and then we like to, around here, we like to reprimand in public, too. It has a salutary effect. [Laughter.]

All right. I suspect you are going to have some follow-up questions for the record. I would just ask that you respond to them promptly, as you always do.

Thank you for your stewardship here, and Mr. Powner, a real special thanks to you and your folks at GAO who are a big help to us in this area. Thank you.

All right. Mr. Grasso, Dr. Brown, Dr. Jarrett, we are happy to see you, Tom Jarrett. Welcome.

Our second panel today begins with Al Grasso. Mr. Grasso is President and Chief Executive Officer of the MITRE Corporation, a not-for-profit organization chartered to work in the public interest. I think you all have been involved, as I understand it, in doing some work on the Census project and we are very grateful for the work that you are doing there. At MITRE, Mr. Grasso is responsible for developing and leading the corporation's overall strategic and business operations. MITRE has been involved in helping to oversee multiple complex and high-risk IT investments in the Federal Government. You have had plenty to do.

Our next witness is Dr. Norm Brown, and I couldn't help but notice Dr. Brown sitting in the first row behind the witnesses on our earlier panel. Dr. Brown did a lot of head nodding one way or the other, so now we will let you actually lend a voice to all the body language that you were sharing with our staff and me earlier.

But he is Executive Director for the Center for Program Transformation. For over 30 years, I am told, Dr. Brown has served as a commercial program manager and program management troubleshooter, and you have also served as the Assistant Secretary of—did you serve as the Assistant Secretary or in the office of the Assistant Secretary of the Navy—in the Navy, good for you—where you worked across all military branches to bring troubled projects back on track. In addition, I am told that you represented the military services on the 2000 Defense Science Board with the mission of solving why risky IT investments spiral out of control.

And our last witness, I am tempted to say saving the best for last—he is a home boy—but Tom Jarrett, whom I have been privileged to know for a long time, Secretary of our Department of Technology and Information for the State of Delaware. Mr. Jarrett is no stranger in testifying before this Subcommittee. Previously, he testified as President—President, that is a job a lot of my colleagues would like to have—President of the National Association of State Chief Information Officers on issues relating to cyber security when

Senator Coburn was Chairman of this Subcommittee. Mr. Jarrett oversees an IT investment budget of over $200 million and has achieved 90 percent of cost, schedule, and performance goals for the past 7 years as the Chief Information Officer of Delaware.

When I was governor, we made progress on a whole lot of different fronts overall in our education and welfare system. I was very pleased with much that we accomplished, such as job creation and job preservation. One of the areas that we made some progress, but maybe not enough, is the area of our government that Mr. Jarrett now leads. He has taken our State clearly to the next level. I think one of the very proud things that our current governor can take credit for is the work that Mr. Jarrett and his folks have done in his department. So, welcome. In terms of best practices, we think you are one.

Mr. JARRETT. Thank you.

Senator CARPER. Mr. Grasso, I am going to recognize you for your statement, and again, I would ask you to use about 5 minutes. If you go a little over, that is all right. And then once all of our witnesses have testified, we will come back and ask some questions. Your entire statement will be made part of the record, so please proceed.

TESTIMONY OF ALFRED GRASSO,[1] PRESIDENT AND CHIEF EXECUTIVE OFFICER, MITRE CORPORATION

Mr. GRASSO. Thank you, Chairman Carper. Thank you for affording me the opportunity to appear before this Subcommittee. I fear that many of the remarks I had prepared have already been stated this morning, but I hope to reemphasize some of those key points.

Senator CARPER. Around here, we talk about an echo effect. It is really hard to cut through the media and to actually deliver a message to constituents, to voters. If you are the President, you have a big megaphone and you have a lot of echo effect from your cabinet secretaries and others who work for the Administration, so you have a good echo effect. But things have to be said over and over and over again in order for them to get through, including to people like us up here. So a little repetition is not bad.

Mr. GRASSO. Thank you. Our company's 50 years of experience, contributions, and accomplishments has given us a perspective that I believe is highly relevant to the topic of information technology planning and management. From the early days of the SAGE air defense system to present-day deployment of advanced command and control and business modernization systems, MITRE has been witness to great successes and, similarly, to great disappointments. We are honored to be asked to share our lessons and insights with your Subcommittee.

Federal IT programs operate in an environment of rapid technology evolution, where some system components become obsolete before the program completes. This pace of technology change challenges program teams to keep their technical skill base current. IT systems and business processes are increasingly interconnected within and across agencies, making it hard to achieve consensus on vision, operational concepts, and requirements. The Federal Gov-

[1] The prepared statement of Mr. Grasso appears in the Appendix on page 100.

ernment's stretched fiscal and human resources further complicate the situation.

The net effect is the widespread failure of many programs to deliver on time and on budget, with only a few notable exceptions where programs are able to overcome these challenges and succeed. Our experience leads me to comment on several critical areas and to offer three steps for improvement.

My first comment pertains to governance. Governance relates to decisions that define expectations, grant power, assign accountability, or verify performance. Effective governance comprises consistent management cohesive policies, processes, and decision rights for a given area of responsibility. Governance becomes increasingly complicated as programs and processes cross organizational boundaries and intersect multiple governing bodies. Authorities and responsibilities become ambiguous and program managers are disenfranchised. It is often said that the debate begins in government once the decision is made.

Successful programs must have unambiguous governance. Decision making authority——

Senator CARPER. Say that again. Successful programs must have what?

Mr. GRASSO. Unambiguous governance.

Senator CARPER. OK.

Mr. GRASSO. Decision making authority and accountability that address the implications of intersecting organizations must be clearly defined at the onset. These authorities must encompass the areas of budget and finance, investment portfolio management, business process, and program and project management.

My second comment pertains to requirements, an equally important consideration. Requirements, reality, and flux are often recognized as the root cause of program rebaselining. Rebaselining is not necessarily a dirty word, but a necessary part of delivering capabilities that meet users' needs. Requirements are too often determined in the absence of cost, schedule, and technology risk consideration, and once determined, they are very difficult to change.

The biggest difference between successful commercial IT developments and troubled government IT acquisitions is how requirements are managed. Successful commercial IT developers handle requirements with great caution. If a certain requirement adversely drives cost, performance, or schedule, it is quickly modified or eliminated. This does not happen in a typical government IT acquisition. Time to market is a competitive driver in the commercial marketplace, and I would submit it is as important, if not more so, in a world where adversary capabilities change as quickly as the technology cycle. System requirements must be considered living, but managed with a controlled process to use regular trade-off analyses to determine the value of change.

My final comment addressees program management practices. Successful programs are characterized by a strong government Program Management Office (PMO), capable of a peer relationship with the contractor on systems engineering and program management issues. With a strong and capable PMO, the government has the capability to make informed decisions and manage the risk in acquisition programs.

A key function of a strong PMO is best described by the metaphor of an architect's relationship with the user and the builder of a building. The architect is the user's agent as independent of the builder. The architect works to understand the user's operational needs and translate them into technical requirements enabling builders to develop the needed capability. The architect evaluates development feasibility and performs an independent conceptual design and cost estimate. These architect functions enable the user to make informed cost and capability tradeoffs and prioritize requirements. The architect is accountable to the user to ensure that delivered capability meets the user's highest priority needs within the constraints imposed by available technology, funding, and time.

I offer the following recommendations based on our experience with these issues. First, change the tone and tenor of oversight to focus equally on programs that have gone from bad to good and good to great, to reveal best practices which then can be applied more broadly. No program is without risk. We should all be more interested in those programs that have managed the risks well and harvest those results for the betterment of the larger set of programs.

Second, to navigate the dynamics of uncertainty of today's environment, IT programs are best structured as a portfolio with internal planning and management flexibility. Oversight should focus on the long-term funding envelope and the overall capabilities to be delivered. This allows flexibility at the program level to make informed trade-off decisions and to concentrate on manageably-sized increments that deliver capabilities in shorter time frames. This approach makes it easier for programs to demonstrate success or to fail early, which is valuable if a program is put in place and funded contingencies. It also puts capabilities in the hands of the users more quickly. This incremental approach is the norm in commercial practice.

Third, Congress should continue to support and refine programs such as the DOD's Highly Qualified Experts program and, as Dave Powner mentioned earlier, the IRS's Critical Pay Authority that helps attract and retain critical government professionals. Additionally, the IRS's pay-for-performance program has helped motivate performance aligned to outcomes. These are valuable tools that address the capacity, capabilities, and incentives needed to manage effective programs. We encourage the Congress to look to these as models, streamline their execution, and broaden their application government-wide.

I request that my prepared statement be included in the record and I would be pleased to answer questions.

Senator CARPER. Your entire statement will be included in the record. That was an excellent statement, an excellent summary. Thank you very much.

Mr. GRASSO. Thank you.

Senator CARPER. Dr. Brown, welcome.

TESTIMONY OF NORM V. BROWN,[1] EXECUTIVE DIRECTOR, CENTER FOR PROGRAM TRANSFORMATION

Mr. BROWN. Good morning, Chairman Carper. First, let me congratulate you for holding this hearing since literally billions of taxpayer dollars are wasted every year in poorly managed IT. Clearly, you are onto something important.

Vice Admiral Jerry O. Tuttle, Retired, the former Deputy Chief of Naval Operations for C4I and an icon for naval computing and net-centric warfare would counsel, "Lead, follow, or get out of the way." Thank you, Senators. Thank you for leading the way. As we say, bravo zulu.

Let us be clear about one thing. Although it is difficult to effectively manage a large-scale project, on the other hand, producing a large-scale IT train wreck is easy. The good news is that wrecks can be avoided by effectively using best practices.

Today, I would like to briefly offer actions that government departments and agencies, OMB, and Congress can take to prevent wrecks. At its core, these actions address rapidly achievable improvements.

I will begin with a structural observation. Much is expected of each agency CIO. Many have responsibility without real authority. Many Federal departments include numerous essentially independent fiefdoms because Congress has so arranged it, fiefdoms independently funded by Congress. The Pentagon rule is, he that has got the gold makes the rules. So, too, in Federal agencies. Although I don't today have any solutions to offer, I would be happy to work with your staff.

Next, an observation regarding those IT problems in project management and oversight. When OMB testified before you last September, they expressed a recent interest in IT program execution, and that is a very good thing, but IT programs simply don't manage themselves.

From my understanding and as we have heard this morning, very few agencies have much in the way of any real IT program management and oversight. Earned value is held up as a do-all silver bullet solution, yet little is done to prevent the easy gaming and corruption that earned value is vulnerable to, and associated rebaselining may lack the transparency needed to ensure effective oversight. Far too much is expected of earned value. Although earned value is a powerful visibility technique that supports program management, earned value cannot replace program management.

Unfortunately, there seems little in the land of government IT program management that implements the needed essential techniques of managing risk, requirements, and change, or integrated baseline reviews. As a solution, I would recommend that each agency be required to actually have real program management and oversight, that they focus on implementing the important critical details with minimum overhead, and that they identify remaining weaknesses and vulnerabilities.

Transparency is dandy, but it must be converted to visibility to be useful. A transparent contractor can deliver a 53-foot truck full

[1] The prepared statement of Mr. Brown appears in the Appendix on page 111.

of boxes of data, but what you really need is only the bottom-line information. What is needed is true visibility of IT project health and progress in near real time.

Since earned value seems to be the only principal visibility technique relied on by OMB and the agencies, I would propose a more comprehensive visibility product, let us say an Exhibit 350, to provide real project visibility indicators monthly, primarily for the program manager, with quarterly simplified versions for agency and component CIOs, OMB, and Congress. I will be happy to work with your staff and OMB on this.

Tracking schedule progress is not easy. One reason for schedule surprises is that it is pressure to meet schedule increases. The hard-to-do things are kicked down the road, with difficult, uncompleted requirements now moved into the future, a future which was not planned to receive it. As it turns out, this unplanned future work will now require a successive series of miracles to be accomplished in order to complete the development on time and on budget. Don't bet on the miracles happening.

To motivate agencies to focus on IT project management and oversight, I would recommend adapting the Nunn-McCurdy notification process, not that it is a great visibility technique; it is not. But it, in fact, serves as a powerful motivator, as something really to be avoided. As little else can do, it gives a clear focus to the business of cost and schedule containment.

We have a serious problem regarding people. It is difficult to reward good talent, to hire good talent, and to train good talent. We expect CIOs and our IT personnel to do more with less and then give them less as if to prove the point. OMB needs to address this people issue as a priority.

Training project personnel to effectively implement fundamental processes is minimal. While DOD has a certificate program in IT program management, GSA long ago disbanded their excellent similar IT Trail Boss program for civilian agencies. The various communities charged with making IT development work have received essentially no education, training, or any certification to do what they are asked to do. No training, no education, no certification, and no experience—it is a wonder we do as well as we do, as bad as it is.

Apropos of your remarks earlier this morning about pulling the plug, a program termination process should be considered. The former Assistant Secretary of the Army for Acquisition, the Hon. Claude Bolton, is a strong proponent of terminating projects if measurable outcomes cannot be achieved within the agreed-to program cost schedule and performance baselines. The DOD has no formal decisionmaking process or policies to terminate programs, and I am not aware of any for other agencies. I think it wise and prudent to consider including such a process among ways to improve the government's IT acquisition process.

Contract incentives and other considerations are important, and I discuss them further in my formal testimony.

That concludes my summary and I will be happy to take questions at the appropriate time.

Senator CARPER. Again, another excellent testimony. Thank you for the thought that you put into it. Thank you for your years of service, too, and your counsel here today.

Mr. Jarrett, you are recognized. Please proceed. Welcome.

TESTIMONY OF THOMAS M. JARRETT,[1] SECRETARY, DEPARTMENT OF TECHNOLOGY AND INFORMATION, STATE OF DELAWARE

Mr. JARRETT. Chairman Carper, Ranking Member Coburn, and Members of the Subcommittee, thank you for the opportunity to be here today. As Secretary of Delaware's Department of Technology and Information, I can well appreciate the complexity, the challenges, and the significant responsibilities associated with managing information technology projects in an investments portfolio that cuts across many agencies, and in Delaware's case, all three branches of government.

Albeit in a much smaller scale than the Federal Government, Delaware and other State Governments are faced with similar concerns regarding IT project management. In fact, Delaware's Department of Technology and Information was established in part because of ongoing IT project delays and cost overruns that Delaware was experiencing. Delaware's centralized IT structure charges our agency with direct oversight and approval on nearly $200 million in active IT projects.

As a new agency, we were able to develop and employ new approaches to IT project management that incorporate many best practices from private industry and others in the government sector. While our methods are under constant review for improvement, we are enjoying some significant progresses. We have an excellent track record of delivering much-needed IT solutions that are on time and on budget.

There are no silver bullets, no one or two changes that you can point to for perfect project management. Instead, there are many small improvements that we have made that, in the aggregate, are making the difference for Delaware. I would like to take a few minutes to give you a high-level view of a project life cycle using the Delaware model. In addition, I would like to point out what I believe are the significant processes and procedures that we have put in place to successfully manage our portfolio.

Like the Federal model, we require agencies to submit a business case that addresses the major items we believe help ensure a project's success. Our model includes the following major areas: Risk management, processes reengineering, architectural review, resource and funding availability, project management oversight, organizational change management, needs assessment, customization requirements, disaster recovery levels, and management and executive sponsorship.

Recommended projects are forwarded for the concurrence of the State CIO before they move ahead in our process. This recommendation usually includes ongoing funding contingent on meeting project milestones. Once approved, DTI works with the agency customer to develop full and complete requirements so a request

[1] The prepared statement of Mr. Jarrett appears in the Appendix on page 120.

for proposals can be released to secure vendor bids in order to meet the needs of the project. DTI stays involved to help the agency make the vendor selection and to structure a contract that ensures the project is delivered on time and on budget.

I cannot emphasize enough how critical the requirements gathering process is to the project's ultimate success or failure. The Delaware model does not allow for requirements gathering to be conducted solely by the vendor. There must be an active involvement by the DTI project management team. There is an old saying, "The customer doesn't know what they want until you give them what they ask for." Requirement gathering is critical to the process and helps alleviate scope, time, and budget creep if it is done correctly.

At the start of a new project, a nationally certified program or project manager is assigned, as well as a certified organizational change management team, to run parallel courses in managing our projects. It is not enough to be certified. We take extra care in selecting the people to fill these positions, as they are essential to the success of the project. We count on these folks to do what we call inflicting discipline and structure to these projects.

It is important to note that DTI manages Delaware's IT projects, not the vendors assigned to them. While we demand the vendor assign a certified and talented project manager, our State folks manage the project.

Further, I would like to highlight our change management process. Change management starts with the review of existing business processes and is focused on preparing the organization for the cultural changes that are a part of any major project. According to a recent study conducted by the National Association of State Chief Information Officers, which represents State CIOs across the 50 States, 80 percent of major IT project failures can be directly attributed to a lack of change management. Too often, the employees who will actually use the new application are left out of the project process, and when this takes place, it is almost certain that the project is doomed to fail or under-perform.

Another major element of our success is how we manage the overall process. All of Delaware's major IT projects have executive sponsors. Executive sponsors include high-level managers from the agencies involved as well as key executives from DTI and our Office of Management and Budget. The executive sponsors hold regular monitoring and update meetings and provide high-level oversight. When difficult project decisions need to be made, the executive sponsors are aware of the issues and have the authority to make critical decisions on whether or not to keep the project moving along.

A real example is our present project involving all of Delaware's courts. Due to the lack of employee training and readiness, the executive sponsors recommended that the project be paused so that the training could take place. In fact, Delaware's Chief Justice himself invoked a 6-month pause in recognition of the need for court employees to be prepared if the project was to succeed.

Besides ongoing project meetings, all projects in the State's portfolio are reviewed weekly by our Project Management Office and bimonthly at a workload management meeting where project man-

agers present their projects' status to the assembled DTI senior managers. Opportunities for improvement or needed adjustments are vetted in an open forum with the goal of keeping the project on track and transparent.

Our agency is committed to project transparency all the way to our legislature and our governor. We believe in continuous information exchange and dialogue with our elected representatives so that they are educated and aware of the complexity of major IT projects. Providing information up front, even when it may be painful, is far better than saving unpleasant surprises for yearly budget sessions. Bad news does not age well.

I wish I could tell you that everything is humming along perfectly and that the processes that we have put in place are the final answer, but I can't, as we have many challenges similar to those being talked about today. However, we believe that by tightly managing these challenges, we can deliver projects on time and on budget. Although our project tracking system is complex, in our communication with stakeholders, we use a high-level red/green/yellow scorecard to inform them how the projects are developing.

All projects have or will have ongoing issues that require senior management attention. Under the Delaware model, we believe that providing the facts, good or bad, to all stakeholders, including the legislature, is the proper policy, and most importantly, lives up to one of my agency's core values of integrity. Our vendors are held accountable to deliver what they said they would, as well, and we call the facts as we see them.

I thank you for the opportunity to testify today and would be happy to answer any questions.

Senator CARPER. Thank you. Thanks not just for your testimony, but for the terrific leadership that you provide for our State and have shared some of the fruits of that leadership with us today.

I think I would like to ask, first of all, Mr. Grasso and Dr. Brown a question and ask you to reflect on what we have heard from Mr. Jarrett today. I have oftentimes described the 50 States as laboratories of democracy and the belief that somewhere in those 50 States, somebody has come up with a solution that will help us solve a number of the problems we face at the Federal level, and the same is true of the private sector. Somebody has figured out how to solve most of the problems, not all, but most of the problems that we face as a Nation and we just have to figure that out and be able to grow them to size or to scale.

What did you hear from Mr. Jarrett in talking about Delaware, the way we operate in our State, that might be applicable to us here at the Federal level? What are some good lessons learned that you think we could take from his testimony and apply them to the Federal Government?

Mr. GRASSO. I think a strong element that I heard in the successes that we have seen in Delaware is the investment, again, that is made in the project management team, in the strength of that project management team. We heard that the project manager is certified, but it goes much further than just simple certification. There is a continuous development effort that is required.

With a strong project management team, that project management team can be held accountable to basically continue to own the

technical baseline of the program and not just basically contract it away such that you just get what you get. The team is informed throughout the process, is able to establish that peer relationship which I mentioned in my testimony with the contractor, and that allows for the successful acquisition.

Requirements are important. We heard that. The level at which requirements are stated are very important. All too often, we detail requirements down to a level that we believe perhaps causes some of the rebaselining that we see because we specify things in terms of technology as opposed to in terms of outcomes. Although he didn't say it, the importance of requirements and the emphasis placed on requirements, I suspect they may have gotten that right in terms of the level by which they establish requirements.

So I think a combination of the strength of the program management team, the investment made in those people to keep them highly qualified, and the ability to deal with requirements at the right level have achieved some of the successes.

Senator CARPER. Thanks for that analysis.

Dr. Brown, what did you hear from Mr. Jarrett's testimony that you think might apply to us at the Federal level?

Mr. BROWN. First, let me echo what Al Grasso has said. I think the emphasis on requirements development and control and change control is absolutely fundamental and determines much of our cost and schedule problems that we see.

And I think there is one other thing that Mr. Jarrett hasn't fully articulated to you that is very relevant, which is his process of paying their IT folks. Maybe you could talk more about that.

Senator CARPER. You actually pay them?

Mr. JARRETT. Yes, imagine, they want to get paid. [Laughter.]

As you know, Mr. Chairman, a number of years ago, the legislature allowed Delaware, and I still believe the only State today that has ever done it, to take the entire IT organization and convert it from a civil service structure to a non-civil service structure, and along with that, they gave me the ability to write our own compensation structure. So I think we are one of the few, if only, State agencies in the country that actually pays its IT people to the market, and what that means is that we have very qualified people, and I am happy to say we also have the highest retention rate of any agency in the State.

Senator CARPER. I used to be State Treasurer. I remember a time early on when we thought that we hired people, usually fairly young people out of school, and trained them so that they could be hired away by the private sector or some other employer. That sounds like that is not the case anymore, is it?

Mr. JARRETT. That is not the case, not in my department.

Senator CARPER. OK, good. Dr. Brown, do you want to add anything?

Mr. BROWN. Sure. One thing that you had talked about that particularly resonated with me was the concept of the tactical training teams, and something that I had started at the Navy Department and later became DOD was the Software Program Managers Network. We had 10,000 members across the country. We supported over 200 programs in helping them. We had a stable of these people that we would call tactical trainers, experts in a wide range of

subject matter experts, over 100 of these people, and as programs need, they could just call in the tactical team.

If they needed help on a task activity network to support earned value or if they needed to better understand how to identify risks in the program or had a plan for testing or had a better oversight of what the contractor is doing or incentives, anything like that, they could call in the team. That is very consistent with your IT support team, and I think that is a fundamentally important thing to do.

Senator CARPER. All right. Mr. Grasso and Dr. Brown have been good enough to comment on your testimony. Let me just ask you if you would do the same with respect to some of what they said and just reinforce the relevance of their counsel to us.

Mr. JARRETT. Well, I was telling Dr. Brown before we started, I was so pleased when I had a chance to read and hear what they both had said because I kind of threw up my arms and said, gee, we are doing that and have been doing it for some time and I think it proves out in a couple of areas.

One is the requirements. People get sick about hearing about that, but in fact, what we have found and where we have spent all of our time is on the front end of the project process, not on the back end, which means that if you are going to get them right, then you have to determine what the requirements are. What we learned in the very beginning is that is not unlike—and you need actually qualified and trained people to be able to do that. That is not as simple as going out to an agency and saying, "OK, tell me what it is that you need," because what we have found is that in a lot of cases, they can't articulate what they need, at least not in a way that when you are looking to replace a system and do that. So you have to help them through that process. So we have spent a lot of time doing that.

The other is in the change management area. I think a lot of States and a lot of folks are moving into the areas of PMOs, Project Management Offices. Something that we have spent an awful lot of time on is, again, in the organizational change management, and I will give you an example. We are doing a new financial system in the State. We are spending a lot of our time not on the technical aspects but in dealing with each of the agencies so that we can help the users kind of work through the processes and the changes that this new project or this new system is going to provide to them. Most times, we don't spend time doing that.

So I hear both of those areas in the testimony that was given, and from my perspective, I think it is well thought out and something that I think the Federal Government could do, as well.

Senator CARPER. Mr. Grasso, did you have a point you wanted to make?

Mr. GRASSO. I might just offer an additional remark.

Senator CARPER. Before you do that, in your testimony, Mr. Jarrett, you said there is an old saying the customer doesn't know what they want until you give them what they have asked for. There is a lot of wisdom in that.

