TURNING THE TORTOISE INTO THE HARE: HOW THE FEDERAL GOVERNMENT CAN TRANSITION FROM OLD ECONOMY SPEED TO BECOME A MODEL FOR ELECTRONIC GOVERNMENT

HEARING

BEFORE THE

SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY

OF THE

COMMITTEE ON GOVERNMENT REFORM

HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTH CONGRESS

SECOND SESSION

MARCH 21, 2002

Serial No. 107–164

Printed for the use of the Committee on Government Reform

Available via the World Wide Web: http://www.gpo.gov/congress/house
http://www.house.gov/reform

U.S. GOVERNMENT PRINTING OFFICE

85–123 PDF WASHINGTON : 2003

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2250 Mail: Stop SSOP, Washington, DC 20402–0001

CONTENTS

Page

Hearing held on March 21, 2002 1

Statement of:

Hite, Randy C., Director, Information Technology Systems Issues, U.S. General Accounting Office, accompanied by Dave McClure, Director, Information Technology Management Issues, U.S. General Accounting Office; and Mark Forman, Associate Director for Information Technology and E-Government, Executive Office of the President, OMB 12

Holcomb, Lee, CIO, Co-Chair, Federal Architecture and Infrastructure Committee, Federal CIO Council, NASA; Debra Stouffer, Deputy Chief Information Officer for IT Reform, Co-Chair, Best Practices Committee, Federal CIO Council, HUD; Mayi Canales, Deputy CIO, E-Government Portfolio Coordinator, Federal CIO Council, Department of Treasury; Laura Callahan, Deputy CIO, Information Technology Center, Co-Chair, Workforce & Human Capital for IT, Federal CIO Council, Department of Labor; Janet Barnes, CIO, OPM; and Lloyd Blanchard, Chief Operating Officer, Office of Management & Administration, Office of the Associate Deputy Administrator, Small Business Administration 68

Letters, statements, etc., submitted for the record by:

Barnes, Janet, CIO, OPM, prepared statement of 118

Blanchard, Lloyd, Chief Operating Officer, Office of Management & Administration, Office of the Associate Deputy Administrator, Small Business Administration, prepared statement of 136

Callahan, Laura, Deputy CIO, Information Technology Center, Co-Chair, Workforce & Human Capital for IT, Federal CIO Council, Department of Labor, prepared statement of 108

Canales, Mayi, Deputy CIO, E-Government Portfolio Coordinator, Federal CIO Council, Department of Treasury, prepared statement of 88

Davis, Hon. Tom, a Representative in Congress from the State of Virginia, prepared statement of 4

Forman, Mark, Associate Director for Information Technology and E-Government, Executive Office of the President, OMB, prepared statement of 46

Hite, Randy C., Director, Information Technology Systems Issues, U.S. General Accounting Office, prepared statement of 15

Holcomb, Lee, CIO, Co-Chair, Federal Architecture and Infrastructure Committee, Federal CIO Council, NASA, prepared statement of 71

Stouffer, Debra, Deputy Chief Information Officer for IT Reform, Co-Chair, Best Practices Committee, Federal CIO Council, HUD, prepared statement of 82

Turner, Hon. Jim, a Representative in Congress from the State of Texas, prepared statement of 10

TURNING THE TORTOISE INTO THE HARE: HOW THE FEDERAL GOVERNMENT CAN TRANSITION FROM OLD ECONOMY SPEED TO BECOME A MODEL FOR ELECTRONIC GOVERNMENT

THURSDAY, MARCH 21, 2002

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY,
COMMITTEE ON GOVERNMENT REFORM,
Washington, DC.

The subcommittee met, pursuant to notice, at 2 p.m. in room 2154, Rayburn House Office Building, Hon. Tom Davis of Virginia (chairman of the subcommittee) presiding.

Present: Representatives Davis and Turner.

Mr. DAVIS. Good afternoon and welcome to the Subcommittee on Technology and Procurement Policies oversight hearing on Electronic Government in Enterprise Architecture.

Before I continue, I ask unanimous consent that all Members' and witnesses' written opening statements be included in the record. Without objection, so ordered.

I ask unanimous consent that all articles, exhibits and extraneous or tabular material referred to be included in the record. Without objection, so ordered.

After a number of years in which there have been so many calls for the Federal Government to reinvent its delivery of services by creating a digital government, this hearing will specifically examine both the context and the direction of electronic government at the Federal level. We will do this by examining the e-government and IT initiatives that are being developed at the direction of the President by the Office of OMB through the newly created Office of Associate Director for Information Technology and E-Government, a position currently held by Mr. Mark Forman. We will also be hearing from GAO about the use of enterprise architecture across the government and how enterprise architecture is being implemented by OMB and by the managing partner agencies charged with carrying out the 24 e-government initiatives approved by the President's Management Council last fall.

In addition, the subcommittee will be hearing from the same Federal agencies regarding their effort to streamline their respective information resources management infrastructure in order to improve the effectiveness and efficiency of government processes in support of electronic government.

As electronic commerce and e-business transactions become commonplace, providing for end to end transactions, the demand for electronic government has increased. In August 2000, a Harris/Teeter Poll conducted for KPMG and the Council for Excellence in Government found that 75 percent of the public expects the Internet to improve its ability to get information from Federal agencies and 60 percent expect e-government to have a strong, positive effect on overall government operations.

In 2000, Mr. Turner and I each introduced legislation separately that would have established a Chief Information Officer [CIO] for the Federal Government as an independent Cabinet level office. In considering that legislation in a hearing before the then-Subcommittee on Government Management, Information and Technology in September 2000, we learned about the problems the Federal Government is facing in transforming itself from an organization that manages information in a discrete, stovepipe fashion to one that simplifies and unifies information agencies governmentwide. Those challenges potentially hinder the Government's ability to reap the cost of service benefits we hope to achieve through IT modernization efforts and employment of electronic government.

Congressman Turner has introduced legislation in this Congress to create the Office of CIO within OMB and establish an e-government fund. During his first year in office the President established electronic government as one of the five key elements of his management and performance plan. As the administration's leading Federal e-government executive, Mr. Forman is responsible for carrying out the President's goal of developing a citizen-centric government through the use of the Internet and for formulating the Federal Government's IT policy.

To carry out this objective, Mr. Forman has led an interagency task force since July 2001, whose purpose is to identify high payoff e-gov opportunities to achieve strategic improvements in citizen access to information, reduce burdens on businesses, strengthen intergovernmental relationships, and advance internal government efficiency.

In that vein, Mr. Forman has moved forward with the administration's Enterprise Information Management and Integration Initiative, using the principles of "unify and simplify" in identifying e-government priorities. In October, the President's Management Council selected 23 cross-agency e-government initiatives for funding, and added a 24th payroll processing initiative this past January. Last month, OMB issued its E-Government Strategy Report, which lays out the implementation road map for developing and deploying those 24 initiatives. In addition to gaining a better understanding about the e-government initiatives and plans for implementation, the subcommittee will also take this opportunity to hear from GAO on its recent report on the use of enterprise architecture by the Federal Government.

As an essential tool for effectively and efficiently engineering business processes and for implementing and evolving their supporting systems, enterprise architecture is regarded by many as a fundamental component of IT modernization and, in turn, of the implementation of electronic government. Transforming our government stovepipe information structure to a cost- and process-effi-

cient network is critical to the successful deployment of the administration's 24 e-government initiatives, and IT modernization efforts overall. Yet, if these objectives are pursued without determining in advance the underlying architecture, we could be undermining our goal of better utilizing technology across the traditional boundaries of bureaucracy.

We will be using this forum to learn from Mr. Forman, and the lead agency managers, of the selection of the 24 e-government initiatives on how they are using EA principles to approach the creation and deployment of these initiatives. We will also learn how agencies are using IT overall to retool their information management and architecture to achieve cross-functional integration that results in efficiency and accountability enterprise-wide.

We will review how Federal agencies address enterprise-wide issues that have traditionally been dealt with bureau by bureau or department by department. We will hear how they are using EA principles to guide their modernization efforts. In addition, information security is an essential component of any successful electronic government effort. The citizen and private sector confidence in the protection and dissemination of information shared by the Government is equally critical. Therefore, as part of this discussion, we would like to understand the agencies' processes for identifying and implementing proper security and privacy policies for information systems, both overall and in respective systems that will be used for e-government initiatives.

Throughout the past year, this subcommittee has been committed to exploring ways the Government can obtain the best value for taxpayer dollars while providing the most efficient services to citizens. This hearing will be no different in asking how the Government is reforming itself with respect to IT investments in the information infrastructure that will support electronic government. We will explore future legislative initiatives that will facilitate cross-agency cooperation for simplifying and unifying redundant business and architecture, particularly in support of e-government initiatives.

Today, the subcommittee will hear testimony from the following witnesses: Mr. Randy Hite, Director, IT Systems Issues, GAO, accompanied by Mr. Dave McClure, Director, IT Management Issues, GAO; Mr. Mark Forman, Associate Director, Information Technology and E-Government, OMB; Mr. Lee Holcomb, Co-Chair, Federal Architecture and Infrastructure Committee, Federal CIO Council and CIO at NASA; Ms. Debra Stouffer, Federal Enterprise Architecture Program Manager on detail to OMB and Deputy CIO at HUD on temporary leave; Ms. Mayi Canales, Deputy CIO, Department of Treasury; Dr. Laura Callahan, Deputy CIO, Department of Labor; Ms. Janet Barnes, CIO, OPM; and Dr. Lloyd Blanchard, CIO, Small Business Administration.

I will yield to Representative Turner for his opening statement.

[The prepared statement of Hon. Tom Davis follows:]

Chairman Tom Davis
Subcommittee on Technology and Procurement Policy
Oversight Hearing on

"Turning the Tortoise into the Hare: How the Federal Government Can Transition from Old Economy Speed to Become a Model for Electronic Government"

March 21, 2002

Good afternoon and welcome to the Subcommittee on Technology and Procurement Policy's oversight hearing on electronic government and enterprise architecture.

After a number of years in which there have been many calls for the Federal government to "reinvent" its delivery of services by creating a "digital government," this hearing will specifically examine both the context and the direction of electronic government at the Federal level. We will do this by examining the e-government and IT initiatives that are being developed at the direction of the President by the Office of Management and Budget (OMB) through the newly-created office of Associate Director of Information Technology and E-Government, a position held by Mr. Mark Forman.

We will also be hearing from the General Accounting Office (GAO) about the use of enterprise architecture (EA) across the Federal Government, and how enterprise architecture is being implemented by OMB and by the managing partner agencies charged with carrying out the 24 e-gov initiatives approved by the President's Management Council last fall. In addition, the Subcommittee will be hearing from these same federal agencies regarding their efforts to streamline their respective information resources management infrastructure in order to improve the effectiveness and efficiency of government processes in support of electronic government.

It is readily apparent to all of us that in a short period of time, the Internet has revolutionized our way of life at home and in the workplace. Since the Internet has become a matter of common parlance, the concept of conducting transactions and communicating completely online without the need for paper has quickly emerged. In 1993, three million people were connected to the Internet; by 1999, that number had exploded to 80 million Americans and

approximately 200 million people worldwide. For the private sector, the Internet is an integral component of business, a low-cost communications and transactional network that is both time and cost-efficient. It is estimated that 56% of U.S. companies were selling their products online by 2000, up from 24% in 1998.

As electronic commerce and "e-business" transactions have become commonplace, providing for end-to-end transactions, the demands for "electronic government" have increased. An August 2000 Harris/Teeter poll conducted for KPMG and the Council for Excellence in Government, found that 75% of the public expects the Internet to improve its ability to get information from federal agencies, and 60% expect e-government to have a strong positive effect on overall government operations.

The term "electronic government" has also evolved to implicate a number of uses. At times, it may refer to the overall use of technology in government information systems. At other times, it may simply refer to the use of web-based Internet applications to provide services and information.

In 2000, Mr. Turner and I each introduced legislation separately that would have established a Chief Information Officer (CIO) for the Federal Government as an independent Cabinet-level office. In considering that legislation in a hearing before the then-Subcommittee on Government Management, Information, and Technology in September 2000, we learned about the problems the federal government is facing in transforming itself from an organization that manages information in a discrete, stovepipe fashion, to one that simplifies and unifies information agency- and government-wide. Those challenges potentially hinder the government's ability to reap the cost and service benefits we hope to achieve through IT modernization efforts and the deployment of electronic government. Congressman Turner has introduced legislation this Congress that would create the Office of CIO within OMB and establish an E-Government Fund

During his first year in office, the President established electronic government as one of the five key elements of his Management and Performance Plan. As the Administration's "leading federal e-government executive," Mr. Forman is responsible for carrying out the President's goal of developing a more citizen-centric government through the use of the Internet and for formulating the federal government's IT policy. To carry out this objective, Mr. Forman has led an interagency task force since July 2001, whose purpose is to identify high payoff e-gov opportunities that will achieve strategic improvements in citizen access to information, reduce burdens on businesses, strengthen intergovernmental relationships, and advance internal government efficiency.

In that vein, Mr. Forman moved forward with the Administration's Enterprise Information Management and Integration initiative, using the principles of "unify and

simply" in identifying e-government priorities. He headed the E-Government Task Force which solicited ideas and narrowed down over 160 e-government proposals to 30, which it then reported to the President's Management Council last fall. **On October 3, 2001, the Council selected 23 of the 30 cross-agency e-gov initiatives for funding, and added a 24th payroll processing initiative this past January. Last month, OMB issued its E-Government Strategy Report which lays out the "implementation roadmap" for developing and deploying those 24 initiatives.**

In addition to gaining a better understanding about the e-gov initiatives and plans for their implementation, the Subcommittee will also take this opportunity to hear from the GAO on its recent report on the use of enterprise architecture by the Federal government. (This report was requested by Chairman Davis and Ranking Member Jim Turner of the Subcommittee, as well as Committee Chairman Burton, Ranking Member Henry Waxman, and Senators Joe Lieberman and Fred Thompson.) **As an "essential tool for effectively and efficiently engineering business processes and for implementing and evolving their supporting systems," enterprise architecture is regarded by many as a fundamental component of IT modernization and in turn, of the implementation of electronic government.** John Zachman, widely recognized as the originator of the EA concept in the mid-1980s, described EA as a framework for defining and controlling the integration of systems and their components.

Transforming our government's stovepipe information structure to a cost- and process-efficient network is critical to the successful deployment of the Administration's 24 e-gov initiatives and IT modernization efforts overall. Yet if these objectives are pursued without determining in advance the underlying architecture, we may be undermining our goal of better utilizing technology across the traditional boundaries of bureaucracy. We will be using this forum to learn from Mr. Forman, and the lead agency managers of a selection of the 24 e-gov initiatives on how they are using EA principles to approach the creation and deployment of these initiatives. We will also be hearing from Mr. Lee Holcomb, the Co-Chair of the Federal CIO Council's Federal Architecture and Infrastructure Committee, which last year released "A Practical Guide to Federal Enterprise Architecture" to provide assistance to agencies for implementing integrated systems architectures.

One of our necessary tasks in managing our information resources is the constant search for and evaluation of, redundancies in IT investments, data collections, and the use of human capital, among other items. It is my concern that if we do not improve the effectiveness and efficiency of government operations and programs from within--on both an intra and inter-agency basis--the financial and time-saving benefits we expect to gain from electronic government will never be realized. If we do not have, in a sense, "an inventory" of each of our information systems, and an understanding of how they may interoperate with other information systems, we

cannot provide the best service possible to citizens and we will fail to achieve the cost-savings that many envision will occur with e-government.

For this reason, **we will also learn how agencies are using IT *overall* to retool their information management architecture to achieve cross-functional integration that results in efficiency and accountability enterprise-wide. We will review how federal agencies address enterprise-wide issues that have traditionally been dealt with bureau by bureau and/or department by department. And we will hear how they are also using EA principles to guide their modernization efforts.**

In addition, information security is an essential component of any successful electronic government effort. Citizen and private sector confidence in the protection and dissemination of information shared with the government is equally critical. Understanding information security risks and implementing cost-effective security controls commensurate with these risks are essential elements of compliance with the Computer Security Act, the Government Information Security Reform Act, and the Paperwork Reduction Act. **Therefore, as part of this discussion, we would like to understand the agencies' processes for identifying and implementing proper security and privacy policies for information systems, both overall and with respect to systems that will be used for e-government initiatives.**

Throughout this past year, this Subcommittee has been committed to exploring ways that the government can obtain the best value from taxpayer dollars while providing the most efficient services to citizens. This hearing will be no different in asking how the government is reforming itself with respect to IT investments and the information infrastructure that will support electronic government. We will explore future legislative initiatives that would facilitate cross-agency cooperation for simplifying and unifying redundant business architectures, particularly in support of e-government initiatives.

The Subcommittee will hear testimony from the following witnesses: Mr. Randy C. Hite, Director, Information Technology Systems Issues, GAO, accompanied by Mr. Dave McClure, Director, Information Technology Management Issues, GAO; Mr. Mark Forman, Associate Director for Information Technology and E-Government, Office of Management and Budget; Mr. Lee Holcomb, Co-Chair, Federal Architecture and Infrastructure Committee, Federal CIO Council and Chief Information Officer, National Aeronautics and Space Administration; Ms. Debra Stouffer, Federal Enterprise Architecture Program Manager (on detail to OMB), Deputy Chief Information Officer for IT Reform, Department of Housing and Urban Development (on leave), and Co-Chair, Best Practices Committee, Federal CIO Council; Ms. Mayi Canales, Deputy Chief Information Officer, Department of Treasury, and E-Government, Portfolio Coordinator, Federal CIO Council; Dr. Laura Callahan, Ph.D., Deputy Chief Information Officer, Information Technology Center, Department of Labor, and Co-Chair, Workforce & Human Capital for IT, Federal CIO Council; Ms. Janet Barnes, Chief Information Officer, Office of

Personnel Management; *and* Dr. Lloyd Blanchard, Chief Operating Officer, Office Of Management & Administration, Office of the Associate Deputy Administrator, Small Business Administration

Mr. TURNER. Thank you.

I appreciate the hearing we are having today and I appreciate your leadership in this particular area. I think all of us fully understand the information technology revolution has transformed our society and that it has certainly transformed the way we do business in the private sector and in government. I also think we have the commonly held view that in government, we have not moved as rapidly in the transformation as has the private sector. It is important that we do so, not only because we can save millions of taxpayer dollars if we do, but we can make government more accessible and user friendly than it is today.

This committee had the opportunity to hear a witness in a previous hearing, Mr. Tom Siebel of the Siebel Corp. He presented a bit of testimony that was quite interesting because he had reviewed the information available to the various agencies of government regarding the terrorists who boarded those planes on September 11th and had drawn at least the tentative conclusion that perhaps with the better utilization of information technology that we would have known enough to have prevented that terrible tragedy.

Not only are we now engaged in an effort to make government more efficient, more user friendly, but perhaps to make government better able to preserve and protect our own personal security. So this is an important topic and one that I feel this committee has a very important role in pursuing.

I think we all understand that we need to make some progress and perhaps need legislation. As the chairman mentioned, I introduced what is known as the E-Government Act of 2001 which was introduced in the Senate by Senator Lieberman. That bill as well as the bill the chairman has introduced in the past are all designed to try to bring us more quickly into the 21st century with regard to our utilization of information technology.

The bill that I introduced with Senator Lieberman was heard this morning in the Senate Governmental Affairs Committee and reported out in an amended form. I haven't had the opportunity to take a look at it but I would say I hope we can all work together to move that or something similar to it forward in the legislative process.

I look forward to hearing from the witnesses today, particularly Mr. Forman as he outlines for us the efforts that the administration is making. I know you are responsible for the administration of the E-Government Fund established in the President's budget. You direct the CIO Council, advise on appointments of those CIOs of various agencies and monitor and work with those CIOs. We will look forward to hearing your report regarding the E-Government Initiative which I understand was recently approved by the President's Management Council.

I know on our second panel we have several chief information officers or deputy CIOs here as well. So this is a very timely hearing and again, I thank the chairman for scheduling it for us.

[The prepared statement of Hon. Jim Turner follows:]

Statement of the Honorable Jim Turner
Oversight Hearing: "Turning the Tortoise into the Hare: How the Federal Government Can Transition From Old Economy Speed to Become a Model for Electronic Government"

March 21, 2002

Thank you Mr. Chairman. The information technology revolution of the last decade has had a profound impact on almost all aspects of our economy and government. As the individuals responsible for providing advice and policy recommendations on information technology to federal agencies, developing and facilitating information systems, as well as evaluating and assessing those systems, federal agency Chief Information Officers play an essential role in fostering a digital government. I look forward to hearing from these witnesses on the progress being made to streamline their agencies' information resources and move toward more integrated, effective, and well-planned e-government.

I also look forward to hearing from Mark A. Forman, Associate Director for Information Technology and E-Government in the Office of Management and Budget. He is responsible for administering the e-government fund established in the President's budget to generate interagency e-government innovation. He also directs the activities of the CIO Council, advises on the appointments of agency CIOs, and monitors and consults on agency technology efforts. I welcome Mr. Forman's comments on the e-government initiatives which have recently been approved by the President's Management Council.

When it comes to information technology, effective use of the internet, and other cutting edge information resources, the federal government is playing catch-up with the private sector, which has been able to integrate the new technology into its day-to-day operations more rapidly and effectively than we have. And

while we are playing catch-up, we're losing money through inefficiency, and we're wasting the time of millions of citizens, who deserve the modern effective government information technology can help us achieve.

Along with Senator Lieberman, I've introduced the E-Government Act of 2001, which I believe would help us move toward that goal by improving leadership and funding, as well as addressing other critical issues like privacy, training, and accessability. I would note for the record that the Senate Governmental Affairs Committee reported out an amended version of the E-government act just this morning. I have not yet had a chance to review the reported bill, so I won't comment on it in detail. But I would say to the Chairman, and to OMB, that I am ready to work with you to craft a bill which will advance the e-government activities of the federal government. I believe the measure holds great promise for improving government and its relationship to American citizens.

I thank the chairman for holding a hearing on this critically important issue, and I look forward to working with him to help realize the true promise of e-government for America.

Mr. DAVIS. Thank you, Mr. Turner.

I will call our first panel witnesses, Randy Hite and Mark Forman. It is the policy of the committee that all witnesses be sworn before you testify.

[Witnesses sworn.]

Mr. DAVIS. To afford sufficient time for questions, if the witnesses would try to limit themselves to no more than 5 minutes. We have your testimony and have looked it over and have questions. All written statements will be a part of the permanent record.

I will begin with Mr. Hite followed by Mr. Forman. Welcome, and thank you for being here.

STATEMENTS OF RANDY C. HITE, DIRECTOR, INFORMATION TECHNOLOGY SYSTEMS ISSUES, U.S. GENERAL ACCOUNTING OFFICE, ACCOMPANIED BY DAVE MCCLURE, DIRECTOR, INFORMATION TECHNOLOGY MANAGEMENT ISSUES, U.S. GENERAL ACCOUNTING OFFICE; AND MARK FORMAN, ASSOCIATE DIRECTOR FOR INFORMATION TECHNOLOGY AND E-GOVERNMENT, EXECUTIVE OFFICE OF THE PRESIDENT, OMB

Mr. HITE. Thank you for the opportunity to participate in today's hearing.

My responsibilities at GAO include our work on enterprise architecture and accompanying me today is Dave McClure, whose responsibilities include e-government.

Before summarizing our statement, let me briefly describe what enterprise architecture and e-government are in lay terms. In a nutshell, enterprise architecture is a high level description of how an entity operates today, how it intends to operate tomorrow and how it plans to get from today to tomorrow. An entity can be an organization such as a Federal agency or it can be a functional or mission area that cuts across more than one agency such an e-government initiative.

Also, it is important to understand that this architecture is more than merely a technical road map and, in fact, describes the entity's operations in both business and technology terms. Metaphorically, an enterprise architecture can be compared to the plans, models, construction blueprints, building codes and materials standards that would be used to construct a modern skyscraper.

Federal e-government refers to a type of business asset or resource consisting of people, process and technology that leverages the power of digital technologies, particular Web-based applications so that Federal agencies can better serve their four customer bases, those being citizens, private businesses, other levels of government and other Federal agencies.

With these definitions as the backdrop, our testimony addresses four questions: how can we define and measure the state of enterprise architecture and maturity; what is the state of maturity in the Federal Government; what role should these architectures play in implementing e-government; and what leadership steps can OMB take to ensure needed progress is made in both of these areas?

The answer to the first two questions is summarized graphically on the briefing board to my right. We also provided each of you a handout on this as well. As represented on the horizontal axis, we have defined five stages of architecture maturity beginning with Stage 1, the lowest level, and progressing to Stage 5, the highest level. We have also surveyed 116 Federal agencies on their architecture efforts and using their responses, have rated and aggregated agencies of like maturity levels as represented on the vertical axis.

As you can see, the state of maturity can best be described as work in progress with much left to be accomplished. In particular, I would draw your attention to the fact that about one-half of the agencies are only at Stage 1, meaning either there is no commitment to developing an architecture or the architecture efforts underway are ad hoc and do not provide a recipe for success. Why is this the case? Our survey results point to four interrelated reasons, all of which can be traced to a lack of agency head commitment sponsorship.

These are: one, lack of funding; two, limited management understanding; three, parochialism; and four, a shortage of skilled staff. Ironically, these are some of the very challenges that OMB faces in implementing its portfolio of 24 initiatives being pursued under the President's management agenda to expand e-government.

Which brings me to the answer to the question to the third question our testimony addresses, the role of enterprise architecture in implementing e-government. As we testified last year, past mistakes in implementing IT solutions remind us of the risk going forward. The key to successfully mitigating these risks is in employing proven management practices. These practices can be viewed as the horse that pulls the cart containing the e-government initiatives.

Historically, however, agencies have all too often put the cart before the horse, forging ahead on IT investments before putting these management practices in place. OMB's success in implementing its e-government initiatives depends in large part on not letting this happen. One of these practices, and I underscore one, is using enterprise architecture.

To its credit, OMB's e-government strategy includes an architecture project. The real challenge, however, lies ahead in actually developing, validating and enforcing the architectures which brings me to the answer to the final question addressed in our testimony, OMB's leadership steps. Clearly, OMB plays a critical leadership role in achieving enterprise architecture and e-government progress. Central to this role will be ensuring that both agency specific investments in IT and governmentwide investments in e-government are made within the context of these architectures.

To date, OMB has demonstrated leadership on both fronts but the importance of these investments requires it to go further. Accordingly, we have made recommendations to OMB aimed at strengthening its enterprise architecture leadership to the adoption of the maturity framework we developed, use of the baseline agency architecture information that we collected, and periodic maturation reporting, all with the intent of bringing greater attention and thus meaningful progress to this very important area.

While these recommendations were made within the context of agency specific architectures and investments, they have applicability to OMB-led e-government initiatives as well. We encourage OMB to move swiftly in accepting and implementing these recommendations.

This concludes my statement. I will be happy to answer any questions.

[The prepared statement of Mr. Hite follows:]

United States General Accounting Office

GAO

Testimony

Before the Subcommittee on Technology and Procurement Policy, Committee on Government Reform, House of Representatives

For Release on Delivery
Expected at
2 p.m. EST
Thursday,
March 21, 2002

INFORMATION TECHNOLOGY

OMB Leadership Critical to Making Needed Enterprise Architecture and E-government Progress

Statement of Randolph C. Hite
Director, Information Technology Architecture and Systems Issues

and

David L. McClure
Director, Information Technology Management Issues

Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to discuss the status and relationship of two critically important components of the federal government's efforts to improve performance and accountability through information technology (IT)—enterprise architectures and electronic (e-) government.

Enterprise architectures are high-level blueprints for transforming how a given entity, whether it be a federal agency or a federal function that cuts across agencies, operates. Without enterprise architectures to guide and constrain IT investments, such as e-government initiatives, stovepipe operations and systems can emerge, which in turn can lead to needless duplication, incompatibilities, and additional costs. E-government refers to a mode of operations (using people, process, and technology—particularly Web-based Internet technology) to enhance access to and delivery of government information and service to citizens, business partners, employees, other agencies, and other levels of government. It has the potential to help build better relationships between the government and its customer bases by making interaction smoother, easier, and more efficient. Together, enterprise architectures provide a vital means to a desired end—successful delivery of e-government applications, which in turn promise improved government performance and accountability.

This hearing on enterprise architectures and e-government is timely for two reasons. First, the president has made expanding e-government integral to his recent five-part management agenda for making the federal government more focused on citizens and results. Under the Office of Management and Budget's (OMB) leadership, the president's fiscal year 2003 budget proposes 24 e-government initiatives, most involving multiple agencies. These initiatives have laudable goals, including elimination of redundant, nonintegrated business operations and systems that, according to OMB, could produce several billions of dollars in savings from improved operational efficiency and, perhaps even more important, improved service to citizens, private-sector businesses, and state and local governments.

At the same time, these initiatives face various challenges, one of which is the second reason for the timeliness of this hearing. That is, the success of these initiatives hinges in large part on whether

they are pursued within the context of enterprise architectures. Currently, approved architectures for most of these initiatives do not yet exist. Overcoming this obstacle would be a formidable undertaking even if federal agencies were now successfully using enterprise architectures to manage their respective operational and technological environments. Unfortunately, this is not the case, as our recent report for this subcommittee and others shows.[1]

Our testimony today will address

- our framework for advancing and measuring enterprise architecture management maturity,
- a snapshot of the state of enterprise architecture management maturity across the federal government,
- the role of enterprise architectures in the successful implementation of e-government initiatives, and
- the need for strong OMB leadership in helping the maturity of enterprise architecture management for both individual agencies and federal e-government initiatives.

Hierarchical in nature, our initial version of a management framework for enterprise architecture management maturity[2] defines five distinct stages. Associated with each are practices that constitute the core elements of effectively managing any endeavor—namely, practices that (1) demonstrate an enterprise architecture commitment, (2) provide the capability to meet this commitment, (3) demonstrate satisfaction of the commitment, and (4) verify satisfaction of the commitment.

[1] U.S. General Accounting Office, *Information Technology: Enterprise Architecture Use across the Federal Government Can Be Improved*, GAO-02-6 (Washington, D.C.: Feb. 19, 2002). This report was addressed to the Senate Committee on Governmental Affairs and the full House Committee on Government Reform, as well as this subcommittee.

[2] Our framework is based on the core elements found in *A Practical Guide to Federal Enterprise Architecture* (version 1.0), published by the federal Chief Information Officers Council in February 2001, and developed in collaboration with us and others.

Employing this framework, we analyzed 116 agencies' self-reported architecture management information, and produced a snapshot in time of the federal government's state of affairs. This snapshot shows that architecture use in the federal government is largely a work in progress, with much left to be accomplished. Nevertheless, there are reasons for optimism, and our recent work at selected agencies shows at least pockets of progress. One factor accounting for the overall immature state of affairs has been that agency leaders have not traditionally understood the purpose and value of enterprise architectures, thus not giving them the priority attention they deserve and require.

E-government applications have already been introduced in federal agencies. As these applications evolve and become more sophisticated, resulting in fundamental business process transformation in federal agencies, and as they extend beyond a single federal agency, their success will become more dependent on whether they are defined and introduced within the context of enterprise architectures.

OMB has been a proponent of enterprise architectures, and has recently devoted increased attention to them; in moving forward, however, it can and should play a larger role. We believe that the tools presented in our report—the maturity framework itself and benchmark data about 116 departments, component agencies, and independent agencies—provide important baseline information against which targeted improvement across the government can be defined and measured. Accordingly, we have made recommendation to OMB for adopting and employing them. OMB has agreed to consider our recommendations. We believe that it should move quickly in implementing them, not only because of their importance to attaining more architecture-centric decisionmaking within individual agencies, but also because they will contribute to OMB's ability to effectively establish the architectural context needed to successfully pursue the president's e-government initiatives.

Background

Enterprise architecture development, implementation, and maintenance is a basic tenet of effective IT management. Used in concert with other IT management controls, they can greatly increase the chances for optimal mission performance. We have found that attempting to modernize operations and systems without an architecture leads to operational and systems duplication, lack of integration, and unnecessary expense. Our best practices research of successful public and private-sector organizations has similarly identified enterprise architectures as essential to effective business and technology transformation.[3]

Expanded use of e-government, which involves people, processes, and technology, is one avenue that the federal government is pursuing to transform how it does business internally and externally with citizens, private-sector businesses, and state and local governments. In fact, the president made e-government expansion one of the five key elements in his management and performance plan for making government citizen-centered, results-oriented, and market-based.

What is an Enterprise Architecture?

In simplest terms, an *enterprise* is any purposeful activity, and an *architecture* is the structure (or structural description) of anything; thus simply making an enterprise architecture a way to describe the structural composition of such activities as a federal agency or a government function that transcends more than one agency (e.g., grants management). Building on this, enterprise architectures consist of models, diagrams, tables, and narrative, which together translate the complexities of a given entity into simplified yet meaningful representations of how the entity operates (and intends to operate). Such operations are described in logical terms (e.g., business processes, rules, information needs and flows, users, locations) and technical terms (e.g., hardware, software, data, communications, and security standards and

[3] U.S. General Accounting Office, *Executive Guide: Improving Mission Performance through Strategic Information Management and Technology*, GAO/AIMD-94-115 (Washington, D.C.: May 1994).

protocols). These windows into the entity's operations are provided for the current, or "as is," environment, as well as for the target, or "to be," environment. A third element is a transition plan that charts the journey between the two.

Federal Enterprise Architecture Activities and Our Past Findings: A Brief History

The concept of enterprise architectures in the federal government can be traced back to the late 1980s, when the National Institute of Standards and Technology issued architectural guidance.[4] Shortly thereafter, our research of public and private-sector organizations identified these architectures as instrumental to organizational success in effectively leveraging IT in meeting mission goals.[5] We subsequently issued architecture guidance,[6] as did other federal entities.

The Clinger-Cohen Act of 1996,[7] which directs the chief information officers (CIOs) of major departments and agencies to develop, maintain, and facilitate the implementation of information technology architectures as a means of integrating agency goals and business processes with IT, served as an important catalyst in promoting greater awareness and use of architectures in the federal government. In response to the act, OMB, in collaboration with us, issued architecture development and implementation guidance.[8] OMB recently issued more stringent guidance directing that agency investments in IT be based on agency architectures.[9] Similarly, the CIO Council recently collaborated with us in issuing two additional guidance documents describing, respectively, assessment of whether

[4] National Institute of Standards and Technology, *Information Management Directions: The Integration Challenge*, Special Publication 500-167 (Gaithersburg, Md.: September 1989).

[5] U.S. General Accounting Office, *Meeting the Government's Technology Challenge: Results of a GAO Symposium*, GAO/IMTEC-90-23 (Washington, D.C.: February 1990).

[6] U.S. General Accounting Office, *Strategic Information Planning: Framework for Designing and Developing System Architectures*, GAO/IMTEC-92-51 (Washington, D.C.: June 1992).

[7] Clinger-Cohen Act of 1996, Public Law 104-106, section 5125, 110 Stat. 684.

[8] Office of Management and Budget, *Information Technology Architectures*, Memorandum M-97-16 (Washington, D.C.: June 18, 1997), rescinded with the update of OMB Circular No. A-130, Nov. 30, 2000.

[9] Office of Management and Budget, *Management of Federal Information Resources*, Circular No. A-130 (Washington, D.C.: Nov. 30, 2000).

agency-proposed IT investments are compliant with its enterprise architecture;[10] and an end-to-end set of steps for managing the development, implementation, and maintenance of enterprise architectures.[11]

We have been reviewing federal agencies' use of architectures since 1994, focusing initially on those agencies that were pursuing major systems modernization programs that were high-risk. These included the National Weather Service modernization,[12] the Federal Aviation Administration air traffic control modernization,[13] and the Internal Revenue Service (IRS) tax systems modernization.[14] We reported that these agencies' did not have complete architectures, and we made detailed recommendations to assist the agencies in developing, maintaining, and implementing them.

Since then, we have tracked the progress of these agencies and reviewed architecture management at other agencies, including the Department of Education,[15] the U.S. Customs Service,[16] and the Immigration and Naturalization Service.[17] We have also reviewed

[10] Chief Information Officers Council, *Architecture Alignment and Assessment Guide* (Washington, D.C.: October 2000).

[11] *A Practical Guide to Federal Enterprise Architecture,* Version 1.0.

[12] U.S. General Accounting Office, *Weather Forecasting: Systems Architecture Needed for National Weather Service Modernization,* GAO/AIMD-94-28 (Washington, D.C.: March 11, 1994).

[13] U.S. General Accounting Office, *Air Traffic Control: Complete and Enforced Architecture Needed for FAA Systems Modernization,* GAO/AIMD-97-30 (Washington, D.C.: Feb. 3, 1997).

[14] U.S. General Accounting Office, *Tax Systems Modernization: Blueprint Is a Good Start but Not Yet Sufficiently Complete to Build or Acquire Systems,* GAO/AIMD/GGD-98-54 (Washington, D.C.: Feb. 24, 1998).

[15] U.S. General Accounting Office, *Student Financial Aid Information: Systems Architecture Needed to Improve Programs' Efficiency,* GAO/AIMD-97-122 (Washington, D.C.: July 29, 1997).

[16] U.S. General Accounting Office, *Customs Service Modernization: Architecture Must Be Complete and Enforced to Effectively Build and Maintain Systems,* GAO/AIMD-98-70 (Washington, D.C.: May 5, 1998).

[17] U.S. General Accounting Office, *Information Technology: INS Needs to Better Manage the Development of Its Enterprise Architecture,* GAO/AIMD-00-212 (Washington, D.C.: Aug. 1, 2000).

the use of architectures for certain agency functional areas, such as Department of Defense financial management[18] and combat identification systems.[19] These reviews have continued to identify the absence of complete and enforced architectures as a fundamental IT management weakness, leading to agency business operations, systems, and data that are incompatible, and forcing agencies either not to share data or to depend on expensive, custom-developed interface systems to do so. In response to our recommendations, some agencies have made progress. But this progress has taken a long time, and other agencies have yet to make similar strides.

Brief Overview of E-government Efforts

As we testified in July 2001,[20] advances in the use of IT and the Internet are continuing to change the way all levels of government communicate, use and disseminate information, deliver services, and conduct business. These advances offer great potential in helping build better relationships between government and the public by facilitating timely and efficient interaction. Accordingly, governments are increasingly turning to the Internet to conduct paperless acquisitions, provide interactive electronic services to the public, and tailor or personalize information. States and localities have been in the forefront of using electronic government, at least in terms of having Web sites: a survey in the fall of 2000 found that about 83 percent of local governments had such sites, but that few were providing interactive, on-line service delivery (although they planned to do so in the future).[21] And the public is certainly on board: in a November 2001 poll, over 75

[18] U.S. General Accounting Office, *Information Technology: Architecture Needed to Guide Modernization of DOD's Financial Operations,* GAO-01-525 (Washington, D.C.: May 17, 2001).

[19] U.S. General Accounting Office, *Combat Identification Systems: Strengthened Management Efforts Needed to Ensure Required Capabilities,* GAO-01-632 (Washington, D.C.: June 25, 2001).

[20] U.S. General Accounting Office, *Electronic Government: Challenges Must Be Addressed With Effective Leadership and Management,* GAO-01-959T (Washington, D.C.: July 11, 2001).

[21] Survey conducted by the International City/County Management Association and Public Technology, Inc.

percent of all Americans reported having used a government Web site, and 90 percent favored increased government investment in information-sharing initiatives aimed at apprehending and prosecuting criminals and terrorists.[22]

Federal agencies have already implemented an array of e-government applications, including using the Internet to collect and disseminate information and forms, buy and pay for goods and services, submit bids and proposals, and apply for licenses, grants, and benefits. In fact, a study of 22 countries' e-government efforts showed that the U.S. federal government had developed an extensive on-line presence. However, this study also judged the U.S. federal government as below average with respect to e-government delivery mechanisms, such as single point of entry and customer-relations management.[23]

The Government Paperwork Elimination Act (GPEA)[24] promotes e-government expansion by requiring that by October 21, 2003, federal agencies provide the public, when practicable, the option of submitting, maintaining, and disclosing required information electronically. The act makes OMB responsible for ensuring that agencies meet this implementation deadline. OMB, in turn, required each agency, by October 2000, to develop and submit an implementation plan and schedule. In testimony last year on GPEA implementation, the director of OMB stated that "agency progress in going electronic is mixed."[25] Our own reviews of agency GPEA implementation plans found many omissions and

[22] Hart-Teeter poll reported in The Council for Excellence in Government: *E-Government: To Connect, Protect, and Serve Us* (February 2002). The nationally representative survey polled 961 American adults, including an "oversample" of 155 Internet users; it has a 3.5 percent margin of error.

[23] Accenture, *eGovernment Leadership: Rhetoric vs. Reality–Closing the Gap* (April 2001).

[24] Public Law 105-277, Div. C, title XVII, October 1998.

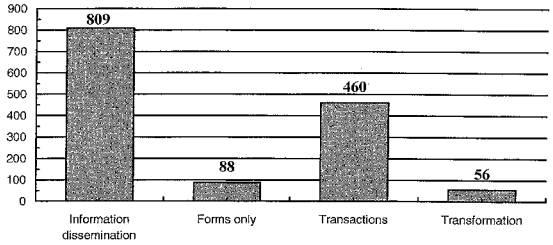
[25] House Committee on Government Reform. Statement of Mitchell E. Daniels, Jr., director, OMB, 107th Cong., 21 June 2001.

inconsistencies, which indicates that many agencies may be at risk of not meeting GPEA objectives.[25]

We later testified, in 2001, that federal agencies had implemented or were in the process of implementing a wide spectrum of e-government initiatives. This variety is illustrated by figure 1, which depicts the types of federal e-government initiatives reported by 37 departments and agencies. The category with the greatest number of initiatives is "information dissemination"—reported by the General Services Administration (GSA) and the federal CIO Council to be the least technically complex; it involves implementing applications on the Internet that make electronic information readily accessible. In the next category—"forms"—agencies provide downloadable electronic forms. The "transaction" category is a more complex implementation of e-government and includes initiatives such as submitting patent applications via the Internet. Finally, in the last category—"transformation"—the e-government initiative is expected to transform the way the government operates. For example, the Navy's Virtual Naval Hospital initiative is to provide a digital science library, and is designed to deliver expert medical information to providers and patients at the point of care.

[25] U.S. General Accounting Office, *Electronic Government: Better Information Needed on Agencies' Implementation of the Government Paperwork Elimination Act*, GAO-01-1100 (Washington, D.C.: Sept. 28, 2001) and U.S. General Accounting Office, *Electronic Government: Selected Agency Plans for Implementing the Government Paperwork Elimination Act*, GAO-01-861T (Washington, D.C.: June 21, 2001).

Figure 1: Numbers of Federal e-government Initiatives, by Type, as of January 2001.[a]

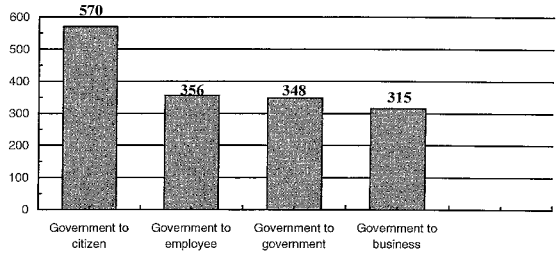


[a] *Transactions* are defined as end-to-end completed electronically. *Transformation* is defined as government's taking a global focus, government involvement being minimal, and citizens not needing to know the government entity to obtain services.

Source: General Services Administration in cooperation with the Federal CIO Council, *An Inventory of Federal e-Government Initiatives* (Washington, D.C.: January 2001).

Figure 2 depicts the constituencies targeted by the e-government initiatives; the greatest number are aimed directly at the American citizen.