Mr. GRASSO. In my written statement, there are a couple of references that I would just point to which emphasize the requirements point, and one of those references points to the 32 programs

at NASA that were evaluated and the up-front investment and the program overrun result. What you see is when the definition phase as a percent of the total program is greater than 10 percent, what you find is that the program overrun is typically less than 20 percent.

Senator CARPER. Say that one more time. I want to make sure I got it.

Mr. GRASSO. The graph refers to 32 NASA programs that have been evaluated and it takes a look at the definition phase of those programs as a percent of the total program. And when the definition phase of the program is 10 percent or greater, what you find is that the program overrun is 20 percent or less.

Senator CARPER. OK. Good.

Mr. GRASSO. And that suggests that considerate thought is being given to the requirements up front and thus less change is required later on.

Senator CARPER. All right. Thank you. My staff has been good enough to prepare a number of questions, and I am just going to take a moment and look at those and I suspect we will use these as a point of departure for some further discussion. In some ways, the kind of discussion that we are having here is actually more helpful than not.

I have asked you to sort of reflect on your respective testimonies here today. Go back with me to the first panel and some of the things that you heard from the first panel, some of the things that we discussed. What were some of the things that struck you that were especially important or maybe something that you wanted to add something that wasn't said, or maybe an answer that wasn't given, or at least wasn't given as well as it might have been? Does anything stand out for you, referring back to the first panel's testimony?

Mr. GRASSO. I would offer one remark because I can't stop looking at the report card. Having several daughters in high school, I have encouraged my daughters to take Advanced Placement classes, whereas I know some of her friends are taking lesser challenging classes, if you will, and——

Senator CARPER. What grades are your daughters going to be in this fall?

Mr. GRASSO. Actually, my oldest is going to the University of Virginia this year, so she is just graduating, and my middle daughter is a rising 11th grader.

Senator CARPER. OK. We have two boys and our youngest son just graduated from the Charter School of Wilmington and he is going off to William and Mary and we know all about Advanced Placement tests.

We just got our results about a week ago, high fives all around. [Laughter.]

Mr. GRASSO. So you know the amount of work that goes into preparing——

Senator CARPER. Yes, we do.

Mr. GRASSO [continuing]. And the level of effort that is required. The report cards are a great start, but at the same time, all IT programs aren't borne of the same level of complexity, the same level of interdependency and challenge. So as we step back and I look

at the report cards, it begs the question of what are the correlations, if you will, to those grades.

As I look at some of those organizations, some of those organizations are more insular than other organizations, if you will, and there are fewer interdependencies, and as a result, what you find is the complexity of the IT system is not necessarily as challenging as an enterprise system that touches a number of different organizations, crosses boundaries, and has unclear governance.

So a comment that I will make is a report card as such, I don't know if those are AP classes or if those are substandard classes. So an F on AP class may not necessarily give you all of the details that you need to respond.

Senator CARPER. Well, you could not have picked a better analogy.

Mr. BROWN. My view is that those don't represent AP classes. [Laughter.]

And with regard to what Ms. Evans and Dave Powner were saying about earned value management and particularly the problem of rebaselining, DOD deals with that in a very direct and forthright manner, which is just to track all the costs and the curve and what you see is a curve that starts going down and then the rebaseline goes up and goes up and it is just this downward spiral, a death spiral. And it is very easy to track what is happening when you see that picture, and that would be very easy for OMB to provide to you. I don't know if they are willing to do that, but they should have that information when they say—I don't know what agencies exactly report to them in their private conversations, but that should be certainly public information.

Senator CARPER. OK.

Mr. GRASSO. The 1987 Defense Science Board had an interesting conclusion and it said, technology is not our problem, management is, and they were talking about software problems, and hopefully——

Senator CARPER. Who said that?

Mr. BROWN. The 1987 Defense Science Board study on software.

Senator CARPER. OK. Mr. Grasso, the folks at MITRE have been good to help us in the Bureau of the Census. You tried to recover from a very bad situation. You may not be intimately familiar with this, but maybe you are, and to the extent that you have some familiarity with how the Census Bureau got into this mess as they prepared for and approached the 2010 Census, where do you think they went wrong and what lessons can we take from that experience to make sure that whether it is the 2020 Census or other IT projects, how we don't let this kind of thing happen again?

As it has turned out, it is an enormously expensive problem and we are going to not only end up spending more money, I don't know that we will get a better product. We will probably not get as good of a product in the end, but we will have spent a lot more money, a very unhappy situation. But we appreciate what you all have done to try to minimize the loss and get us going in the right direction. But what are some lessons learned?

Mr. GRASSO. I think the two lessons have already been described today. The first is requirements. In the case of Census, as you step back, there certainly has been a significant number of require-

ments changes throughout the process which has led to changes with the contractor. In the time period in which this all has occurred, the technology has evolved, so the solution that was envisioned some time ago perhaps is not necessarily the best today in terms of the architectural basis for that solution. So the program was not able to evolve as quickly as the technology was able to evolve.

The second part of that is as all of this is evolving and all of these changes are being made, the strength of the program office, quite frankly, I would say, could have used some building up in the early stages. That has occurred as a result of the response to the issues that they have been confronted with most recently, but quite frankly, I would say that many of the responsibilities that should have been within the program office in establishing the technical baseline were really given to the contractor as opposed to being held within the program office.

Senator CARPER. This is sort of the inverse of the situation that I think Mr. Jarrett described.

Mr. GRASSO. Exactly. And we find that to be the case quite often. When you don't have a strong program office, a lot gets transferred to the contractor and you end up with a lot more dynamics in the program.

Senator CARPER. All right. Let me just ask, do you all have any closing thoughts that you would like to give us? I like to talk about take-aways, and it is impossible for me to remember everything that is said here. Even our staff, as smart as they are, it is impossible to remember everything. But just some of the key take-aways for us from what you have heard from other witnesses and maybe some points that you have brought up that you would like to reemphasize as we prepare to conclude.

Is it Secretary Jarrett? Do they call you Secretary? Mr. Secretary.

Mr. JARRETT. You may call me anything you wish.

Senator CARPER. No, but seriously, aren't you a cabinet secretary.

Mr. JARRETT. I am.

Senator CARPER. Then I shouldn't call you Mr. Jarrett. I should call you Mr. Secretary. Do you want to take the first shot at that?

Mr. JARRETT. I guess the only thoughts I had, and it kind of goes back to your earlier question about comments from OMB, and that is that reports and all the things that they put out are good and I guess they are a requirement here, but in fact, I have always believed that reports are only as good as how you use them to actually make a difference and to change things.

What I guess I don't see in a lot of ways is how those reports are being utilized to actually begin to change the process. It just kind of has become embedded in the reports, and in fact, again, if you are not using them, then why even produce them. We spend less time on reports and more on the performance of the projects themselves.

The second would be I see a lot of red. Well, we actually end up with red on some of our projects, too. The difference is, just because it is red doesn't mean it is ready to go and tank. It just means, at least in our case, that it is something that needs a lot of extra look-

see and effort on it to get it back to yellow or to green, where it ultimately needs to be. Projects go in and out of red, green, and yellow all of the time. It depends on the complexity. So I think maybe red is nice, but I think there is this perception that red is bad. Yes, it is not good, but it is not necessarily the end of all things.

The final thing is that in the issue about information back to Congress, I was telling some folks earlier, kind of the mindset which they take, and having come from the private sector and then Delaware Government for the last 7½ years, I am by no means an expert in the dynamics of Washington, but we took a very simple approach with our legislature which was we will notify them and show them this process on everything, painful as it may be on occasion. I have had some painful discussions with Senators and Representatives one-on-one and even in groups.

Over time, what it has built, though, is the fact that they have come to understand the complexities with projects. They have become educated that it is not as easy as people think it is and that there are a lot of bumps in the road. So now what we find is that they have a far better understanding of that and we have a lot more productive dialogue back and forth as we work through those particular projects than we did when we started 7 years ago.

So I would recommend to them to take the opposite approach, which is to provide that information almost as much as they can and not be concerned about the fact of whether it shames somebody or not because I think as you said earlier, I think sometimes that is not necessarily a bad thing.

Senator CARPER. All right. Thank you. Dr. Brown.

Mr. BROWN. I have three things that might be take-aways. One is to actually have Congress require visibility at agencies and at OMB.

The second is to have Congress require the agencies to maintain and use effective critical practices.

And the third is for Congress to maintain its involvement.

Senator CARPER. All right. Expand just a little bit on the second one.

Mr. BROWN. On maintaining critical practices, that is to have a real program management and oversight capability at each agency. What happens is there is so much focus on the Exhibit 300s and the planning of programs that their execution and management go almost unnoticed, and that is where the troubles begin. It has been said that the plan doesn't survive the first battle, and so, too, with the plans for our programs. Things change and are very dynamic. Requirements change all the time and that is why, as Mr. Jarrett said, change management is very important.

Agencies tend to ignore change management. They tend to ignore a very important thing called risk management to identify risks. They don't pay a lot of attention to what is going on in programs in terms of incentivizing the contractor to do the kinds of things that are fundamental, to examine what the fundamental capabilities that are needed by government are and not be absolutely controlled by requirements, to ignore the kinds of things that allow you to have a real confidence in your way of understanding what is going on.

Instead of just requiring earned value as your sole indicator, you could look at real products being developed. You want to have products being developed all the time, weekly or monthly deliveries to the government, and to have assurance that those products are being properly integrated together. I have probably given you more than you want.

Senator CARPER. All right. Just enough. Thank you. Mr. Grasso.

Mr. GRASSO. I guess I would start by saying this is hard. I have seen good organizations fail at IT projects, and I would start by simply saying that we all have A teams and B teams. We need a lot more A teams, which means investment in people and the processes to do this job right.

The teams need to feel ownership, if you will, in the programs and need to have the authorities to do the right things. I once used this analogy. As a homeowner, I may make some decisions to make some investments in my home. This year, I am going to put $3,000 into a sprinkler system in my home. Well, as I proceed to do that, I spring a leak in my roof. If this were the government, I wouldn't be able to fix that roof because I don't have the right kind of money to fix that roof and I would continue to fix my sprinkler system. I don't have the ownership of that portfolio, if you will, to treat my home as a whole complex suite of things. And the ability for a program manager to be able to manage a portfolio as opposed to an individual activity will allow him to manage some of those risks and make the necessary shifts as is appropriate.

I mentioned earlier in my testimony about contingencies and funding contingencies. A risk management plan is absolutely critical to any program, but a risk management plan must have actionable alternatives. If the alternatives are not actionable, then we will just continue to mount on the risks.

So I think the key points that I would make is we must continue to invest in the people and the organizations. As I mentioned earlier, the Highly Qualified Experts Program and the Critical Pay Program in IRS are good examples of investment. It sounds like Delaware has been able to do that. We must be able to manage these risks and empower our program managers with strong teams to make the right decisions and to have alternatives and choices as they see the technologies change and some of those risks surface.

Senator CARPER. Good. Thank you. Well, in closing, I really want to commend our staffs for being smart enough to invite you to come and testify. The way it works here, you have Democrats and Republicans who submit ideas and come up with ideas and ultimately we end up with a witness list. But this has been an especially helpful and beneficial panel of witnesses for us.

One of the things that you are especially good at is explaining things in terms that even I can almost understand in most cases, and these are not easily understood concepts. That is a great gift.

Thanks a lot for making time in your schedules to be here with us today, for preparing for this hearing, and for giving us not just a lot of food for thought, but, I think, a pretty good road map to follow to better ensure that we are getting our money's worth out of these IT projects that are going on throughout the government, actually around the world, and for all the taxpayers who are put-

ting their money into this. Thank you for them, too. Keep up the good work that you are doing and much obliged.

With that, you will probably hear from some of us with some additional questions. We will try to get those out in the next week or so, but if you could respond promptly, we would be most grateful.

Thank you so much, and with that, this hearing is adjourned.

[Whereupon, at 1:41 p.m., the Subcommittee was adjourned.]

APPENDIX

STATEMENT OF PAUL A. DENETT
ADMINISTRATOR FOR FEDERAL PROCUREMENT POLICY
BEFORE THE
SUBCOMMITTEE ON FEDERAL FINANCIAL MANAGEMENT, GOVERNMENT INFORMATION, FEDERAL SERVICES, AND INTERNATIONAL SECURITY
COMMITTEE ON HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS
UNITED STATES SENATE
JULY 31, 2008

Chairman Carper, Ranking Member Coburn, and Members of the Subcommittee, I appreciate the opportunity to appear before you today as the Subcommittee discusses the Administration's progress in tracking, analyzing and evaluating the federal government's information technology (IT) investments.

This morning, I will provide a short overview of agencies' progress in implementing performance-based management for their major acquisition programs. My remarks will primarily address non-IT investments. My colleague, the Honorable Karen Evans, Administrator for Electronic Government and Information Technology, will discuss the initiatives the Administration is pursuing to effectively manage the government's IT portfolio.

Performance-based management requirements

Title V of the Federal Acquisition Streamlining Act ("FASA V") requires executive agencies to establish cost, schedule and performance goals for all major acquisition programs and achieve, on average, 90 percent of those goals. Part 7 of OMB Circular A-11 (*Preparation, Submission, and Execution of the Budget*) provides guidance to implement this practice, known as performance-based management. Major acquisitions of new capital assets must be justified in terms of agency strategic goals and needs, reflect sound acquisition and capital planning

decisions, and include measurable cost, schedule, and performance goals. For ongoing acquisition programs, agencies must report progress toward achieving baseline goals, explain actual or projected deviations from those goals, and describe actual or planned corrective action as needed to achieve baseline goals.

Additional guidance is provided in OMB's *Capital Programming Guide*, a supplement to Circular A-11 Part 7. OMB revised the guide in 2006 to emphasize the importance of key steps in the acquisition planning process, such as needs assessment and alternative analyses. The guide also includes expanded coverage on earned value management (EVM) to ensure agencies have and use objective "early warning" information to identify projects that may be falling short on their goals and make reasoned decisions to support corrective actions.

The Circular prescribes a form, Exhibit 300, for agencies to provide specific information on performance goals and measures, results achieved against goals, acquisition strategies, and project management. With respect to project management, Exhibit 300 requires agencies to report on the qualifications of the assigned program or project manager, and address the use of EVM.

Progress implementing performance-based management

For a number of years, government efforts to implement performance-based management at civilian agencies have focused heavily on major IT acquisition programs. As Administrator Evans will explain, the Administration continues to pursue an aggressive strategy for tracking, analyzing and evaluating the risks and results of major capital investments for information systems. Most agencies are making reasonable progress in implementing performance-based management policies and practices for their major IT investments.

Progress implementing performance-based management has been more limited on non-IT investments. Currently, there is no government-wide portfolio assessment of non-IT capital asset classes, which may take a variety of forms, ranging from construction and real-property management to aircraft acquisitions.

To assess agency progress in implementing performance-based management principles and practices, the Office of Federal Procurement Policy (OFPP) directed agencies to provide information on their new and ongoing non-IT major acquisition projects. OFPP considered whether agencies: (1) have capital planning and investment control (CPIC) policies for major acquisitions other than IT; (ii) have cost, schedule, and performance goals for new and ongoing projects; (iii) use, or plan to use performance-based management systems (PBMS) to monitor acquisition progress on ongoing programs and new programs, respectively; and (iv) are meeting their cost, schedule, and performance goals.

A number of agencies could not demonstrate that they were meeting all of these criteria. CPIC policies are often not as well established as they are for IT investments. Performance-based management systems are not always available to track cost, schedule, and performance. As a result, some agencies could not provide sufficient information to demonstrate that cost, schedule, and performance goals are being met.

We can and must do better. OMB is taking steps to strengthen the application of performance-based management to non-IT investments. These steps include the following:

1. *Increased collaboration.* In late 2007, the Chief Acquisition Officers Council (CAOC) established the Project Management Working Group (PMWG) to work with OMB in achieving the consistent implementation and use of capital planning and project management principles and practices to improve outcomes on federal projects, both for IT and non-IT.

Among other things, the PMWG will serve as an inter-agency focal point to help evaluate the appropriate application of performance-based management -- including tools, models and metrics -- to different types of major non-IT investments, such as construction and aircraft.

2. *Mitigation of high risk in major acquisitions.* Since the early 1990s, the Department of Defense (DoD), the Department of Energy (DOE), and the National Aeronautics and Space Administration (NASA) have been listed on the High-Risk List established by the Government Accountability Office (GAO) for significant vulnerabilities in contract management, including the management of major acquisitions. In 2007, OMB partnered with each of these agencies and the GAO to collaborate in the development of corrective action plans (CAPs). Each plan will identify a clear definition of success tied to successful attainment of cost, schedule, and performance goals. Plans are to include outcome and process goals, metrics on cost and schedule containment, and corrective steps to meet each goal. Goals and metrics will be shared among the agencies so they may build on each other's efforts to mitigate risk and maximize return on investment. DOE's CAP was finalized earlier this month. We expect NASA and DoD to finalize their CAPs by the fall.

3. *Strengthened workforce competencies in program and project management.* OFPP, in conjunction with the Federal Acquisition Institute and more than twelve federal agencies, developed a federal acquisition certification program for program and project managers to standardize training and experience requirements for the civilian agencies. The certification program promotes development of competencies that are critical to successful performance-based management, such as requirements analysis, cost estimating, financial management, risk management, and quality assurance. Certification is required for program and project managers that are assigned to major acquisitions. These managers will be expected to have at least four

years of program and project management experience on federal projects and programs, including managing and evaluating agency acquisition investment performance, developing and managing a program budget, building and presenting a successful business case, reporting program results, strategic planning, and high-level communication with internal and external stakeholders.

4. *Improved assessment of internal controls*. This past spring, OFPP issued guidance to standardize the approach agencies use to assess their acquisition activities. The guidance requires agencies to integrate their assessments with other agency internal control reviews established under Circular A-123 *(Management's Responsibility for Internal Control)*. The guidance, which is modeled on an analytical framework developed by the GAO, is designed to ensure reviews address the areas that most significantly influence the effectiveness and accountability of the acquisition process – namely, organizational alignment and leadership, policies and practices, human capital, and information management and stewardship. The guidance includes a series of critical questions to help agencies identify factors that may contribute to weaknesses in the planning and execution of major projects. For example, the guidance helps agencies assess if they are integrating organizational goals into the capital decision-making process, evaluating, selecting, and controlling capital assets using an investment approach, and balancing budgetary control and managerial flexibility when funding capital projects. If a material weakness with an internal control involving a major acquisition was identified during an assessment, it would be addressed during corrective action monitoring and reflected on the agency's statement of assurance.

Reports on agency implementation efforts

Information on major capital investments for IT may be found in Chapter 9 of the *Analytical Perspectives* volume of the President's Budget and on OMB's E-Government homepage at www.omb.gov. This analysis is published annually. Of particular note, Table 9-1 of Chapter 9 provides an evaluation of each agency's effectiveness in managing IT investments and E-Government processes, along with improvement milestones for the calendar year. The information in the Budget is provided to Congress and the public in accordance with section 5112(c) of the Clinger-Cohen Act.

Information on agency progress in implementing performance-based management for both IT and non-IT investments is included in an OFPP report addressing the FASA V requirements. OFPP will partner with the CAOC PMWG to ensure timely collection of information and preparation and submission of future reports to Congress in accordance with FASA V.

Conclusion

The Administration strongly supports use of performance-based management for its major acquisition programs and remains committed to its effective implementation. This discipline helps agencies identify and mitigate cost overruns, schedule delays, and performance shortfalls. We will also continue to rely on those additional tools that have helped us achieve success – including the management watch list, the high-risk list, EVM and the scorecard -- and adopt new tools, as necessary, to ensure taxpayer dollars are invested wisely and managed responsibly.

This concludes my prepared remarks. I am happy to answer any questions you might have.

STATEMENT OF
THE HONORABLE KAREN EVANS
ADMINISTRATOR FOR ELECTRONIC GOVERNMENT AND INFORMATION TECHNOLOGY
OFFICE OF MANAGEMENT AND BUDGET
BEFORE THE
SUBCOMMITTEE ON FEDERAL FINANCIAL MANAGEMENT, GOVERNMENT INFORMATION AND INTERNATIONAL SECURITY
SENATE HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS COMMITTEE

July 31, 2008

Good morning, Mr. Chairman and Members of the Committee. My remarks will focus on the Administration's strategy and continued progress in performing oversight of agency capital investments in information technology (IT). Specifically, I will address the topic of the Office of Management and Budget's (OMB's) ability to effectively analyze, track, and evaluate agency major capital IT investments.

The President's budget request for FY 2009 includes approximately $71 billion for IT and associated support services government-wide. Though this amount does not represent a large percentage of the total President's budget request, the Office of Management and Budget (OMB) focuses considerable attention on IT-related budgetary issues, program planning and program execution given the cross-cutting nature of information systems management as well as the potential impact of investments in IT on an agency's ability to effectively deliver programs and services to the citizens of the United States.

Of the $71 billion in the President's Budget request for 2009, $22 billion, or 31%, represents proposed funding for development, modernization, or enhancement of new or existing information systems, infrastructure or services. Projected expenditure on existing systems operations and maintenance is $49 billion or 69 percent.

Capital Planning and Investment Control
As I have discussed in previous testimony on the topic of OMB's oversight of IT investments, Public Law 104-106, the Clinger-Cohen Act of 1996 established processes for executive agencies to analyze, track, and evaluate the risks and results of major capital investments for information systems.

The operative means by which OMB evaluates agency capital asset plans and their associated budgetary requests is a business case, or exhibit 300, for individual investments. Agencies develop and submit business cases with their annual budget request to OMB, and we in turn evaluate each business case in terms of its ability to support a given investment proposal, including factors such as alignment with the IT

architecture, planned performance improvement goals, cost/benefit analyses, and eliminating costly duplicative and outdated systems.

OMB also evaluates the capability to manage the investment as demonstrated in the business case and planning process, including factors such as having a qualified project manager, acquisition planning, systems security, risk management, and use of Earned Value Management (EVM) to track and manage cost and schedule goals.

As OMB prepares a budget to sustain current services for Fiscal Year 2010, due to the impending change in Administrations, agencies are required to submit updates to their IT business cases and non-major systems spending projections by September 8, 2008, to allow continuity of oversight and review of IT capital investments in order to prepare for the transition period.

The Management Watch List and High Risk List

Last year, I came before this committee to explain two specific tools OMB uses to track and review agency IT capital investments and high stake and special interest investments, the Management Watch List and the High Risk List. I am pleased to report that we have since expanded upon our criteria for evaluating investments, and improved upon the transparency of how investments and projects are placed on either or both lists.

We added three overall evaluation criteria affecting all business cases in an agency's investment portfolio to better capture and communicate the impact and importance of fundamental IT project management and planning capabilities in the areas of information security, privacy and cost, schedule and performance management. Now, if an agency has not demonstrated effective processes for systems certification and accreditation and performing privacy impact assessments, as evidenced by their Inspector General's evaluation of these processes in the agency's annual Federal Information Security Management Act (FISMA) report (http://www.whitehouse.gov/omb/inforeg/reports/2007_fisma_report.pdf), all investments within the portfolio are placed on the Management Watch List until those core competencies are adequately performed. Likewise, if an agency has failed to achieve an average of seventy percent of the cost, schedule, and performance goals for acquisitions within the investment portfolio, as evidenced by their performance on the E-Government scorecard of the President's Management Agenda (which I will discuss in more detail shortly), all investments within the portfolio are placed on the Management Watch List until the agency remediates this fundamental investment management risk.

In terms of increasing transparency, during the preparation of the FY 2009 President's Budget, OMB provided specific feedback to agencies on a business case-by business case basis as to where they fell short of the evaluation criteria, published the section-by-section evaluation results for each business case on the Management Watch List, and published the criteria OMB uses in assigning scores for each section of the business case.

We also improved the High Risk List by expanding the information included for each project to include the reason(s) why the project is deemed high risk in nature or execution, and included this additional detail in the published version for the third quarter of FY 2008.

The Management Watch List and the High Risk List are reported as part of Chapter 9 of the Analytical Perspectives Chapter of the Budget, and are thereafter published quarterly until the next budget year.