Figure 2: Numbers of Federal e-government Initiatives, by Constituent Category, as of January 2001.



Source: GSA in cooperation with the Federal CIO Council, *An Inventory of Federal e-Government Initiatives* (Washington, D.C.: January 2001).

We also testified at this time that e-government implementation faced many challenges. These challenges included, among other things, the need for architectures to guide and constrain e-government investments.[27]

Subsequently, the OMB director created an e-government task force to identify priority actions aimed at improving service to individuals, service to businesses, intergovernmental affairs (state-federal), and federal agency-to-agency efficiency and

[27] The challenges we identified were (1) sustaining committed executive leadership, (2) building an e-government business case, which includes development of an enterprise architecture, (3) maintaining a citizen focus, (4) protecting personal privacy, (5) implementing appropriate security controls, (6) maintaining electronic records, (7) maintaining a robust technical infrastructure, (8) IT workforce management, and (9) ensuring uniform service to the public. See GAO-01-959T.

effectiveness. The task force produced 24 initiatives, which were approved by the president's management council in October 2001.[23] Criteria for settling on the 24 were expected value to citizens, potential for improvements in agency operational efficiency and savings, and likelihood of deploying within 18-24 months. According to the task force report, these initiatives could generate several billions of dollars in savings by reducing operating inefficiencies, redundant spending, and excessive paperwork. Further, the report states that the initiatives will provide service to citizens in minutes or hours, compared with today's standard of days or weeks, and will make available over $1 billion in savings from aligning redundant IT investments. Table 1 provides examples of these initiatives.

[23] Twenty-three initiatives were approved last October, with a 24th, *e-Payroll/HR*, being added later. An additional 25th initiative, called *Federal Architecture*, is included in OMB's February 2002 *E-Government Strategy*. It plans to map government processes by line of business.

Table 1: Sample e-government Initiatives.

Name	Function	Category	Proposed agency managing partner
EZ Tax Filing	Make it easier for citizens to file taxes in Web-enabled environment	Government to citizen	Internal Revenue Service
One-Stop Business Compliance Information	Provide information on laws and regulations; offer "wizards" and tutorials enabling citizens to determine if rules apply to them; permits can be completed, submitted, approved on-line, to extent possible.	Government to business	Small Business Administration
Disaster Assistance and Crisis Response	Serve as a single application point for all disaster assistance programs	Government to government	Federal Emergency Management Agency
Enterprise Human Resources Integration	Eliminate need for paper employee records; enable strategic decisions regarding human capital and financial resources; allow electronic transfer of data; better protect employee rights and benefits, and improve governmentwide reporting and data analysis; enable faster security clearances	Internal efficiency and effectiveness	Office of Personnel Management

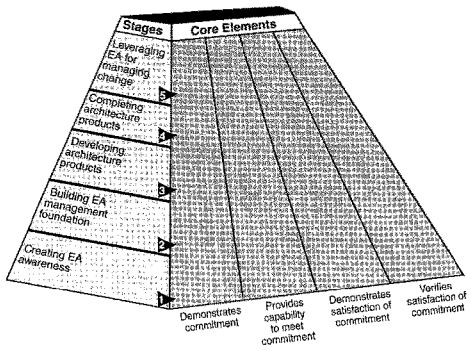
Source: *E-Government Strategy: Simplified Delivery of Services to Citizens.*

The 24 initiatives form the core of OMB's strategy for accomplishing the president' e-government expansion agenda–one of the five key elements in the president's management agenda and performance plan issued in August 2001.

A Five Stage Framework for Enterprise Architecture Maturity

As part of our recent report on the state of enterprise architecture management in the federal government,[29] we developed an initial version of a framework for defining and measuring architecture management progress. This framework defines five stages of maturity, beginning at the bottom with stage 1, *Creating EA Awareness*, and rising ultimately to stage 5, *Leveraging EA for Managing Change*. Figure 3 provides a simplified depiction of the framework.

Figure 3: A Simplified Depiction of our Enterprise Architecture Maturity Framework.



Source: GAO.

[29] GAO-02-6.

The stages build, from 1 to 5, such that each stage includes all of the elements of the prior stage. Each stage in briefly summarized below. A more detailed description is in our report.[30]

Stage 1, Creating Architecture Awareness, signifies either no architecture plans, or plans that do not yet demonstrate awareness of the architecture's value. While some core elements may have been initiated, such actions are ad hoc and unstructured, and do not provide the needed foundation for successful development.

Stage 2, Building Architecture Management Foundation, focuses on assigning roles and responsibilities and establishing plans for developing architecture products; this would include a chief architect and a staffed program office. Also required is a steering committee—with representatives of both business and IT—to oversee development. An architecture framework and automated tool should also have been selected.

Stage 3, Developing Architecture Products, addresses the creation of properly scoped components of the architecture. While products are not yet complete, plans provide for an architecture that characterizes the agency in business, data, applications, and technology terms. They also describe the current condition, target state, and sequencing plan for making the transition.

Stage 4, Completing Architecture Products, is just that; CIO-approved, properly scoped products exist for use in selecting and controlling IT investments. Further, agency policy requires that IT investments comply with the architecture.

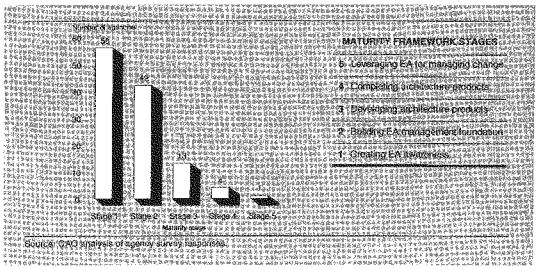
Stage 5, Leveraging the Architecture for Managing Change, entails evolving the architecture products according to an approved policy for architecture maintenance. The architecture is approved by the steering committee, investment review board, or agency head. Finally, it is being used for IT investment decisionmaking, and metrics about the architecture's use and value are being captured.

[30] GAO-02-6.

Federal Enterprise Architecture Maturity Is Limited, But Positive Signs for Progress Exist

As our report details, the state of EA maturity governmentwide is not good.[31] About half of the 116 agencies surveyed had reached at least stage 2, having a management foundation in place. This means that half had not, remaining in stage 1. At the other end of the spectrum, only 5 of the 116 agencies[32] reported that they were satisfying the core elements needed to be considered effective architecture managers, meaning that they have approved architectures that are being used to some extent in selecting and controlling IT investments (stage 4 or 5). Figure 4 depicts the number of agencies at each stage.

Figure 4: Number of Agencies at Each Stage of Enterprise Architecture Maturity, and Stage Definitions.



Despite this immature state of affairs, embedded in the agency responses to our survey are signs that near-term progress is possible. For example, about 75 percent of the agencies have established an enterprise architecture program office, and about

[31] GAO-02-6.

[32] The Customs Service, Department of the Army, Internal Revenue Service, Office of Personnel Management, and Patent and Trademark Office.

75 percent have likewise selected an architecture framework and automated tool.

Further, in several cases, agencies have satisfied some elements of a higher stage (say, stage 3), but are still categorized lower (stage 2) because, in such an example, not *all* of the stage 3 tasks have been satisfied. Over 80 percent of the agencies, in fact, reported performing one or more core elements associated with a higher stage of maturity. Specifically:

- Of the 56 agencies in stage 1, 35 are performing core elements that meet at least one criterion found in stages 2–5.
- About half of the 116 agencies must satisfy only one additional core element to advance to the next stage. In fact, 8 of the 53 agencies in this category could jump two stages by satisfying just one more element. One agency—the Defense Contract Audit Agency—could climb *three* stages, from stage 2 to stage 5, by satisfying just one additional core element: placing their EA products under configuration management.[33]

It is also important to remember that the self-reported agency data that we used are as of a specific point in time, a snapshot; responses were received by us between June and October 2001. Anecdotal evidence suggests that if such a picture were taken today, it would reflect a somewhat better situation. For example:

- The Immigration and Naturalization Service has been working to implement our recommendations for correcting its enterprise architecture management weaknesses,[34] and it has made some progress since responding to our survey in July 2001. Judged at stage 1 on the basis of its responses to us at that time, it now reports that it has satisfied the single element it was missing in order to be at stage 2–an automated architecture tool. Further, INS reports completing the initial version of its current, "as is" architecture for data, application,

[33] Configuration management is a means for ensuring the integrity and consistency of program and project products throughout their life cycles.

[34] GAO/AIMD-00-212.

and technology. It is currently focusing on developing its target ("to be") architecture, and plans to complete this work—along with a transition plan—by October 1, 2002.

- The National Aeronautics and Space Administration, judged as being at stage 2 level of maturity because it reported not satisfying one stage 3 core element—having the architecture products that it was developing under configuration control—has since addressed this weakness. Accordingly, it would now be considered stage 3.

- Judged as a stage 1 agency based on the information it reported, the Department of Veterans Affairs has made progress in two important areas necessary to building the foundation for effective EA management. Specifically, it now has an acting chief architect and is recruiting a permanent one, and is in the process of establishing an EA program management office.

Additionally, it is important to recognize that enterprise architectures are *living* documents; to be effective change management tools, they must be continuously maintained, meaning new versions will be created to reflect shifts in business priorities and strategies and emerging technologies. Such revision and update also signal agency architecture maturity progression.

IRS is a case in point. Judged a stage 4 agency on the basis of information it submitted last July and remaining so today, IRS has nonetheless continued to evolve its architecture, subsequently producing updated versions. On the basis of IRS officials' briefings to us, the latest version is more robust and content rich than previous versions, including, for example, an enterprisewide focus, multiple levels of business decomposition, and a detailed logical data model.

Enterprise Architecture Progress: Benefits and Challenges

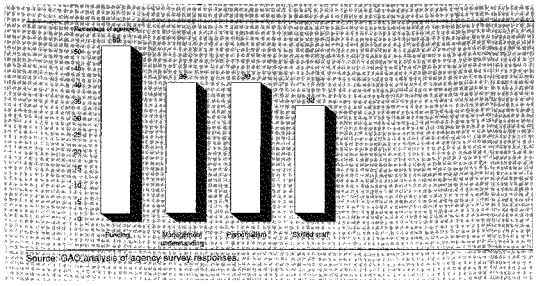
In the absence of enterprise architectures, agency operations and systems have been allowed to "morph" over time in isolation from one another, thus producing standalone, subagency islands of processes and automation. As we have repeatedly reported, the result is suboptimization of the whole (the agency) in favor of the needs of the parochial parts (agency components). These

undesirable consequences of "architecture-free" past practices point to the benefits to be realized from having and using enterprise architectures.

Our survey of agency enterprise architecture management efforts highlighted these benefits. Specifically, about 40-50 percent of the agencies responding cited the following benefits from enterprise architectures: (1) lower system-related costs, (2) enhanced productivity and improved efficiency, and (3) improved organization and change management. Further, about 25 percent cited improved systems interoperability as an additional benefit.

Given these impressive benefits, why has progress across the federal government been so meager? When asked about challenges and potential barriers to developing and using enterprise architectures, the four areas most often cited by agencies that responded to our inquiry were lack of funding, limited management understanding, parochialism, and shortage of skilled staff. Ironically, these are some of the very challenges facing OMB in implementing its e-government initiatives. (See figure 5.)

Figure 5: Federal Agencies' Frequently Identified EA Management Challenges.



E-government Success Depends on Effective Use of Enterprise Architectures

As we testified last year,[35] opportunities abound for expanded use of e-government to provide faster, more convenient, and more efficient on-line information access and services to citizens. However, many challenges exist, and past mistakes serve to remind us that IT solutions carry with them risks as well as benefits. If not managed properly, these risks can become problems that rob the nation of promised IT investment value. The key to success is to proceed in a way that employs proven IT management best practices. Metaphorically, these practices are the horse that pulls the cart that contains the e-government initiatives. In the past, federal agencies have largely allowed the cart to get ahead of the horse. For OMB's e-government initiatives to succeed, this pitfall must be avoided.

One proven best practice is developing, maintaining, and using enterprise architectures to guide and constrain IT investments. When well developed, maintained, and used, they bring clarity and understanding to the interrelationships and interdependencies among business operations and the underlying IT infrastructure and applications that support the operations. Used in concert with other IT management best practices, they can greatly increase the chances for optimizing overall mission performance. As noted, attempting to modernize operations and systems without architectures leads to operational and systems duplication, lack of integration, and unnecessary expense.

OMB's recently released e-government strategy[36] includes an e-government federal architecture project, a goal of which was to develop, by March 15, 2002, certain enterprise architecture products for each of the 24 e-government initiatives.[37] Another goal is to collect and analyze available agency architecture information with an eye toward identifying new e-government initiatives. A final goal is to develop federal (i.e., governmentwide)

[35] GAO-01-959T.

[36] *E-Government Strategy: Simplified Delivery of Services to Citizens.*

[37] See the attachment to this statement for information on all of the initiatives.

architecture products in four focus areas: homeland security, economic stimulus, social services, and "back office" operations. These latter two goals are to be accomplished by April 30, 2002.[38]

The need for progress in the federal government's use of enterprise architectures is undeniable, and OMB's central role in holding agencies accountable and helping them to progress in this area is equally obvious. At stake is not only the ability of federal agencies to effectively transform their respective operations and supporting systems environments, and thus elevate their performance, but also the ability of agencies to effectively work together in implementing integrated e-government solutions, thereby advancing governmentwide mission effectiveness and efficiency.

OMB: The Lead Actor in Achieving Enterprise Architecture and E-government Progress

To its credit, OMB has taken important steps in the last year to promote and oversee agency development and use of enterprise architectures. We support these efforts. Nevertheless, OMB's approach has been to focus only on the 24 major departments and agencies, and to rely on the unverified, nonstandard status reporting of each. Restated, OMB is not using a structured, systematic approach to define and measure architecture progress and identify associated governmentwide challenges and solutions.

Also to OMB's credit, it has committed to developing enterprise architectures for its e-government initiatives, and has set challenging goals for doing so. Aside from the ambitious time frames it has established and the sheer breadth and magnitude of these architecture efforts, a challenge facing OMB is overcoming the less-than-stellar state of the government's enterprise architecture affairs, as our testimony and recent report show, particularly for those agencies that have lead responsibility for the initiatives. For example, as table 2 indicates, 2 of the 13 lead agencies for the 24 e-government initiatives are at an enterprise architecture stage of 1, 8 are at stage 2, 1 is at stage 3, and only 2 are at stage 4. None have reached stage 5.

[38] We have not conducted work to determine OMB's progress in meeting these goals.

Table 2: Enterprise Architecture Stages of the Agencies Having "Managing Partner" Status in the 24 OMB e-government Initiatives.

Department/Agency	EA stage	Initiative(s)
Department of Commerce	3	*International Trade Process Streamlining*
Department of Education	2	*Online Access for Loans*
Federal Emergency Management Agency	2	*Disaster Assistance and Crisis Response*
GSA	2	*e-Authentication*
		e-Travel
		Federal Asset Sales
		Integrated Acquisition Environment
		USA Services
Department of Health and Human Services	1	*Consolidated Health Informatics*
		e-Grants
Department of the Interior	2	*Geospatial Information One-Stop*
		Recreation One-Stop
IRS	4	*Expanding Electronic Tax Products for Business*
		EZ Tax Filing
Department of Labor	2	*Eligibility Assistance Online*
National Archives and Records Administration	*	*Electronic Records Management*
Office of Personnel Management (OPM)	4	*Enterprise HR Integrations*
		e-Payroll/HR
		e-Training
		Recruitment One-Stop
Small Business Administration	2	*One-Stop Business Compliance Information*
Social Security Administration	2	*e-Vital*
Department of Transportation	2	*Online Rulemaking Management*
Department of the Treasury	1	*Wireless Public SAFEty Interoperable COMmunications/Project SAFECOM*

*The National Archives and Records Administration was not included in our survey due to the size of its budget.

Source: *E-Government Strategy: Simplified Delivery of Services to Citizens.*

Strong OMB leadership is especially pivotal to ensuring that both agency-specific investments in IT and governmentwide investments in e-government are made within the context of enterprise architectures. To do less jeopardizes realizing the full potential and benefits of these investments. OMB has thus far demonstrated leadership on both fronts, but the importance of these investments requires it to go farther.

Accordingly, we have made recommendations to the director of OMB aimed at strengthening its enterprise architecture leadership through adoption of the maturity framework we developed, use of the baseline agency architecture information that we collected as a maturity benchmark, and periodic maturation reporting, all with the intent of bringing greater emphasis, and thus meaningful progress, to this important area. While these recommendations were made in the context of agency-specific architectures and investments, they have relevance to the OMB-led e-government architecture project and initiatives as well. OMB has agreed to consider implementing them. We encourage OMB to move swiftly in accepting and implementing these recommendations.

* * * * *

In conclusion, federal agencies' use of enterprise architectures is mixed, but overall insufficient to support informed IT investment decisionmaking. As a result, most agencies are at risk of investing in IT solutions that will not overcome, but rather will perpetuate, longstanding incompatibilities and duplication within agency operational and systems environments. This risk is amplified for investments that involve multiple agencies, such as OMB's e-government initiatives, because they too require effectively defined and effectively implemented architectures to be successful, and the reasons that have stymied agency-specific architecture efforts are an order of magnitude greater when more than one agency is involved.

Given that effective use of enterprise architectures is a key element to successfully investing in IT solutions, the burden is on OMB as the federal government's IT management leader to ensure that agencies meet their enterprise architecture obligations and that progress is made across the federal government. To do less

risks both unwise IT spending and missed opportunities. To assist OMB in shouldering this burden, we have provided it with important tools for defining, measuring, and promoting enterprise architecture maturation across federal agencies.

Mr. Chairman, this concludes our statement. We would be pleased to answer any questions that you or other members of the subcommittee may have at this time.

Contact and Acknowledgments

Should you have any questions about this testimony, please contact us by e-mail at *hiter@gao.gov* or *mcclured@gao.gov,* or by phone at (202) 512-3439 or (202) 512-6257. Other major contributors to this testimony included Mark T. Bird, John A. de Ferrari, Michael P. Fruitman, and Pamlutricia Greenleaf.

E-Government Initiatives

The following table provides information on each of the 24 OMB-sponsored e-government initiatives.

Name	Function	Category	Proposed agency managing partner
Consolidated Health Informatics	Provides a simplified, unified system for sharing and reusing medical record information among agencies and private providers and insurers.	Government to business	Department of Health and Human Services
Disaster Assistance and Crisis Response	Serves as a single application point for all disaster assistance programs.	Government to government	Federal Emergency Management Agency
e-Authentication	Builds and enables mutual trust needed for widespread use of electronic interactions between the public and government and across governments; provides a method for satisfactorily establishing identity.	Addressing Barriers to E-Government Success	GSA
e-Grants	Creates an electronic portal for grant recipients and grant-making agencies that will streamline federal grants management.	Government to government	Department of Health and Human Services
Electronic Records Management	Provides tools and guidance agencies need to manage their records electronically.	Internal efficiency and effectiveness	National Archives and Records Administration
Eligibility Assistance Online	Provides common Internet portal for identifying government benefits programs for which citizens may be eligible; targets high-need demographic groups.	Government to citizen	Department of Labor
Enterprise HR Integration	Eliminates need for paper employee records, enables strategic decisions regarding human capital and financial resources; allows electronic transfer of HR data; better protects employee rights and benefits; and improves governmentwide reporting and data analysis; enables faster security clearances.	Internal efficiency and effectiveness	OPM
e-Payroll/HR	Simplifies/unifies payroll/human resources elements to consolidate and integrate these functions across government.	Internal efficiency and effectiveness	OPM
e-Training	Provides a repository of government-owned courseware, enabling economies of scale pricing and fostering development of communities of practice.	Internal efficiency and effectiveness	OPM
e-Travel	Provides a common travel management system for agency use.	Internal efficiency and effectiveness	GSA
e-Vital	Expands existing vital records on-line data exchange activity between the federal and state governments.	Government to government	Social Security Administration

Attachment

E-Government Initiatives

Name	Function	Category	Proposed agency managing partner
Expanding Electronic Tax Products for Business	Reduces number of tax forms that employers must file, and provides timely and accurate information and more available electronic filing.	Government to Business	IRS
E-Tax Filing	Makes it easier for citizens to file taxes in Web-enabled environment.	Government to citizen	IRS
Federal Asset Sales	Provides easier locating of asset sales, irrespective of agency involved, and allows bidding and purchasing electronically.	Government to business	GSA
Geospatial Information One-Stop	Provides access to the government's spatial data assets in one location, and promotes collaboration with state and local governments.	Government to government	Department of the Interior
Integrated Acquisition Environment	Allows agencies to share information so that procurement and other types of decisions can be more informed.	Internal efficiency and effectiveness	GSA
International Trade Process Streamlining	Creates a single site where exporters can be assisted electronically through entire export process.	Government to business	Department of Commerce
One-Stop Business Compliance Information	Provides information on laws and regulations; offers "wizards" and tutorials enabling citizens to determine if rules apply to them; permits can be completed, submitted, approved on-line to extent possible.	Government to business	Small Business Administration
Online Access for Loans	Allows citizens and business to find appropriate loan programs.	Government to citizen	Department of Education
Online Rulemaking Management	Provides access to all government rulemaking, anytime, anywhere, by expanding an existing e-Docket system that permits use by other agency systems through "storefronts."	Government to Business	Department of Transportation
Recreation One-Stop	Provides a one-stop, searchable database of recreational areas nationwide; includes on-line campground reservations and purchase of recreational passes, maps, and other products.	Government to citizen	Department of the Interior
Recruitment One-Stop	Improves federal hiring process by improving automated employment information system; provides job seekers with on-line status feedback and provides employees with a searchable resume database.	Internal efficiency and effectiveness	OPM
USA Services	Uses best practices in customer relationships to enable citizens to quickly obtain service on-line while improving responsiveness and consistency across government agencies.	Government to citizen	GSA

Attachment

E-Government Initiatives

Name	Function	Category	Proposed agency managing partner
Wireless Public SAFEty Interoperable COMmunications Project SAFECOM	Helps public safety agencies at all levels of government achieve interoperability and eliminate redundant wireless communications infrastructures	Government to government	Department of the Treasury

And a 25th initiative, just announced last month called *Federal Architecture,* managed by OMB, will develop information and data and application interface standards to eliminate redundancies and yield improved operating efficiencies governmentwide.