Projects on the Management Watch List and High Risk List FY 2006, FY 2007, and as of Third Quarter FY 2008

	FY 2007 President's Budget (2006)		FY 2008 President's Budget (2007)		FY 2009 President's Budget (2008)	
Date of Publication	Q1	Q4	Q1	Q4	Q1	Q3
Major IT Investments	857	861	840	833	810	801
Management Watch List Investments	263	84	346	134	585	352
High Risk Projects	N/A	234	477	603	601	477

Performance Measures for Acceptable IT Business Cases and Cost/Schedule/Performance in the President's Management Agenda Scorecard

OMB oversees the agencies' activities under the President's Management Agenda and its associated quarterly reporting process. The Expanding Electronic Government Scorecard includes standards for success for the full complement of IT management practices, including enterprise architecture, capital planning and investment management, managing cost, schedule and performance, information systems security and privacy, and implementation of government-wide E-Gov shared service systems and Line of Business initiatives.

Agency scores are posted quarterly at http://results.gov/agenda/scorecard.html.

The percentage of acceptable business cases within an agency investment portfolio is an explicit criterion on the E-Gov Scorecard. Green performance requires an agency not to have any business cases on the Management Watch List. Yellow performance requires less than half of the business cases in the investment portfolio to be on the Management Watch List.

Starting in Fiscal Year 2008, if an agency's entire portfolio is on the Management Watch List due to the addition of the three aforementioned cross-business case evaluation criteria for systems security, privacy impact assessments, and cost, schedule and performance management, the agency's E-Gov Scorecard status is downgraded to red in the third quarter of the fiscal year.

Cost, schedule and Performance Management

The exhibit 300 includes information on program cost and schedule milestones. Investments in development, modernization, and enhancement are required to report an original and current baseline upon entering into the systems development phase of the systems development lifecycle. Also, for projects requiring use of EVM, agencies report if cost or schedule variance is within 10%, and if the project has been rebaselined within the last fiscal year.

Green performance for cost, schedule and performance management on the E-Gov Scorecard requires a demonstration of management capabilities and sustained performance as evidenced by a composite cost and schedule variance within 10% of goals for development investments.

We also collect and review EVM data quarterly from those agencies that are green for cost, schedule and performance on the E-Gov Scorecard, as well as from agencies expecting to demonstrate green performance in the near term.

GAO's recent report on project rebaselining points out weaknesses in agency policies in terms of specifying all of the elements of rebaselining according to best practices. We acknowledge more should be done to address this in the future. In particular, OMB needs to clarify expectations for when an original baseline should be established, and elaborate upon the process steps for agencies to submit to and receive feedback from OMB on rebaseline requests.

Though the number of project rebaselines is admittedly high, the practice is not always indicative of project management or execution failure. As the GAO report indicates, 99% of the rebaselines for the sample projects in their survey cited changes in either requirements and scope or funding stream as the underlying reason for the rebaseline. There is inherent difficulty in projecting and predicting, or failure to accurately project and predict, the various internal and external factors and events that can impact an IT investment throughout its intended development life cycle.

To mitigate planning risks, agencies should be using an Integrated Baseline Review (IBR) to finalize a project baseline, and to validate the information for a rebaseline where appropriate. OMB policy directs agencies to perform Integrated Baseline Reviews (IBRs) to finalize the cost, schedule and performance goals of the project. IBRs can be conducted pre or post- contract award for systems acquisitions.

If agencies establish the performance measurement baseline prior to conducting an IBR, the likelihood of the baseline having enduring validity is lower. Likewise, if an agency establishes detailed original cost and schedule goals via the budget formulation process, a forward looking planning activity of two years or more, they may be setting themselves up for failure when conditions change at the time of actual contract award and project execution. The original baseline should be established at the onset of systems development and via a rigorous IBR process.

Corrective rebaselines can and do happen when a project is failing to meet goals due to mismanagement. Our shared goal should be to address the causes of project failure, before a corrective rebaseline is necessary, rather than focus on the procedural aspects of the rebaselining process itself.

Solutions for Improving Management and Oversight of IT Investments

OMB, Congress, and agencies must work collaboratively to address weaknesses in IT program and project performance—we are all vested in a common interest: delivering results for the American people. How can we best do this going forward? I believe OMB has the foundational processes in place to perform program and project investment oversight at the macro-level. These core processes, capital planning, architectural alignment, the Management Watch List, the High Risk List, and the E-Gov scorecard have been, and can continue to be, further enhanced and incrementally improved to provide better visibility into program performance before a project is in trouble so deep it is irreparable.

One improvement for OMB would be to leverage the efforts of the Budget Formulation and Execution Line of Business and to ensure the use of the analytical tools and collaboration environment to improve our own information management capabilities supporting the management and oversight regarding IT investments and projects. The various data sets collected by OMB from agencies, can and should be better integrated into a more comprehensive knowledge base. We are working closely with this Line of Business to improve our ability to integrate the information.

I have brought a display of an example of how we could better integrate and expand upon information on agency IT investments. This is one potential snap-shot of project performance at a point in time. We would like to work with Congress to improve transparency and ease of use of this information. With the transparency into departments' and agencies' performance, will come improved accountability and results which the American taxpayers' deserve.

Conclusion

Thank you for this opportunity to discuss the Administration's strategy and progress to date in tracking and evaluating IT investments and projects performance. With this foundation in place, we can continue to work together to achieve the outcome we both desire which is successful implementation of information technology for program and mission results. We have accomplished a lot in the last eight years, and there is more we can continue to do this very important area.

United States Government Accountability Office

GAO

Testimony

Before the Subcommittee on Federal Financial Management, Government Information, Federal Services, and International Security, Committee on Homeland Security and Governmental Affairs, U.S. Senate

For Release on Delivery
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INFORMATION TECHNOLOGY

OMB and Agencies Need to Improve Planning, Management, and Oversight of Projects Totaling Billions of Dollars

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

GAO-08-1051T

DRAFT

July 2008

GAO
Accountability·Integrity·Reliability

Highlights

Highlights of GAO-08-1051T, a testimony to the Subcommittee on Federal Financial Management, Government Information, Federal Services, and International Security, Committee on Homeland Security and Governmental Affairs, U.S. Senate

Why GAO Did This Study

The federal government spends billions of dollars on information technology (IT) projects each year. Consequently, it is important that projects be managed effectively to ensure that public resources are wisely invested. To this end, the Office of Management and Budget (OMB), which plays a key role in overseeing the federal government's IT investments, identifies major projects that are poorly planned by placing them on a Management Watch List and requires agencies to identify high risk projects that are performing poorly (i.e., have performance shortfalls). Having accurate and transparent project cost and schedule information is also essential to effective oversight. At times, changes to this information—called a rebaselining— are made to reflect changed development circumstances. These changes can be done for valid reasons, but can also be used to mask cost overruns and schedule delays.

GAO has previously testified on the Management Watch List and high risk projects. GAO was asked to (1) provide an update on these projects, (2) identify OMB's efforts to improve the identification and oversight of these projects, and (3) summarize the results of GAO's IT project rebaselining report being released today. In preparing this testimony, GAO analyzed current Management Watch List and high risk project information.

To view the full product, including the scope and methodology, click on GAO-08-1051T. For more information, contact David A. Powner at (202) 512-9286 or pownerd@gao.gov.

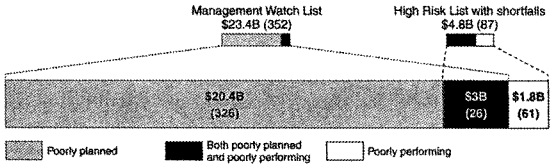
INFORMATION TECHNOLOGY

OMB and Agencies Need to Improve Planning, Management, and Oversight of Projects Totaling Billions of Dollars

What GAO Found

OMB and federal agencies have identified approximately 413 IT projects—totaling at least $25.2 billion in expenditures for fiscal year 2008—as being poorly planned, poorly performing, or both. Specifically, through the Management Watch List process, OMB determined that 352 projects (totaling about $23.4 billion) are poorly planned. In addition, agencies reported that 87 of their high risk projects (totaling about $4.8 billion) were poorly performing. Twenty-six projects (totaling about $3 billion) are considered both poorly planned and poorly performing.

Figure: Poorly Planned and Poorly Performing IT Projects (as of July 2008)



Source: GAO analysis of OMB and agency data.

OMB has taken steps to improve the identification of the Management Watch List and high risk projects since GAO testified last September, including publicly disclosing reasons for placement on the Management Watch List and clarifying high risk project criteria. However, more needs to be done by both OMB and the agencies to address recommendations GAO has previously made to improve the planning, management, and oversight of poorly planned and performing projects so that potentially billions in taxpayer dollars are not wasted.

In its rebaselining review, GAO reports that 48 percent of the federal government's major IT projects have been rebaselined for several reasons, including changes in project goals and changes in funding. Of those rebaselined projects, 51 percent were rebaselined at least twice and about 11 percent were rebaselined 4 times or more. In addition, while the major agencies have all established rebaselining policies, these policies are not comprehensive. Specifically, none of the policies were fully consistent with best practices, including describing a process for developing a new baseline and requiring the validation of the new baseline. Agencies' policies varied in part because OMB has not issued guidance specifying what elements these policies are to include. In its report, GAO makes recommendations to OMB to issue guidance for rebaselining policies and to the major agencies to develop comprehensive rebaselining policies that address identified weaknesses.

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss the federal government's processes for improving the management of information technology (IT) investments. As you know, billions of taxpayer dollars are spent on these projects each year. This number is expected to reach $71 billion for fiscal year 2009. Given the size of these investments and the criticality of many of the systems to the health, economy, and security of the nation, it is important that they be effectively managed.

To this end, the Office of Management and Budget (OMB), which plays a key role in overseeing the federal government's IT investments, identifies major projects that are poorly planned by placing them on a Management Watch List and requires agencies to identify high risk projects that are performing poorly. Having accurate and transparent project cost and schedule information is also essential to effective oversight. At times, changes to this information—called a rebaselining— are made to reflect changed development circumstances. These changes can be done for valid reasons, but can also be used to mask cost overruns and schedule delays.

We have testified on the Management Watch List and high risk projects for the past 2 years, highlighting the number and dollar value of the projects identified as poorly planned and/ or poorly performing.[1] You asked us to (1) provide an update on OMB's Management Watch List and list of high risk projects, (2) identify OMB's efforts to improve the identification and oversight of these projects, and (3) summarize our IT project rebaselining report, which is being released today.[2] In preparing this testimony, we

[1] *GAO, Information Technology: Further Improvements Needed to Identify and Oversee Poorly Planned and Performing Projects,* GAO-07-1211T (Washington, D.C.: Sept. 20, 2007); GAO, *Information Technology: Improvements Needed to More Accurately Identify and Better Oversee Risky Projects Totaling Billions of Dollars,* GAO-06-1099T (Washington, D.C.: Sept. 7, 2006)

[2] GAO, *Information Technology: Agencies Need to Establish Comprehensive Policies to Address Changes to Projects' Cost, Schedule, and Performance Goals,* GAO-08-925 (Washington, D.C.: July 31, 2008).

analyzed the current Management Watch List and high risk project information and reviewed recent actions taken by OMB to better identify and oversee these projects. In completing our rebaselining review we surveyed the managers of a random sample of 180 projects selected from the 778 major IT projects the 24 major agencies plan to invest in during fiscal year 2008 and compared agencies' rebaselining policies to best practices identified in our *Cost Assessment Guide*. We performed our work 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 objectives.

Results in Brief

OMB and federal agencies have identified approximately 413 IT projects—totaling at least $25.2 billion in expenditures for fiscal year 2008—as being poorly planned, poorly performing, or both. Specifically, through the Management Watch List process, OMB determined that 352 projects (totaling about $23.4 billion) are poorly planned. In addition, agencies reported that 87 of their high risk projects (totaling about $4.8 billion) were poorly performing. Twenty-six projects (totaling about $3 billion) are considered both poorly planned and poorly performing.

OMB has taken steps to improve the identification of the Management Watch List and high risk projects since GAO testified last September, including publicly disclosing reasons for inclusion on the Management Watch List and clarifying high risk project criteria. However, more needs to be done by both OMB and the agencies to address recommendations we have previously made to improve the planning, management, and oversight of the poorly planned and poorly performing projects so that potentially billions in taxpayer dollars are not wasted. For example, OMB has yet to publicly disclose the deficiencies (i.e., performance shortfalls) associated with high risk projects, and agencies still need to take

actions to address recommendations we have previously made to improve their investment management practices.

In our rebaselining review, we project that 48 percent of the federal government's major IT projects have been rebaselined for several reasons, including changes in project goals and changes in funding. Of those rebaselined projects, 51 percent were rebaselined at least twice and about 11 percent were rebaselined 4 times or more. In addition, while the major agencies had all established rebaselining policies, these policies were not comprehensive. Specifically, none of the policies were fully consistent with best practices, including describing a process for developing a new baseline and requiring the validation of the new baseline. Agencies' policies varied in part because OMB has not issued guidance specifying what elements these policies are to include. In our report, we are making recommendations to OMB to issue guidance for rebaselining policies and to the major agencies to develop comprehensive rebaselining policies that address identified weaknesses.

Background

Each year, OMB and federal agencies work together to determine how much the government plans to spend on IT projects and how these funds are to be allocated. Federal IT spending has risen to an estimated $71 billion for fiscal year 2009.

OMB plays a key role in overseeing the implementation and management of federal IT investments. To improve this oversight, Congress enacted the Clinger-Cohen Act in 1996, expanding the responsibilities delegated to OMB and agencies under the Paperwork Reduction Act.[3] Among other things, Clinger-Cohen requires agencies to better link their IT planning and investment decisions to program missions and goals and to implement and enforce IT management policies, procedures, standards, and guidelines. The act also requires that agencies engage in capital

[3]44 U.S.C. § 3504(h) & 3506(h).

planning and performance and results-based management.[4] OMB's responsibilities under the act include establishing processes to analyze, track, and evaluate the risks and results of major capital investments in information systems made by executive agencies. OMB must also report to Congress on the net program performance benefits achieved as a result of these investments.[5]

In response to the Clinger-Cohen Act and other statutes, OMB developed policy for the planning, budgeting, acquisition, and management of federal capital assets. This policy is set forth in OMB Circular A-11 (section 300) and in OMB's *Capital Programming Guide* (supplement to Part 7 of Circular A-11), which direct agencies to develop, implement, and use a capital programming process to build their capital asset portfolios. Among other things, OMB's *Capital Programming Guide* directs agencies to

- evaluate and select capital asset investments that will support core mission functions and demonstrate projected returns on investment that are clearly equal to or better than alternative uses of available public resources;
- institute performance measures and management processes that monitor actual performance and compare it to planned results; and
- establish oversight mechanisms that require periodic review of operational capital assets to determine if mission requirements have changed and whether the asset continues to fulfill those requirements and deliver its intended benefits.

To further support the implementation of IT capital planning practices as required by statute and directed in OMB's *Capital Programming Guide*, we have developed an IT investment management framework[6] that agencies can use in developing a stable and effective capital planning process. It is a tool that can be used to determine both the status of an agency's current IT

[4]40 U.S.C. § 11312 &11313.

[5]40 U.S.C. § 11302 &11303.

[6]GAO, *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, GAO-04-394G (Washington, D.C.: March 2004).

investment management capabilities and the additional steps that are needed to establish more effective processes. Mature and effective management of IT investments can vastly improve government performance and accountability, while poor management can result in wasteful spending and lost opportunities for improving delivery of services to the public.

Prior Reviews on Federal IT Investment Management Have Identified Weaknesses

We have previously reported that the federal government faces enduring challenges in effectively managing IT investments. For example, in January 2004, we reported on the mixed results of federal agencies' use of IT investment management practices.[7] Specifically, we reported that, although most of the agencies had IT investment boards responsible for defining and implementing the agencies' investment management processes, they did not always have important mechanisms in place for these boards to effectively control investments, including decision-making rules for project oversight, early warning mechanisms, and/or requirements that corrective actions for underperforming projects be agreed upon and tracked. Accordingly, we made several recommendations to agencies to improve their practices.

In previous work using our investment management framework, we reported that the use of IT investment management practices by agencies was mixed. For example, a few agencies that have followed the framework in implementing capital planning processes have made significant improvements.[8] In contrast, however, we and others have continued to identify weaknesses at agencies in many areas, including immature management processes to support both the selection and oversight of major IT investments and the measurement of actual versus expected performance in meeting

[7] GAO, *Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved*, GAO-04-49 (Washington, D.C.: Jan. 12, 2004).

[8] These agencies include the Departments of Agriculture, Commerce, and the Interior.

established performance measures.[9] For example, in 2007, we reported that the Department of Homeland Security and the Department of the Treasury did not have the processes in place to effectively select and oversee their major investments.[10]

OMB's Management Watch List Is Intended to Correct Project Weaknesses and Business Case Deficiencies

To help ensure that investments of public resources are justified and that public resources are wisely invested, OMB began using its Management Watch List in the President's fiscal year 2004 budget request as a means to oversee the justification for and planning of agencies' IT investments. This list was derived based on a detailed review of each investment's Capital Asset Plan and Business Case, also known as the exhibit 300.

The exhibit 300 is a reporting mechanism intended to enable an agency to demonstrate to its own management, as well as to OMB, that a major project is well-planned in that it has employed the disciplines of good project management; developed a strong business case for the investment; and met other Administration priorities in defining the cost, schedule, and performance goals proposed for the investment.

In April 2005, we reported that OMB analysts evaluated agency exhibit 300s by assigning scores to each exhibit 300 based on guidance presented in OMB Circular A-11.[11] As described in this

[9]For example, GAO, *Information Technology: Treasury Needs to Strengthen Its Investment Board Operations and Oversight*, GAO-07-865 (Washington, D.C.; Jul. 23, 2007); GAO, *Information Technology: DHS Needs to Fully Define and Implement Policies and Procedures for Effectively Managing Investments*, GAO-07-424 (Washington, D.C., Apr. 27, 2007); GAO, *Information Technology: Centers for Medicare & Medicaid Services Needs to Establish Critical Investment Management Capabilities*, GAO-06-12 (Washington, D.C.: Oct. 28, 2005); GAO, *Information Technology: Departmental Leadership Crucial to Success of Investment Reforms at Interior*, GAO-03-1028 (Washington, D.C.: Sept. 12, 2003); and GAO, *United States Postal Service: Opportunities to Strengthen IT Investment Management Capabilities*, GAO-03-3 (Washington, D.C.: Oct. 15, 2002).

[10]GAO-07-424 and GAO-07-865.

[11]GAO, *Information Technology: OMB Can Make more Effective Use of Its Investment Reviews, GAO-05-276* (Washington, D.C., April 15, 2005)

circular, the scoring of a business case consisted of individual scoring for 10 categories (on a scale from 1 to 5 with 5 being the highest), as well as a total composite score of all the categories. The 10 scoring categories are:

- support of the President's Management Agenda.
- project (investment) management,
- acquisition strategy,
- performance information,
- security,
- privacy,
- enterprise architecture,
- alternatives analysis,
- risk management, and
- cost/ schedule/ performance.

When we reported on the Management Watch List in 2005, projects were placed on the Management Watch List if they received low scores (3 or less) in the areas of performance goals, performance-based management systems, security and privacy or a low composite score.

For the fiscal year 2009 budget, OMB used more stringent criteria. Specifically, OMB placed projects on the Management Watch List if they had (1) an overall score of 30 or less, (2) a security score of 3 or less, or (3) a non-security score of 2 or less. Projects were also placed on the Watch List if other sources (such as an Inspector General's Federal Information Security Management Act report[12] or the agency's E-gov President's Management Agenda scorecard[13])

[12] The Federal Information Security Management Act directs federal agencies to conduct periodic information security reviews and Inspectors General to perform annual independent evaluations of agency programs and systems and report their results to OMB and Congress; 44 U.S.C. § 3544(b)(5) & 3545.

[13] The President's Management Agenda is a program that was instituted in 2002 to improve the management and performance of the federal government. It addresses 5 governmentwide initiatives, including E-government, that agencies are supposed to implement to achieve improvements. OMB issues scorecards on a quarterly basis to track how well the departments and major agencies are executing these initiatives.

indicated that the agency did not have qualified project managers or had weaknesses in its implementation of security, privacy, or earned value management techniques.

According to OMB, agencies with projects on the Management Watch List are to submit remediation plans addressing the weaknesses. Those projects that receive specific follow-up attention receive feedback through what is known as the passback process, targeted evaluation of remediation plans designed to address weaknesses, the apportioning of funds made conditional on appropriate remediation plans being in place, and the quarterly e-Gov Scorecards. According to OMB, it removes projects from the Management Watch List as agencies remediate the weaknesses identified with these projects' business cases.

OMB's High Risk Projects Process Is Intended to Correct and Improve Project Performance

As originally defined in OMB Circular A-11 and subsequently reiterated in an August 2005 memorandum, high risk projects are those that require special attention from oversight authorities and the highest levels of agency management. These projects are not necessarily "at risk" of failure, but may be on the list because of one or more of the following four reasons:

- The agency has not consistently demonstrated the ability to manage complex projects.
- The project has exceptionally high development, operating, or maintenance costs, either in absolute terms or as a percentage of the agency's total IT portfolio.
- The project is being undertaken to correct recognized deficiencies in the adequate performance of an essential mission program or function of the agency, a component of the agency, or another organization.
- Delay or failure of the project would introduce for the first time unacceptable or inadequate performance or failure of an essential mission function of the agency, a component of the agency, or another organization.

In 2006, we reported that, to identify high risk projects, staff from each agency's Office of the Chief Information Officer compare the

criteria against their current portfolio to determine which projects met OMB's definition. They then submit the list to OMB for review. According to OMB and agency officials, after the submission of the initial list examiners at OMB work with individual agencies to identify or remove projects as appropriate. According to most agencies, the final list is then approved by their Chief Information Officer.[14]

This year, OMB clarified/ expanded the high risk project criteria. Specifically, in the materials supplementing the President's Budget for fiscal year 2009, OMB listed the following criteria for these projects:

- complex projects;
- projects with a high degree of political or citizen interest;
- projects with cross-organizational or agency impact or interdependencies with other systems efforts;
- major systems on the Management Watch List at the conclusion of the prior fiscal year that continue to warrant heightened attention during project execution;
- major systems formally designated as an E-Government or Line of Business Shared Service Provider;
- E-Government initiative migration projects that are planned or underway (which are removed upon completion);
- existing or legacy agency systems retiring once their functionality has been migrated to a common solution (also removed once retired); and
- program or program management office activities supporting government-wide common solutions.

For the identified high risk projects, Chief Information Officers are to assess, confirm, and document projects' performance. Specifically, agencies are required to determine, for each of their high risk projects, whether the project was meeting one or more of four performance evaluation criteria, which include:

[14] *GAO, Information Technology: Agencies and OMB Should Strengthen Processes for Identifying and Overseeing High Risk Projects, GAO-06-647* (Washington, D.C., June 15, 2006)

- establishing baselines with clear cost, schedule, and performance goals;
- maintaining the project's cost and schedule variances within 10 percent;
- assigning a qualified project manager; and
- avoiding duplication by leveraging inter-agency and governmentwide investments.

High risk projects failing to meet any of these four performance evaluation criteria are considered as having "performance shortfalls." Agencies are instructed to document these shortfalls using a standard template provided by OMB and provide this template to oversight authorities on request. Upon submission, individual analysts review the quarterly performance reports of projects with shortfalls to determine how well the projects are progressing and, using other performance data already received, whether the actions described in the planned improvement efforts are adequate.

OMB's Role and Laws and Guidance on IT Project Rebaselining

At times, a major IT project's cost, schedule, and performance goals—known as a baseline—need to be modified to reflect new circumstances. While these changes—generally referred to as rebaselining—can be done for valid reasons—including, for example, changes in a project's objectives, scope, requirements, or funding stream, they can also be used to mask cost overruns and schedule delays. The purpose of a rebaselining is to ensure that project managers have realistic benchmarks for tracking the status of the project.

OMB requires that all proposed changes to baselines be submitted to it prior to an agency's budget request (and that proposed changes should not be assumed to be approved). The information OMB requires from agencies includes costs and milestones from both the initial and current baselines (if the program has been rebaselined). It also asks agencies whether the investment was rebaselined during the past fiscal year and, if so, if the new baseline was approved by the agency head. The *Capital Programming Guide* also notes that OMB reviews the reasons for deviation from goals, the

reasonableness of the corrective actions proposed, and the validity of increased cost estimates. The guide further states that OMB is to consider approving a rebaseline proposal only when the agency has provided justification based on an integrated baseline review,[15] demonstrates that the new goals have a high probability of attainability, and shows that the acquisition will still have a benefit-cost ratio that justifies continued funding after comparing it with the other projects in the portfolio and considering budget limitations.

Staff from OMB's Office of E-government and Information Technology and the Acting Chief of OMB's Information Policy and Technology Branch told us that they review agencies' earned value management policies to determine their compliance with the provisions of the Presidential Management Agenda for E-government. They stated that, in reviewing these policies, they determine whether rebaselining is adequately addressed.

In addition, the Department of Defense (DOD) has statutory requirements involving rebaselining. Each major defense acquisition program is required by statute to establish an approved program baseline before entering into the system development and demonstration phase of the acquisition cycle. For such programs, a revised baseline is also required for each subsequent milestone authorizing entry into the next phase of the acquisition cycle. The statute also requires DOD to prescribe regulations addressing the content of the baseline; reports of deviations from the baseline; procedures for reviewing such deviations within DOD; and procedures for submission to and approval by the Secretary of Defense of revised baselines.

We also recently issued a draft *GAO Cost Assessment Guide* on best practices for estimating and managing program costs[16] which, among other things, discusses considerations in rebaselining programs. For

[15] An integrated baseline review is an evaluation of a program's baseline plan to determine whether all program requirements have been addressed, risks have been identified, mitigation plans are in place, and available and planned resources are sufficient to complete the work.

[16] *GAO, Cost Assessment Guide: Best Practices for Estimating, and Managing Program Costs, exposure draft, GAO-07-1134SP* (Washington, D.C.: July 2007).

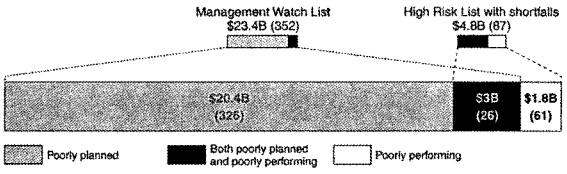
example, the guide identifies key cost, schedule, project execution risk, and data accuracy indicators that can serve as warning signs that a program may need to be rebaselined. The guide also identifies best practices that are relevant to rebaselining policies. These practices are: (1) describing reasons when a rebaseline is warranted, (2) describing the process for developing a new baseline, (3) requiring validation of the new baseline, (4) requiring management review, and (5) requiring that decisions associated with the rebaselining process are documented.

Hundreds of Projects Totaling Billions of Dollars in Estimated Expenditures for Fiscal Year 2009 Are Poorly Planned or Poorly Performing

OMB and federal agencies have identified approximately 413 IT projects—totaling at least $25.2 billion in expenditures for fiscal year 2009—as being poorly planned, poorly performing, or both. Specifically, hundreds of projects totaling billions of dollars have been placed on OMB's Management Watch List for fiscal year 2009. In addition, projects identified as poorly performing under OMB's high-risk process total about $4.8 billion in estimated expenditures for fiscal year 2009. Finally, 26 projects totaling $3 billion have been identified as both poorly planned and poorly performing.

Figure 1 shows the distribution of these projects and their associated dollar values.

Figure 1: Poorly Planned and Poorly Performing IT Projects (as of July 2008)



Source: GAO analysis of OMB and agency data.

Hundreds of Projects Totaling Billions of Dollars Were Placed on the Management Watch List for Fiscal Year 2009

Each year, OMB has placed hundreds of projects totaling billions of dollars on the Management Watch List. Table 1 provides a historical perspective of the number of these projects and their associated budgets since OMB started reporting on the Management Watch List in the President's budget request for 2004. The table shows that while the number of projects and their associated budgets have generally decreased since then, they increased by 239 projects and $13 billion dollars for fiscal year 2009, and represent a significant percentage of the total budget.

Table 1: Major IT Projects on the Management Watch List for Fiscal Years 2004-2009

Fiscal years	Major federal IT projects (associated budget in billions)	Management Watch List projects (associated budget in billions)	Percentage of federal IT projects on Management Watch List (percentage of budget)
2004	1400 ($59.0)	771 ($20.9)	55% (35%)
2005	1200 ($60.0)	621 ($22.0)	52% (37%)
2006	1087 ($65.0)	342 ($15.0)	31% (23%)
2007	857 ($64.0)	263 ($9.9)	31% (15%)
2008	840 ($65.0)	346 ($14.0)	41% (22%)
2009	810 ($70.7)	585 ($27.0)	72% (38%)

Source: GAO analysis of OMB data.

As of July 2008, OMB reported that 352 of the 585 projects, representing $23.4 billion, still remained on the Management Watch List (see appendix I for complete list). Table 2 shows the number of projects each agency has on the watch list as of July 2008.

Table 2: Number of Major IT Projects on Watch List by Agency (as of July 2008)

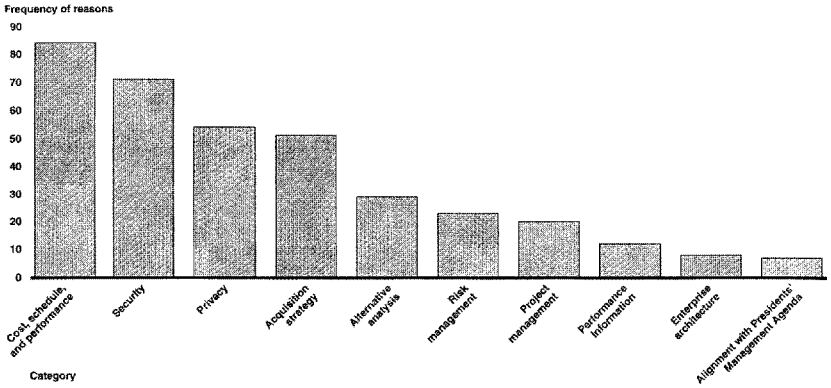
Agency	Number of Projects	Percentage of Agencies' Major Projects
Corps of Engineers	10	100%
Department of Agriculture	37	100%
Department of Commerce	61	100%

Department of Defense	63	100%
Department of Education	11	39%
Department of Health and Human Services	29	43%
Department of Homeland Security	28	39%
Department of Interior	50	100%
Department of State	1	5%
Department of Transportation	2	4%
Department of Treasury	4	7%
Department of Veteran Affairs	40	100%
Nuclear Regulatory Commission	15	100%
Office of Personnel Management	1	100%
Total	352	44%

Source OMB data

According to OMB's evaluation of the exhibit 300s, investments were placed on the watch list primarily because of weaknesses in the way they addressed (1) cost, schedule, and performance, (2) security, (3) privacy, and (4) acquisition strategy. Figure 2 illustrates the frequency of these reasons for the projects that remained on list as of July 2008. Appendix II provides additional detail by agency.

Figure 2: Frequency of Reasons for Inclusion on the Management Watch List as of July 2008



Source: GAO analysis of OMB data.

*Note: Frequency does not add up to 352 because projects could be placed on the Management Watch List for multiple reasons.

In addition, according to OMB, thirty-two of these projects have been on the Management Watch List since fiscal year 2006. The departments of Veterans Affairs and Commerce have had the most projects on the list since then: 14 and 7, respectively. Table 3 identifies the 32 projects that have been on the Management Watch List since fiscal year 2006.

Table 3: Projects on the Management Watch List since fiscal year 2006

Agency	Project
Department of Agriculture	Human Resources Line of Business: Service Center
Department of Commerce	Financial Management IT Operations
	Weather and Climate Computing Infrastructure Services
	Consolidated IT Infrastructure
	National Air Quality Forecast Capability

Agency	Project
	Next Generation Weather Radar System Product Improvement
	National Weather Service Telecommunication Gateway System
	National Weather Service Regions & Field
Department of Education	Common Services for Borrowers-Legacy
Department of the Interior	Capstone Facility Management System
	Consolidated Infrastructure, Automation, Telecomm
Department of Transportation	IT Combined Infrastructure
Department of the Treasury	Enterprise IT Infrastructure Optimization Initiative
Department of Veterans Affairs	Health Administration Center IT Operations
	Health Data Repository
	Benefits Delivery Network Maintenance and Operations
	Decision Support System
	VistA-Legacy
	Federal Health Information Exchange
	Enrollment Operations and Maintenance
	VistA Imaging
	Allocation Resource Center
	Learning Management System
	Medical and Prosthetic Research Operations
	IT Infrastructure-2009
	Program Integrity/Data Management
	Benefits Support Services
Corps of Engineers	Financial Management System
	Automated Personal Property Management Systems
	Project Management Information System II
	Corps Water Management System
Office of Personnel Management	Enterprise Infrastructure

Source OMB data.

Poorly Performing Projects Total About $4.8 Billion in Estimated Expenditures for Fiscal Year 2009

As of June 2008, the 24 major agencies identified 472 IT projects as high risk, at least 87 of which had performance shortfalls collectively totaling about $4.8 billion in funding requested for fiscal year 2009. Table 4 shows that the number of projects increased, while the number of projects with shortfalls decreased this year. OMB attributes the decrease in projects with performance shortfalls to the fact that many of the e-Gov projects have now been

implemented and are therefore no longer considered "at-risk." In addition, the Department of Veterans Affairs has not yet provided information on its number of projects with shortfalls.

Table 4: High Risk Projects with Performance Shortfalls (associated budget in billions)

Fiscal years	Total federal IT projects	High risk projects (associated budget)	High risk projects with shortfalls (associated budget)	Percentage of total IT projects with shortfalls	Percentage of total IT projects' budget with shortfalls
2007	857 ($64.0)	226 ($6.4)[a]	79 ($2.2)[a]	9%	3.4%
2008	840 ($65.0)	438 ($14.0)[b]	124 ($6.0)[b]	15%	9%
2009	810 ($70.7)	472 ($14.7)[c]	87 ($4.8)[d]	10%	7%

Source: GAO analysis of OMB and agency data

[a] These number and dollar figures are from September 2006.

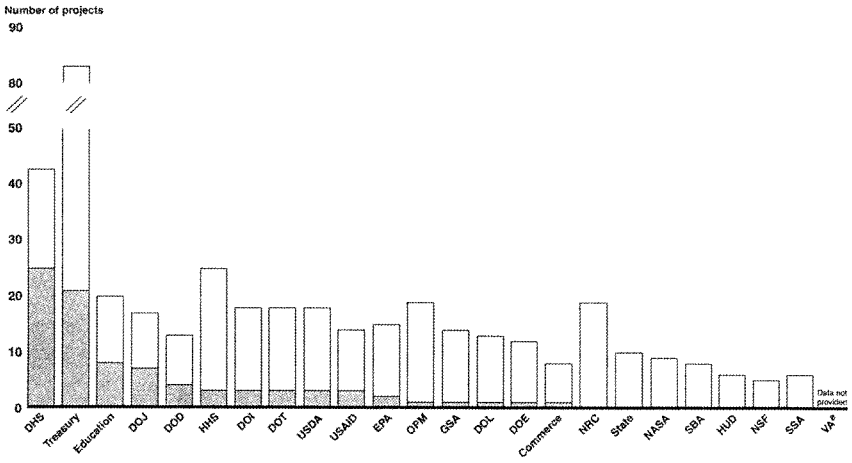
[b] These number and dollar figures are from June 2007.

[c] These number and dollar figures are from June 2008

[d] These number and dollar figures do not include the Department of Veterans Affairs.

The majority of projects were not reported to have had performance shortfalls. Further, seven agencies—the Department of Housing and Urban Development, the Department of State, the National Aeronautics and Space Administration, the Nuclear Regulatory Commission, the National Science Foundation, the Small Business Administration, and the Social Security Administration—reported that none of their high risk projects experienced any performance shortfalls. Figure 3 illustrates the number of high risk projects by agency as of June 2008, with and without shortfalls.

Figure 3: Number of Agencies' High Risk Projects with and without Performance Shortfalls (as of June 2008)



Source: GAO analysis of agency data.

*The Department of Veterans Affairs has not yet provided its June 2008 high risk report to GAO.

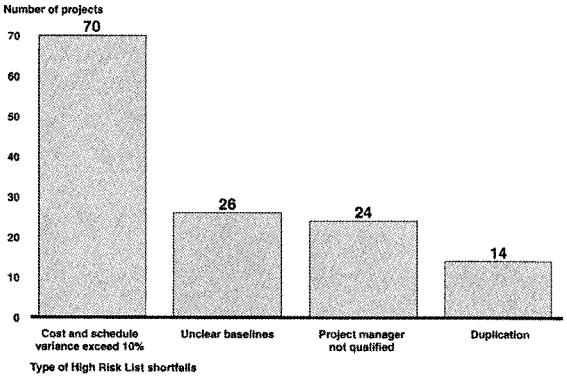
Note: One project can have multiple shortfalls.

Note: Department of Homeland Security (DHS); Department of Veterans Affairs (VA); Department of Transportation (DOT); U.S. Agency for International Development (USAID); Social Security Administration (SSA); General Services Administration (GSA); Department of Agriculture (USDA); Small Business Administration (SBA); Department of Defense (DOD); Environmental Protection Agency (EPA); Nuclear Regulatory Commission (NRC); Office of Personnel Management (OPM); Department of Health and Human Services (HHS), Department of Justice (DOJ); National Aeronautics and Space Administration (NASA); National Science Foundation (NSF); Department of Housing and Urban Development (HUD); Department of Energy (DOE); Department of Labor (DOL); Department of Interior (DOI)

Agencies reported cost and schedule variances that exceeded 10 percent as the most common shortfall. This is consistent with what they reported about a year ago, and the distribution of shortfall types is similar to that of last year. Figure 4 illustrates the reported number and type of performance shortfalls associated with high risk

projects, and appendix III provides additional details of the shortfalls associated with each of the poorly performing projects.

Figure 4: Reported Performance Shortfalls of 87 Projects (as of June 2008)



Source: GAO analysis of agency data.

Seventeen high risk projects have experienced performance shortfalls for the past four quarters (see figure 5).

Figure 5: High Risk Projects with Shortfalls in the Last 4 Quarters Sorted by Funding

Agency	Project name	Fiscal year 2009 request (in millions)	2005 Sept	2005 Dec	2006 Mar	2006 June	2006 Sept	2006 Dec	2007 Mar	2007 June	2007 Sept	2007 Dec	2008 Mar	2008 June
DHS	Infrastructure	1,461							■	■	■	■	■	■
DOT	Telecommunications Infrastructure	188	■	■		■	■		■	■	■	■	■	■
DHS	Secure Border Initiative net Technology Program	157	■	■	■	■	■	■	■	■	■	■	■	■
DOJ	Unified Financial Management System	123				■					■	■	■	■
DOT	Traffic flow Management	114							■	■	■	■	■	■
DHS	Secure Flight	83	■		■	■	■	■	■	■	■	■	■	■
DHS	Nationwide Automatic Identification System	38	■		■			■	■	■	■	■	■	■
EPA	Financial Management Line of Business - Migration	31							■	■	■	■	■	■
DHS	Transportation Worker Identification Credentialing	27	■	■	■	■	■	■	■	■	■	■	■	■
DHS	Crew Vetting	21	■	■				■	■	■	■	■	■	■
DHS	Homeland Security Information Network	21						■	■	■	■	■	■	■
DHS	eNEMIS	13			■		■	■	■	■	■	■	■	■
DOI	IMARS	12							■		■	■	■	■
DOI	Minerals Management Service - OCS Connect	6							■		■	■	■	■
HHS	Federal Health Architecture	4							■	■	■	■	■	■
DHS	National Protection and Programs Directorate Information Systems Security Line of Business	3								■	■	■	■	■
USAID	E-Authentication	NA					■	■	■	■	■	■	■	■

■ Quarter in which the project had shortfall(s)

NA Not available: financial data on project was not found in OMB's *Report on IT Spending for Fiscal Years 2007, 2008, and 2009.*

Source: GAO analysis of agency data.

Note: Department of Homeland Security (DHS); Department of Transportation (DOT) Department of Justice (DOJ); Environmental Protection Agency (EPA); Department of Interior (DOI); Department of Health and Human Services (HHS); U.S. Agency for International Development (USAID)

Of these projects, two projects have had shortfalls since the list of high risk projects was established in September 2005:

- DHS's Customs and Border Patrol *Secure Border Initiative Network Technology Program*, which is expected to provide on-scene agents near real-time information on attempted border crossings by illegal aliens, terrorists, or smugglers.
- DHS's *Transportation Security Administration Transportation Worker Identification Credentialing*, which is to establish a

system-wide common secure biometric credential, used by all transportation modes, for personnel requiring unescorted physical and/or logical access to secure areas of the transportation system.

Several Projects Are Both Poorly Planned and Poorly Performing

As of July 2008, 26 projects are on both the Management Watch List and list of high risk projects with shortfalls, meaning that they are both poorly planned and poorly performing. They total about $3 billion in estimated expenditures for fiscal year 2009. This is an increase of 5 projects but a decrease of $1.1 billion from when we reported last year. These projects are listed in table 5 below. (Note: the project names were taken from OMB's Management Watch List released in July 2008 and matched to those in agencies' June 2008 quarterly high risk reports.)

Table 5: Projects on Both the Management Watch List and the High Risk List with Shortfalls

Agency	Investment Name	Fiscal year 2009 request
Department of Homeland Security	NPPD IICP	15
	Computer Emergency Readiness Team	109
	Transformation & Systems Consolidation	19
	Science and Technology Disaster Management E-Gov	13
	Infrastructure	1,461
	Homeland Secure Data Network	48
	USCIS- Transformation	71
	Immigration - CLAIMS 3.0	11
	Federal Financial Management System	30
	Secure Border Initiative net Technology Program	157
	Crew Vetting	21
	FAMS Air to Ground Communications & Tactical Information Sharing	13
	Vessel Logistics System	4
	Marine Information for Safety and law Enforcement	13
	NPPD Information Systems Security Line of Business	3
	eNEMIS	13
Department of Interior	IMARS	12
	ePlanning	1
	Minerals Management Service - OCS Connect	6
Department of Education	Common Origination and Disbursement	45

Agency	Investment Name	Fiscal year 2009 request
	ADvance (Aid Delivery)	69
Department of Heath and Human Services	Federal Health Architecture	4
	Commissioned Corps Force Management Solution	4
Department of Treasury	Treasury-Wide Enterprise Content Management Services	28
Department of Agriculture	Consolidated Infrastructure, Office Automation and Telecommunications	872
	National Animal Identification System	5

Source: GAO Analysis of OMB and agency data.

Steps Taken to Improve the Identification of Management Watch List and High Risk Projects, But Project Totaling Billions of Dollars Still Require Oversight

OMB has taken steps to improve the identification of the Management Watch List and high risk projects since we testified last September, including publicly disclosing reasons for placement on the Management Watch List, and clarifying high risk project criteria, however, more needs to be done by both OMB and the agencies to fully address recommendations we have previously made to improve the planning, management, and oversight of the poorly planned and poorly performing projects so that potentially billions in taxpayer dollars are not wasted.

Management Watch List: In order for OMB to take advantage of the potential benefits of using the Management Watch List as a tool for analyzing and following up on IT investments on a governmentwide basis, in 2005, we recommended that the agency take the following 4 actions: (1) develop a central list of Management Watch List projects and their deficiencies; (2) use the list as the basis for selecting projects for follow-up and for tracking follow-up activities—to guide follow-up, develop specific criteria for prioritizing the IT projects included on the list, taking into consideration such factors as the relative potential financial and program benefits of these IT projects, as well as potential risks; (3) analyze the prioritized list to develop governmentwide and agency assessments of the progress and risks of IT investments, identifying opportunities for continued improvement; and (4) report to the

Congress on progress made in addressing risks of major IT investments and management areas needing attention.

OMB has taken steps to address our recommendations for developing a central list of projects and their deficiencies and developing governmentwide and agency assessments. Specifically, as previously noted, OMB started issuing a central list of Management Watch List projects in September 2006, and publicly disclosing these projects' deficiencies (i.e., the reasons for inclusion on the Management Watch List) in April. In addition, OMB performed governmentwide and agency-specific analyses of projects' deficiencies in April and in July of this year which it reported to Congress and disclosed publicly. However, OMB needs to continue to use the Management Watch List to prioritize the projects needing follow up action and to keep reporting to Congress on management areas needing attention.

High Risk Projects: To improve the identification and oversight of the high risk projects, in 2006, we recommended, among other things, that OMB establish a structured, consistent process to update the list of high risk projects on a regular basis, including identifying new projects and removing previous ones to ensure the ensure the list is current and complete. We also recommended that OMB develop a single aggregate list of high risk projects and their deficiencies and use that list to report to Congress progress made in correcting high risk problems, actions under way, and further actions that may be needed.

OMB took several steps to address these recommendations. As previously noted, the agency clarified the high risk project criteria this year. It also asked agencies to identify, in their quarterly reports, reasons for placement on the list and reasons for removal, thereby adding structure and consistency to the process for updating the list. In addition, as previously reported, OMB also started publicly releasing aggregate lists of the high risk projects in September 2006, and has been releasing them on their website on a quarterly basis since then. However, OMB has yet to identify the deficiencies (i.e., performance shortfalls) associated with the high risk projects as we have done in this report (see appendix III). As we have stated before, doing so would allow OMB and others to

better analyze the reasons projects are poorly performing, take corrective actions, and track these projects on a governmentwide basis. Such information would also help to highlight progress made by agencies or projects, identify management issues that transcend individual agencies, and highlight the root causes of governmentwide issues and trends.

In addition, as noted earlier, our prior reviews of federal IT management practices have identified (and continue to identify) weaknesses at agencies that have yet to be addressed. While these agencies have taken action to address the many recommendations we have made to improve their practices, more needs to be done as evidenced by the large number of projects that are still poorly planned and poorly performing.

While the actions taken have resulted in better data on the poorly planned and performing projects, additional steps need to be taken by both OMB and the agencies to address recommendations we have previously made to improve the planning, management, and oversight of these projects. These steps include using the Management Watch List to prioritize follow up activities. Until these additional steps are taken, potentially billion of taxpayer dollars are at risk of being wasted.

About Half of Major IT Projects Have Been Rebaselined Using Policies that Are Not Fully Consistent with Best Practices

Given that cost and schedule variances are the primary reason for poorly performing projects, having accurate and transparent cost and schedule information is essential to effective oversight. In a report being released today, we estimate that about 48 percent[17] of the federal government's major IT projects have been rebaselined. Of those rebaselined projects, 51 percent were rebaselined at least

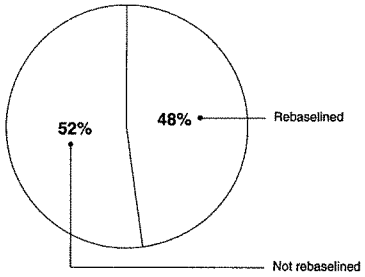
[17]All percentage estimates based on our survey have 95 percent confidence intervals that are within +/- 11 percentage points of the estimate itself.

twice and about 11 percent were rebaselined 4 times or more.[18] These projects are rebaselined for several reasons, including changes in project goals and changes in funding. While the major agencies have all established rebaselining policies, these policies are not comprehensive. Specifically, none of the policies are fully consistent with best practices, including describing a process for developing a new baseline and requiring the validation of the new baseline, identified in our cost assessment guide. Agencies' policies vary in part because OMB has not issued guidance specifying what elements these policies are to include.

About Half of IT Projects Were Rebaselined for Several Reasons

In our report we project that 48 percent of the major projects federal agencies plan to fund in fiscal year 2008 have been rebaselined, and about half of those have been rebaselined at least twice. Figure 5 summarizes the percentage of projects rebaselined and figure 6 summarizes the estimated frequencies of the number of times rebaselined major IT projects were rebaselined.

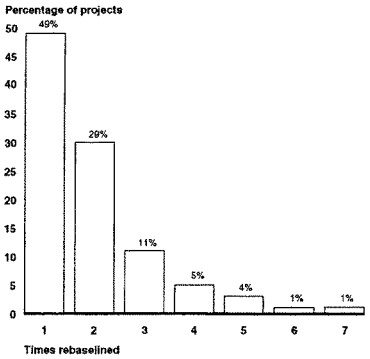
Figure 5: Estimated Percentage of Major FY2008 Funded IT Projects Rebaselined



Source GAO survey of major IT projects.

[18]We surveyed the managers of a random sample of 180 projects selected from the 778 major IT projects the 24 major agencies plan to invest in during fiscal year 2008.

Figure 6: Estimated Frequency of the Number of Times Rebaselined Projects Were Rebaselined



Source: GAO survey of major IT projects

Table 5 lists the nine projects in our sample that agencies reported having been rebaselined four or more times.[19]

Table 5: Projects Rebaselined Four or More Times

Department	Project	Number of times rebaselined
Department of Defense	Advanced Field Artillery Tactical Data System	4
Department of Energy	Licensing Support Network	4
Department of Homeland Security	Coast Guard Rescue 21	4
Department of Housing and Urban Development	Integrated Human Resources and Training System	4

[19]This lists only the projects in our sample that have been rebaselined at least 4 times. Additional projects in the full population of 778 major IT projects may also have been rebaselined at least 4 times.