Source: *E-Government Strategy: Simplified Delivery of Services to Citizens.*

(310227)

Mr. DAVIS. Mr. Forman.

Mr. FORMAN. Thank you. Thank you also for your leadership in e-government, cyber security and IT work force issues.

This hearing is particularly important because we believe that the e-government efforts are critical to our ability to run the government effectively and efficiently. We appreciate your commitment and support in moving forward to leverage the power of the Internet for Americans.

Before I get into the substance of my testimony, I need to make sure the subcommittee understands that I don't serve in a confirmed position within OMB. As a general policy, OMB usually does not send officials in unconfirmed political positions to testify. However, in this case, because OMB does not yet have a Deputy Director for Management, the OMB Director decided it was in the best interest of the administration to have me appear on his behalf as a witness.

As you know, electronic government is one of the key elements of the President's management and performance plan. It is integral or integrated with, as we see it, the other management initiatives because e-government facilitates performance based budgeting, strategic management of human capital, and financial management. In fact, if you were to put those together, it is what corporations generally call enterprise resource management.

At the same time, competitive sourcing has become a key tool used by companies to rapidly acquire and integrate information technology. We believe the combined effect of all the initiatives pursued concurrently is far greater than the mere sum of work on any independent initiatives.

For our e-government efforts, we have to keep in mind three relevant lessons learned from e-business efforts in the commercial world. First, complex transactions can be collapsed and made simple using a combination of new business design and Internet technology. It is not simple enough to do the technology work. As was discussed, the business design is in parallel.

Second, survival in the digital economy often requires restructuring into integrated customer centered operations that use both physical and on-line environments.

Third, an organization's most senior executives must manage transformations strategically through commitments, setting priorities, expectation, focus and measurement. Therefore, the guiding principles for achieving our e-government vision are about simplifying the process and unifying the operations to better serve citizen needs and ultimately uncomplicating government.

In late February, the Council for Excellence released its updated Teeter poll of what Americans want from e-government. As the chairman noted, Americans view e-government as important. In fact, more than three-quarters of Internet accessible Americans and more than half of all Americans overall go on line today to interact with their government. Moreover, the study found that 70 percent of Americans want government to invest in making it easier to get services and information.

Our strategy for doing this focuses on the four citizen center groups, for individuals, what people wold call G to C, focused on one-stop shops for citizens that create single, easy points of entry

to access high quality information and services, for businesses what people would call G to B, reducing the burden on business through use of the Internet. This is not about building a government Web site but rather being able to communicate with business in the language of e-business largely x amount. For intergovernment or what people would refer to as G to G, we must make it easier for States and localities to meet the reporting requirements, provide better performance measurement and easier access to grants and other vertical information sharing initiatives. As Congressman Turner pointed out, it is these G to G initiatives that are homeland security related.

In intergovernmental, our internal efficiency and effectiveness portfolio is using modern technology to rethink internal processes and bringing modern e-business programs to government and approaches to government.

E-government uses IT to improve Federal productivity by enabling better interactions and coordination. Each opportunity requires substantial changes in current bureaucratic procedures. Each e-government initiative in our portfolio needs to be based on a valid business case. It has to clearly articulate the value both to the citizen and to the government, has to provide for privacy and security, and provide a real work plan for achieving the results.

We undertook an analysis of the opportunities in our e-government strategy project, what many would call the Quicksilver Project, a nickname we gave it during last summer. That identified the initiatives as you mentioned. In addition, we identified key barriers that have prevented successful implementation of e-government and those are listed in my testimony.

One of the key findings of the task force came from review of the Federal enterprise architecture. Simply stated, the enterprise architecture, in our view, describes how the organization performs its work using the people, the business processes, the data and the technology. In essence, our view of the enterprise architecture that we need from the agencies and to support the projects has to be a modernization blueprint, the path as Mr. Hite said to get to where we need to go.

A task force major finding was that there is a significant overlap and redundancy in the Federal business architecture. With 19 out of 24 Cabinet level departments and agencies reforming each major function in line of business of the Federal Government. The task force found that this business architecture redundancy creates excessive duplicative spending on staff, IT and administration. Moreover, the task force's assessment determined that the redundancy makes it hard to get service while generating duplicative reporting and paperwork burdens. In general, today's Federal Government business architecture is expensive to operate and not customer centered. Basic management principles tell us that the government operating cost will go down and effectiveness will go up if we make it simpler for citizens to get services. That is what we need to focus on in the enterprise architecture.

Finally, I would like to call your attention to the government structure we have put in my larger testimony and highlight the fact that we have adopted modern portfolio management practices to move forward in e-government, leveraging the steering group

that comprises the CIO Council, CFO Council, Human Resources Management Council, Procurement Executive Council members as well as line of business membership. Norm Larenz, the newly named Chief Technology Officer for the Federal Government, assists me in this regard and oversees the Portfolio Management Office as well as the enterprise architecture.

Also noted in my testimony what we are moving toward in the Federal Government is the same best practice you will see in modern communications who are Web-enabled, these component-based architecture tools and techniques to address these issues Mr. Hite has described.

Ultimately, what gets measured gets done and I have included in my testimony the criteria that we use to measure agency progress. Included in that is how well they work together to support the integration across the silos in the area of e-government.

Thank you.

[The prepared statement of Mr. Forman follows:]

STATEMENT OF MARK FORMAN
ASSOCIATE DIRECTOR FOR INFORMATION TECHNOLOGY AND E-GOVERNMENT
OFFICE OF MANAGEMENT AND BUDGET
BEFORE THE SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY
OF THE COMMITTEE ON GOVERNMENT REFORM

March 21, 2001

Mr. Chairman and members of the Subcommittee:

Thank you for the opportunity to testify today on the Administration's efforts to make the transformation to an E-Government. This hearing is particularly important because we believe that E-government efforts are critical to our ability to run the government effectively and efficiently. We appreciate your commitment and support for moving forward to leverage the power of the Internet for Americans.

Before I get to the substance of my testimony, I need to make sure the Subcommittee understands that I do not serve in a confirmed position within the Office of Management and Budget (OMB). As a general policy, OMB does not usually send officials in non-confirmed political positions to testify before Congress. However, in this case, because OMB does not yet have a Deputy Director for Management, the OMB Director decided it was in the best interest of the Administration to have me appear on his behalf as a witness at this hearing.

Today's hearing focuses on how the Federal government will take advantage of the opportunities offered by E-business to improve quality, responsiveness, efficiency, and effectiveness. As you know, Electronic Government is one of the key elements in the President's Management and Performance Plan. That is because e-government facilitates performance-based budgeting, strategic management of human capital, and financial management, while competitive sourcing has become a key tool used by companies to rapidly acquire and integrate information technology. The combined effect of all these initiatives, pursued concurrently, is far greater than the mere sum of the parts.

In June of 2001, I was appointed as the Associate Director of the Office of Management and Budget for Information Technology and E-government. My position was created to improve agency use of information technology and E-government practices. Having spent several years working with world leaders in e-business and E-government, I know that the Information Age creates tremendous opportunities for our government and our citizens. As the Dot Com era passed quickly, our economy and institutions were fundamentally changed. Both Industrial Age companies, such as GE, and Information Age companies, such as Dell Computer, accomplished rapid transformation needed to repel Dot Com competition. Our economy is ripe with failed legacy companies that did not make the transformation and Dot Coms that could not build and integrate physical elements needed to provide the customer service Americans demand.

For our Government efforts, we must keep in mind three relevant lessons learned:

- Complex transactions were collapsed and made simple using a combination of new business designs and Internet technologies.

- Survival in the Digital Economy requires restructuring product-centered organizations into integrated, customer-centered operations that use both physical and on-line environments.

- An organization's most senior executives must manage the transformation strategically through commitment, priorities, expectations, focus, and measurement.

In a nutshell, an organization can be successful if it focuses on simplifying and unifying around its customer. Therefore, the guiding principles for achieving our e-government vision are also about simplifying processes and unifying operations to better serve citizen needs; that is, "uncomplicating" government.

The President's Challenge and Vision for Expanding E-Government

Like organizations that have successfully made the transformation, our E-government vision comes from the top -- in our case the President -- and is focused on our customers – the citizens. Our vision is to become a citizen-centered electronic government that will result in an order-of-magnitude improvement in the federal government's value to the citizen.

In late February, the Council for Excellence in government released its annual Hart-Teeter poll of what Americans want from E-government. The survey found E-government has become an important part of how many Americans interact with government. Most are Internet users (76%) and over half (51%) of all Americans have now visited a government Web site. Americans are more positive about the idea of E-government; they have higher expectations for what E-government can accomplish; and they are increasingly willing to invest their tax dollars in E-government. Moreover, the study found that 70% of Americans want government to invest in making it easier to access services and information.

Simply going "on-line" is not useful unless it is built around the needs of the users inside and outside government. The question is how to make government easier, quicker, cheaper, more effective and more responsive. Our strategy focuses initiatives on four citizen-centered groups:

- Individuals (G2C): We are focused on building easy to find one-stop-shops for citizens -- creating single points of easy entry to access high-quality government services.

- Businesses (G2B): We must reduce burden on businesses through the use of the Internet. This is not about building government web sites, but rather about being able to communicate with businesses in the language of E-business. We cannot continue to make businesses report the same data to multiple agencies because government fails to reuse the data appropriately or fails to take advantage of commercial electronic transaction protocols, especially eb XML.

This can help streamline the myriad of reporting requirements as well as facilitate a more efficient means for business to do business with the government.

- Intergovernmental (G2G): We must make it easier for states and localities to meet reporting requirements, while enabling better performance measurement, especially for grants and other vertical information sharing.

- Intra-governmental: We must use modern technology to re-think internal processes to improve efficiency for federal government agency administration by using industry enterprise resource management best practices, such as supply-chain management, human capital management, financial management, and knowledge management.

To accomplish this vision, we must refocus resources and strategically manage change. My assessment is that while Federal Departments and agencies have many very good E-Government efforts under way, the initiatives will be much more effective if applied across agencies and departments. Many of these examples will be evident as you listen to the success stories of my panel colleagues. Each of the panelists will provide examples of core agency IT projects and some that are clearly the predecessor to government-wide shared resources. They will also tell you about the lessons learned from being change agents in their organizations and in their government. While the federal government is the world's biggest spender on information technology, it has not experienced commensurate improvements in productivity, quality and customer service. In many companies, major gains have come from leveraging the technology to transform old business practices. There are at least four major reasons that the federal government has been unable to increase productivity:

• **Lack of Focus on Program Results**: Agencies have typically evaluated their IT systems as a cost of operations—not how well they responded to citizens' needs. Systems are often evaluated by the percentage of time they are working, rather than the internal and external performance benefit they deliver to the programs they support.

• **Islands of Automation**: Agencies have generally bought systems that address internal needs, and rarely are the systems able to inter-operate or communicate with those in other agencies. Consequently, citizens have had to search across multiple agencies to get service; businesses have had to file the same information multiple times; and agencies cannot easily share information. Chronic management problems in government have resulted from operation in isolation. For example, logistics, procurement, and property disposal functions are integral parts of the same supply chain, but have traditionally been managed as separate functions. Information collection, data mining and analysis, information dissemination, and information preservation have not been seen as part of the same information life-cycle. The problems of isolation are only magnified when automation is attempted. Indeed, the IT architectures of the past decade have facilitated isolation so that a branch office can operate as its own island, complete with databases and computer power that would have required an extensive data center 15 years ago.

• **Poor Technology Leverage**: In the 1990s, government agencies used IT to automate existing processes, rather than to create more efficient and effective solutions that are now possible because of commercial E-business lessons learned. In the past, agencies considered technology

to be the barrier to working together. But productivity improvements in the commercial world have leveraged revolutionary Internet technologies (such as XML, ubiquitous data, peer-to-peer computing, and simple-object-access-protocol (SOAP)) to make cross-silo integration both cheap and the normal way of business. We will leverage such approaches in unifying across islands of automation to build a citizen-centered government. As those who have tried to get Federal services know, they are often constrained by complicated government procedures. As information flows are managed, consolidated and linked, and before new information technology is applied, we must re-engineer processes to eliminate redundancy and take advantage of technology to unify and simplify the process rather than merely automating what has occurred to date. Such a dramatic change in organizations can be difficult but it is the best way to become more efficient.

• **Resistance to Change**: A fundamental barrier to getting productivity from federal government IT is government's inherent resistance to change. Budget processes and agency cultures perpetuate obsolete bureaucratic divisions. Budgeting processes have not provided a mechanism for investing in cross-agency IT. Moreover, agency cultures and fear of reorganization create resistance to integrating work and sharing use of systems across several agencies. Better leveraging technology investments will require that government managers look beyond the current ways of doing work. Today's IT solutions incorporate more productive ways of doing work, either through eliminating paperwork or integrating activities across longstanding organizational silos. A holistic approach is needed. Success will depend on breaking down the resistance to such change. Consequently, affected program officials need to be involved in strategic IT investment decisions.

E-Government uses IT to improve federal productivity by enabling better interactions and coordination. Each opportunity requires substantial changes in current bureaucratic procedures, and each E-Government initiative needs to be based on a valid business case that clearly articulates the value to both the citizen and the government, and provides for privacy and security that is critical to successful e-government.

The Quicksilver Project

In August 2001, the OMB Director established a cross-agency task force under my leadership to develop the strategic action plan and roadmap for achieving our E-Government vision. Its task was to:

- Recommend highest payoff cross-agency initiatives that can be rapidly deployed;
- Identify key barriers to the federal government becoming a citizen-centered E-Government, and implement actions needed to overcome these barriers; and
- Develop a technology framework that provides for the integration of government services and information.

The E-government task force, which we referred to as project Quicksilver, was comprised of individuals knowledgeable in their agency programs and experienced in government reform initiatives. It operated as an interagency working group over a period of five weeks, completing

its recommendations in mid-September. The task force applied best-of-breed e-strategy methods that have been used widely in industry and government The E-Government Task Force conducted 71 interviews with more than 150 senior government officials during the process to gather and identify strategic E-Government opportunities. In addition, nearly 200 projects were identified from e-mails sent primarily by federal employees.

The overall findings were that agency executives and line professionals want the government to:

- Use the Web to provide services such as benefits, recreational opportunities, and educational materials;
- Share information and integrate federal, state and local data where appropriate and possible;
- Reduce burden on businesses by adopting streamlined processes that promote and enable consolidation in data collection;
- Adopt commercial best practices to reduce operating costs and make it simpler for government employees to perform their jobs, especially in the areas of finance, human resources and procurement; and
- Define measures of success and regularly monitor and measure performance.

The Task Force synthesized that information into a set of more than 30 high-payoff E-government initiatives. Then it analyzed those initiatives and produced mini-business cases to identify the potential cost and benefits of each, along with barriers to their implementation. The E-Government Task Force found that the federal government could significantly improve customer service over 18 to 24 months by focusing on 23 high-payoff, government-wide initiatives that integrate agency operations and IT investments (subsequently, payroll processing was added as the 24th E-Government initiative).

As a result of simplifying business processes and unifying government operations around citizen needs, each E-Government initiative creates an order of magnitude improvement in efficiency and effectiveness of government operations. But the pay-off is not because of the automation of existing processes. It is because they offer the potential to change the way the Federal government operates to perform these functions. This is a win-win situation.

24 E-Gov Initiatives and Managing Partners

Government to Citizen

	Managing Partner
1. USA Service	GSA
2. EZ Tax Filing	Treas
3. Online Access for Loans	DoEd
4. Recreation One Stop	DOI
5. Eligibility Assistance Online	DOL

Government to Business

	Managing Partner
1. Federal Asset Sales	GSA
2. Online Rulemaking Management	DOT
3. Expanding Tax Products for Businesses	Treas
4. Consolidated Health Informatics	HHS
5. One-Stop Business Compliance	SBA
6. International Trade Process Streamlining	DOC

Government to Government

	Managing Partner
1. E-Vital (business case)	SSA
2. E-Grants	HHS
3. Disaster Assistance	FEMA
4. Geospatial Information One Stop	DOI
5. Wireless	Treas

Internal Effectiveness and Efficiency

	Managing Partner
1. E-Training	OPM
2. Recruitment One Stop	OPM
3. Enterprise HR Integration	OPM
4. E-Travel	GSA
5. Integrated Acquisition	GSA
6. E-Records Management	NARA
7. E-payroll/HR	OPM

Cross-cutting initiative: E-Authentication

While I haven't the time to discuss each of the specific initiatives at this time, I can provide a synopsis of the initiatives.

- The Government to Citizen (G2C) initiatives will provide one-stop on-line access to benefits, loans, and services for recreation sites. They will also bring modern tools to improve the quality and efficiency of service delivery.

- The Government to Business (G2B) initiatives will reduce burden on businesses by adopting processes that dramatically reduce redundant data collection, provide one-stop streamlined support for businesses, and enable digital communication with businesses using the language of E-business (XML).

- The Government to Government (G2G) initiatives will enable sharing and integration of Federal, State, and local data to facilitate better leverage of investments in systems that support Homeland Security (e.g., geographical information), provide better integration of key lines of business such as disaster response. The G2G initiatives also improve grant management as required by the Federal Financial Assistance Improvement Act (P.L 106-107).

- The Internal Efficiency and Effectiveness initiatives adapt commercial best practices in key government operations, particularly supply chain management, human resources, and document workflow.

These are not new ideas in general, but are the result of taking a cross-agency approach to leverage and integrate multiple efforts currently underway at different agencies. By leveraging IT spending across federal agencies, these initiatives could generate several billion dollars from reducing operating inefficiencies, redundant investments, and excessive paperwork. The initiatives will provide service to citizens in minutes or hours, compared to today's standard of days or weeks.

The President's Management Council approved the E-government initiatives and the action plan in their October 3, 2001, meeting. Through December 2001, agencies developed detailed business cases and formed partnerships for investment and implementation of the initiatives where possible. The results of the business cases were incorporated into the Fiscal Year 2003 budget, and agencies are integrating planned FY 2002 efforts into the 24 E-government initiatives.

The Task Force was also tasked to identify key barriers that may prevent the successful implementation of each initiative. Recurring barriers included agency culture, lack of federal architecture, trust, resources, and stakeholder resistance. By mitigating cross-agency barriers, we expect agencies will engage in additional self-generated E-government work beyond the 24 projects. The Task Force then worked with the Steering Group to define actions for overcoming the barriers. The table below lists the actions needed to overcome each chronic barrier.

Actions for Overcoming Barriers to E-Government

Barrier	Mitigation
Agency Culture	• Sustain high level leadership and commitment • Establish interagency governance structure • Give priority to cross-agency work • Engage interagency user/stakeholder groups, including communities of practice
Lack of Federal Architecture	• OMB leads government-wide business and data architecture rationalization • OMB sponsors architecture development for cross-agency projects • FirstGov.gov will be the primary online delivery portal for G2C and G2B interactions
Trust	• Through e-Authentication E-Government initiative, establish secure transactions and identity authentication that will be used by all E-Government initiatives • Incorporate security and privacy protections into each business plan • Provide public training and promotion
Resources	• Move resources to programs with greatest return and citizen impact • Set measures up-front and use to monitor implementation • Provide online training to create new expertise among employees/contractors
Stakeholder Resistance	• Create comprehensive strategy for engaging Congressional committees • Have multiple PMC members argue collectively for initiatives • Tie performance evaluations to cross-agency success • Communicate strategy to stakeholders

One barrier frequently cited is the need to ensure adequate security and privacy. A successful E-Government strategy must deploy effective security controls into government processes and systems. In order for the initiatives to be successful they will not only need effective security controls built into their processes and systems, but organizations will need to develop comprehensive security plans that provide adequate safeguards, address critical infrastructure protection, and incorporate best practices and reporting mechanisms. Having a public key infrastructure to help authenticate with whom the government is doing business will be a critical need for some of the initiatives to be successful, and a separate initiative has been established to overcome this barrier. In addition, organizations will need to address privacy concerns regarding the sharing of personal information.

The e-Authentication project was added to build and enable mutual trust between the public and government and across government by providing common solutions to establish identity and ensure appropriate access controls. These solutions will address authentication security, privacy, and electronic signature needs of all the E-Government initiatives. E-Authentication will provide a secure, easy to use and consistent method of proving identity to the federal government that is an appropriate match to the level of risk and business needs of each initiative. In addition, project teams will address privacy concerns regarding the sharing of personal information. E-government depends on confidence by citizens that the government is handling their personal information with care. Agencies are working on building strong privacy protections into the E-Government initiatives and OMB is focusing on government wide privacy protections by all agencies.

In addition, as OMB noted in testimony to the Subcommittee on Government Efficiency, the Administration has been very proactive on advancing information security in general and on in implementation of the Government Information Security Reform Act. This includes expansion of its reporting requirements to include CIO and senior agency officials' input with IGs and moving beyond simply reporting security weaknesses and instead focusing on agency work to remediate their security weaknesses. The basic push behind our continuing work is a strong focus on management implementation of security.

The Business Architecture

One of the most significant findings of the Task Force came from a review of the federal government's enterprise architecture. Simply stated, enterprise architecture (EA) describes how an organization performs its work using people, business processes, data, and technology. An EA is often represented as a current "as is" state, and a future "to be" state; this "to be" state is, in essence, a modernization blueprint.