Department	Project	Number of times rebaselined
U.S. Department of Agriculture	Program Fund Control System	5
Department of Commerce	Patent and Trade Office Revenue and Account Management System	5
Department of Commerce	Commerce Business Environment	5
Department of Veterans Affairs	Health Admin Center IT Operations	6
Department of Housing and Urban Development	Tenant Rental Assistance Certification System	7

Source: GAO analysis of agency survey responses

Agency officials reported that the key reasons for the most recent rebaselinings were changes in project requirements, objectives, or scope, and changes in funding stream. Table 6 shows the estimated frequencies of each of these reasons.

Table 6: Estimated Frequency of Reasons for the Most Recent Rebaselining of Projects

Category of Reasons	Percentage of Times Reported
Change in project requirements, objectives, or scope	55%
Change in funding stream	44%
Original baseline was inaccurate	14%
Cost or schedule overruns due to project performance	4%
Cost or schedule overruns due to contractor performance	4%
Other	41%

Source: GAO analysis of agency survey responses

Note: Percentages do not total 100 percent because multiple reasons could be provided for rebaselining projects.

Several rebaselined projects we have performed detailed reviews of have experienced significant cost or schedule changes. For example, the U.S. Coast Guard's *Rescue 21* program is projected to have cost increases of 184 percent and schedule delays of 5 years after rebaselining. Table 7 provides additional examples of projects

we have reviewed that experienced significant cost or schedule changes.

Table 7: Rebaselined Projects' Cost and Schedule Changes (in millions)

Project	Original Cost	Cost After Rebaseline(s)	Dollar Change	Percent Change	Original Completion Date	Completion Date After Rebaseline	Delay
National Polar-orbiting Operational Environmental Satellite System[a]	$ 7000	$ 12500	$ 5500	79%	2018	2026	8 years
Navy Enterprise Resource Planning	$ 1993	$ 2445	$ 452	23%	Jun. 2011	Aug. 2013	2.2 years
FAA Standard Terminal Automation Replacement System	$ 940	$ 2770	$1830	195%	Oct. 2005	Dec. 2007	2.2 years
FAA Wide Area Augmentation System	$1001	$3340	$2339	234%	Aug. 1999	Dec. 2008	9.3 years
US Coast Guard Rescue 21	$250	$711	$461	184%	2006	2011	5 years

Source: GAO reports and agency data

[a]Only a portion of this program's costs are included in the $70 billion estimated cost. The rest is not considered to be an IT investment.

Agencies' Rebaselining Policies Are Not Comprehensive

We are also reporting that, although the 24 major agencies have rebaselined about half of their major IT projects that they planned to invest in during fiscal year 2008, they have not been guided by comprehensive rebaselining policies. Specifically, while major agencies have all established rebaselining policies, none of the policies are fully consistent with best practices such as *describing a process for developing a new baseline.*

Our recently issued draft *GAO Cost Assessment Guide*[20] includes five practices that are relevant to rebaselining policies:

1. *Describe reasons when a rebaseline is warranted.* A rebaselining policy should require valid reasons for rebaselining such as that the baseline is no longer useful as a management tool (e.g., cost/schedule variances are so high that they lose meaning; program scope has significantly changed).

2. *Describe the process for developing a new baseline.* A rebaselining policy should describe the development of a new cost estimate and a new project plan that details the scope of the remaining work along with schedule and resource allocation.

3. *Require validating the new baseline.* A rebaselining policy should identify who can validate the new baseline and how the validation is to be done.

4. *Require management review.* A rebaselining policy should identify the authority who decides whether the rebaselining is warranted and the rebaselining plan is acceptable. In addition, the policy should outline decision criteria used by the decision authority to determine if the rebaseline plan is acceptable.

5. *Require that the process is documented.* A rebaselining policy should identify and document rebaselining decisions, including the reasons for rebaselining; changes to the approved baseline cost, schedule, and scope; management review of the rebaseline request; and approval of new baseline. The policy should also require an explanation of why the current plan is no longer feasible; identify the problems that led to the need for a new plan of the remaining work; and discuss measures in place to prevent recurrence.

Our analysis shows that agencies do not have comprehensive rebaselining policies. Specifically, none of the agencies' rebaselining policies are fully consistent with all of the five practices mentioned above. Most policies fully or partially addressed reasons for

[20] GAO-07-1134SP

rebaselining, requiring management review, and requiring that the rebaselining process be documented (79 percent, 96 percent, and 88 percent, respectively), while describing the process for developing the new baseline, and requiring validation of the new baseline were addressed the least (46 percent and 54 percent of the policies, respectively did not address these practices). Table 4 summarizes our assessment of agencies' rebaselining polices and table 5 provides a detailed assessment by agency.

Table 4: Summary of Rebaselining Policy Assessment

	Extent to Which Policy Addressed Best Practices		
Practice	**Number (and percent) of Policies that Fully Addressed the Practice**	**Number (and percent)of Policies that Partially Addressed the Practice**	**Number(and percent) of Policies that Did Not Address the Practice**
Describe reasons when a rebaseline is warranted	14 (58%)	5 (21%)	5 (21%)
Describe process for developing a new baseline	0 (0%)	13 (54%)	11 (46%)
Require validating the new baseline	5 (21%)	6(25%)	13 (54%)
Require management review	9 (38%)	14 (58%)	1 (4%)
Require that the process is documented	6 (25%)	15 (63%)	3 (13%)

Soucrce: GAO analysis of agencies' rebaslining policies

Agencies' policies vary in part because no guidance has been issued specifying what elements these policies are to include. As previously noted, OMB has issued guidance which, among other things, requires baseline change requests to be approved by the agency heads and to be submitted to OMB for approval. However, this guidance does not specifically address how agencies are to implement their rebaselining activities, including the key elements that should be addressed in their policies. In addition, officials from OMB's Office of E-government and Information Technology and the Acting Chief of OMB's Information Policy and Technology Branch told us that, in their oversight function, they review agencies' earned value management policies, and in doing so determine whether these policies address rebaselining. However, they noted that they

have not established specific criteria to evaluate the EVM policies (and therefore their rebaselining aspects) and acknowledged that having such criteria would improve consistency among the policies and facilitate their oversight process. Without comprehensive policies to guide their rebaselining activities, agencies may not be optimizing the effectiveness of rebaselining as a tool to improve performance management. In addition, their rebaselining process may lack the transparency needed to ensure effective oversight.

To address the weaknesses identified with agencies' rebaselining policies, we made recommendations to the Director of OMB and to the 24 major agencies. Specifically, we recommended that

- the Director of OMB issue guidance for rebaselining policies that would include a minimum set of key elements, taking into consideration the criteria used in our report, and
- each of the heads of the 24 major agencies direct the development of comprehensive rebaselining policies that address the weaknesses we identified.

We received comments on a draft of our report from 20 of the major agencies–3 of which stated that they had no comments. Of the remaining 17 agencies, 5 agreed with our recommendations, and 6 disagreed with our assessment of their rebaselining policies and provided information which we have incorporated into the report, as appropriate. Six agencies provided varied comments, including 3 who stated they plan to use the practices identified in our report to improve their policies.

In summary, effective management and oversight of federal IT projects remains a crucial task for OMB and executive branch agencies. Hundreds of projects, amounting to billions of dollars in expenditures, have been identified as poorly managed, poorly performing, or both. While OMB has taken steps to improve the identification of poorly managed and poorly performing projects, more needs to be done to improve management and oversight, as evidenced by the number of recurring Management Watch List

projects and the surge of these projects at the beginning of every fiscal year.

In addition, without sound policies guiding agencies' rebaselining efforts, changes to projects' cost and schedule goals are not as transparent as desired and may in fact mask cost overruns and schedule delays. Having sound rebaselining guidance from OMB and more diligent oversight of rebaselining efforts from federal agencies will result in more accurate information on cost and schedule performance shortfalls and provide the necessary transparency to agency officials, OMB, and other oversight organizations. As we transition to a new administration, it is essential to maintain the current momentum of identifying troubled projects and the reasons they are poorly planned and/or performing and to continue to focus attention more keenly on solutions and long-term improvement efforts.

Mr. Chairman, this concludes my statement. I would be happy to answer any questions at this time.

GAO Contact and Acknowledgements

If you should have any questions about this testimony, please contact me at (202) 512-9286 or by e-mail at pownerd@gao.gov. Individuals who made key contributions to this testimony are Sabine Paul, Assistant Director; Neil Doherty; Lee McCracken; Kevin Walsh and Eric Winter.

Appendix I: Management Watch List Projects

The following provides additional detail on the investments comprising OMB's Management Watch List as of July 2008. The project names were taken from OMB's Management Watch List released earlier this month and matched to the list of projects in the OMB's *Report on IT Spending for Fiscal Years 2007, 2008, and 2009* to derive the requested amounts for fiscal year 2009.

Table 4: Management Watch List Projects by Agency

Agency	Project Name	Fiscal year 2009 request (in millions)
Department of Agriculture	Conservation Program Delivery	11.11
	Multi-Family Management	5.355
	Program Funds Control System	6.267
	Store Tracking and Redemption System	5.24
	Natural Resource Information, Inventory, & Assessment	19.39
	Guaranteed	16.674
	Integrated Program Accounting System	3.24
	USDA Forest Service Automated Timber Sales Accounting	1.289
	Water and Climate Information System	2.392
	Corporate Financial Management Systems	59.559
	Legacy Payroll/Personnel System	10.601
	Consolidated General Sales Manager	2.378
	Consolidated Farm Loan Program Information and Delivery System #103	12.541
	Natural Resource Manager	33.909
	Corporate Property Automated Information System	2.153
	USDA Identity And Access Management	20.757
	Consolidated Financial Management Information Systems	7.94
	Processed Commodities Inventory Management System	8.27
	Commerical	7.887
	Forest Service National Financial Applications	5.363
	Resource Ordering and Status System	11.126
	Fire Program Analysis System - Phase 2	2.202
	Human Resources Line of Business: Service Center	53.851
	Integrated Acquisition System	17.485
	Wide Consolidated Infrastructure, Office Automation, and Telecommunications	871.714
	National Animal Identification System	4.627
	Public Health Information Consolidation Projects	4.65
	RMA-01 Financial Management Systems	1.914

Agency	Project Name	Fiscal year 2009 request (in millions)
	Consumer	13.489
	NASS Survey Processing System	4.202
	Corporate Insurance Information System	6.487
	APHIS Comprehensive Electronic Permit System	3.132
	Geographic Information System 0084	14.777
	Farm Program Modernization	134.155
	Web Based Supply Chain Management	21.646
	RMA-13 Emerging Information Technology Architecture - Electronic Written Agreement Project	8.757
	Financial Management Modernization Initiative	46.237
Department of Commerce	Economic Census and Surveys	61.941
	American Community Survey	34.07
	BEA Estimation Information Technology System	10.156
	NIST-wide Grant Management Information System	1.25
	Demographic Surveys Statistical IT Support	14.601
	Geographic Support Systems	24.089
	ITA International Trade Process Streamlining	0.76
	NPOESS Data Exploitation	2.455
	Satellite Operations Control Center Command and Data Acquisition	37.938
	Field Support Systems	40.618
	The Longitudinal Employer-Household Dynamics Program	5.69
	Advanced Weather Interactive Processing System	57.129
	Next Generation Weather Radar System Product Improvement	8.376
	Next Generation Weather Radar Operations and Maintenance	8.654
	COOP Historical Climate Network - Modernization	3.734
	NWS Dissemination Systems	5.838
	NOAA National Data Centers	77.71
	GOES Ground System	19.744
	Office of Satellite Data Processing and Distribution Systems Critical Infrastructure Protection	2.772
	Environmental Satellite Processing Center	26.657
	USPTO Consolidated Financial System	24.987
	Commerce Business Environment	3.97
	MAF/TIGER Enhancements	18.344
	Search and Rescue Satellite-Aided Tracking	3.605
	Nautical Charting System	3.879
	PORTS & NWLON	5.367
	NPOESS Ground System	47.115
	GOES-R Series Ground Segment	68.939
	Data Access and Dissemination System	48.767
	BIS Legacy Export Control	2.475
	NOAA Non-Core CBS Financial Management System	0.999

Agency	Project Name	Fiscal year 2009 request (in millions)
	National Weather Service Telecommunication Gateway System (Legacy, Replacement, and CIP)	21.058
	NOAA Weather Radio All Hazards Weather Network) aka All Hazards Emergency Message Collection System	0.75
	National Air Quality Forecast Capability	6.46
	NWS Office of Hydrologic Development	4.501
	NWS Regions & Field	21.9
	National Integrated Drought Information System Implementation	3.8
	NCEP Weather and Climate Operational Supercomputer Systems (WCOSS Primary and Backup)	22.369
	NCEP Weather and Climate Computing Infrastructure Services	30.708
	NOAA R&D High Performance Computing System	26.524
	NOAA Grants On-line	1.496
	USPTO Revenue Accounting and Management System	7.361
	USPTO Patent File Wrapper Program	17.887
	Commerce Business Systems (formerly Commerce Administrative Management System)	39.313
	Department of Commerce Consolidated IT Infrastructure	432.269
	EDA Operations Planning and Control System and Loan Billing and Management System	0.66
	BIS ECASS2000+	5.316
	OCIO Financial Management IT Operations	8.13
	NWS/ Weather Radio Improvement Project	5.74
	Comprehensive Large Array-data Stewardship System	8.966
	NOAA Research Scientific Computing Support	19.204
	Geodetic Support System	1.815
	POES Ground System	15.274
	USPTO Business Continuity and Disaster Recovery Program	6.421
	NIST Central IT Support for Science	8.737
	Radio Spectrum Management: Federal Spectrum Management System	3.074
	NDBC Ocean Observing System of Systems	7.125
	Decennial 2010 Systems Design and Integration, and Decennial 2010 Testing and Evaluation	604.159
	BIS ECASS Modernization	0.357
	USPTO First Action System for Trademarks	1.891
	Automated Surface Observing System Operations and Maintenance	2.95
Department of Defense	Logistics Modernization Program	199.142
	DeCA Enterprise Business System	30.293
	Integrated Data Environment/Global Transportation Network Convergence	38.018
	Global Combat Support System - Marine Corps	52.488
	Warfighter Information Network-Tactical	616.028
	Global Combat Support System - Army	139.149
	Defense Enrollment Eligibility Reporting System	146.218
	General Fund Enterprise Business System	130.458

Agency	Project Name	Fiscal year 2009 request (in millions)
	Advanced Field Artillery Tactical Data System	51.988
	FORCE XXI Battle Command Brigade And Below	297.234
	GUARDNET XXI, The Army National Guard's Wide Area Network	74.059
	Mounted Battle Command on the Move Program	37.697
	Transportation Coordinators' Automated Information For Movements System II	69.879
	Expeditionary Combat Support System	275.227
	Mission Planning Systems	214.151
	Integrated Strategic Planning And Analysis Network	67.192
	Minimum Essential Emergency Communications Network	82.47
	Battle Control System - Mobile	194.972
	Global Combat Support System - Air Force	76.088
	Defense Medical Human Resource System Internet	27.061
	Defense Integrated Military Human Resources System	63.37
	Standard Procurement System	22.225
	Global Decision Support System	42.926
	DOD TELEPORT	32.666
	Net-Enabled Command Capability	0
	Protect Information - Public Key Infrastructure	42.329
	Navy Enterprise Resource Planning	177.116
	Common Aviation Command And Control System	76.722
	Navy Marine Corps Intranet	1609.615
	US Mepcom Integrated Resource System	65.51
	Installation Information Infrastructure Modernization Program	233.303
	Global Command And Control System - Army	34.842
	Combat Information Transport System	341.706
	Battle Control System Fixed	65.911
	Cheyenne Mountain Complex/Tactical Warning - Attack Assessment	90.977
	Commissary Advanced Resale Transaction System	15.49
	Military Computer-Based Patient Record (includes Inits 0049, 0379, and 0435)	0
	Executive Information/Decision Support	66.37
	Defense Message System	67.896
	Defense Information System Network	1518.426
	Global Combat Support System-COCOM-JTF	39.224
	Joint Precision Approach And Landing System	99.929
	Global Command And Control System - Maritime	85.214
	JTRS - Airborne, Maritime And Fixed Radios	204.454
	Deployable Joint Command And Control	34.632
	Future Combat Systems-Advanced Collaborative Environment	22.565
	Distributed Learning System	62.19
	Maneuver Control System	161.517
	Defense Enterprise Accounting and Management System-Air Force	59.968
	Air and Space Operations Center - Weapon System	288.144

Agency	Project Name	Fiscal year 2009 request (in millions)
	Theater Battle Management Core System	70.27
	Defense Medical Logistics Standard Support	56.531
	Global Command And Control System- Joint	137.458
	Theater Medical Information Program-Joint	66.287
	Net Centric Enterprise Services	127.091
	JTRS - Handheld, Manpack, And Small Form Fit Radios	164.766
	JTRS - Network Enterprise Domain	244.165
	Defense Enterprise Accounting And Management System	11.746
	Future Business System	32.067
	Defense Travel System	27.417
	Key Management Infrastructure	49.578
	JTRS - Ground Mobile Radios	196.32
	Defense Information System For Security	31.9
Department of Education	Federal Student Aid Financial Management System	10.187
	E-Authentication	3.163
	Common Services for Borrowers-Legacy	184.714
	Information Assurance	8.637
	Enterprise Portal	5.155
	National Student Loan Data System	9.85
	ED Web	5.686
	Common Origination and Disbursement	45.307
	Virtual Data Center	24.308
	ADvance - Aid Delivery	69.326
	ADvance - Person Data Management Program	23.01
Department of Health and Human Services	HHS Consolidated Acquisition Solution	9.534
	IHS Resource and Patient Management System - Maintenance & Enhancements	73.678
	National Select Agent Registry (formerly SATERIS)	7.488
	Electronic Research Administration	39.699
	CMS Integrated Data Repository	7.485
	Consolidated Infrastructure	111.551
	Medicaid Data Systems	7.552
	Data Management Operations - Claims	15.737
	OS ASAM IT Service Center	57.594
	Information and Computer Technologies for the 21st Century	19.233
	CMS Drug Claims	22.333
	CMS IT Infrastructure	259.084
	ACF GrantSolutions.gov / Grants Administration Tracking Evaluation System - Grants Center for Excellence	4.964
	OS OPHS Commissioned Corps Force Management Solution	4
	HHS Asset - Property Management Information System	1.337

Agency	Project Name	Fiscal year 2009 request (in millions)
	HHS HR LOB IT	0
	Information Technology Infrastructure	76.1
	Interoperability & Standardization - Provider ID	4.27
	Federal Health Architecture	3.662
	NIH Business System	25.06
	CMS Modernized IT Infrastructure	11.25
	CMS ICD-10 Initiative	17.15
	OS ASAM Payment Management System	7.03
	OS ASAM Debt Management and Collection System	5.728
	OS ONC Prototype Nationwide Health Information Network Architectures	19.127
	NIH IT Infrastructure	282.496
	AHRQ Medical Expenditures Panel Survey	21.587
	OS ASAM Accounting for Pay System	2.267
	IHS Infrastructure, Office Automation, & Telecommunications	19.146
Department of Homeland Security	ICE - Federal Financial Management System	30.379
	FAMS Air to Ground Communications System and Tactical Information Sharing System	12.8
	NPPD - Information Systems Security Line of Business	2.577
	USCIS - Immigration - CLAIMS 3.0	11.176
	CBP - Advance Passenger Information System	7.94
	DNDO - Joint Analysis Center	8.923
	USCIS - Transformation	71
	USCIS - Naturalization - CLAIMS 4.0	18.271
	Secure Border Initiative net: Command, Control, Communications & Intelligent Systems	157
	Crew Vetting	20.925
	Vessel Logistics System	3.93
	Marine Information for Safety and Law Enforcement	13.144
	Integrated Common Analytical Viewer	4.864
	FEMA - Disaster Management E-Government Initiative	12.714
	DHS - Homeland Secure Data Network	47.673
	DHS - Infrastructure	1461.074
	Rescue 21	126.65
	Integrated Deepwater System	14.4
	FEMA - eNEMIS	12.688
	CBP - Traveler Enforcement Compliance System - Modernization	65.7
	ICE - Detention and Removal Modernization	13.372
	Integrated Deepwater Systems	92.1
	NPPD - IICP - Infrastructure Information Collection Program	14.643
	DHS - Financial Transformation & Systems Consolidation	19.2
	USCIS - Integrated Document Production	31.855
	NBIS National Bio-Surveillance Integration System	3.125
	NPPD - US-CERT	109.154

Agency	Project Name	Fiscal year 2009 request (in millions)
	CBP - Non-Intrusive Inspection Systems Program	159.371
Department of Interior	USGS - Landsat Data Continuity Mission	24.15
	OS - OHTA Account Reconciliation Tool	3.135
	DOI - Advanced Budget/Accounting Control and Information System	0.685
	USGS - Landsat	16
	BIA - Integrated Records Management System	2.67
	DOI - Consolidated Financial Statement System	0.765
	Minerals Revenue Management Support System	21.278
	USGS - National Water Information System	7.46
	BIA - LOMAS - Loan Management and Accounting System	0.3
	E-DOI - Geospatial One-Stop	1.65
	DOI - Capstone Facility Management System	9.625
	OSM - Abandoned Mine Land Inventory System	0.175
	USGS - The National Map Reengineering Project	4.829
	National Fee Collection Point of Sale System	0.93
	BIE - Native American Student Information System	2.468
	DOI - Federal Financial System	26.448
	DOI - Financial and Business Management System	92.705
	E-DOI - NBC FMLoB Shared Service Provider	0
	E-DOI - NBC Shared Service Center	21.001
	BLM-National Integrated Land System	2.943
	BLM-Incident Qualifications and Certification System	1.337
	OSM - Applicant Violator System	0.256
	OSM - Coal Fee Collection Management System	0.404
	BOR1-PABS (Program and Budget System)	1.042
	BOR1-CDW (Corporate Data Warehouse)	0.658
	BOR1-RMSS (Reclamation Mission Support System)	42.158
	USGS - Enterprise Web	2.338
	BIA - Trust Asset Accounting Management System	6.076
	BIA - Facilities Management Information System	1.5
	BLM-Collections and Billings System	2.06
	DOI - Interior Department Electronic Acquisition System	5.019
	BLM-Legacy Rehost	1.84
	BLM-Automated Fluid Mineral Support System	1.599
	BLM-IT Support for Resources and Mineral Land Use Planning	0.55
	MMS - OCS Connect	5.647
	USGS - National Biological Information Infrastructure	4.207
	USGS - Advanced National Seismic System	8
	NPS -NPS.gov Internet/Intranet Portal: Infrastructure - Public Web Services	2.86
	E-DOI - Geospatial Line of Business	0.372
	National Fire Plan Operations and Reporting System	0.525

Agency	Project Name	Fiscal year 2009 request (in millions)
	FWS - Federal Aid Information Management System	2.409
	E-DOI - Recreation	0.2
	BIA - National Irrigation Information Management System	2.195
	OST - Trust Funds Accounting System	14.7
	DOI - Incident Management, Analysis, and Reporting System	11.779
	DOI - Consolidated Infrastructure, Automation, Telecomm	495.843
	BOR1-CVACS (Central Valley Automated Control System)	1.371
	BOR1-HSCADA (Hoover Supervisory Control and Data Acquisition System	0.826
	BOR1-GCPO SCADA (Grand Coulee Power Office Supervisory Control and Data Acquisition System)	4.065
	BOR1-CRSP SCADA (Colorado River Storage Project Supervisory Control and Data Acquisition System)	0.623
Department of State	Joint Financial Management System	18.261
Department of Transportation	DOTXX070: DOT IT Combined Infrastructure	232.14
	FAAXX712 - Next Generation Air Transportation System	649.185
Department of Treasury	Enterprise IT Infrastructure Optimization Initiative	1466.792
	Treasury-Wide Enterprise Content Management Services	28.168
	Consolidated Enterprise Identity Management Project	59.469
	Fiscal Management 09	1.92
Department of Veterans Affairs	Decision Support System	19.217
	VistA Imaging	29.431
	VA-Learning Management System	6.379
	VistA-Application Development	146.301
	One-VA Registration and Eligibility	7.296
	Health Data Repository	28.916
	VistA-Foundations Modernization	115.366
	Virtual VA	18.12
	Benefits Processing and Workflow	2.272
	Enrollment Enhancements	19.687
	Federal Health Information Exchange	6.53
	My HealtheVet	20.467
	USA Staffing	5.129
	VistA-Legacy	360.414
	Pharmacy Re-Engineering and IT Support	19.5
	Enrollment Operations and Maintenance	0.853
	Veterans Benefits Delivery	2.169
	Benefits Delivery Network Maintenance and Operations	22.426
	e-Payroll	8.039
	VBA Application Migration Program	0

Agency	Project Name	Fiscal year 2009 request (in millions)
	VA-Wide e-Travel Solution	1.365
	Scheduling Replacement Project	32.609
	VistA Laboratory IS System Reengineering	30.925
	VBA Rules Based Claims Processing	6.288
	Capital Asset Management System	2.801
	One VA Contact Management	7.658
	Health Admin Center IT Operations	21.815
	VETSNET	30.424
	Benefits Support Services	42.719
	Program Integrity/Data Management	12.512
	Revenue Improvements and System Enhancements	5.4
	Personal Identification Verification	17.887
	Medical and Prosthetic Research Operations	24.77
	Document and Correspondence Management System	1.431
	Financial & Logistics Integrated Technology Enterprise	45.05
	Financial Management System	15.506
	IT Infrastructure	1000.813
	Allocation Resource Center	1.392
	Blood Bank	1.961
	Payroll/HR Systems	41.428
Corps of Engineers	ENGLink Interactive	2.81
	Automated Personal Property Management Systems	0.51
	Real Estate Management Information System	3.48
	Corps of Engineers Financial Management System	9.59
	Operations and Maintenance Business Information Link	2.5
	Resident Management System	2.554
	Project Management Information System II	14.3
	Corps Water Management System	1.936
	Consolidated Information Technology Infrastructure/Office Automation/Telecommunications	304.367
	Facilities & Equipment Maintenance System	3.5
Office of Personnel Management	Retirement Systems Modernization	39.94
Nuclear Regulatory Commission	National Source Tracking System	7.902
	Licensing Support Network	2.501
	Budget Formulation System	0.537
	Secure LAN and Electronic Safe	4.098
	Reactor Program System	1.294
	Incident Response System	3.97

Agency	Project Name	Fiscal year 2009 request (in millions)
	Enterprise Digital Data Management System	0.081
	Cost Accounting System	0.733
	Core Financial System - Replacement	5.701
	License Fee Billing System	1.904
	Material Licensing Program - Web-Based Licensing	1.285
	Infrastructure Services and Support	67.476
	Time and Labor Legacy	0
	Time and Labor Modernization	1.646
	Agency-wide Documents Access and Management System	8.707

Source: OMB Management Watch List released in July 2008 for project names and OMB's *Report on IT Spending for Fiscal Years 2007, 2008, and 2009* for the financial data.

Appendix II: Reasons for Inclusion on the Management Watch List by Agency

The following table provides additional detail on the frequency of the reasons for inclusion on the Management Watch List for each agency for the projects remaining on the List as of July 2008. It shows security and cost and schedule performance as being the most common reasons.

Table: Frequency of Reasons for Inclusion on the Management Watch List by Agency (as of July 2008)

Agency	President's Management Agenda	Program Management	Acquisition Strategy	Performance Information	Security	Privacy	Enterprise Architecture	Alternative Analysis	Risk Management	Cost and Schedule Performance
Department of Agriculture	0	0	0	0	0	2	3	0	0	2
Department of Commerce	0	0	0	0	1	0	0	0	0	5
Corps of Engineers	0	1	1	1	0	0	1	1	1	2
Department of Homeland Security	0	9	9	5	7	4	2	8	0	9
Department of Defense	1	2	1	1	1	2	1	1	3	9
Department of Transportation	0	1	0	1	1	1	0	1	1	1
Department of Education	0	3	4	1	7	3	1	6	1	4
Department of Health and Human Services	5	1	12	1	10	0	0	4	5	9
Nuclear Regulatory Commission	0	1	0	0	13	1	0	0	1	0
Office of Personnel Management	0	0	1	0	1	0	0	1	1	1
Department of State	0	0	0	0	1	1	0	0	0	0
Department of Treasury	0	0	1	0	3	4	0	1	1	2

Agency	President's Management Agenda	Program Management	Acquisition Strategy	Performance Information	Security	Privacy	Enterprise Arcitecture	Alternative Analysis	Risk Management	Cost and Schedule Performance
Department of Veterans Affairs	1	2	22	2	26	36	0	6	9	40
Total	7	20	51	12	71	54	8	29	23	84

Source: GAO analysis of OMB's July 2008 Management Watch list data.

Appendix III: High Risk Projects with Shortfalls

The following provides additional detail on the high risk projects that have performance shortfalls as of June 2008. These shortfalls were identified by agencies in June 2008 high risk reports. (Note: the Department of Veterans' Affairs did not provide its report.) The project names were taken from OMB's list of Management Watch List released earlier this month and matched to the list of projects on agencies' June 2008 high risk reports.

Table 5: High Risk Projects with Shortfalls by Agency

Agency	Investment Name	Fiscal Year 2009 request (in millions)	Unclear baselines	Cost and schedule variance exceeding 10%	Project manager not qualified	Duplication
Department of Homeland Security	NPPD IICP	15	X	X	X	
	NPPD- US Cert	109	X		X	X
	DHS Transformation & Systems Consolidation	19			X	
	S&T Disaster Management E-Gov	13		X	X	
	DHS - HR IT	17	X			
	DHS Infrastructure	1,461	X	X		
	DHS - Homeland Secure Data Network	48		X	X	
	A&O Homeland Security Information Network	21	X	X		
	USCIS- Transformation	71	X		X	
	USCIS Immigration - CLAIMS 3.0	11		X		
	ICE Federal Financial Management System	30		X	X	
	CBP Secure Border Initiative net Technology Program	157	X	X		
	Secure Flight	83		X		
	TSA Transportation Worker Identification Credentialing	27		X		
	TSA Crew Vetting	21		X	X	
	TSA- FAMS Air to Ground Communications & Tactical Information Sharing	13		X	X	
	ICE Automation and Modernization	23	X	X		
	USCG-Core Accounting System	13		X		
	USCG- Vessel Logistics System	4			X	
	USCG- Marine Information for Safety and law Enforcement	13		X	X	

Agency	Investment Name	Fiscal Year 2009 request (in millions)	Unclear baselines	Cost and schedule variance exceeding 10%	Project manager not qualified	Duplication
	USCG Nationwide Automatic Identification System for MDA	38		X		
	NPPD US-VISIT	453		X		
	NPPD Information Systems Security Line of Business	3	X	X	X	X
	FEMA -Integrated Financial Management Information System	3				X
	FEMA eNEMIS	13		X	X	
Department of Commerce	FDCA	221	X	X		
Department of Defense	E-Training	NA	X	X		X
	Recruitment One Stop - Migration	NA	X	X		X
	EHRI - Migration	NA	X	X		X
	E-Training - Legacy System	NA	X	X		X
Department of Energy	EE Corporate Management and Planning System	2		X		
Department of Interior	DOI - IMARS	12	X	X		
	BLM - ePlanning	1		X		
	MMS - OCS Connect	6		X		
Department of Justice	Unified Financial Management System	123		X		
	SENTINEL	97		X		
	Case Management LOB	NA	X	X	X	X
	E-Travel Migration	NA		X		
	E-Authentication Implementation	NA	X	X	X	X
	EHRI (eOPF conversion)	NA	X	X	X	X
	HR LoB - Legacy System	0	X	X	X	X
Department of Labor	EFAST2	7		X		
Department of Transportation	E-Authentication Migration	NA		X		
	FAAXX705: Traffic flow Management	114		X		
	FAAXX445: FAA Telecommunications Infrastructure	188		X		
Department of Education	ADvance Person Data Management	NA		X		
	Grants Administration Payment System	4			X	
	G5	7		X	X	
	Common Origination and Disbursement	45			X	

Agency	Investment Name	Fiscal Year 2009 request (in millions)	Unclear baselines	Cost and schedule variance exceeding 10%	Project manager not qualified	Duplication
	Integrated Technical Architecture/ Enterprise Application Integration	8			X	
	Enterprise Information System	0		X	X	
	Integrated Partner Management	10		X		
	ADvance (Aid Delivery)	69		X	X	
Environmental Protection Agency	E-Travel Migration	1		X		
	FM LOB - Migration	31		X		
General Service Administration	HRLOB Migration	NA	X			
Department of Health and Human Services	Federal Health Architecture	4		X		
	FDA MedWatch Plus	12		X		
	OS OPHS Commissioned Corps Force Management Solution	4		X		
Office of Personnel Management	RSM	40	X			
Department of Treasury	Correspondence Examination Automation Support Major Wintel	8		X		
	Correspondence Imaging System - Major	7		X		
	Counsel Automated Systems Environment	28			X	
	Enterprise Data Access Strategy	6		X		
	Examination Desktop Support System - Release 2 - Major	8		X		
	Excise Files Information Retrieval Systems	11		X		
	Financial Information and Reporting Standardization	7		X		
	GAISS	4		X		
	Government-Wide Accounting and Reporting Modernization	19		X		
	HR LoB - HR Connect	23		X		
	Integrated Financial System/CORE Financial System	15				X
	Integrated Submission and Remittance Processing System	17		X		
	Oracle e-Business Suite	27		X		
	Pay.gov	9		X		
	Payment Application Modernization	19		X		
	SaBRe	5		X		
	Service Center Recognition Image Processing System	16		X		

Agency	Investment Name	Fiscal Year 2009 request (in millions)	Unclear baselines	Cost and schedule variance exceeding 10%	Project manager not qualified	Duplication
	Travel Reimbursement and Accounting System	0				X
	Treasury Foreign Intelligence Network	5		X		
	TreasuryDirect	6		X		
	Treasury-Wide Enterprise Content Management Services	28		X		
Agency for International Development	E-Authentication	NA	X	X		
	E-Travel	1		X		
	HSPD-12	2	X	X		
Department of Agriculture	Consolidated Infrastructure, Office Automation and Telecommunications	872	X			X
	APHIS - National Animal Identification System	5	X			
	RMA - Common Information Management System	3	X			

NA Not available: Financial data on project was not found in OMB's *Report on IT Spending for Fiscal Years 2007, 2008, and 2009.*

Source: OMB's Management Watch List released in July 2008 for the project names; OMB's *Report on IT Spending for Fiscal Years 2007, 2008, and 2009* for the financial data; and GAO analysis of agencies' June 2008 high risk reports for all other information.

Testimony of
Alfred Grasso
President and CEO, The MITRE Corporation
to the
Committee on Homeland Security and Government Affairs
on the subject of
"Off-line and Off-Budget: The Dismal State of Federal Information Technology Planning"

Chairman Carper, Senator Coburn, Honorable Members, thank you for the opportunity to appear before your Subcommittee. My name is Alfred Grasso, and I am the Chief Executive Officer and President of The MITRE Corporation. Our company's 50 years of experience, contributions, and accomplishments have given us a perspective that I believe is highly relevant to today's topic of information technology planning and management. From the early days of the SAGE air defense system to present day deployment of advanced command and control and business modernization systems, MITRE has been witness to great successes and significant disappointments. We are honored to be asked to share our lessons and insights with your committee.

Federal information technology (IT) programs operate in an environment of rapid technology evolution, where some system components become obsolete while the program is still in development. This pace of technology change challenges program teams to keep their technical skill base current. IT systems and business processes are increasingly interconnected within and across agencies, making it hard to achieve consensus on vision, operational concept, and requirements. The federal government's stretched fiscal and human resources further complicate the situation. The net effect is the widespread failure of many programs to deliver on time and on budget, with only a few notable exceptions where programs are able to overcome these challenges and succeed. Our experience leads me to comment on several critical areas and to offer three steps for improvement.

My first comment pertains to governance. Governance relates to decisions that define expectations, grant power, assign accountability, or verify performance. Effective governance comprises consistent management, cohesive policies, processes, and decision-rights for a given area of responsibility. Governance becomes increasingly complicated as programs and processes cross organizational boundaries and intersect multiple governing bodies. Authorities and responsibilities become ambiguous and program managers are disenfranchised. It is often said that the debate begins in government once the decision is made.

Successful programs must have unambiguous governance. Decision-making authority and accountability that address the implications of intersecting organizations must be clearly defined at the onset. These authorities must encompass the areas of budget and

finance, investment portfolio management, business process, program and project management.

My second comment pertains to requirements, an equally important consideration. Requirements reality and flux are often recognized as the root cause of program re-baselining. Re-baselining is not a dirty word but a necessary part of delivering capabilities that meet the user's needs. Requirements are too often determined in the absence of cost, schedule, and technology risk considerations, and once determined they are very difficult to change.

The biggest difference between successful commercial IT developments and troubled government IT acquisitions is how requirements are managed. Successful commercial IT developers handle requirements with great caution. If a certain requirement adversely drives cost, performance, or schedule it is quickly modified or eliminated. This does not happen in the typical government IT acquisition. Time-to-market is a competitive driver in the commercial marketplace, and I would submit it is as important, if not more so, in a world where adversary capabilities change as quickly as the technology cycle. System requirements must be considered "living" but managed with a controlled process using regular trade-off analyses to determine the value of change.

One concept, put forth by George Spix of Microsoft drives this point home. Spix suggests that if one were to have a competition between a program conducted the traditional way (tight control over requirements process) and a program with the same objectives, but where the developer has full control over requirements and is provided only one tenth of the funding, the non-traditional program would produce a better product in a shorter timeframe. The many prototypes and "proof of concept" developments that transition directly to operation, as well as the experience of many commercial developments, seem to substantiate this theory.

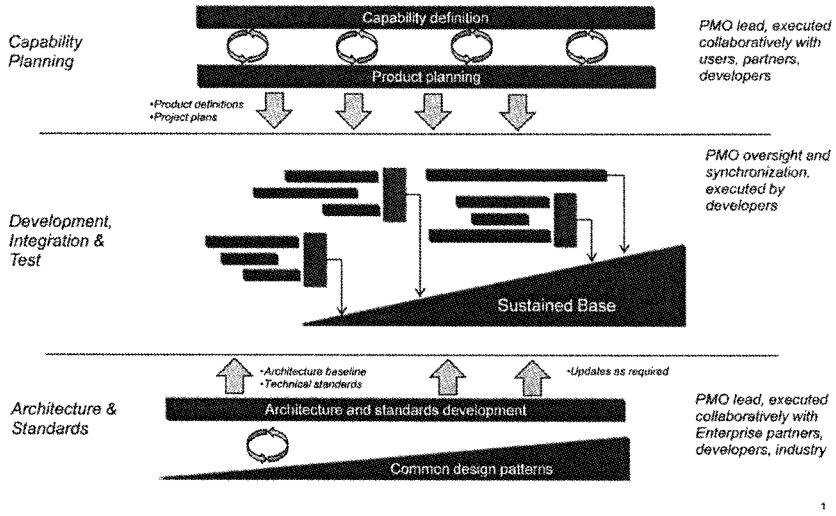
Another key element to rapid fielding of capability is the notion of a pipeline such as depicted in Figure 1. This pipeline consists of concurrent processes for Capability Planning; Incremental Development, Integration and Test; and Architecture and Standards.

- Capability Planning is the process by which products and capabilities are defined and time phased. This is done in close collaboration with users, partners, and developers.
- Development Integration and Test is done in small, time definite, increments. Each development is oriented toward a specific business/mission function (or small set thereof).
- Architecture and Standards enable individual development efforts to build on each other, eventually providing the full functionality required. A layered architecture, or a separation-of-concerns approach, enables technology refresh, requirements flexibility, and the ability to have some developmental failures,

while not placing the entire project at risk. In this approach infrastructure build-out follows capability, not vice versa.

Throughout this process, there is close interaction among users, developers, the test community, and decision makers. This is analogous to the successful approach taken by the Missile Defense Agency in the rapid development and deployment of the Ground-Based Missile Defense capability.

Figure 1. Creating a pipeline to deliver new capabilities



My final comment addresses program management practices. Successful programs are characterized by a strong government program management office—or PMO—capable of a peer relationship with the contractor(s) on systems engineering and program management issues. With a strong and capable PMO, the government has the capability to make informed decisions and manage the risk in acquisition programs. A key function of a strong PMO is best described by the metaphor of an Architect's relationships with

the user and the builder of a building. The Architect is the user's agent and is independent of the builder.

The Architect works to understand the user's operational needs and translate them into technical requirements enabling builders to develop the needed capability. The Architect evaluates development feasibility and performs an independent conceptual design and cost estimate. These Architect functions enable the user to make informed cost and capability tradeoffs and prioritize requirements. The Architect is accountable to the user to ensure that the delivered capability meets the user's highest-priority needs within the constraints imposed by available technology, funding, and time.

The Architect also supports other critical decision-making processes. For example, one of the most important decisions a PMO makes is selection of a prime contractor. Many studies have concluded that contractor past performance should be a prominent factor in the source selection decision. An effective Architect is also instrumental in helping the PMO structure the source selection to effectively incorporate past performance into the decision process.

There are many successful programs that exhibit the characteristics described above. One such program is the Distributed Common Ground Station–Army (DCGS-A). This program has fielded leading-edge technology, flattening the intelligence architecture across echelons and coalition partners. DCGS-A leveraged the successful Joint Information Operations Center–Iraq proof-of-concept effort, bringing operational intelligence information and alerts to field units and individual soldiers today in Iraq. Attachment 1 elaborates on strong program offices and the Architect function.

I offer the following recommendations based on our experience with these issues:

First, change the tone and tenor of oversight to focus equally on programs that have gone from bad to good or good to great to reveal best practices, which then can be applied more broadly. No program is without risk. We should all be more interested in those programs that have managed risks well and harvest those results for the betterment of a larger set of programs.

In our experience, we have seen the impact that the tone and tenor of oversight has on decision-making through program and enterprise governance and program operations. When program decisions are made in anticipation of the reaction or desires of the Office of Management and Budget (OMB) or Congress, the program, the stakeholders, and the public are not necessarily well served. While Congress must exercise its stewardship responsibility and authority to hold government managers accountable for performance, we have observed a greater focus on programs that have gone from "bad to worse" than those that have gone from "bad to better" and "better to best."

Government managers will be more effective with exposure to a structured, thoughtful discussion of both why some troubled programs fail and why some improve. We believe that Congress has a role in modeling this approach, and that OMB is an appropriate facilitator of these discussions. It is our belief that a variety of forums, held in public and

in private, where real-world experiences are discussed and analyzed to understand why programs improve, would serve the overall interest of improved outcomes. This hearing is a good example of a first step, and the Chairman and Ranking Member should be commended on their approach—focusing hearings on solutions as opposed to problems and highlighting the struggling programs.

Specific recommendations include, but are not limited to:

- OMB-chaired, facilitated workshops on a variety of program delivery topics, attended by a cross-section of program leaders and government technical professionals, highlighting program cases as examples, and held in low-key, private venues that encourage discussion of issues and successes

- A cross-government "PMO Council," following the concept of the CFO and CIO councils, constituted as a forum for Program Leaders to work together to establish government standards, to make recommendations directly to Congress on future legislative steps to help advance the state of the practice in government IT acquisition, and to leverage successes across the government

The challenge of program management is to deliver programs while managing *appropriate risk.* Today this is impacted by anticipating the reaction of oversight and by limited forums where program-level professionals can learn from successes and see successes highlighted. We recommend a more enabling oversight role in the future—modeled by Congress, executed by OMB, and supported by the Government Accountability Office (GAO). We are working on additional thoughts and will be approaching OMB very soon to discuss these and other observations and ideas on how to develop and implement a program of this nature.

Second, to navigate the dynamics and uncertainty of today's environment, IT programs are best structured as a portfolio with internal planning and management flexibility. Oversight should focus on the long-term funding envelope and the overall capabilities to be delivered. This allows flexibility at the program level to make informed trade-off decisions and to concentrate on manageably-sized increments that deliver capabilities in shorter time frames. This approach makes it easier for programs to demonstrate success or to "fail early," which is valuable if the program has put in place and funded contingencies. It also puts capabilities in the hands of the users more quickly. This incremental approach (as depicted in the pipeline discussion above) is the norm in commercial practice.

Third, Congress should continue to support and refine programs such as the DoD's Highly Qualified Experts Program and the IRS' Critical Pay Authority that help attract and retain critical government professionals. Additionally, IRS' pay-for-performance program has helped motivate performance aligned to outcomes. These are valuable tools that address the capacity, capabilities, and incentives needed to manage effective programs.

We encourage the Congress to look to these as models, streamline their execution and broaden their application government-wide—perhaps explicitly expanding them to include commercial IT Program Management expertise.

Investing in people and establishing clear measures of success at the macro (program) level versus the micro (project) level have had positive effects in every case where we have seen this occur. Major IT programs are increasingly complex endeavors, and no matter how well organized, issues arise. The key is how one "rights the ship" when problems develop. Experienced and empowered leadership is an essential element.

I request that my prepared statement be included in the record and I would be pleased to answer any questions.

Attachment
Strengthening the Program Management Office

An increasing number of today's major government information technology (IT) acquisition programs are suffering cost and schedule overruns and/or failing to deliver usable capabilities. To improve success rates, Agency Chief Information Officers, the Office of Management and Budget, and Congress are searching for ways to ensure that government IT acquisitions are better planned and managed. In many failed programs, the government Program Management Office (PMO) did not recognize (or was unable to manage) common sources of program risk, such as unrealistic or unstable requirements. A technically strong PMO can improve the probability of program success by executing the disciplined systems engineering and program management processes necessary to manage risk effectively.

The Importance of Strong Technical Capabilities

To manage acquisition program execution successfully, the PMO must have strong technical and management capabilities. This begins with the Program Manager (PM). The most effective PMs possess proven leadership skills, mission knowledge, and understanding of the technical domain. The PM must understand the relationships among requirements, mission performance, cost, schedule, and risk. He must be empowered to make decisions that bring these competing elements into balance. The PM is accountable for program outcome within the authority and resources provided by the program sponsors. Even the most capable PM cannot succeed without access to (and support from) senior agency leadership.

Supporting the PM in a technically strong PMO is a team that includes technical, mission, program management, cost estimation, and contracting experts. When staffed with the appropriate skills and experience, the PMO is capable of a peer relationship with the contractor(s) on technical and program management issues. Therefore, the PM is not forced to rely exclusively on the prime contractor for technical input to program decisions. The PMO team executes disciplined processes for program management, acquisition and contracting, and systems architecture and engineering.

Program management

Program management processes ensure that acquisitions are structured to deliver capabilities within budget and that program execution is managed to minimize risk while adapting to changing requirements and priorities. Program management processes include planning, assessment, control, decision-making, risk management, configuration management, and information management.

Acquisition and contracting

Acquisition processes ensure that qualified suppliers are selected and that agreements are negotiated with terms that, if fulfilled, ensure that the cost, schedule, and performance expectations will be met. Acquisition processes include developing acquisition strategies and plans, preparing solicitation packages, establishing evaluation criteria, evaluating responses to

requests for proposals, and evaluating vendor capability to meet technical requirements and stated commitments.

Systems architecture and engineering

Systems architecture and engineering processes ensure that systems are engineered to provide the desired capabilities within the constraints imposed by technology, available resources, schedule, external interfaces, operating environment, and regulatory requirements. These processes cover the full system life-cycle and include requirements definition, requirements analysis, architectural design, implementation, integration, verification, transition, validation, operation, maintenance, and disposal.

Effective systems architecture and engineering is critical to acquisition program success.

Figure 1 (Honour 2004) shows acquisition program cost and schedule performance as a function of the percent of actual program cost spent on systems engineering weighted by expert assessment of the quality of the systems engineering effort. Performance improves dramatically when a significant fraction (up to 12%) of program cost is for effective systems engineering. Today's government IT acquisition programs rarely devote this percentage of program resources to systems engineering.