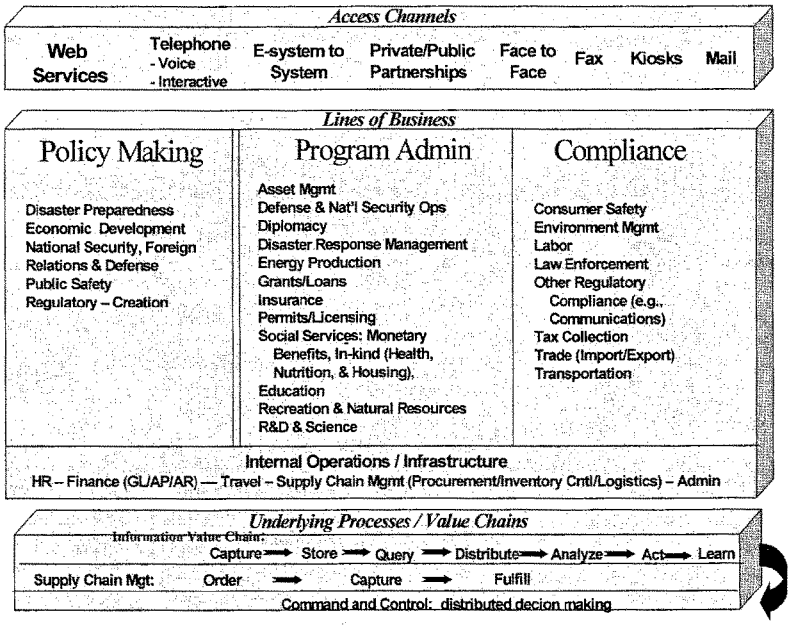
Since E-Government opportunities affect how agencies do their work and employ technology, it was necessary to evaluate the projects identified against the current enterprise architecture. The assessment applied the approach of the Federal Chief Information Officers Council, using the enterprise architecture to establish a "roadmap to achieve an agency's mission through optimal performance of its core business processes within an efficient IT environment."

The Task Force began the assessment by creating a clear framework of the federal government's business architecture, detailing how the federal government interfaces with citizens, what functions and lines of business the government performs and the key business processes used.

The Task Force's major finding was that there was significant overlap and redundancy, with multiple agencies performing each of 30 major functions and business lines in the Executive Branch of government. The review clearly identified the current federal enterprise architecture as "the architecture that isn't."

As we looked at the business architecture, our assessment focused on the opportunities to unify operations and simplify processes within lines of business. The Task Force found that this "business architecture" redundancy creates excessive duplicative spending on staff, IT and administration. Moreover, the Task Force assessment determined that the redundancy makes it hard to get service, while generating duplicative reporting and paperwork burdens. Consequently, the Task Force focused on E-Government initiatives that provide significant opportunities to transform the way the government interacts with its citizens, through the elimination of redundancy and creating simpler ways for citizens to get service. As the Task Force evaluated potential projects relative to the business architecture, the assessment focused on the opportunities to integrate operations and simplify processes within a line of business across agencies and around citizen needs.

An Integrated Government-wide Business Architecture



Activities of the federal government can be viewed in four primary functions: policymaking, program administration, compliance and enforcement, and internal operations. Policy making activities generally determine programs and compliance efforts. Internal operations are administrative functions, such as financial management, that support day-to-day activities needed to carry out policy making, program administration and compliance activities.

E-Government offers the opportunity to streamline activities, improving productivity by enabling agencies to focus on their core competencies and mission requirements. E-Government initiatives eliminate unnecessary redundancy, while improving service quality by simplifying processes and unifying agency islands of automation.

The Quicksilver Task Force identified highlighted the dozens of agencies and bureaus that perform the same function or line of business. When the task force analyzed which Executive Departments and agencies are performing what lines of business, it found that each line of business is being performed by 19 Executive agencies and departments on average, and each Executive Department or agency performs 17 lines of business on average.

In many cases, agencies buy redundant IT systems to support redundant operations; this generally over-burdens and confuses the citizen, business, or local government that must hire experts who convert simple data into complex government filings four or five times over. Indeed, agency IT investments in the 1990s acquired client-server architectures that created hundreds, if not thousands, of "islands of automation." These investments allow agencies to operate thousands of organizational silos, which gain power through "owning" information or data.

In general, today's Federal government business architecture is expensive to operate and not customer-centered. Basic management principles tell us that government operating costs will go down and effectiveness will go up if we make it simpler for citizens to get service. E-government provides the tool kit for accomplishing these objectives. E-government offers the opportunity to integrate this hodgepodge of activity so those different agencies can focus on their core competencies and mission requirements. Specifically, we must focus on simplifying processes and unifying islands of automation. We seek to "uncomplicate" government.

The E-Government Architecture project will carry out two major concurrent activities. One of the activities will be the development of a solution architecture for each of the current E-Government initiatives. The solution architecture includes data, applications, processes, user interface, and organizational elements. The second activity will be the construction of a component-based architecture framework for each line of business. Component architectures are modular application designs enabling "Solution Architects" to deliver E-government solutions that are secure, scalable, and extensible. Solution architectures will be built leveraging common business practices across the federal government, reducing duplication, and speeding the delivery of services to the citizen. Initially this effort will focus on four key areas including Homeland Security, economic stimulus, social services, and back office operations.

The E-Government Action Plan: Implementation of the Vision

Today, the Federal government has only scratched the surface of the E-government potential. From a government-wide perspective, there are more than 31 million Federal Web pages, 6600 transactions are being considered to become web-enabled, and a search engine is available to help citizens find relevant information. Also, as you will see in the other statements today, many of our agencies have or are implementing creative and useful E-government projects. But there is so much more potential that we can unlock if we leverage government resources across agency silos.

It is in streamlining these underlying processes and value chains that the real pay-off from E-government lies. To do this the government must take advantage of all of the access channels available to it, including telephone, E-system to system, face-to-face, fax, kiosks, and mail in creating an integrated government-wide business architecture.

Our vision combines successful online operating practices with the federal government's human capital and physical assets to build a "click and mortar" enterprise. In this vision, organizations serve citizens, businesses, other government and federal employees. Achieving this vision requires that agencies integrate and simplify their operations. In adopting a "click and mortar" model, we are using the best practices of industry with regard to customer relationship management, supply chain management, enterprise information management, and management of change. Our goal is that services and information will rarely be more than three clicks away when using the Internet.

The recent relaunch of the First Gov website is the initial action in the launch of our citizen-centered e-government strategy. Prior to the re-launch, silos of Federal operations created an untenable situation for citizens seeking service on-line. For example, typing "disaster assistance grants" into the Firstgov.gov search portal yielded a message that there were "over 1000 relevant results." Typing "unemployment assistance" gave that same message, but if you found and clicked on the item titled "unemployment insurance claims," you were sent to a web site that lists eligibility requirements and told to contact your local unemployment insurance office. The new enhanced FirstGov.gov allows citizens to find services, transact business and interact directly with their government within three clicks. FirstGov.gov is truly a one-stop easy access web portal to all government online services which allow citizens to quickly find and conduct business without needing to know which department or agency provides it.

Resistance to Change

Perhaps the most significant barrier to E-government is stove-piped organizations' resistance to change. In her recent book, "Evolve", Rosabeth Moss Kanter, noted author on the successful transformation of organizations, characterized failed, halfhearted attempts at E-business as like "putting lipstick on a Bulldog". She goes on to say "Success requires systemic change, a shift in the organizational way of life." E-government, like E-business, is about fundamental change in the way organizations and processes work to take advantage of opportunities the technology offers.

Governance and Senior Leadership Commitment

To succeed will require an effective governance structure to overcome the barriers and implement the changes necessary. This includes substantial long-term commitment by senior management. As I noted earlier, a key principle is that executives must lead the transformation. Accordingly, OMB Director Daniel's memorandum that established the task force also required identification of a senior E-Government leader who reports directly to each Executive Department or Agency Head. I am pleased to report that are the vast majority of E-Government leaders are Deputy Secretaries or Assistant Secretaries for management, so that budget and management decisions regarding E-Government can be integrated at the highest levels.

To better support the Administration's E-government initiative, the Chief Information Officers' Council has been restructured. The previous structure was intended to analyze issues concerning management and use of Federal Information technology. As a result, it had working groups in areas related to technology. In the new structure, three standing committees remain focused on such issues: Workforce and Human Capital for IT, Best Practices, and Government-wide Architecture.

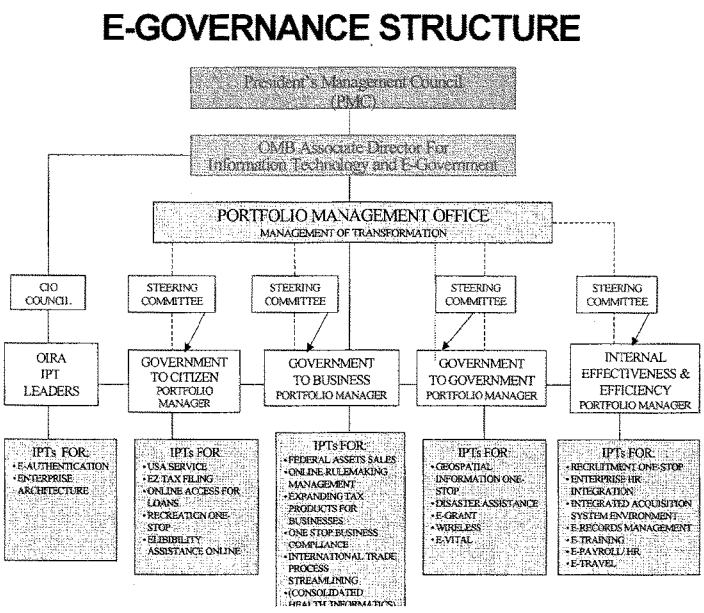


Figure 9.1 *Governance Structure*

Key to acronyms: CIO- Chief Information Officer, HR- Human Resources; IPT Integrated Project Team

The 24 initiatives will be managed using a portfolio management process, which manages risk within the range of initiatives for improving service to a given citizen-centered grouping. Senior officials of the departments and agencies are "managing partners" and "participating partners" for each of the initiatives. The managing partners are establishing program offices to ensure that the initiatives are implemented, and the partners will cooperate in the planning and implementation of the initiative. OMB is overseeing this process and working with the managing and participating partner agencies to establish appropriate and equitable implementation and resource plans as well as adequate funding for these projects. Consequently,

OMB has hired four Portfolio Managers, reporting to the Associate Director for IT and E-Government, who are responsible for overseeing progress in the E-Government initiatives.

To help this transformation, the CIO Council, CFO Council, Procurement Executives Council, and Human Resources Management Council – as well as agency program leaders -- will form portfolio steering groups to focus on E-Government in each of the four citizen segments: G2C, G2B, G2G, and Internal Efficiency and Effectiveness. Portfolio Steering Group members will be from agencies that make up the project teams for each of the initiatives. In addition, the G2G Steering Committee will include representation from official state and local government organizations. The steering committees will advise agency program managers concerning their initiatives and help remove barriers to the implementation of the initiatives. The Committees will also support their corresponding OMB Portfolio Manager, who is responsible for making government more citizen-centered through daily interaction with the managing partners who they oversee.

What Gets Measured Gets Done

As you know, the President has charged OMB Director Mitch Daniels with overseeing the implementation of his Management Agenda through the use of an Executive Branch Management Scorecard. This Scorecard tracks agency improvement in five government-wide problem areas and assigns a red, yellow, or green score. The OMB website has information that describes each element of the scorecard as well as detailed criteria that are used to determine an agency's score.

OMB will be working with Department and agency E-Government leaders, as well as their CIOs, to provide for success. Progress will be tracked for each E-Government initiative, and agency success and cooperation will be documented in the President's Management Agenda Scorecard. It should be noted that the scorecard addresses both progress on agency participation in the 24 cross-agency E-gov initiatives, and agency performance on their own IT investments. OMB is in the process of modifying the scorecard to clarify the importance of the IT security element as a core criterion in the E-government standards for success. Clarification of IT security as a core element of the E-government standards will hold agencies accountable to address security. If agencies fail to adequately address IT security, they will remain "red" against the standards for success in Expanding E-government.

As outlined in the February 28 release of the E-government Strategy, each of the project managers have established initial action and timeline milestones, which will be updated mid-April consistent with results of partnership meetings.

Timeline for Deployment

This is non-exhaustive list that will grow or be modified as the initiatives evolve.

Project	Milestone	*Date*
Government to Citizen		
Recreation One Stop	Revised Recreation.gov deployed	Completed
	First version of Volunteer.gov online	4/31/02
	RFPs or agreements with private sector reached on implementation of new recreation online projects	TBD

	Additional recreation projects (reservations, searchable maps, more recreation information, etc.) available online	TBD
Eligibility Assistance Online	Initial release of online screening tool for 20 benefit programs	4/31/02
	Online screening tool for 100 benefit programs	9/30/02
	Targeted consolidation of online benefit application and customer relationship management	TBD
Online Access for Loans	Deploy "seek and find" methodology to make it easier for the public to find loan information	TBD
USA Services	Enable citizens to personalize the combination of services they obtain across multiple programs	TBD
	Enable a case to be created and acted upon by multiple agencies	TBD
	Implement a multi-channel contact center to facilitate easy access to information and service	TBD
EZ Tax Filing	Internet fact of filing and refund	4/31/02
	Initial deployment of industry partnership free e-filing solution for 2003 season	12/31/02
Government to Business		
Online Rulemaking Management	Develop capability assessment of "top ten" rulemaking agencies' docket systems – who has the best existing solution	3/30/02
	Create a page, through FIRSTGOV, that links to all agency's docket sites	4/15/02
	Complete study of requirements for moving rulemaking agencies to an integrated online rulemaking system	8/30/02
	Deploy unified cross-agency public comment site	TBD
	Deploy a single on-line rulemaking dockets application to include integration with the RISC/OIRA Consolidated Information System (ROCIS)	TBD
Expanding Electronic Tax Products for Businesses	Begin deployment of filing of W2s on the internet	2/01/02
	Complete XML or non EDI formats (schemas) for electronic filing of 94x	8/31/02
	Begin deployment of the interim solution for online EIN by November 2002 (IRS)	11/31/02
	By January 2004 target initial implementation of 1120 efile for business to facilitate end to end tax administration	1/15/04
Federal Asset Sales	Re-host Federal Sales	3/31/02
	Develop pilot business integration	9/30/02
	Pilot transaction platform	3/31/03
International Trade Process Streamlining	Complete EX-IM Working Capital Automation Project and Integrate into Export.gov	4/15/02
	Deploy on-line collaborative workspace that consolidates all of the information gathering by trade specialists and disseminates it through export.gov to SMEs.	8/15/02
	Simplify EX-IM Insurance filing processes and products and integrate them into Export.gov	1/15/03
One-Stop Business Compliance Information	Pilot/test prototype content management tool for Businesslaw.gov. Conduct full inventory/registry of regulatory agency's "plain language" compliance assistance tools	8/1/02
	Prototype seamless intergovernmental licensing and permitting tool to include Internet EIN	11/30/02
	Complete 30 expert tools (from multiple agencies to include OSHA, EPA, IRS, INS, DOT, DOE) designed to help businesses to comply with relevant regulations in the environment, health and safety, employment, and taxes.	5/1/03
Government to Government		
Geospatial Information One-Stop	Complete draft standards for critical spatial data themes (framework data)	9/30/02
	Identify Federal inventories of framework data	9/30/02

	Deploy first iteration of the Geospatial One-Stop	TBD
e-Grants	Finalize the E-Grants business case in support of partner requirements and other participant input	4/15/02
	Evaluate the use or expansion of interagency and agency specific capabilities for discretionary grant programs	6/1/02
	Pilot a simple, unified way to find federal grant opportunities via the Web	7/1/02
	Define application data standards	10/1/02
	Deploy simple, unified grant application mechanism	10/1/03
Disaster Assistance and Crisis Response	Finalize the business case in support of partner requirements and other participant input	05/15/02
	Deploy a single portal for citizens, public and private institutions that provides access to information and services relating to Disaster and Crisis Management	TBD
Wireless Public Safety Interoperable Communications – Project SAFECOM	Define the communications concept of operations for interaction that identifies the communications requirements to address the two highest probable threat scenarios: Bio terrorism and natural disasters.	05/31/2002
	Develop an integrated public safety response solution that addresses the top two threat scenarios by using existing infrastructure augmented by available commercial capability.	09/30/02
	Complete a gap analysis of existing inventories of public safety wireless communications at federal, state, and local level.	12/31/02
	Implement Priority Wireless Access.	TBD
e-Vital	Finalize the business case in support of partner requirements and other participant input, and submit to the PMC	05/15/02
	Deploy electronic process for Federal and State agencies to collect, process, analyze, and disseminate Electronic Verification of Vital Events (EVVE) records.	TBD
	Deploy an electronic process for Federal and State agencies to collect, process, analyze, and disseminate Electronic Death Registration (EDR) records	TBD
Internal Efficiency & Effectiveness		
E-Training	Initial e-Training system operational with mandatory Government courses (module 1) -	10/15/02
	Expanded e-Training system with fee-for-service courses (Module 2)	4/30/03
	Enhanced e-Training system contains user and managerial tools (such as virtual classrooms and evaluation tools (Modules 2 and 3)	11/01/03
Recruitment One-Stop	Implement simple front-end – Improved appearance and usability that mirrors popular private sector internet recruiting sites	6/30/02
	Applicant status applicant database mining, intake of paper resumes/applications, and capability to link to Federal agency's assessment tools.	1/31/03
	Integration with agency assessment tools.	6/30/03
Integrated Human Resources	HR Logical Data Model including metadata, extended markup language (XML) tags, including proposal for standard Federal HR data	9/30/02
	Prototype Analytical Tools Enabling Integrated Resource Management, Workforce Planning, and Policy Analysis	12/31/02
	Design notional architecture for HR initiatives integration to include financial management	11/30/02
E-Clearance	Clearance Verification System which creates a common, source of investigative info to support employee assignment	12/31/02

	Implement e-QIP to reduce error rejection rate, eliminate manual data transfers	6/30/03
	Connect OPM & DoD security clearance indexes	12/31/02
e- Payroll/HR (Payroll Processing Consolidation)	*Complete and submit business case to the PMC*	3/31/02
	Integrated Enterprise Architecture	TBD
	Strengthening Payroll Service Delivery	TBD
e-Travel	Government wide web-based end to end solutions initial capabilities assessment (ICA)	10/01/02
	E-Travel Customer Care Implemented	12/01/02
	Web Travel Authorization and Voucher System (TAVS)	6/30/03
	Integrated Solution	12/30/03
Integrated Acquisition Environment	Integrated Vendor Profile Network – IVPN Single point of vendor registration, initial capability	6/30/02
	Consolidated eCatalog –Implement a directory of GWAC and MAC contracts to simplify selection and facilitate leverage of Government buying, initial capability	9/30/02
	Federal Acquisition Management Information System – FAMIS Implement a new web-based Federal Management Information System that is integrated with legacy systems and provides useful real-time data, initial capability	9/30/03
Electronic Records Management	With partners, finalize ERM initiative work plan and types of ERM guidance and tools to be developed in initiative	5/31/02
	Issue first ERM guidance product (subsequent products to be identified with their timelines under the first milestone)	9/30/02
	Issue first lessons learned/best practices model	9/30/02
	Complete RM and archival XML schema	2/28/03
	Develop ERM requirements that agencies can incorporate in their system designs	04/30/03
	Issue final guidance products and tools	9/30/03
Cross Cutting Initiatives		
E-Authentication	Define operational concept including critical success factors and requirements for 12 of the projects.	7/1/02
	Initial authentication gateway prototype	9/30/02
	Full deployment	9/30/03
	Government-wide authentication guidance	TBD
Federal Enterprise Architecture	Produce a set of generally accepted, component-based technology models to guide the target and transition architectures of the currently approved E-government initiatives	3/15/02
	Identify opportunities, based upon agreed criteria measuring impact and value to the citizen, for additional e-Government initiatives (Budget Year 2003/2004)	4/30/02
	Deliver a Federal EA repository with high level business and data architecture in 4 focus areas: Homeland Security, Social Services, Economic Stimulus, and Back Office Operations	4/30/02

E-Gov Fund

Each of these initiatives will result in the elimination of duplicative agency IT programs and savings could reach several billion dollars. For example, FEMA is leading the initiative to create a one-stop portal with information applicable to public and private organizations involved in disaster preparedness and response.. Accurate and timely data from this project may result in saved lives and reduction of property damage, as well as saving millions of dollars by eliminating redundant programs and agency costs. It is because of this potential high pay-off from E-government that an "E-gov fund" is recommended.

An "E-gov fund" would allow us to assure use is coordinated with other agency information technology investments as well as with complementary management reform initiatives. The fund will provide important seed money for initiatives in each of the four customer segments and thus help stimulate transformation to an E-government.

The administration provided $5 million for E-government in FY 2002 and the FY 2003 Budget seeks an appropriation of $45 million for the second installment of this fund, totaling $100 million over the next three years. OMB would manage allocations from the fund housed in an account in the General Services Administration. Projects will be selected that create savings by replacing redundant efforts, and that have viable business cases and implementation plans; in other words, fund once and use for many.

We appreciate this subcommittee's support of this initiative last year and will continue to place a high priority on funding innovative interagency projects that would deliver services directly to the public, or create the infrastructure to support such delivery. We look forward to continuing to work with you and your staff in this important initiative.

Conclusion

Today, Federal programs are working -- but we can do better. Information technology offers the possibility to dramatically improve the Federal government – interactions with citizens as well as our internal operations. To be able to take advantage of that possibility, we must break down the barriers associated with resistance to such change. The Administration is moving quickly to take advantage of this opportunity. Our E-government task force began this effort by identifying a first set of initiatives that will demonstrate what is possible. The President's Management Council and the CIO Council are working to make those initiatives a reality. We are off to a good start, but it is only that -- a start. With the continued interest and assistance from the Congress, particularly this Subcommittee, we will soon begin to see results from those efforts – and will be well on the way to uncomplicating a Federal government that is simplified and unified across agencies to better serve citizens.

Information on this E-government effort may be found on the Internet at, http://www.firstgov.gov, http://www.whitehouse.gov/OMB, or http://www.cio.gov, including an electronic copy of the strategy.

I would be happy to answer any questions.

Mr. DAVIS. Thank you. I have a few questions. Mr. Hite, let me start with you.