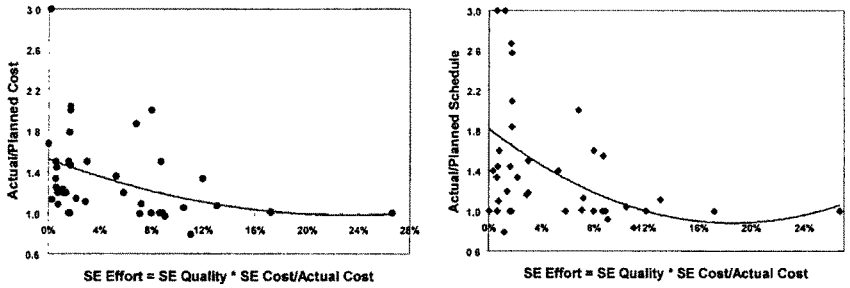


Figure 1: The Value of Systems Engineering

The "Architect" Function

A key function of a strong PMO is best described by the metaphor of an Architect's relationships with the user and the builder of a building. The Architect is the user's agent and is independent of the builder. The Architect works to understand the user's operational needs and translate them into technical requirements, defining the needed capability sufficiently to enable builders to develop it. The Architect evaluates development feasibility and performs an independent baseline design and cost estimate. These Architect functions enable the user to make informed cost/capability tradeoffs and prioritize requirements. The Architect is accountable to the user to ensure that the delivered capability meets the user's highest-priority needs within the constraints imposed by available technology, funding, and time. The Architect accepts responsibility not just for the quality of his own work, but for ensuring

program success through orchestration of others' contributions. Two of the most important of the Architect's responsibilities are requirements management and conducting trade studies.

Requirements management

The Architect works with the user to understand operational capability needs and performs cost/schedule/capability tradeoffs to establish target system requirements that define the system sufficiently to enable one or more "builders" to develop the capability. Initially, the architect team works collaboratively with the users and other stakeholders to elicit and refine requirements. Tradeoff analyses and negotiations among key stakeholders are critical parts of this process. The result is an agreement on the prioritized set of system requirements that the system must satisfy.

The initial requirements definition and tradeoff phase is rarely performed with sufficient rigor. In many agencies, responsibility for requirements definition, resource allocation, and acquisition are spread across multiple organizations without a process for making explicit tradeoffs among cost, schedule, and performance. The importance of spending sufficient time and resources in this initial phase cannot be overemphasized. Figure 2 (Gruhl 1992) shows acquisition program cost performance as a function of the amount of program cost spent on initial requirements and concept definition. Performance improves dramatically when a significant fraction (up to 15%) of total program cost is for requirements and concept definition.

After system development begins, the Architect works with the system builders throughout the development to clarify requirements, perform design tradeoffs, and verify that the system design meets requirements. During this process, requirements may be revised due to changes in user needs, experience with selected technologies, or introduction of new technologies. If requirements must be revised, the Architect performs supporting analysis and negotiates requirements changes with the user.

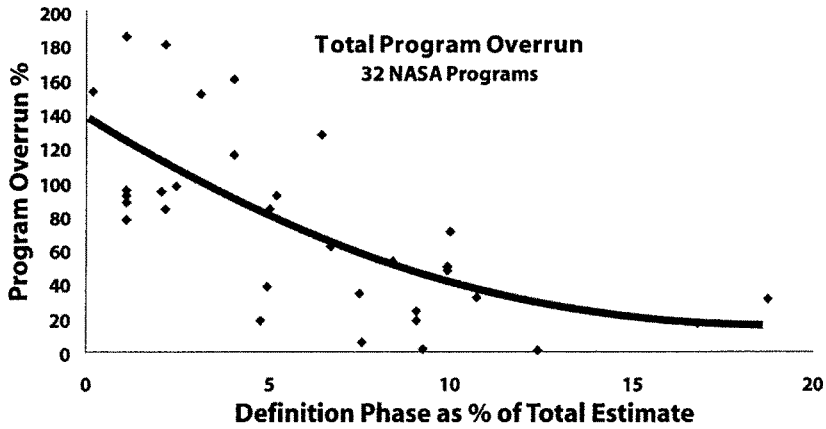


Figure 2: The Value of Initial Requirements and Concept Definition

Trade studies

The Architect performs analyses supporting PMO decisions throughout the program lifecycle, including cost and performance estimates, cost/schedule/performance tradeoffs, and evaluations of competing architectural and technical approaches. A "best practice" for performing these trade studies is for the Architect to develop and maintain a baseline system design and performance model throughout the program lifecycle. The baseline design is driven by technology as well as requirements; it is initially developed by the Architect, but evolves to reflect the contractor's design. For the baseline design to be useful for trade studies, it must be detailed—sometimes down to the card level for hardware or the module level for software. With this level of detail it is possible to identify the critical technologies that need to be developed in the technology development phase and closely monitored during systems development. In addition, a detailed baseline design enables the PMO to generate accurate cost estimates.

The nature and effectiveness of PMO trade studies can best be described by the following real-life case study of a program faced with selecting the best approach to modernize an aging computing infrastructure comprising processing, data storage, and database management capabilities:

> The system provides supercomputer-class processing power to users distributed over a wide geographic area and stores, maintains, and provides access to enormous quantities of data. The legacy capability was a centralized processing and data storage architecture built from proprietary hardware and software. It was obsolete and expensive to maintain. The goals of the modernization program were to improve performance and reduce maintenance costs while minimizing impact on users' business processes. In addition, transition from the existing to the replacement system had to be performed with no disruption to the users.
>
> Performing the architectural trade study presented the PMO team with several challenges. The user requirements were poorly defined and their business processes were not

documented. The quantitative requirements that were known (e.g., throughput, memory, bandwidth) were valid only for the legacy architecture. In addition, the incumbent contractor asserted that refreshing the existing architecture with new proprietary hardware was the only viable option. They based their conclusion on an analysis that appeared to understate the performance of other architectures. Finally, there were many possible architectural alternatives, which created a large trade space. Options ranged from replicating the existing centralized supercomputer architecture to developing a new fully-distributed cluster-computing architecture.

The PMO team conducted a comprehensive review and documented the users' business processes. Based on the business process description, the team developed architecture-independent system requirements. The PMO team's conflict-of-interest-free status gave them access to proprietary vendor data, including case study data from operational cluster computing installations. Based on the derived system requirements and the data collected from potential vendors, the team synthesized five complete baseline designs covering the entire architecture trade space and developed an architecture-independent system performance model. Using the baseline designs and performance model, the team generated life-cycle cost estimates (including the cost of future upgrades) for each baseline design. Finally the team conducted a risk assessment focusing on potential disruption to mission-critical activities during the upgrade.

The results of the trade study indicated that there were only modest life-cycle cost differences among the architectural options. A centralized architecture minimized data-transport costs, while a fully-distributed architecture minimized hardware costs. However, a hybrid option that distributed some functions while centralizing others provided a 20% increase in user productivity. Based on the study results, the program selected a hybrid architecture option. The new system was developed, and the transition was made seamlessly within projected cost and schedule. Furthermore, a user productivity advantage was realized from the new system consistent with the study projections.

Conclusion

Today's government IT acquisition programs are executed in a complex, uncertain environment. Rapidly evolving roles and missions create requirements volatility, and growing operational interdependence of organizations increases the number of program stakeholders and dependencies. In many failed programs, the government PMO's inability to manage this uncertainty and risk resulted in a failure to meet cost, schedule, and performance expectations.

A technically strong PMO provides an "Architect" function that enables the government to make informed decisions and manage the increased risks in today's environment of uncertainty, improving the likelihood of success in complex IT acquisitions. Unfortunately, the government is suffering from years of erosion in its organic ability to perform the functions of a strong PMO, particularly the Architect function. An aging workforce, difficulty in attracting new talent, and an explicit strategy to reduce the size (and expense) of PMOs are the root causes of the erosion and will be difficult to reverse. However, the Architect function can be performed outside of government as long as the Architect is sufficiently free of conflict-of-interest to serve as the government's trusted agent.

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STATEMENT FOR THE RECORD

NORM V. BROWN
EXECUTIVE DIRECTOR
CENTER FOR PROGRAM TRANSFORMATION

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

July 31, 2008

HEARING ENTITLED
"Off-Line and Off-Budget:
The Dismal State of Federal Information Technology Planning"

STATEMENT

Actions to Avoid "IT" Train-wrecks: An Agenda for Change

Good morning, Chairman Carper, Ranking Member Coburn, and distinguished members. First, let me thank you for inviting me to testify, and to congratulate you for holding this hearing, since literally billions of taxpayer dollars go down the drain every year in both visible and invisible Information Technology (IT) acquisition waste, and clearly you are on to something important. Vice Admiral Jerry O. Tuttle (RET), the former Deputy Chief of Naval Operations for C4I and icon for naval computing and net-centric warfare, would counsel "Lead, Follow, or Get out of the way"; thank you, Senators, for leading the way.

IT projects too often experience problems of Cost Explosions, Schedule Black-Holes, Performance Disappearances, and large-scale Train-wrecks—many caused by violating one or more fundamental laws of "IT" Physics, described later in my testimony.

Let us be clear about one thing: Although effectively managing a large-scale IT program is difficult, on the other hand, producing a large-scale IT Train Wreck is easy; the good news is that Wrecks can be avoided by effectively using well-known practices.

Today I would like to briefly offer actions that government Departments, Agencies, OMB, and Congress can take to prevent them. At its core, these actions address rapidly achievable improvements.

With your permission I will summarize my testimony and submit it in full for the record.

I'll begin with a structural observation: Much is expected of each Agency CIO. Many have responsibility without real authority. Many Federal Departments include numerous, essentially independent "fiefdoms" because congress has so arranged it, fiefdoms independently funded by Congress. The Pentagon rule is, "He that's got the gold makes the Rules"—so too in Federal Departments. Although I don't today have any solutions to offer, I would be happy to work with your staff to perhaps devise some.

Next an observation regarding those IT problems as relating to project management and oversight: When OMB testified before you last September, they expressed their recent interest in IT program execution, and that's a very good thing; but IT programs don't manage themselves.

From my understanding, very few Agencies have much in the way of any real IT program management and oversight. Earned Value Management is held-up as the do-all silver-bullet solution, yet little is done to prevent the easy gaming and corruption that Earned Value is vulnerable to, and associated rebaselining may lack the transparency needed to ensure effective oversight, and far too much is expected of it. Although it's a powerful visibility technique that supports program management, it cannot replace program management. Unfortunately, there seems little in the land of government IT Program Management that implements needed essential techniques like Risk Management, Requirements Management, or Integrated Baseline Reviews.

As a solution, I would recommend that each Agency be required to create their own "process lite" version of IT program management and oversight; that their focus be on implementing the critical detail that makes these processes effective with minimum overhead; and to use automated tools to identify remaining weaknesses and vulnerabilities. And while they are at it, it would be a good time to apply the "Lean Six Sigma" waste-cutting improvement process across OMB and the Agencies—to chop-off potential nodes of unnecessary work and all other non-value-added activities built-up over time in attempt to inspect-in quality and defuse responsibility.

Transparency is dandy, but it must be converted to visibility to be useful. A "transparent" contractor can deliver a 53' truck full of boxes of data, but what you really need is only the bottom-line information. What's needed is true visibility of IT project health and progress—in near real-time.

Since Earned Value seems to be the only principal visibility technique relied on by OMB, I would propose a more comprehensive visibility product—Exhibit 350—to provide real project visibility indicators monthly, primarily for the Program Manager, with quarterly simplified versions for component and Agency CIOs, OMB and Congress. I'll be happy to work with your staff and OMB to flesh this out if it would be useful.

Tracking schedule progress is not easy, and requires at least a good Task Activity Network. One reason for schedule surprises is that as pressure to meet schedule increases, the "hard-to-do things" are "kicked-down-the-road", with uncompleted difficult work now moved into future builds. As it turns out, these future builds typically will require a successive series of miracles to be accomplished in-order to complete the development on time and on budget; don't bet on those miracles happening.

To motivate Agencies to focus on IT project management and oversight, I would recommend adapting the "Nunn-McCurdy" notification process. Not that it's a great visibility technique—its not. But it in fact serves as a powerful motivator as something *really* to be avoided; as little else can do, it gives clear focus to the business of cost and schedule containment.

We have a serious problem regarding people: It's difficult to reward good talent, to hire good talent, to train good talent. We expect CIOs and our IT personnel to do more with less and then give them less, as if to prove the point. OMB needs to address this as a priority.

Training of project personnel in effectively implementing fundamental processes is minimal; while DoD has a certificate program in IT Program Management, GSA has long ago disbanded their excellent similar "Trail Boss" program for civilian agencies. A lack of training for the various communities charged with making IT developments work—the requirements, resourcing, testing and sustainment communities are even further behind management training—those communities have received essentially no education, training or any certification to do what they are asked to do. No training; no education; no certification and no experience-it's a wonder we do as well as we do, as bad as it is.

A Program Termination Process: The former Assistant Secretary of the Army for Acquisition, the Honorable Claude Bolton, is a strong proponent of terminating

projects if measurable outcomes cannot be achieved within the agreed-to program cost, schedule, performance baselines. The DoD has no formal decision making process or policies to terminate programs, and I am not aware of any for other Agencies. I think it wise and prudent to consider including such a process among ways to improve the government's IT acquisition process.

Contract incentives and other considerations are important, and I discuss them further in my testimony.

Now I will address my concerns and recommendations in more detail:

PROGRAM CONTROL AND MANAGEMENT

First, Require Effective Implementation of Fundamental Processes. Congress could and should require Departments and Agencies to formalize their processes for risk management, visibility and metrics, and other fundamental processes—acquisition planning, requirements development and management, continuous estimation of cost and schedule, and program management and oversight—together with mechanisms to assure their effective use and accountability, identification of their weaknesses and vulnerabilities, and their continuous improvement.

Focus on Rapid Deployment of Critical Detail. "Process Improvement" can come with a lot of baggage; Process-Priests make it into a religion; but focused on a core of effectively-implemented critical detail, fundamental processes can make a big difference in project success. Implementation of fundamental processes need not be overly complicated: pithy descriptions of actionable critical-detail coupled with quick deployment is infinitely more preferable to creation of study groups and "process action teams" who extensively coordinate, plan and define comprehensive lengthy descriptions which ultimately are never implemented; start with the core-details that are critical for a process to achieve its bottom-line potential and rapidly deploy them; avoid "box-checking" of label-engineered processes that produce great-sounding but hollow processes which—(borrowing from Macbeth (Scene 5)), have a sound and furry of correct-titles but whose actions signify nothing.

An Annual Agency IT Report to Congress should already be in the mail. Having seen from the inside the power of a simple annual report to Congress to bring-about real change in government, I would earnestly recommend such a report—from

each Department Secretary and Agency head—covering IT project status and health, and also progress in implementing fundamental process improvement.

Risk Management is the first fundamental process. Although all of these fundamental processes are equal in importance, Risk Management is first among them, and should be first deployed and checked for effectiveness.

Independent Expert Reviews are an important adjunct. The Defense Science Board study on software has recommended projects be reviewed by a team of independent experts because they provide an essential and needed means for identifying project risk. Despite its powerful potential for avoiding IT Train-wrecks, its use in government projects is, unfortunately, rare.

Require Certification of the Requirements-Budget Estimate. There are a number of powerful techniques that support the definition, management, tracking, and related cost estimation of requirements, which can and should be applied to ensure that project cost and schedule estimates are current and accurate. OMB could require that Exhibit 300's include a certification (together with supporting information) that the budget estimation process results in a realistic cost and schedule estimate for implementing existing requirements and addresses potential requirements growth. The certification should also describe the specific detailed process for requirements definition and cost/schedule estimation techniques which were utilized.

VISIBILITY

Transparency is lacking—missing is provision of relevant known, program status information to all stakeholders: Notwithstanding OMB's new and important focus on management of project execution, OMB's Management-Watch-List and High-Risk-List, while valuable adjuncts, do not provide the additional transparency needed to anticipate and identify emerging problems.

Conversely, Visibility is needed. Making the important aspects of project status and progress known is paramount. As the Sixth law of IT Physics states, "You can't manage what you can't see." There are a number of important metrics and indicators that are needed to provide information essential to effective and prudent management of large-scale IT projects, with differing levels of detail needed for Project Managers, Department or Agency management and senior

leadership, OMB, and Congress. Visibility becomes more useful as things become more tangible: Quantative measures; Knowledge Points; and frequent tangible deliveries of working product.

A new Exhibit 350 would go a long way. OMB could devise a much needed visibility companion to its Exhibit 300 documentation, which I denote as Exhibit 350 to indicate its intertwined relationship with its companion Exhibit 300. Exhibit 350 would constitute the core of a status report produced for and reviewed monthly by the project manager for each OMB-approved program, and a less detailed variant, say Exhibit 350-A to be provided quarterly through the cognizant Department or Agency Officials to OMB and Congress. Exhibit 350 would include a number of current indicators of project health and progress, such as: predicted Functional Availability; Defect Status; Integration Progress; Currently Estimated Cost at Completion and other important Earned Value indicators; Currently Estimated Schedule Completion, and Earned Schedule; Defect Containment; identification of key risks and status of associated Mitigation Activities; and other indicators tuned to the project's current phase.

Earned Value Management. While Earned Value, which quantifies products by intermediate and final products produced is a fundamentally important visibility process, however, it can be readily gamed or corrupted, producing misleading results which can be more dangerous than not implementing EV, since unrealistically positive results generate complacency. Seriously flawed Earned Value may be difficult to detect; however, experts can ferret-out the gaming and commonly made "adjustments" that can produce spurious and misleading results leading managers astray. Two of the common easily detected corrupting influences are tasks without products, and rubber-band rebaslining. While a few IT projects scan their Earned Value implementation for such landmines, most do not.

Nunn-McCurdy Certification. Nunn-McCurdy is a powerful visibility technique which should be borrowed from the Congressional Defense oversight process for government IT programs. Such a certification would require a Department Secretary or Agency Head, upon a breach in excess of some specified amount, say 25% of the contract cost baseline, to certify to Congress the continuing need; causes of the breach; that effective corrective action was put in place to prevent a future breach (including description of such actions); and, that a review of other

major projects has been conducted to check for potential existence of similar problems. Perhaps a similar certification might be considered for similar schedule slips. Although not a predictive mechanism (since its "red-light' goes on only after a significant cost increase has just about, if not already occurred), its greatest benefit is as a highly effective motivator throughout every Department and Agency—since it focuses attention at every associated management and executive level (including congress) on actions that could have been taken to avoid such a certification, and creates uncertainty as to potential negative effect upon congressional appropriations.

Incentives

Contract Incentives. When properly employed, the contractor's interest and government's interest become aligned, cooperation and shared risk exist, and the likelihood of a successful outcome is significantly enhanced. Serious focus by agencies on contract incentive structures can make dramatic improvements in successful IT project outcome. The trick is creating the proper incentives--that's critical--but the details of this constitute an entire other discussion.

Employee Incentives. People. Teams. Success. People are more important than any process. Much has been written about the success of large-scale IT project development as dependent on knowledgeable, dedicated people and effective teamwork. Government personnel rules do little to encourage and incentivize the career government IT expert. Little meaningful financial incentive exists for outstanding contribution; in one Department, rewarding such a federal employee with a five percent bonus requires the personal approval of the Secretary of the Department. There is little likelihood that such a request would be made, and the betting is that it would not be approved. The government's ability to reward and incentivize its employees is in sorry shape, and OMB should initiate coordinated action to address this issue. The same can be said for the difficult conditions faced by CIOs and IT project managers with regard to their ability to hire needed talented employees. We ask them all to "do more with less", then we actually give them less, and are surprised at resulting failures.

Training of project personnel in effectively applying fundamental processes is virtually absent. These diverse activities include rapidly deploying an effective Earned-Value and Risk-Management process, establishing meaningful project and agency metrics, determining effective test strategies, structuring contract

incentives, managing and tracking requirements, maintaining a good cost and schedule estimate, using simulation to predict project completion within specified confidence limits, identifying risks, and ensuring a solid Task Activity Network.

* * * * *

The Laws of IT Physics™: Although there are many factors influencing a successful project development outcome, and other "Laws" and corollaries exist, the following have been selected as most relevant to this hearing and testimony. In the interest of brevity, substantial explanatory text associated with these laws and their corollaries has been omitted.

First Law	**Planning is a continuous process, not a one-time event.**
Corollary	A Project Plan cannot survive past contract award and must continually change based on actual experience (requirement additions or modifications count as actual experience).

Second Law	**Complexity** kills IT projects since defects and security vulnerabilities increase nonlinearly with increased complexity.
Corollary	Minimizing and controlling complexity are key to successfully achieving a large-scale system development success both in the development of individual releases and in the cost and schedule of downstream upgrades to operational software. Government Project Offices should ensure that the complexity of system architecture, each lower level of design, source-code, and task activity Networks is minimized.

Third Law	**Schedules and project chaos** create Event Horizons, from which a project cannot recover.
Corollary	Avoid the Project Event Horizon; Compute Schedule Compression and Monte-Carlo simulate the Task Activity Network.

Fourth Law	The **initial requirements** for any large system will be incomplete, independent of the resources expended to develop them.
Corollary	Ensure planned requirements can be delivered within cost and schedule estimates, but also include budget for anticipated and actual requirements change; rigorously test, accept, and track requirements as they are met.

Fifth Law	**Unvalidated requirements** pave the road to project failure.
Corollary	Test and validate requirements as early as possible before basing significant projects upon them; use pilots where possible before fully committing.

Sixth Law	You can't manage **what you can't see.**
Corollary	Track Project Status and Progress against small, testable, incremental product deliverables and use quantitative project parameters, such as Earned Value, to make projects visible and manageable.

Seventh Law	**Not controlling** the right things assures failure.
Corollary	Use well established best practices such as Risk Management, Requirements Management; Defect Management; and Integrated Baseline Reviews to control projects.

Eighth Law	**Poor defect management** causes high rework and leads to project failure.
Corollary	Use automated testing and continuous integration to prevent defects, and continuously identify out of phase defects to correct their root causes.

Ninth Law	**Unknown and untreated vulnerabilities** originating in ineffectually implemented Processes destroy IT projects.
Corollary	Automate vulnerability identification and prioritize fixes which root-out and fix processes lacking critical essential detail needed to achieve bottom-line objectives.

Tenth Law	**Development Contractors** will do what is in their financial interest, and government organizations may be led toward a project Event Horizon.
Corollary	Incentivize well and wisely, trust but verify, and use Award-Fee type contracts; carefully construct the Award-Fee criteria to address principal project objectives over the near term; identify what Award-Fee structure will sufficiently motivate the development contractor.

Eleventh Law	Thoughtful, knowledgeable, **committed people** operating as a team are critical to IT Project Success.
Corollary	Treat people as the valuable resources that they are; take actions to create and maintain "jelled" teams.

Oral Testimony of
The Honorable Thomas Jarrett
Secretary and CIO, Delaware Department of Technology
And Information

"Offline and Off-budget: The Dismal State of Information Technology
Planning in the Federal Government"

Before the

Subcommittee on Federal Financial Management, Government
Information, Federal Services and
International Security
Of the Senate Committee on Homeland Security and
Governmental Affairs

342 Dirksen
July 31, 2008

Chairman Carper, Ranking Member Coburn, and other members of the Subcommittee, I thank you for the opportunity to speak with you today. As Secretary of Delaware's Department of Technology and Information (DTI), I can well appreciate the complexity, the challenges, and the significant responsibilities associated with managing information technology projects in an investments portfolio that cuts across many agencies, and in Delaware's case, all three branches of government. Albeit on a much smaller scale than the federal government, Delaware (and other state governments) are faced with similar concerns regarding IT project management. In fact, Delaware's Department of Technology and Information was established in part because of the ongoing IT project delays and cost overruns that Delaware was experiencing. Delaware's centralized IT structure charges our agency with direct oversight and approval of nearly $200 million in active IT projects.

As a new agency we were able to develop and deploy new approaches to IT project management that incorporate many best practices from private industry and others in government sector. While our methods are under constant review for improvement, we are enjoying some significant progress and we have an excellent track record of delivering much needed IT solutions that are on-time and on-budget.

There are no "silver bullets," no one or two changes that you can point to for perfect project management. Instead, there are many small improvements that we have made that, in the aggregate, are making a difference for Delaware. I would like to take a few minutes to give you a high-level view of a project lifecycle using the "Delaware Model." In addition, I would like to point out what I believe are the significant processes and procedures that we have put in place to successfully manage our portfolio.

Like the federal model, we require agencies to submit a business case that addresses the major items we believe help insure a project's success. Our model includes the following major areas: risk management, processes re-engineering, architecture review, resource and funding availability, project management oversight, organizational change management, needs assessment, customization requirements, disaster recovery levels and management/executive sponsorship.

Recommended projects are forwarded for the concurrence of the State CIO before they move ahead in our process. This recommendation usually includes ongoing funding contingent on meeting project milestones.