According to the figures you gave, there are 1,413 e-government initiatives underway as of January 2001 and OMB seems to be really pursuing 24, which is a drop in the bucket when it comes to overall IT spending, which in 2000 will exceed $48 billion according to OMB's projections. Can you comment on the ability of one agency with a multitude of management and budgetary responsibilities to effectively oversee these other e-gov investments?

Mr. HITE. Mr. Chairman, as Clint Eastwood said, a man has to know his limitations and I would defer to my colleague who is our expert on e-government to respond to that.

Mr. DAVIS. Mr. McClure, thank you for being with us. Let the record know Mr. McClure was sworn earlier.

Mr. MCCLURE. I think you raise a good point, Mr. Chairman. Mark has responsibilities that go beyond the 24 e-gov initiatives being pursued under the President's management agenda. There is a relatively substantial IT budget for the Federal Government, $48 billion in 2002, going up to $53 billion in 2003. What we would like to see is some of the things that have been done since Mark arrived as the use of good oversight tools by OMB to determine whether the agencies are pursuing best practices in some of the critical IT management areas, including enterprise architecture, capital planning and investment control, security, IT human capital.

I think we have seen movement in that direction as exhibited both by the scorecard he alluded to that the President is using to rate agency performance, much of the IT being rated in the e-gov area, and second, the comprehensive nature of the changes made to the A11 budget exhibits that all the agencies use to submit their major IT submissions. These require a level of detail that did not exist before to get at some of the most vexing problems that we at GAO encounter when we do our reviews, solid business cases, security requirements, human capital needs, risk assessments, things that traditionally we have seen as weaknesses in many of the agencies we have reviewed.

I think the real answer is the resources and tools being made available and analytical approaches being exercised by OMB give frank feedback to the agencies on their performance in the IT area.

Mr. FORMAN. Mr. Chairman, if I could add something?

Mr. DAVIS. Please, Mr. Forman.

Mr FORMAN. When we did the work last summer, indeed we found about 370 ideas or concepts. Many of those projects were already funded and out of the 24 we selected, on average I would say there are 5 to 10 projects currently funded in that list of 400 and some you mentioned that Mr. Hite identified.

We have a choice. We could let those 100 to 120 projects go forward, we could add in another cross agency project and then we would have 24 plus 110 to 120. Our decision was to forge partnerships among the teams that were already investing in these projects and adopt a component architecture type approach that allows not to pursue independent activities but to join their funding or join their assets around these common initiatives.

I will give you a couple of examples. On-line rulemaking, one of the issues that came out very clearly in the recent Hart/Teeter sur-

vey is that people want more accountability in government. That means they want to see the regulations and rules that are being proposed and want to be able to comment on those.

The agencies heard that and so if we have five, we have 25. Actually, we have quite a bit more than that initiatives underway to put rulemaking dockets on-line. There are five major projects that we have identified with the business cases using the methodologies Dr. McClure laid out. We don't need to buy all those and the agencies don't need to continue reinventing the wheel. So via the partnership for rulemaking on-line, we are figuring out essentially who does what and we are not going to invest in reinventing the wheel. We have to get control on that and these are the 24 priorities and areas we are going to focus on now.

Mr. DAVIS. Let me ask also, what is your position on OMB's plans for component architecture for its e-government initiatives versus a consolidated Federal architecture?

Mr. HITE. I would say it is difficult to answer that question because I have yet to have the conversation with OMB about the meaning of the word component. If component means or equals e-government initiative in which case it would be an architecture for each of the e-government initiatives, that would be fully consistent with our position as to what an enterprise represents. In fact, an enterprise can represent a business area or mission area that transcends more than one organization.

If component means cost based components that would be integrated together to provide the e-government solution, I would fully support using cost based solutions, cost based components as the basis for introducing these e-government capabilities. That is the wave of the future. There are important management practices that go along with how you do that, one of which is having the context in which those cost applications will fit, that context is the architecture.

Mr. DAVIS. Mr. Forman, the President, OMB and you have demonstrated remarkable management progress in recognizing the Federal Government's IT challenges and implementing reforms through the budget processes. In the future, probably way in the future, when the President is no longer the head of the executive branch, what statutory or executive branch mechanisms are or will be in place to guarantee that these reforms will continue to be managed effectively from one administration to the next?

Mr. FORMAN. I think that is an excellent question. In fact, I and some colleagues I worked with on the staff were remarking about that. I am making extensive use of the Act and some of the vast authorities endowed on the Director of OMB. Why that was not done before, I don't know. Clearly we are living in a confluence of events now. The technology supports it, the interconnectivity of society has grown dramatically over the last 2 years, the whole notion of component based approaches in architectures, modular approaches, the battle that is going on between Microsoft and the Java community right now becoming relevant to the business world and the fact that government is increasing its investment when the business world is decreasing creates unique opportunities but when you get right down to it, using the authority that is laid out in the

Act and that is at the heart of what I am finding to be the key to success.

Mr. DAVIS. Let me yield to Mr. Turner.

Mr. TURNER. Mr. McClure, as you know, Mr. Davis and I met on occasion with some State and local officials talking about what they perceived to be barriers to the use of information technology and implementing e-government. You are familiar, I know, with some of those issues. It would be helpful to us if you could identify for us what in your opinion are the existing Federal laws or regulations that do represent legitimate barriers to State and local governments' ability to implement effective e-government policies?

Mr. MCCLURE. I can't claim to speak for all the laws and their impact in that area but I will tell you I think it requires a real partnership between the CIO Council at the Federal level, OMB and the Congress and State and local needs in the e-gov area so that we can ensure that on-line government and services being delivered to citizens and businesses at any level of government are as connected as possible.

There is work in this area that is underway. The Federal CIO Council is working closely with the National Association of State CIOs to try to identify and overcome some of the technical barriers, managerial barriers, approaches, if you will, to how things are being managed in an intergovernmental fashion to try to produce more seamless service to the citizens regardless of where the service is being provided from. We have funding issues involved and how the money appropriated by the Congress is to be used; we have traditional cultural turf, ownership issues that have to be dealt with, but in the long run, I think what we need is a real identification of not only the barriers but the opportunities in those quick hit areas where services to citizens and businesses can be done in an integrated fashion across government lines. Some of that is proceeding. A lot of it has to do with resources, where the resources will come from, to fund many of those initiatives.

Mr. TURNER. We have seen examples of progress in some States, perhaps even progress exceeding our Federal Government. I know Mr. Davis and I both have concerns that we want to give our States flexibility to continue to move forward and not be a hindrance in what we put into law or policy.

Several members requested a report some months ago which the GAO prepared regarding the Immigration and Naturalization Service. I don't recall who prepared that report within the GAO. Are you familiar with the report I am referring to?

Mr. MCCLURE. I think Mr. Hite actually prepared it.

Mr. HITE. There are a number of reports we prepared on INS. The one in particular you are referring to, if you could give me a clue as to the subject?

Mr. TURNER. I may have a copy of it in just a minute.

Mr. HITE. I personally have done reports recently dealing with INS' lack of an enterprise architecture and their lack of IT investment management capability.

Mr. TURNER. I may have a copy here. I will direct your attention to it in a moment.

Mr. Forman, in the meantime, have you had an opportunity, particularly in light of the recent revelations, to take a look at the INS

and its architecture, and what we might do to rapidly move to improve it?

Mr. FORMAN. My review is actually supposed to be reported to me tomorrow with a set of recommendations. I don't have detailed analysis that I can answer that question with. Let me give you some insight on the types of things we are looking at. First of all, as Mr. Hite said, they are not one of the ones we would consider as successful in enterprise architecture. I think the GAO review lays out key insights and we are using those insights. I think that is an important piece of work.

Let me also say that this issue is not unique or will not be solved by just the INS. The issue of border security requires getting a handle on our business architecture as it relates to border protection. That is something that extends beyond the INS, something Governor Ridge and the Homeland Security Office is looking at as well as the work that is going on in what is generally called the information sharing initiatives as one of the four major areas reported in the budget for homeland security.

Mr. TURNER. I noticed the President's budget requests $20 million for the E-Government Fund which as we know is the fund to pay for interagency initiatives in e-government. Last year, the same request was made and you received $5 million. Do you have hope or prospects that maybe we can get that number up to the $20 million this year in light of the circumstances we find ourselves in?

Mr. FORMAN. We actually requested $45 million this year. The issue here, and the Director of OMB laid this out to the Appropriations Subcommittee last week, is all 24 of these initiatives, and indeed there are many more, represent multiple funded projects. So the Congress has a choice and we too are working this issue, of how many times do we want to fund the same e-government effort. E-government forces us to look across agencies and focus on how we are delivering that line of business or service to the citizen.

I believe this is the fundamental issue in the appropriations process for e-government and I believe that just as you have a focus across the agencies on e-government and other government reform issues, similarly the Appropriations Committee has to look across the subcommittees and take on essentially funding in e-government initiative once not agency by agency or department by department and that is essentially what we have laid out. Let us fund the key components of these initiatives once and then deduct up front, if you will, by not paying for five to ten times that many initiatives subcommittee by subcommittee. It is a tradeoff that has to be made at the full committee level.

Mr. TURNER. I suggested in my opening statement that the proper and efficient implementation of information technology in our agencies is now a national security issue, a personal safety issue. Heretofore, prior to September 11th, we always spoke of it in terms of efficiency in government, making government user friendly, and so forth. It seems to me in light of September 11th, there should be a new urgency regarding information technology in government. I am not sure that I have heard it expressed in those terms very often.

Mr. Chairman, you will have to forgive me for this, but it is almost like what Enron did for campaign finance reform. September 11th and the terrorist threat should give impetus to emphasis on information technology. When I heard Mr. Siebel's testimony a few weeks ago, it caused me to realize that though the American people have not blamed their government and the failure of government for September 11th, the link between those events and the lack of information coordination would tell us if that is ever repeated, the American people may very well hold their government accountable for that next incident.

I think it is very important for us to speak in terms of national security, personal safety when we make the case to move forward more rapidly through the proper application of information technology. I hope you will do that and carry that message forward and the administration will carry that message forward and if you do so, I feel much more confident that your budget request will be honored by the Congress.

Mr. FORMAN. I appreciate that. Indeed, we view the government and homeland security as very closely related. Even though the government to government portfolio was defined before the events of September 11th, four out of the five initiatives are homeland security and are embraced as such in the budget as what we call vertical information sharing.

If I can amplify your point and also embrace the chairman's composition of the hearing today, I think one thing that is clear is this as much an enterprise and business architecture issue as it is an IT issue. I will give you some very simple concepts.

After the events of September 11th when Governor Ridge came on board, the President and Governor Ridge said we need to leverage the technology to address this issue. They made that very clear and about 1,000 vendors and multiple government agencies showed up on my doorstep, everybody wanting to share information or having tools to share information.

One company showed up that said, we can make you do something with the information and that is the business process issue, how do you work together, not just to share information, but to improve the quality of the process. So we adopted two very simple measures of merit to look at these IT investments but they are business process related metrics.

First is can you increase the response time? To me that is the measure of success that we need to be held accountable for delivering things like e-government and homeland security. The other is quality of the decisions—are we getting better decisions faster, are we able to respond to threats faster?

Mr. TURNER. I have no doubt that we can make progress. The chairman's hearing we had a few weeks ago brought together many folks from the private sector. We got just a taste of some of those ideas that I am sure you have heard about many times over. I am hopeful that this opportunity will not be lost and I think it is critical to our safety and our security.

Mr. DAVIS. Mr. Forman, can you comment on concerns raised by some folks in the private sector that government is competing with industry in developing and implementing e-government initiatives?

Mr. FORMAN. I don't see any competition at all. There is a generational gap that I think we are getting through, hope we are getting through. In the e-government space, there are so many different opportunities and ways to partner with industry but one very simple way is to have people build a branded store for us. For example, take the concept of Hot Jobs or Monster, they build a branded storefront for recruitment for many large companies. You would go to a company and apply for their job and the job part of their portal never realizing that you are actually at Hot Jobs or Monster.com. Then you can click back and look at the stock reports or whatever. You are operating within what is called a branded storefront or branded portal.

That is the type of thing we see. It is a faster way to get things, proven, you can specify security, specify services but you don't have to build anything.

Mr. DAVIS. I want to thank you all for being here. I will dismiss this panel at this point.

We will call our next panel: Mr. Holcomb, Ms. Stouffer, Ms. Canales, Dr. Callahan, Ms. Barnes and Dr. Blanchard. We will take a 2-minute break while you set up.

[Recess.]

Mr. DAVIS. The second panel is ready.

[Witnesses sworn.]

Mr. DAVIS. I will start with Mr. Holcomb and move straight down the line. If you can keep your testimony to 5 minutes, we have most of our questions pre-determined on this as we have gone through your testimony and it will make it run a little more efficiently.

So, Mr. Holcomb, please proceed.

STATEMENTS OF LEE HOLCOMB, CIO, CO-CHAIR, FEDERAL ARCHITECTURE AND INFRASTRUCTURE COMMITTEE, FEDERAL CIO COUNCIL, NASA; DEBRA STOUFFER, DEPUTY CHIEF INFORMATION OFFICER FOR IT REFORM, CO-CHAIR, BEST PRACTICES COMMITTEE, FEDERAL CIO COUNCIL, HUD; MAYI CANALES, DEPUTY CIO, E-GOVERNMENT PORTFOLIO COORDINATOR, FEDERAL CIO COUNCIL, DEPARTMENT OF TREASURY; LAURA CALLAHAN, DEPUTY CIO, INFORMATION TECHNOLOGY CENTER, CO-CHAIR, WORKFORCE & HUMAN CAPITAL FOR IT, FEDERAL CIO COUNCIL, DEPARTMENT OF LABOR; JANET BARNES, CIO, OPM; AND LLOYD BLANCHARD, CHIEF OPERATING OFFICER, OFFICE OF MANAGEMENT & ADMINISTRATION, OFFICE OF THE ASSOCIATE DEPUTY ADMINISTRATOR, SMALL BUSINESS ADMINISTRATION

Mr. HOLCOMB. I am pleased to appear before the subcommittee today to discuss enterprise architectures. I will briefly summarize my written statement.

I want to thank the chairman and Mr. Turner for your continued support and encouragement toward electronic government.

Development and use of enterprise architectures at the individual agency and Federal levels is a key component in the effective management of information technology investments. I have serve as the CIO for NASA since November 1997 and since February

1999, I have also served as the Co-Chair of the Architecture Infrastructure Committee of the Federal CIO Council. Mr. John Gilligan, the CIO from the Air Force, is my Co-Chair.

In the context of an individual agency, an enterprise architecture establishes the agencywide road map to achieve the agency's mission through optimal performance of its core business processes within an efficient information technology framework. The history of Federal IT investments provides many examples of failed projects which lack linkage between business needs and the underlying IT technical solutions. These failed IT projects in most cases did not benefit from an enterprise architecture to guide the IT investment.

In my remarks today I plan to speak briefly about how the Federal CIO Council has sought to avoid those consequences through enterprise architecture related products and through education and training efforts.

The Federal Architecture Working Group of the Architecture and Infrastructure Committee is one of the most productive working groups in the Federal IT community. The working group has significantly influenced the enterprise architecture efforts of governmental and private entities, especially through their publications.

The Federal Architecture Working Group has partnered with OMB and the General Accounting Office to produce the Federal Enterprise Architecture Framework. This framework is available at the CIO Web site, www.cio.gov.

The framework provides agencies with definitive guidance on creating and using enterprise architectures. It can be used by anyone considering or actively developing an enterprise architecture. The Federal Enterprise Architecture Framework provides a road map for agencies seeking to transition from a current architecture to a target architecture. Mr. Hite did an excellent job of defining an enterprise architecture in the prior panel.

In addition to publishing formal guidance, the Architecture and Infrastructure Committee provides and supports education and training initiatives addressing enterprise architectures in general, as well as specific subtopics such as Section 508 of the Rehabilitation Act of 1973, public key infrastructure and extensive mark-up language or XMl.

Reflective of the positive momentum which enterprise architecture efforts have achieved in the Federal sector, the private has begun offering Federal enterprise architecture training courses. These programs recognize that Federal agencies require qualified staff to implement enterprise architecture. One example of this is the certification program in enterprise architectures that is being offered by the California State University system. The Federal Architecture Working Group has been asked to support that certification by acting as a forum for setting certification standards and assisting in updating the content of the certification program.

In conclusion, as we heard in the first panel, the Federal Government remains in the early stages of the development and use of enterprise architectures. One would not build a building or an aerospace vehicle without architectural drawings. Similarly, the Government should set as a goal establishing an enterprise architecture prior to investing in a major IT program.

I would like to offer four observations and recommendations for your consideration. First, the Federal CIO Council's Architecture Working Group with the participation of GAO and OMB has laid a strong technical foundation in the discipline or enterprise architectures as applied to the public sector.

Second, the OMB should continue to assess and report on agency level development and use of enterprise architectures.

Third, Federal agencies should address the natural tendency for internal bureaus to become compartmentalized and stovepiped. Often the largest impediment to enterprise architecture efforts is the tension between program managers who are trying to achieve a specific task and CIOs who are trying to build a more cohesive and strategic IT foundation. The OMB could play a role in encouraging these broader attitudes which are crucial to the successful application of enterprise architectures at both the agency and Federal Government levels.

Fourth, we should collectively work to achieve the proper balance of resources allocated to enterprise architecture at the agency and cross agency levels. There is clearly evidence of a positive momentum in Federal agency use of enterprise architectures. With the support of OMB and Congress, this momentum can be sustained to ensure enterprise architectures play a major role in improving the performance and accountability of IT investments at both the agency and governmentwide levels.

I would welcome any questions you might have.

[The prepared statement of Mr. Holcomb follows:]

Hold For Release
Until Presented by Witness
March 21, 2002

Statement of
Lee B. Holcomb
Chief Information Officer
National Aeronautics and Space Administration

before the

Subcommittee on Technology and Procurement Policy
Committee on Government Reform
House of Representatives

Mr. Chairman and Members of the Subcommittee:

I am pleased to appear before the Subcommittee today to discuss the enterprise architecture and the Federal Government. First, I want to thank the Chairman and the other Members of the Subcommittee for your continued support and encouragement toward electronic Government, which will improve the performance and accountability of the federal government. The development and use of enterprise architectures at the individual agency and federal levels is a key component in the effective management of information technology (IT) investments. The development of a federal enterprise architecture is vital to success in transforming government to be citizen-centered, results-oriented, and market-based.

I have served as the Chief Information Officer (CIO) for the National Aeronautics and Space Administration (NASA) since November, 1997. In this role, I provide strategic direction and oversight for information technology programs within NASA and its ten Centers. Since February of 1999, I have also served as the co-chair of the Architecture and Infrastructure Committee (AIC) of the Federal CIO Council. Mr. John Gilligan, the CIO for the Air Force, serves as the co-chair of the Committee. The Architecture and Infrastructure Committee provides strategic direction to the Federal CIO Council and to the Federal Government's enterprise architecture efforts.

In the context of an individual agency, an enterprise architecture establishes the agency-wide roadmap to achieve the agency's mission through optimal performance of its core business processes within an efficient information technology framework. Enterprise architectures are "blueprints" for systematically and completely defining an organization's current and desired environments. They are essential for evolving

information systems and developing new systems that optimize their mission value. An enterprise architecture marries business concepts such as mission, business functions, and information flows to technical concepts such as computer hardware, software, and communications capabilities. Enterprise architectures are not solely or even primarily technical documents. They are tools critical to managers for making IT-related capital investment decisions in support of an agency's business. At the broader Federal Government level, an enterprise architecture establishes common ground to support the sharing of information and resources across agencies.

Analysis of the maturity of enterprise architecture by the Office of Management and Budget (OMB) and the General Accounting Office (GAO) indicates that, at the department or agency level, the Federal Government remains in the early stages of the development of enterprise architectures and of using enterprise architectures to support IT investment decisions. Some parts of government have made good progress, but it is clear that all parts of government have substantial room for improvement.

The history of federal IT investments provides many examples of failed projects which lacked linkage between business needs and the underlying IT technical solutions. These failed IT projects in most cases did not benefit from an enterprise architecture to guide the IT investments. As the federal sector begins to implement major agency or department-wide financial management, human resources, and asset management systems, it is imperative that enterprise architectures be established to guide change and document how improved business level results will be obtained.

In my remarks today, I plan to speak about how the CIO Council has sought to avoid those consequences, through enterprise architecture-related products and through education and training efforts. I'll also discuss current federal enterprise architecture activities of the AIC and our work in this area with OMB.

ENTERPRISE-ARCHITECTURE-RELATED PRODUCTS OF THE CIO COUNCIL

The Federal Architecture Working Group of the Architecture and Infrastructure Committee is one of the most active and productive working groups in the federal IT community. They have been especially effective in supporting the development of enterprise architectures across the Federal Government. The working group has significantly influenced the enterprise architecture efforts of governmental and private entities, especially through their publications.

The working group's achievements are all the more impressive when you consider that their activities are completely voluntary. Its membership consists of approximately 70 people representing most major agencies, as well as representatives of State and local governments, the Federal courts, and GAO. Clearly, the Members' hearts are in this effort and the individual participants believe that their efforts will pay off by improving the way our Government operates.

I'd like to discuss two products of the working group that are of particular importance.

The Federal Enterprise Architecture Framework

The Federal Architecture Working Group has partnered with OMB and GAO to produce the Federal Enterprise Architecture Framework[1]. The framework provides agencies with definitive guidance on creating and using enterprise architecture. It can be used by anyone considering or actively developing an enterprise architecture. The framework is intended as a living, breathing document and continues to evolve with changes in government business activities and technology. As such, it must be maintained and regularly updated by the federal enterprise architecture community.

The framework promotes common federal business processes, resource sharing, interoperability, and sharing of information among the agencies of the Federal Government and other governmental entities. The framework was greatly influenced by the work of John Zachman and Steven Spewak, two well-known authorities on enterprise architecture. It is structured in layers representing business processes, data, applications, and technology.

The Federal Enterprise Architecture Framework provides the roadmap for agencies seeking to transition from a current architecture to a target architecture. It addresses the **drivers** that provide the external stimulus for change, the **current architecture** that represents the current state of the enterprise, and the **target architecture** that represents the target state for the enterprise within the context of a strategic direction. The architecture serves as a common reference point to facilitate the efficient and effective coordination of common business processes, information flows, systems, and technical investments within and among Federal agencies and other Governmental entities.

A Practical Guide to Federal Enterprise Architecture

In February 2001, the CIO Council published "A Practical Guide to Federal Enterprise Architecture." This document assists agencies in defining, maintaining, and implementing enterprise architectures by providing a disciplined and rigorous approach to architecture life cycle management. The development of a successful enterprise architecture is a complicated and significant undertaking. The approaches defined in the guide help agencies avoid problems discovered by others and minimize the need for agencies to develop their own approaches.

The guide also describes in detail how the architecture processes relate to enterprise engineering, program management, and capital planning and investment control processes. Although the guide specifically addresses the roles and responsibilities of

[1] The "Federal Enterprise Architecture Framework" is available at http://www.cio.gov/.

major players in the architecture development process, it is also a handbook for anyone who needs to know more about the enterprise architecture process.

Together, the "Federal Enterprise Architecture Framework" and the "Practical Guide to Federal Enterprise Architecture" have helped agencies to develop their enterprise architectures and better guide their investment decisions.

EDUCATION AND TRAINING EFFORTS OF THE CIO COUNCIL

In addition to publishing formal guidance, the Architecture and Infrastructure Committee provides and supports education and training initiatives. These address federal enterprise architecture requirements (legislative and regulatory) and also build upon enterprise architecture best practices to create effective guidance. Our outreach programs have included numerous symposia and seminars held across the country. These have addressed enterprise architecture in general, as well as specific subtopics, such as:

- Section 508 of the Rehabilitation Act of 1973, which requires Federal Electronic and Information Technology to be accessible to individuals with disabilities;
- Public Key Infrastructure (PKI): an important technology that supports digital signatures and other security-related services; and
- eXtensible Markup Language (XML), a non-proprietary set of standards designed to assist the exchange of information among disparate computer systems.

The creation of the "xml.gov" domain has provided a ready source of information and facilitates collaborative efforts. Members of the XML group also helped plan and conduct the first Congressional conference on XML, and they will be helping to plan and conduct the second conference as well, to be scheduled later this year.

Reflective of the positive momentum which enterprise architecture efforts have achieved in the federal sector, private sector firms have begun offering federal enterprise architecture training courses. These programs recognize that federal agencies require qualified staff to implement an enterprise architecture. One example of this is the certification program in enterprise architecture that is being offered by the California State University System. The Federal Architecture Working Group has been asked to support that certification by acting as a forum for setting certification standards and assisting in updating the content of the certification program.

CURRENT FEDERAL ENTERPRISE ARCHITECTURE ACTIVITIES

Federal agencies are facing several common challenges. These include:

- Increasing the awareness of senior management and business owners of the need for and benefits of enterprise architectures. Successful enterprise architecture efforts require senior management support and leadership. Without it, efforts end up incomplete or collecting dust on a shelf;

- Training the government personnel who conduct and oversee the architecture development process; and
- Identifying adequate funding to support enterprise architecture efforts.

I would also point to the difficulty and importance of integrating architectures across the various components of departments and agencies to achieve a true enterprise architecture, as opposed to a bureau or regional office architecture. A number of departments and agencies have produced well thought out and documented architectures for individual components or efforts. However, if we are to avoid stovepipe solutions and achieve the benefits of a true enterprise-level architecture, departments and agencies must guide and integrate the architecture efforts of their component organizations.

This is not an easy task, especially for large, distributed organizations. I commend OMB's efforts to assess the status of deployment and maturity of enterprise architectures. Receiving a scorecard on enterprise architecture efforts elevates the profile of these efforts among senior management; that attention is crucial to these efforts. Also, the CIO Council and OMB should continue to provide guidance and assistance in overcoming the barriers to success.

Federal Level Efforts Supporting E-government

The enterprise architecture proposition is equally complex, demanding, and important at the broader Federal Government level. The 2001 Quicksilver E-Government Task Force cites the lack of a federal enterprise architecture as a key barrier to the success of cross-agency e-Government initiative success. In response, the CIO Council and OMB have begun developing a federal enterprise architecture to guide the President's e-government initiatives. That effort is being led by OMB's new Federal Enterprise Architecture Program Management Office (FEA-PMO). The office was established in February of this year under the leadership of Debra Stouffer. Ms. Stouffer is a member of the CIO Council Executive Committee and has gained considerable recognition for her leadership of the successful enterprise architecture effort at the Department of Housing and Urban Development (HUD). She has accepted a short detail to OMB during which she is assembling a core team of experts and analysts to provide federal-level architecture support.

The office will collect and analyze business and data architecture information across the Federal Government. This effort will initially focus on four key areas:

- Homeland Security,
- Economic Stimulus,
- Social Services, and
- Back Office Operations.

The purpose of the effort is to identify opportunities to simplify processes and unify work across agencies and within lines of business. The office will use both a bottom up and top down information collection strategy, building upon the work and information collected through the Quicksilver E-Gov Task Force in 2001.

The first step within this task involves the review and assessment of existing architecture information available from agencies and other federal entities. The Enterprise Architecture Management System, a powerful enterprise architecture tool will be populated with appropriate data, linking the data to the government's lines of business. Then, the data will be used to identify initial promising opportunities where collaboration, data sharing, and process simplification can lead to improved productivity, efficiency, and effectiveness in service delivery.

Once initial opportunities are identified, follow-on dialogue between the Program Management Office and agencies will occur to provide a better understanding of business processes and activities, stakeholders, and the associated data that support them. Stakeholders will assess the opportunities identified based upon criteria measuring impact and value to the citizen. Based upon the assessment, the opportunities will be ranked and prioritized. Business Cases will be developed for the final list of opportunities. Those approved will require full business case development based upon the requirements of an OMB Capital Asset Plan.

Since architectural work on the 24 cross-agency Quicksilver E-Government initiatives has not been completed, this initiative will assist with architecture design by producing a set of standardized component-based models. To leverage best practices and facilitate sound technology solutions for the E-Gov initiatives, the office will produce a set of standardized technology models that address common federal agency technology environments. This model-driven approach will use component-based blueprints/frameworks to enable a range of standardized solutions based on a limited set of common technologies. The OMB Chief Technology Officer will provide overall guidance and direction for this component. The Integrated Project Team for each of the approved cross agency E-Government initiatives will include a "Solutions Architect." Solutions Architects will be able to reference preferred models for creating E-Government target/transition architectures.

The blueprints will prove beneficial by lowering the cost of solutions, increasing delivery speed, and improving solution quality through consistency in approach and increased interoperability. The Solutions Architect will coordinate the information collection for the architecture for their particular initiative and lead the development of the baseline, target, and transition architectures.

Deliverables

The CIO Council's Architecture and Infrastructure Committee and the Federal Enterprise Architecture Program Management Office will deliver three major products in 2002:

- Federal guidance on enterprise architecture to include revisions to the Federal Enterprise Architecture Framework, maintenance of the XML Registry/Repository, and PKI support;

- An assessment and identification of new opportunities for business process and system consolidation to improve government efficiency and effectiveness; and
- A core set of standardized technology models to facilitate technology solutions and the development of a complete architecture (baseline, target, and transition) for each of the current E-Gov initiatives.

Activities Of The Architecture And Infrastructure Committee

In 2002, the Federal Enterprise Architecture Framework will be updated and reissued to incorporate the cross-agency Quicksilver E-Government Projects, as well as the top-level enterprise business model developed for the Quicksilver Task Force.

The Federal PKI Steering Committee coordinates, oversees, monitors, implements, and reports on the development of a public key infrastructure to support secure electronic commerce and electronic messaging. In 2002, the PKI Steering Committee will focus its activities on encouraging heightened participation in and use of the Federal Bridge Certification Authority (FBCA), a key service for allowing organizations with disparate PKI solutions to interoperate and "trust" each other as if they were using the same PKI system. The PKI Steering Committee will ensure that PKI compatibility issues and standards are key components of solutions for the 24 cross-agency E-Gov initiatives. In addition, the Steering Committee will continue its outreach efforts to local and state governments, industry, and international governments, promoting interoperability through shared trust facilitated by cross-certification with the Federal Bridge Certification Authority.

Interoperability among heterogeneous systems and reuse of data can be enabled using eXtensible Markup Language (XML). The mission of the eXtensible Markup Language Working Group is to foster the efficient and effective use of XML by government agencies. The XML Working Group has created a pilot registry/repository of "inherently governmental" XML data elements and other related information. This task is the key to reducing inconsistencies and redundancies in governmental use of XML. The repository will enable agencies to register their XML information and make them available for use by others. Among the data elements warranting priority attention are those required to protect homeland security. A longer-term objective for the XML Working Group is to work with voluntary consensus organizations to harmonize the various standards that are relevant to the operation and use of the registry.

Application to NASA

NASA has a well-defined process for developing and modifying the Information Technology Enterprise Architecture. NASA published the second version of its Integrated Information Technology Architecture in June 2000. This architecture, supported by 18 IT standards, was updated to provide the framework for development and deployment of the Agency's Integrated Financial Management system. During the course of NASA's integration and planning for this system, the Enterprise Architecture has also

been used to identify and manage technical risks -- known within NASA as "flash points" -- associated with the integration of the financial system into the NASA IT infrastructure. This approach represents a best practice for deploying enterprise-wide business systems across a distributed Agency infrastructure.

Analysis of architectural conformance of capital investments is one step in identifying candidates for enterprise-wide deployment. NASA recently conducted an internal study that collected information on IT infrastructure from its ten Centers. Using the enterprise architecture and best practices as a guide, this study has identified potential enterprise-wide infrastructure investments.

NASA has sought to apply the principles described above to our own activities. In the area of security, we have developed policies, procedures, and performance measures aligned with our missions and business practices. To aid this, we benchmark ourselves extensively against best practices in government and the private sector. One of the things we learned was the importance of workforce training, with training material customized to job functions. Today we deliver web-based IT security training to over 50,000 federal and contractor employees annually, tailored to users, managers, and technical staff. We require passing an exam to receive credit for the training and track the training rates through performance metrics. We also require up-to-date security plans, including implementation of appropriate risk-management and authorization by management to process, for all NASA IT systems. Status of these is tracked through performance measures. NASA has deployed a Public Key Infrastructure across the agency to provide digital signature, secure messaging and stronger authentication. We have systematically reduced the vulnerabilities on our computer systems, and to verify progress we systematically scan about 85,000 systems each quarter, reporting to management areas where action is required. We have also improved our awareness and response to intrusions, so that we can take quick action in the event our security is breached. We track the ratio of attacks versus successful compromises and have seen this improve fourfold in the last year. Although we can point to very specific improvements, security is a very dynamic technology, and we must constantly monitor and revise our approaches as the threats evolve. Over the past three years our budget for IT security has grown substantially, and we are searching for ways to improve security while controlling cost. We have begun experimenting with automated techniques that should reduce labor costs.

CONCLUSION

The Federal Government remains in the early stages of the development of enterprise architectures and in the use of enterprise architectures to support IT investment decisions. One would not build a building or an aerospace vehicle without architectural drawings. Similarly, the government should set as a goal establishing an enterprise architecture prior to investing in a major IT program.

Four final observations and recommendations are offered for your consideration:

- First, the Federal CIO Council's Architecture Working Group, with participation from GAO and OMB, has laid a strong technical foundation in the discipline of enterprise architectures applied to the public sector.
- Second, OMB should continue to assess and report on the agency-level development and use of enterprise architectures.
- Third, Federal agencies should address the natural tendency for internal bureaus to become compartmentalized and stovepiped. Often, the largest impediment to enterprise architecture efforts is a tension between program managers, who are trying to achieve a specific task, and CIOs, who are trying to build a more cohesive and strategic IT foundation. While a mission-focused view is important, Federal agencies must recognize the role of the enterprise architecture to link the IT infrastructure to the agency's strategic objectives. OMB could play a role in encouraging these broader attitudes, which are crucial to the successful application of enterprise architectures at the agency level.
- Finally, we should collectively achieve the proper balance of resources allocated to enterprise architecture at the agency and cross agency levels.

There is evidence of a positive momentum in Federal agency use of enterprise architectures. With the support of OMB and Congress, this momentum can be sustained to ensure enterprise architectures play a major role in improving the performance and accountability of IT investments at the agency and Government-wide levels.

Mr. DAVIS. Thank you.

Ms. Stouffer.

Ms. STOUFFER. On behalf of Secretary Mel Martinez, thank you for the opportunity to discuss HUD's effort to improve the effectiveness and cost efficiency of departmental programs, to the development and deployment of a HUD enterprise-wide architecture.

I am going to limit my remarks to enterprise architecture at HUD and the need for continued congressional and OMB support for enterprise architecture development.

I serve as HUD's Deputy CIO for IT Reform and I co-chair the Federal CIO Council's Committee on Best Practices. In early February 2002, I accepted a temporary detail as the Federal Enterprise Architecture Program Manager.

Let me first discuss HUD's approach to enterprise architecture. At one time, HUD's IT environment consisted of more than 200 stovepipe systems, many of which were very independent of one another and didn't talk to one another. The systems carried out redundant processes and relied on obsolete technology, contained incompatible data and were incapable of supporting enterprisewide decisionmaking.

HUD completed the initial development of an enterprise architecture and a baseline architecture and target architectures in the areas of grants and financial management in January 2001. HUD also developed a dynamic Web-based tool to track and analyze the layers of its enterprise architecture and the relationships between those layers.

This enterprise architecture management system is helping to identify opportunities where collaboration, data sharing and process simplification can lead to improved productivity, efficiency, effectiveness and service delivery. Because of HUD's success, EAMS is currently being used and evaluated by approximately ten other Federal organizations.

HUD's enterprise architecture is beginning to drive its IT capital planning and investment management process. The selection of initiatives to be included in the Department's IT portfolio is based upon a thorough business case that includes several architectural related considerations. As a result, its enterprisewide approach to IT investment management, HUD is now pursuing several cross program enterprisewide or cross governmental initiatives.

Let me now discuss HUD's leadership in the area of e-gov. Two examples of HUD's e-gov success stories include FHA connection and the capability to conduct on-line loan auctions. FHA connection was developed by HUD to support electronic commerce between FHA and the community of approved FHA lenders and service providers. Using a single user ID a business partner can submit official business transactions to a variety of automated systems.

In the area of FHA single family loan origination, more than 90 percent of the business transactions processed by HUD come from business partners using FHA connection. There are currently 9,000 lenders and 100,000 users of the system.

In addition, last April, HUD conducted its first Web-based loan sale. The $111 million auction was the largest Internet loan sale ever conducted by the Federal Government. The auction loans provided funds for the rehabilitation of homes in distressed neighbor-

hoods at below market rates. By empowering bidders through an advanced loan trading system, HUD increased bidder interest in the sale and maximized its sale proceeds. Because of its leadership in the area of enterprise architecture and e-gov, HUD is the partnering agency on 15 of the President's e-gov initiatives.

With regard to the security of its IT investments, HUD is also implementing a methodology to comprehensively assess the current HUD security landscape through its enterprise architecture. With respect to security and privacy, HUD will make no distinction between e-gov and non-e-gov systems. The methodology will guide the Department in identifying sensitive information being collected and the processes and policies for handling this information.

Finally, let me comment on how the Federal budget process can support enterprise architecture development. Based on my experience at HUD and as Co-Chair of the Best Practices Committee, I believe it is critical that OMB and Congress continue to encourage agencies to make progress in this area. Establishing an enterprise architecture requires participation from all agency organizations. Providing, verifying, updating and analyzing the enormous amount of information takes a significant amount of time and requires a widespread, multidisciplined effort. Continued improvement requires perseverance and the support of critical oversight organizations such as Congress and OMB.

Thank you for the opportunity to share my thoughts.

[The prepared statement of Ms. Stouffer follows:]

STATEMENT OF DEBRA D. STOUFFER
Deputy Chief Information Officer for IT Reform
U.S. Department of Housing and Urban Development

BEFORE THE
UNITED STATES HOUSE OF REPRESENTATIVES
COMMITTEE ON GOVERNMENT REFORM
SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY

March 21, 2002

Mr. Chairman and Members of the Subcommittee. On behalf of Secretary Mel Martinez, I thank you for the opportunity to discuss the Department of Housing and Urban Development's (HUD) ongoing initiative to improve the effectiveness and cost efficiency of Departmental programs through the development and deployment of an enterprise-wide architecture. I will limit my remarks to enterprise architecture at HUD, and the need for continued Congressional and OMB support for enterprise architecture development. I will leave it to Mark Forman, Associate Director for Information Technology and E-Government with the Office of Management and Budget, to discuss efforts to develop a Federal Enterprise Architecture.

I serve as HUD's Deputy Chief Information Officer (CIO) for Information Technology (IT) Reform, and I Co-chair the Federal CIO Council's Committee on Best Practices. In early February 2002, I accepted a temporary detail as Program Manager for the Federal Enterprise Architecture Program.

ENTERPRISE ARCHITECTURE AT HUD. Let me first discuss HUD's approach to enterprise architecture. At one time, HUD's IT environment consisted of more than 200 stovepipe systems and databases conceived and developed independent of each other. Many systems carried out redundant processes, relied on obsolete technology, contained incompatible data and were incapable of supporting enterprise-wide decision making. HUD completed initial development of an Enterprise Architecture Management Process, a baseline Architecture, and a strategic Target Architecture for Grants and Financial business functions in January 2001. Through the current leadership at HUD, the Department continues the process set forth by previous administrations toward achieving a Federal Enterprise Architecture.

The enterprise architecture development process began with a series of in-depth workshops with key program and IT officials. These sessions clarified HUD business functions and processes, and the applications and technologies in use across the enterprise. HUD also developed a dynamic, web-based tool to track and analyze the layers of its enterprise architecture, and the relationships between those layers. This Enterprise Architecture Management System (EAMS) now serves as the repository for the information that defines HUD's baseline architecture and is facilitating the development of a target architecture. The data in EAMS is helping to identify promising opportunities where collaboration, data sharing, and process simplification can lead to improved productivity, efficiency and effectiveness in service delivery. Because of HUD's success, EAMS is currently being used or evaluated by approximately ten other Federal organizations.

HUD's Enterprise Architecture is beginning to drive its IT Capital Planning and Investment Management Process. The selection of initiatives to be included in the Department's IT portfolio is based upon thorough business cases that include several architecture-related considerations, including:

- Is the proposed initiative an Enterprise Solution that moves us closer to our near-and long-term target environments?

- Is the proposed initiative designed to allow data to be shared across the organization?
- Will the initiative consolidate or eliminate redundant systems and infrastructure?
- Does the proposed initiative reuse existing components and infrastructure?
- Does the hardware and software to be used comply with existing and target agency standards?

As a result of HUD's enterprise-wide approach to IT investment management, the Department is now pursuing several cross-program, enterprise-wide, or cross-government initiatives. For example, Native EDGE is cross-government office and internet portal led by HUD, with 17 partnering agencies. It includes a call center and resource library for Native American small businesses and community development practitioners. The site also contains a publications clearinghouse, business partner links, and a technical assistance information center.

A second example is HUD's Empowerment Zone / Enterprise Community Software. This suite of software provides a full range of services to HUD business partners, communities, and the public from the program selection phase to post-award performance reporting. It permits application, selection and performance evaluation for the Empowerment Zone program on-line.

HUD AND E-GOVERNMENT. Let me now discuss HUD's leadership in the area of E-Government. HUD is a leader in the development of E-Government initiatives and continues to be recognized through government and industry's most prestigious awards.

Two examples of HUD E-Government success stories include FHA Connection and the capability to conduct on-line loan auctions. FHA Connection is the application developed by HUD to support electronic commerce between FHA and the community of approved FHA lenders and service providers. Using a single FHA assigned user-id, a business partner can submit official FHA business transactions to a variety of FHA automated systems. In the area of FHA single-family loan origination alone, more than 90 percent of the business transactions processed by HUD's underwriting system come from business partners using the FHA Connection. There are currently 9,000 lenders and 100,000 users of the system.

For HUD's third successful E-Government example, last April 2001, HUD conducted its first web-based loan sale. The $111 million auction was the largest Internet loan sale to date by the U.S. Government. The auctioned loans were originated under the Department's Section 312 Loan Program, which provided funds for the rehabilitation of homes in distressed neighborhoods at below-market rates. The marketing, investor due diligence, and bidding were all conducted on-line. By empowering bidders through an advanced loan trading system, HUD increased bidder interest in the sale, and maximized its sale proceeds.

Because of its leadership in the areas of enterprise architecture and E-Government, HUD is a partnering agency on 15 of the President's E-Government initiatives. In fact, HUD staff worked with OMB and representatives from across the Government to finalize the business cases for several of the 24 E-Government initiatives.

SECURITY. With regards to the security of its IT investments, HUD is also implementing a methodology to comprehensively assess the current HUD security landscape through its enterprise architecture. With respect to security and privacy, HUD's methodology will make no distinction between those systems that will be used for E-Government initiatives and those that will not. The methodology will guide the Department in identifying sensitive information being collected, and in identifying current agency processes and policies for handling sensitive data throughout the lifecycle. HUD will also begin assessing security measures for applications and technology associated with most-sensitive personal information. In addition, HUD will provide a long-term strategic approach to ensure that the target architecture appropriately addresses security and privacy.

BUDGETARY ISSUES. Finally, let me comment on how the Federal budget process can support the continued development of enterprise architectures. It is true that agencies are making mixed progress in terms of enterprise architecture. Based on my experience at HUD and as Co-Chair of the Best Practices Committee, I believe that it is critical that OMB and Congress continue to encourage agencies to make progress in this area. Establishing an enterprise architecture requires participation from all agency organizations. Providing, verifying, updating, and analyzing the enormous amount of information takes a significant amount of time and requires a widespread, multi-disciplined effort. Continued improvement requires perseverance and the continued support of critical oversight organizations, such as Congress and OMB.