Once approved, DTI works with the agency-customer to develop full and complete requirements so a request for proposals can be released to secure vendor bids in order to meet the needs of the project. DTI stays involved to help the agency make a vendor selection, and to structure a contract that ensures the project is delivered on-time and on-budget. I cannot emphasize enough how critical the requirements gathering process is to the project's ultimate success or failure. The Delaware Model does not allow for requirements gathering to be conducted solely by the vendor, there must be active involvement by the DTI project management team. There is an old saying, "the customer doesn't know what they want, until you give them what they asked for." Requirement gathering is critical to the process and helps alleviate scope, time, and budget creep if done correctly.

At the start of a new project, a nationally certified program/project manager is assigned as well as a certified organizational change management team to run parallel courses in managing the projects. It is not enough to be certified, we take extra care in selecting the people to fill these positions as they are essential to the success of the project. We count on these folks to inflict discipline and structure to our projects.

It is important to note that DTI manages Delaware's IT projects, not the vendors assigned to them. While we demand the vendor assign a certified and talented project manager, our state folks manage the project. Further, I would like to highlight our change management process. Change management starts with the review of existing business processes and is focused on preparing the organization for the cultural changes that are a part of any major projects. According to a recent study conducted by the National Association of Chief Information Officers, which represents state CIOs and Information Technology Executives from the states, 80 percent of major IT project failures can be directly attributed to a lack of change management. Too often, the employees who will actually use the new application are left out of the project process and when this takes place it is almost certain that the project is doomed to fail or underperform.

Another major element of our success is how we manage the overall process. All of Delaware's major IT projects have executive sponsors. The executive sponsors include high-level managers from the agencies involved, as well as, key executives from DTI, and our Office of Management and Budget. The executive sponsors hold regular monitoring and update meetings and provide high level oversight. When difficult project decisions need to be made, the executive sponsors are aware of the issues and have the authority to make critical decisions on whether or not to keep the project moving along.

A real-life example is our present project involving all of Delaware's courts. Due to a lack of employee training and readiness, the executive sponsors recommended that the project be "paused," so that training could take place. In fact, Delaware's Chief Justice himself invoked a six month pause in recognition of the need for court employees to be prepared if the project was to succeed.

Besides ongoing project meetings, all projects in the State's portfolio are reviewed weekly by our project management office and bi-monthly at a workload management meeting where project managers present their projects' status to the assembled DTI senior managers. Opportunities for improvement or needed adjustments are vetted in an open forum with the goal of keeping the project on track and transparent.

Our agency is committed to project transparency, all the way to our legislature and our governor. We believe in continuous information exchange and dialogue with our elected representatives so that they are educated and aware of the complexities of major IT projects. Providing information upfront, even when it may be painful, is far better than "saving" unpleasant surprises for yearly budget sessions. Bad news doesn't age well.

I wish I could tell you that everything is humming along perfectly and that the processes that we have put in place are the final answer. But I can't, as we have many challengers similar to those being talked about today. However, we believe that by tightly managing these challenges we can deliver projects on-time and on-budget. Although our project tracking system is complex, in our communication with stakeholders, we use high level red, green, yellow scorecards to inform them of how the projects are developing.

All projects have, or will have, ongoing issues that require senior management attention. Under the Delaware Model, we believe that providing the facts, good or bad, to all stakeholders – including our legislature – is the proper policy, and most importantly, lives up to one of DTI's core values, "Integrity." Our vendors are held accountable to deliver what they said they would and we call the facts as they are.

Thank you for the opportunity to testify today and I would be happy to answer any questions.

Post-Hearing Questions for the Record

"Offline and Off-budget: The Dismal State of IT Planning in the Federal Government"
July 31, 2008

Questions for the Record from Senator Thomas R. Carper to the Honorable Paul Denett[1]

1. Mr. Denett, it seems you have acknowledged that OMB has dropped the ball when it comes to reporting to Congress on major capital assets as required by the Federal Acquisition Streamlining Act (FASA) of 1994. Although it is unfortunate that this mistake was caught on your watch, it is something that has not happened for some time and needs to be addressed before the next presidential transition.

    a. What specific steps have you taken to make sure your office will continue to report this information to Congress annually?

    Response: The Office of Federal Procurement Policy (OFPP) is working with the Resource Management Offices (RMOs) in the Office of Management and Budget (OMB) to determine the best way to collect, analyze, and report on non-information technology (IT) investments. OFPP is also consulting with the Project Management Working Group (PMWG), which was formed by the Chief Acquisition Officers Council late last year to help improve the use of capital planning and project management for major acquisitions.

    b. And why do you think there was a lapse in reporting in the first place?

    Response: Comprehensive information covering the same issues required by the reporting requirement in title V of the Federal Acquisition Streamlining Act ("FASA V") -- including cost, schedule, and performance information -- has been provided annually to Congress through Chapter 9 of the *Analytical Perspectives* volume of the President's Budget. It was presumed that this information was addressing the FASA V reporting requirements, at least with respect to IT investments, which has been the focus of Congressional interest, including that of this Committee.

2. Historically, this hearing has focused solely on the proper planning and execution of IT investments. However when my staff was investigating OMB's oversight role for all capital assets, of which IT is a subset, it seems that OMB does not collect, analyze, or provide the same type of information to Congress that the Office of E-Government and Information Technology does for IT.

[1] The Honorable Paul Denett resigned as Administrator of OFPP on September 2, 2008. The responses in this document were prepared by the OFPP staff.

a. What type of investment specific information does your office collect government-wide on capital assets besides IT?

Response: OMB Circular A-11 requires agencies to develop business cases for their major non-IT capital assets used by the Federal Government and having an estimated useful life of two years or more. The business cases include information covering project management, acquisition strategy, performance information, security, privacy, enterprise architecture, alternative analysis, risk management, and cost, schedule and performance.

Agencies work with OMB to identify which new and ongoing acquisition programs require closer evaluation and should be reported to OMB, taking into account factors such as importance to agency mission, significance in terms of program or policy implications, high executive visibility, or high development, operating, or maintenance costs. There currently is no uniform government-wide portfolio assessment of non-IT capital asset classes similar to that used for IT, in part because major acquisition programs outside of IT take a variety of forms, ranging from construction and real property to aircraft acquisitions. OFPP is consulting with the PMWG to evaluate how performance-based management for different types of major non-IT investments is best applied.

b. In what format do you collect this information?

Response: Circular A-11 requires agencies to submit business cases using the format prescribed in Exhibit 300. The Exhibit 300 requires agencies to provide specific information on performance goals and measures, results achieved against goals, acquisition strategies, and project management.

c. How often is this information updated by the agency?

Response: Under A-11, agencies are expected to update Exhibit 300s to reflect decisions in the Budget. If agencies request supplemental funds, which include changes to the agency's portfolio, agencies would need to update their Exhibit 300(s), as appropriate. Agencies are expected to continuously maintain updated information about the projects contained in the Exhibit 300.

d. What type of analysis does your office perform to make sure the agency is spending the money wisely?

Response: OFPP works with the RMOs during the development of the budget to support the review of the business cases that have been submitted to OMB. OMB uses the agency Exhibit 300 submission to make both quantitative decisions about budgetary resources, consistent with the

Administration's program priorities, and qualitative assessments about whether the agency's programming processes are consistent with OMB policy and guidance.

To assess agency progress in implementing capital programming principles and practices for non-IT investments, OFPP directed agencies to provide information on their new and ongoing non-IT major acquisition projects. During its assessment, OFPP considered whether agencies: (i) have capital planning and investment control policies for major acquisitions other than IT, (ii) have established cost, schedule, and performance goals for new and ongoing projects, (iii) plan to use Performance-Based Management Systems (PBMS) to monitor acquisition progress on new programs, and (iv) are using PMBS to monitor ongoing program progress. The results of OFPP's assessment were reported to Congress in its FASA V Report, dated July 30, 2008.

e. And how does your office work with the agency and with Congress to make sure we are proper fiscal stewards?

Response: The general principles for non-IT investments are the same as those for IT. As OMB's *Capital Programming Guide* explains, when an agency reports that a major acquisition is not projected to achieve 90 percent of goals, OMB works with the agency on remediation activities, reviews the agency's reasons for deviation from goals, the reasonableness of the corrective actions proposed, and the validity of increased cost estimates.

In addition, OMB and the Government Accountability Office (GAO) have worked with the Department of Defense, the Department of Energy, and the National Aeronautics and Space Administration to mitigate risk in capital investments by (1) establishing clear definitions of success and (2) developing corrective action plans with milestones and metrics that hold agencies accountable for meeting the goals that have been collectively agreed upon for the successful attainment of cost, schedule, and performance goals.

f. Lastly, do you believe the information you provide Congress allows us to spot problems in non-IT capital assets before they spiral out of control? If so, how?

Response: Agency use of performance-based management for non-IT acquisition programs has generally been more limited than that for IT acquisitions, which has limited the information that is readily available on non-IT capital assets. OMB is committed to working with agencies to improve these practices so that better information is available to identify and address project shortcomings before taxpayer resources are wasted.

3. Like Ms. Evans, your office oversees billions of dollars that could potentially be wasted, abused, or even stolen. However, I question whether OMB is providing the proper oversight that is needed to hold agencies accountable when an investment becomes a money-pit.

    a. Will you commit to providing Congress a single, aggregate list for all major capital assets that tracks their cost, schedule, and performance from the investment's inception to its completion?
    b. If so, when will this information be provided?
    c. If not, why not, and what do we in Congress need to do to make sure we properly oversee the hundreds of billions of dollars that is spent on non-IT capital assets?

    Response: **As OFPP's FASA V report explained, capital planning and investment control policies are generally not as well established for non-IT projects as they are for IT investments and performance-based management systems are not always being used to track cost, schedule, and performance. OFPP is reviewing, in consultation with the Chief Acquisition Officers, how more complete information can be collected in order to improve transparency and increase accountability. OMB looks forward to working collaboratively with Congress to improve upon the ways in which we deliver and share information.**

Post-Hearing Questions for the Record
Submitted to Karen S. Evans
From Senator Thomas R. Carper

"Offline and Off-budget: The Dismal State of IT Planning in the Federal Government"
July 31, 2008

Question:

1. Ms. Evans, this Subcommittee had enjoyed a wonderful working relationship with you since you first testified before us two years ago. As I have said before, I must thank you for all of the progress that has been made in the area of IT planning and management. However, it doesn't mean that there isn't more work we can do. Specifically, I still do not believe Congress has the information required to hold agencies accountable -- which in large part is our job – to oversee and track an investment's cost, schedule, and performance information from its inception to its completion. Most of these projects span several years and are worth millions; yet Congress only recently learned a month ago that some of these projects have been poorly planned for over 2 years.

a. Do you believe that OMB provides Congress the information necessary to track the performance of an IT investment from its inception to its completion on measures such as cost, schedule, and performance goals?

Response:

In recent years, OMB has taken steps to provide Congress direct information or the ability for Congress to access agency information on the planning and execution of IT investments throughout their lifecycle. The steps have included the following:

- Quarterly reporting of the Management Watch-list (http://www.whitehouse.gov/omb/egov/documents/MgtWatchList.pdf)
- High Risk-list (http://www.whitehouse.gov/omb/egov/documents/High_Risk_List_Q3FY08.pdf)
- Exhibit 300 Evaluations Profile (http://www.whitehouse.gov/omb/egov/documents/Exhibit300_Evaluations_Profiles.pdf).

Additionally, OMB has enacted policy changes through OMB policy memo (M-05-23) to enable Congress (through GAO) and agency Inspectors General to access agency performance data for all high risk projects not meeting one of the four principal criteria as provided in the policy memo.

Lastly, OMB modified Circular A-11, Section 300.7 in 2007 to require agencies to post public versions of their Exhibit 300s to their website within two weeks of the release of the President's Budget.

The processes currently in place at OMB for evaluating potential and active investments in IT are not designed to provide real-time project performance data. For those projects that experience critical issues in between quarterly reporting processes, agencies typically notify OMB on an interim basis. In the case of the Census project, the issues involved were not isolated to IT.

b. If you feel the information is adequate, how come Congress was caught off-guard with several investments that have spiraled out of control and required Congress to pass emergency funds; such is the case with the Census?

Response:

OMB is in the process of providing a user friendly way to navigate through the Federal Report on IT Spend and will identify both Management Watch List (MWL) and High Risk List (HRL) investments along with the rationale for an investments' inclusion on the MWL or HRL, and where possible, identify multi-year members of the MWL. The data will be downloadable to allow users to conduct further analysis and print reports.

The goal of this new functionality is to make the underlying data more useful and easier to access. The portal has the added benefit of improving data quality by presenting information in context to both authors and consumers of the information.

c. If you do not feel the information is adequate, what information will be helpful to Congress so we can track investments government-wide and prevent future problems before they spiral out of control?

Response:

OMB will continue to evaluate potential investments in information technology against several strategic and management criteria as part of the budget process, including identifying those that demonstrate a moderate to high likelihood to encounter project management and execution problems; however, instituting a simplified reporting process for in-process acquisitions that are mission critical, high profile or dollar value, or are otherwise at risk, using Earned Value or comparable information would provide both OMB and Congress with current information from which to take preventive action.

Also, OMB encourages Congress to use the functionality discussed above, provide feedback and continue to work with the E-Gov Office.

d. Lastly, why hasn't OMB provided Congress a single, aggregate list of all IT investments that track whether they are poorly planned; how long they have been poorly planned; the reasons why an investment is poorly planned; if the investment is achieving cost, schedule, and performance

benchmarks, and if not, what percent the investment is off; whether the agency is properly tracking the investment with Earned-Value Management; and whether the investment has been rebaselined, and how many times it has been rebaselined? Isn't this all important information for Congress to know?

Response:

OMB looks forward to working collaboratively with Congress to continue improving upon the ways in which we deliver and share information. The portal described above is a step forward and potentially provides a platform to streamline and improve the performance information we provide publically and to Congress in the coming year.

Question:

2. You stated in an earlier response that you didn't feel it was OMB's responsibility to embarrass an agency, but instead help them to correct problems. I agree with this statement, only to the extent that someone needs to be holding these agencies accountable, and I don't feel that is happening now at OMB. Furthermore, you mentioned that instead of Congress focusing solely on those investments that are doing poorly, to instead focus on those investments that are doing exceptionally well. Once again, I agree with this statement, only to the extent that OMB needs to provide Congress the information necessary to hold those agencies accountable that are doing poorly, but also provide the information necessary to point out those agencies as models that are doing well.

a. Ms. Evans, how can the American people trust that OMB doesn't have a conflict of interest when helping agencies to right problems, but holding them accountable when money shouldn't be spent on bad projects?

Response:

OMB's charge and interest is to provide oversight and policy direction to agencies. This includes working with them to achieve success, as well as putting controls in place to ensure proper management. OMB works with agencies to correct program deficiencies and to be good stewards of public resources. OMB holds agencies accountable through the President's Management Agenda (PMA) Scorecard quarterly process, public reporting of the Management Watch List and High Risk List, and analysis of IT investments during the budget formulation process. In addition, OMB holds monthly or quarterly briefings with agencies on critical and/or struggling IT projects.

b. Further, can you provide this Subcommittee any and all times your office has held an agency accountable through the Apportionment B process since 2001 for an IT investment and the reasons why OMB redirected these funds?

Response:

OMB uses a wide variety of management mechanisms to ensure agencies are held accountable for their performance as it relates to their IT investments. Agencies provide OMB with regular updates on agency projects, including through the PMA Scorecard process on a quarterly basis, through agency budget exhibits, and through other annual reporting. Through these processes, both the agency and OMB are able to identify investments that need additional focus to ensure a successful outcome. In that regard, OMB has also utilized its Clinger-Cohen authority to ensure agencies are accountable for their investments by providing specific funding levels in their apportionments.

The Internal Revenue Service Business Systems Modernization (BSM) account was apportioned by category B in the past to ensure project-by-project spending was consistent with the BSM spend plan. The BSM spend plan is submitted as part of the budget formulation process. Currently, the account is not apportioned by project in category B, but IRS notifies OMB of any deviations from the spend plan that exceed $1 million or 10 percent of a project's cost.

The Department of Veterans Affairs' (VA) Information Technology Systems account has apportioned funding by category B for specific projects in recent supplemental appropriations bills. Examples include funding provided for information technology support and improvements for processing of Operation Enduring Freedom and Operation Iraqi Freedom veterans benefits claims. VA submitted an expenditure plan for category B funds for OMB approval prior to the apportionment of funds, which is then reviewed throughout the budget execution process to ensure that funds are obligated as planned.

c. Lastly, do you believe OMB is providing Congress the information necessary to hold those agencies in the spotlight that are doing exceptionally well?

Response:

OMB highlights agency successes in a number of ways to various audiences and Congress, including reports such as the annual E-Government report and Clinger-Cohen annual report (Chapter 9 of the Analytical Perspectives of the President's Budget) to Congress.

Question 3:

3. Many investments that agencies are undertaking have to deal with their financial management systems. As agencies are bringing on new investments, they have to phase out older, legacy systems. However, I am little worried that we are investing in new IT systems that may not be achieving the best value for the American taxpayers. Specifically, I have a few questions about the Department of Homeland Security's Transformation and Systems Consolidations investment. Previous hearings have focused on some of the problems that DHS faced a few years ago when consolidating the many stove-piped financial management systems.

a. Specifically, how is DHS using proven capabilities of commercial-off-the-shelf software and in what way is this a factor when selecting a vendor?

Response:

All agencies are required to use a COTS software package certified by Financial Systems Integration Office (FSIO) as stated under OMB Circular A-127, Financial Management Systems. DHS is not exempt from this requirement and therefore is required to procure a certified COTS package.

b. Further how is DHS making sure the government is receiving the best value for its money when selecting IT vendors and system integrators? What specific measures is DHS using to measure success for products delivered by IT vendors and system integrators?

Response:

DHS plans to follow OMB's Competition Framework for Financial Management Lines of Business Migrations issued on May 22, 2006. DHS shall select a service provider from either federal service providers designated by OMB or from commercial vendors. This ensures the agency will obtain bids from a large pool of qualified providers, which results in the most competitive bid. After selecting a provider, DHS will monitor provider performance using the OMB guidance on earned value management (EVM), see OMB Memorandum M-05-23, Improving Information Technology (IT) Project Planning and Execution. DHS's EVM System shall be compliant with the guidelines under ANSI/EIA STD-748.

c. Also what has DHS done to make sure the financial management system consolidation doesn't experience the same problems that were faced in the previous attempt? What is the most optimistic and pessimistic cost and delivery date for DHS to consolidate all of their financial management systems?

Response:

DHS has learned from past experience. For instance, DHS will not rebuild requirements for its new system, Transformation and Systems Consolidation (TASC) from scratch as it did with its previous attempt, Electronically Managing Enterprise Resources for Government Effectiveness and Efficiency (eMerge2). The new acquisition strategy is not a build strategy, but rather the adoption of an existing federal capability. A Request for Information (RFI) was released to industry in May, 2008. Twenty industry responses were received and ten meetings held with industry with DHS component representation attending. The RFP will be released on September 30, 2008. The award date will be in Q2 2009. In addition, DHS will rely on the standard business processes developed by FSIO. The Independent Government Cost Estimate (IGCE) is not currently available for public release as the Department is in an acquisition sensitive timeframe. The Department can provide this information once the bids are received.

d. I understand that there are several IT vendors that provide financial system solutions for DHS. What are the benefits for using these multiple vendors in the short and long term? And is there a benefit for having multiple vendors in comparison to just one?

Response:

We understand that DHS is moving forward with a full-and -open competition and the final award will be made to a single vendor. The full and open competition will give DHS an opportunity to maximize value by considering alternative solutions and selecting the best available federal or commercial provider or providers.

e. Lastly, how is DHS leveraging the current financial management systems that have already received a clean audit opinion?

Response:

DHS has experienced some success with its components, such as CBP, which received a clean audit opinion. DHS will consider current CBP standard business processes as they move forward with the systems consolidation effort. The sound financial management practices developed in CBP could be extended to other agencies within DHS.

REPORT CARD

PASS

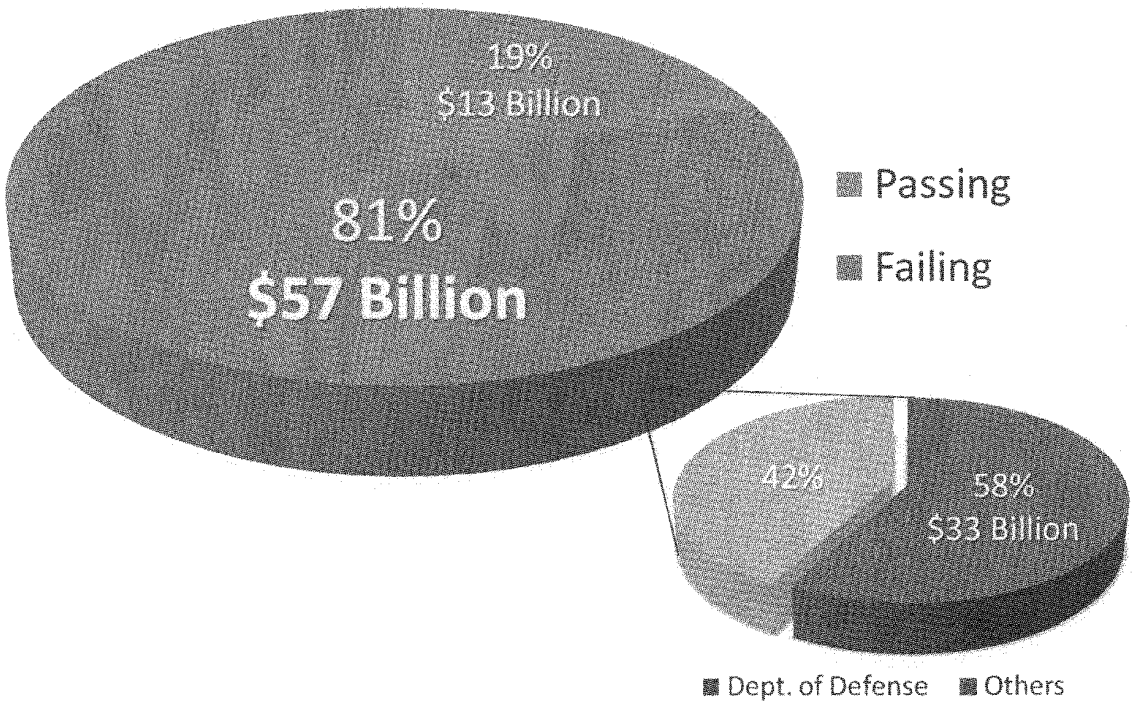
NAME: Federal Government
DATE: FY 2009

Agency	Score	Grade	FY 2009 IT Budget
Department of Housing and Urban Development	100%	A+	$[illegible]13,0[illegible]0,000
National Science Foundation	100%	A+	$83,000,000
Smithsonian Institution	100%	A+	$66,000,000
Social Security Administration	99%	A+	$1,139,000,000
Department of Energy	93%	A-	$2,038,000,000
Office of Management and Budget	92%	A-	$5,000,000
National Aeronautics and Space Administration	90%	A-	$1,874,000,000
National Archives and Records Administration	90%	A-	$136,000,000
General Services Administration	88%	B	$558,000,000
Environmental Protection Agency	87%	B	$455,000,000
Department of Transportation	83%	B-	$2,981,000,000
Department of State	79%	C+	$1,045,000,000
Small Business Administration	74%	C	$85,000,000
Department of Justice	69%	D+	$2,750,000,000

REPORT CARD

FAIL

NAME: Federal Government
DATE: FY 2009

Agency	Score	Grade	FY 2009 IT Budget
Department of Labor	64%	F	$542,000,000
Department of the Treasury	56%	F	$3,061,000,000
Office of Personnel Management	55%	F	$89,000,000
Department of Education	53%	F	$593,000,000
Department of Health and Human Services	50%	F	$5,681,000,000
Department of Homeland Security	44%	F	$5,317,000,000
Department of Veterans Affairs	40%	F	$2,534,000,000
Corps of Engineers	40%	F	$392,000,000
Nuclear Regulatory Commission	40%	F	$155,000,000
Department of Commerce	39%	F	$2,295,000,000
US Agency for International Development	39%	F	$103,000,000
Department of the Interior	38%	F	$965,000,000
Department of Defense	37%	F	$33,032,000,000
Department of Agriculture	36%	F	$2,429,000,000

Percent of IT Budget in Danger of Failing