Mr. Chairman, thank you for the opportunity to share my thoughts with you today. I would be happy to answer any questions you may have.

Mr. DAVIS. Thank you very much.

Ms. Canales.

Ms. CANALES. I would like to thank the chairman and the other members of the subcommittee for your continued support and interest in the improvement of information technology performance and accountability in the Federal Government. I will briefly summarize my written testimony.

I serve as the Deputy CIO for the Treasury Department. In this role I provide strategic direction, oversight and management of all information technology programs within the Treasury Department and its bureaus. I also serve on the Federal CIO Council Executive Committee as the E-Government Coordinator.

In the Treasury Department, forums such as the Treasury Chief Information Officer's Council, the Capital Investment Review Board and the newly formed Chief Officer's Council, address enterprisewide issues facing the Department and its bureaus. I have provided a handout with my testimony of the structure within the Treasury Department to address enterprise decisions and strategic planning.

The Treasury CIO Council provides the strategic technical direction and evaluation technical solutions considered on an enterprise basis. Business cases for enterprise solutions are evaluated and approved by the Capital Investment Review Board. The Chief Officer's Council is designed to act as a steering group adopting initiatives and developing high level departmental benchmarks. Its membership is comprised of chief information and financial officers, human resource officers and procurement executives.

Treasury has more direct contact with the public than most Federal agencies. To mention a few initiatives that are in my written submission, Treasury is implementing an enterprise human resource system, the Treasury communications enterprise, the IRS business systems modernization, the automated commercial environment with customs, the savings bond connection and the payment application modernization under Financial Management Service. These are just a few of the success stories we have in the department.

The task at hand now is to continue the growth of e-government and to manage the transfer as a team across government. At Treasury we are using enterprise architecture, EA, to create a unified approach to business solutions. We are leveraging EA to align technology to the business needs to allow sound business decisions, making IT more accountable to the business management.

We have a Department EA Working Group that reports directly to the CIO Council. Treasury also has the lead project, Safe COM. Safe COM will accelerate the implementation of interoperable public safety, wireless communications at all levels of government throughout the Nation. The goals of the program are to save lives through immediate public safety communications and coordination. By addressing local, State and Federal interoperability, we will be able to provide effective public safety and emergency support communications.

Any legislation considered should focus on improving the coordination and implementation of IT efforts across functional boundaries. Any legislation that would reduce the burden on citizens to

provide information is a positive step. The Government programs that share common elements of information could be vastly improved with stronger authority to enforce interagency and intergovernmental cooperation.

OMB's memorandum funding information systems investments establishes eight decision criteria OMB uses to evaluate all major information systems investments. These rules initiated fundamental changes in the management of IT resources and provided the underpinning in the promotion of enterprise solutions.

Legislative guidelines such as Klinger-Cohen Act further underscore the importance for the effective management of IT resources. The next step is to the capital planning process across agency boundary and into citizen-centered investments.

The Treasury CIO Council has identified security, privacy and critical infrastructure protection as a key initiative. The Council established several committees with cross bureau representation to address security issues for the Department.

Policies and practices are shared and implemented across the Department. The committees have established enterprise performance metrics to ensure that effective security controls are developed for every major system or application within the Department. There is a plan in place to certify and accredit all major systems. We have established a computer security incident response capability. Periodic system security reviews are performed by the Office of Information Security.

The Treasury CIO Council approved and adopted the IRS' security assessment framework as a standard for Treasury. Treasury also developed a Web-enabled, agencywide information security awareness course.

I would like to thank the subcommittee for the support it has given to e-government. Without your support, we would not have been able to achieve the national success we enjoy today.

Thank you for the opportunity to appear before you this afternoon. This concludes my formal remarks and I would be happy to respond to any questions.

[The prepared statement of Ms. Canales follows:]

TEXT AS PREPARED FOR DELIVERY

March 21, 2002

TREASURY DEPUTY CHIEF INFORMATION OFFICER TESTIMONY

BEFORE THE

HOUSE SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT

POLICY

HOUSE COMMITTEE ON GOVERNMENT REFORM

Mr. Chairman and members of the Subcommittee, I appreciate the opportunity to appear today to discuss the progress of the Department of the Treasury in using information technology to retool its information management architecture with a goal of simplifying and unifying information for the enterprise. I would like to thank the Chairman and the other members of the Subcommittee for your continued support and interest in the improvement of information technology performance and accountability in the Federal Government.

I serve as the Deputy Chief Information Officer (CIO) for the Treasury Department. In this role I provide strategic direction, oversight and management of all information technology programs within the Treasury Department and its Bureaus. I also serve on the Federal CIO Council Executive Committee as the E-Government Coordinator. My Federal role is to promote E-government initiatives that focus on results oriented, citizen-centric government.

How do you address enterprise-wide issues that have traditionally been dealt with bureau by bureau and/or department by department within your agency? How do you determine which information systems are suitable for cross cutting implementation enterprise-wide?

In the Treasury Department, forums such as the Treasury Chief Information Officers (CIO) Council, the Capital Investment Review Board (CIRB), and the newly formed Chief Officers (CXO) Council address the enterprise-wide issues facing the Department and its bureaus. I have provided a handout with my testimony of the structure within the Treasury Department to address enterprise decisions and strategic planning. The Treasury CIO Council provides the strategic technical direction and evaluates technical solutions considered on an enterprise basis. Business cases for enterprise solutions are evaluated and approved by the Capital Investment Review Board. The Chief Officers Council (CXO), a newly formed group, is designed to act as a Steering Group – adopting initiatives and developing high level Departmental benchmarks. Its membership is comprised of the highest-level executives of the following four disciplines: CIOs, Chief Financial Officers (CFOs), Human Resource Officers (HROs), and Procurement Executives (PEs). Our method for determining information systems that are suitable for implementation on an enterprise-wide basis boils down to requirements, economies of scale, and common sense. We hold periodic strategic planning sessions with the CIOs and other departmental officials to determine initiatives we can all benefit from, initiatives that are doable, areas where we already share common technology and issues

that we all need to address. Financing options are discussed. Leadership is assigned. Every enterprise initiative has a champion CIO within the Department or its bureaus.

The CXO Council approved a number of technology initiatives that will provide a baseline for many business initiatives within the Department and its bureaus, and is exploring implementation issues necessary to move forward. These initiatives include Portal technology; Self Service Travel; Public Key Infrastructure and Smart Cards; Electronic Records and Document Management; and the Wireless Program. A portal framework was ready on October 1st. The portal will support departmental directory services, communities of practice and the secure sharing of electronic information. The internal communities of practice under consideration include management, procurement, finance, human resources and legislative. We are in the process of evaluating proposals for an enterprise travel solution and hope to have a streamlined and cost effective solution in place within six months. We are providing this information to the Federal E-Gov Travel initiative. Discussions are underway for the provision of public key technology and smart cards for the Department. There is an immediate need to provide 2,000 certificates to the Treasury Inspector General for Tax Administration to support the transmission of confidential files via public mechanisms. The smart cards, we are exploring, would be used for building access and eventually as an employee identification and network access card. For the wireless program, we are working closely with local, state and federal entities to improve the public safety wireless network. Treasury has the leadership role for this effort in the Federal E-Gov initiatives. One of the first successful uses was at the 2002 winter Olympics.

The next logical step in the process will be to manage investments across agency silos to address citizen focused services such as health care, grants, licensing or taxes.

Discuss specific enterprise-wide infrastructure initiatives that are being implemented that will allow the federal government to harness the benefits of technology. How will your efforts support the work of the OMB Associate Director of IT and E-Government, Mark Forman, in implementing priority e-government and IT initiatives? How will your agency's initiatives benefit citizens? State and local governments? Other agencies?

The Department of the Treasury has more direct contact with the public than most Federal agencies. According to Media Metrics, the Treasury web properties are consistently among the top most frequently accessed sites. The majority of Treasury's E-government initiatives are directed at its customer base – citizens, businesses and other government agencies. This strategy maximizes Treasury's return on its investment, by reducing costs, leveling off its workforce and leveraging technology across all its business lines. I could spend the rest of the afternoon detailing the Department's E-government initiatives, but let me focus on some of the major enterprise initiatives underway at the Department.

Treasury is implementing an enterprise Human Resources system – HR Connect. We are currently spending $53 million a year to support more than 90 personnel and payroll

systems. The majority of these systems do not interoperate or "talk" to each other and were never designed for use with today's technology. The objectives of this effort are:

- Enable strategic management of the Treasury workforce
- Facilitate process improvements increasing productivity and achieve high performance
- Provide improved services to employees and managers at reduced costs
- Replace legacy systems with integrated state-of-the-art technology
- Improve the organization's ability to recruit, develop and retain high caliber individuals.

The first three bureaus that went live on HR Connect represented a major milestone. It was the first time that multiple Treasury bureaus were supported within a single line of code. At this time we are working to bring our 7th bureau on line with HR Connect. Total investment plus operational costs of $262 million over 10 years yields a cumulative net benefit of $195 million. The return on investment is $2.31 for every dollar invested. This system supports the internal efficiency and effectiveness goal set forth by OMB.

Our Treasury Communications System (TCS) is the largest private data network in the world. The Department is transitioning TCS into the Treasury Communications Enterprise (TCE). This is essentially a set of corporate utilities that take advantage of Treasury's volume to reduce costs plus managed services to integrate several Treasury telecommunications management programs into a single corporate telecommunications and information technology service. This system serves as a backbone for Treasury's E-

government initiatives and supports over 200,000 users worldwide. This system definitely supports the internal efficiency and effectiveness goal but will also provide the baseline for many of Treasury's E-Government initiatives supporting the areas of government to citizen (G2C), government to business (G2B) and government to government (G2G).

As is well known throughout the government and the IT world, Treasury and its bureaus have a number of modernization efforts in various stages of implementation. These modernization efforts address the most difficult issues by reengineering the business processes they support as well as reengineering the technology. The federal tax system, which produces close to $2 trillion in revenue each year, is dependent on a collection of obsolete computer systems developed by IRS over the last 35 years. The purpose of the IRS Business Systems Modernization effort is to raise all major IRS business systems to the level of best practice that exists in private and public sectors, while managing risks inherent in the process. This modernization effort will impact every component of IRS over time. Implementation work on the first approved modernization projects to facilitate call routing and electronic filing will begin in 2001-2002. The Business Systems Modernization Program has reorganized the IRS into business lines which will be supported by the technology. The business lines are: Wage and Investment; Large and Mid-sized Business; Small Business/Self Employed; and Tax Exempt. The IRS has three strategic, customer focused goals: service to each taxpayer, service to all taxpayers, productivity through a quality work environment. Congress has established the aggressive goal that 80 percent of all tax and information returns should be filed

electronically by 2007. The 2000 tax year was a banner year for the IRS with one out of every four individual taxpayers filing their tax returns electronically. The IRS E-file program provides faster refunds, an acknowledgement that the tax return has been accepted by the IRS, and nearly 100% accuracy, all of which translates into fewer contacts with the IRS. As of March 30, 2001, the IRS received about 69.9 million Form 1040 returns, down about .4% from last year at that time. This includes 32.6 million returns that were filed electronically, up about 11.2% from the same period last year. The IRS modernization effort addresses all four OMB priorities: internal efficiency and effectiveness, G2C, G2B, and G2G.

In the last decade, trade has grown 132%. U.S. Customs is currently using the Automated Commercial System (ACS), which is sixteen years old and taxed to its limits. To address this deficiency, Customs has designated its replacement, the Automated commercial Environment (ACE) under the overall Customs Modernization Program. Other government agencies, such as Agriculture, Food and Drug Administration, Transportation, Immigration and Naturalization Service, and the Bureau of the Census, rely on Customs systems to perform their internal operations. Currently, a single international shipment can require as many as 40 different government paper forms. Ninety percent of the information is redundant. ACE will significantly reduce the paperwork burden, provide functionality long sought by the trade, and respond to legislative requirements. This contract will put in place a system that not only replaces the current trade system, but in later stages or modules it will upgrade the investigative case management system and internal administrative systems – financial and human

resources. A cost-benefit analysis for ACE has determined that a $1 billion investment in ACE now will generate $3.3 billion in Government benefits through revenue recovery, labor cost avoidance, and productivity improvements. ACE is another example of a system hitting each of OMB's goals.

An example of the way that Treasury Bureaus are delivering new value to citizens, businesses, and government partners is FMS' Pay.gov. Pay.gov is an Internet portal and transaction engine that offers a package of electronic financial services to assist agencies. The services of Pay.gov rest on four cornerstones:

- Collections – enabling end-users to authorize collections over the Internet
- Forms submittals and bill presentment – accepting agency forms submitted over the Internet and presenting agency bills to end-users over the Internet
- Authentication – establishing the identity of Internet end-users
- Agency reporting – providing necessary information back to agencies about transactions.

The services of Pay.gov can help agencies meet their GPEA requirements to accept forms electronically by October 2003. The basic services of Pay.gov generally will be free for agencies and the public. FMS will price services that go beyond basic services using an "at-cost" basis.

Treasury's Bureau of Public Debt partnered with Treasury's Financial Management Service, Mellon Bank, MasterCard and IBM to build an Internet-based system to sell U.S. Savings Bonds directly to the public. The Savings Bond Connection allows citizens

to buy a savings bond on a 24 x 7 basis through the Internet using a credit card. The Bureau of Public Debt sells directly to the public instead of using its traditional network of over 40,000 commercial banks. Through the Savings Bond Connection, Public Debt reduced the delivery time for bonds by one-third. The system cost $350 thousand to develop and implement. Americans bought $292 million in bonds at the site in fiscal year 2001.

The Bureau of the Public Debt's Treasury Direct Electronic Services (TDES) allows individuals to directly manage their investments in the U.S. Treasury marketable securities using either the Internet or telephone. The system is an application that uses intelligent agents to automate various investor services, such as purchasing securities, reinvesting maturing securities, viewing account status, requesting account statements, as well as other similar services. TDES was implemented to promote self-sufficiency among Treasury Direct's 600,000 customers who hold some $77 billion in securities. The system facilitated Public Debt's consolidation of servicing sites from thirty-six Federal Reserve Banks to three. By using TDES, Public Debt has reduced the processing cost of a tender to $0.50 as opposed to $30.00 to process a paper tender in the past. Now, TDES accounts for 70 percent of all reinvestments and 40 percent of new sales. Investors purchased more than $8.7 billion in bills, notes and bonds in fiscal year 2001.

The Savings Bond Connection and the Treasury Direct Electronic Services are two highly secure E-Government applications that allow individual investors the option of

establishing their accounts on-line, completing transactions to include the payment process, and accessing all account information.

The U.S. Mint operates the Online Store, a highly successful electronic commerce web site with an online catalog shopping service. The site offers Internet catalog browsing with mail and phone order capability as well as secure credit card sales. The U.S. Mints; Online Store is recognized as one of the top 20 "e-tailers" in the nation, with total web sales of more that $256 million during a twelve-month period. The Mint receives orders from customers located world-wide to electronically buy Mint products. The Mint also receives coin orders electronically from the Federal Reserve Banks (FRB). E-mails and electronic spreadsheets are used quarterly by the FRB to order coins for individual banks by denomination and amount.

The Electronic Federal Tax Payment System (EFTPS) provides an electronic system for reporting and paying Federal taxes. EFTPS is the largest payment collections system in the world. The Financial Management Service (FMS) and the Internal Revenue Service (IRS), working with the private sector, have modernized the federal tax payment environment. They started with the federal tax deposit coupon system then expanded to other business and individual tax payments. By replacing the current paper-based system, EFTPS benefits taxpayers and the Federal Government by providing greater reporting efficiencies and by expediting the availability of funds and investment decision-making information to the Treasury Department. The primary objectives for EFTPS are to reduce the filing burden by providing flexible payment choices for taxpayers; to

increase the speed, efficiency, and accuracy of revenue collection and taxpayer account posting; and to expedite the availability of funds to the Government.

The Financial Management Service (FMS) Payment Application Modernization and Government-wide Accounting Modernization efforts include processes in the areas of payments, collections, government-wide accounting and debt management that, when made available in an electronic form, will provide individuals and other entitles that do business with FMS, the option to submit information or transact with FMS more efficiently and with improved customer service and satisfaction. Since the implementation of the electronic funds transfer (EFT) requirement of the Debt Collection improvement Act, the percentage of total Treasury disbursed payments made by EFT has risen to 73%. FMS Payment services touch the lives of over 100 million people. Literally tens of millions of Americans depend on FMS systems to meet lifeline needs every month. FMS makes almost 900 million payments annually on behalf of civilian agencies such as the Social Security Administration, Department of Veterans Affairs and the IRS. FMS also offsets certain payments against debt owed to the Federal Government. Payment modernization is one component of a multi-year effort to replace, streamline and reengineer the critical information systems that support core FMS business processes. The processes and systems used to account for and report on the execution of the President's Budget, and on the government's receipts, outlays and surplus or deficit, have not changed fundamentally for 30 years. However, there have been dramatic changes in the government's accounting environment. The Government-wide Accounting Modernization initiative will improve the reliability and timeliness of

the government's financial information by providing better tools for federal program agencies to check the status of their financial information held by Treasury and by streamlining reporting and reconciliation processes.

These are just a few of the success stories we have in the Department. The task at hand now is to continue the growth of E-Government and to manage the transformation as a team across government. The task of managing investments across departments will be difficult but we now have an internal advocate within OMB. Mark Forman is the key leader of this initiative at OMB. For the first time, we have a dedicated person within OMB, appointed by the administration, whose purpose is to help us manage citizen-focused investments and work across agency silos.

How does the Department of Treasury view EA in the context of improving its information infrastructure? How has EA been used to modernize the Department of Treasury's IT environments? As the managing agency partner on a number of e-government initiatives, how is EA being integrated into those tasks? Please discuss specifically the Wireless Public Safety Interoperable Communications-Project SAFECOM.

At the Department of the Treasury, we are using Enterprise Architecture to create a unified approach to business solutions. We are leveraging EA to align technology to the business needs to allow sound business decisions, including anticipating and mitigating risks and making IT more accountable to business management. We believe that business objectives must be well defined before initiating information technology

solutions, and that total business value is the primary objective when making information technology decisions. We are focusing on interoperability of systems and integration of data requirements. The focus is on the commonality of customers, functions and business processes.

We have a Department Enterprise Architecture Working Group that reports directly to the CIO Council. Business processes and supporting "as-is" structures have been defines. The "to-be" architecture is developed. Consistent standards and products have been defined for common processes. New initiatives will adhere to the standards. The Enterprise Architecture working group continuously identifies opportunities for consolidating services, site licenses, and economies of scale for equipment and services.

Treasury has the lead on Project SAFECOM. The intent of Project SAFECOM is to accelerate the implementation of interoperable public safety wireless communications at all levels of government throughout the nation. The goals of the program are to save lives through immediate public safety communications and coordination. By addressing federal to federal, federal to state/local, and state to local interoperability we will be able to provide effective public safety and emergency support communications for not only emergency response situations, but also for daily operations and task force support for public safety agencies. We will use EA to identify interoperability requirements across all level of government, and to achieve interoperability solutions and cost savings through standardization, resource sharing, frequency spectrum management, and sharing of information between partners.

Treasury has a history of supporting the Federal EA effort and the Federal CIO Council. Treasury was a major contributor to several CIO Council EA documents. (Federal Enterprise Architecture Framework (FEAF), Version 1.1, September 1999; the Architecture Alignment and Assessment Guide (AAAG), October 2000; and A Practical Guide to Federal Enterprise Architecture, Chief Information Officer Council, Version 1.0, February, 2001). The last two documents are primarily based on the EA work that was done at Treasury's U.S. Customs bureau. Treasury will continue to support the E-government initiatives including the Federal CIO Council, OMB and Congressional efforts.

What recommendations can you make to the Subcommittee for future legislative initiatives that would facilitate cross-agency and inter-agency cooperation for simplifying and unifying redundant business architectures, particularly in support of e-government initiatives?

Any legislation considered should focus on improving the coordination and implementation of IT efforts across functional boundaries. Any legislation that would reduce the burden on citizens to provide information is a positive step. We must envision a government in an interconnected digital world. As a member of the Executive Committee of the Federal CIO Council I believe that many government programs that share common elements or information could be vastly improved with stronger authority to enforce interagency and intergovernmental cooperation. We need to tear down

stovepipes and obsolete hierarchical structures. We don't have an architecture to support our lines of business. We have 478 lines of business with multiple departments supporting the same lines. In the past, the client server based technology presented barriers to the provision of services across agency boundaries and to the sharing of information across functional areas. Today, the Internet knows no such structures or boundaries. Today, technology can facilitate the interoperability. Technology can support the path to a citizen-centered government.

How do current budgetary practices and the appropriations process affect your ability to implement enterprise-wide architectures and eliminate redundant IT investments?

The appropriations process, coupled with a variety of budgetary practices, have provided the framework for federal agencies to implement a variety of enterprise solutions. OMB's October 25, 1996 memorandum, "Funding Information Systems Investments" (also known as "Raines Rules") establishes eight decision criteria OMB uses to evaluate all major information system investments proposed in the President's budget. These rules initiated fundamental changes in the management of IT resources and provided the underpinning in the promotion of enterprise solutions.

Legislative guidelines, such as the Clinger Cohen Act, further underscore the importance for the effective management of IT resources. This particular legislation allows the CIO to maximize his role in establishing enterprise approaches to fully exploit the advantages of Information Technology. Treasury's CIO leveraged this as the chair of the Treasury's

CIO Council. The CIO council serves as the forum for recommending policies and standards for enterprise applications, products and services as well as promoting new technologies and IT opportunities. The council provides the voice of the customers across a range of IT management issues, including the evaluation of the effectiveness of bureau programs and the costs of services provided. The Capital Investment Review Board and the CXO Council provide the opportunity to regularly review investment plans to ensure the most cost effective solutions; emphasis is given to those utilizing enterprise solutions.

The next step is to take the capital planning process across agency boundaries and into citizen-centered investments. With the help of the Associate Director for IT and E-Government and the President's Management Council, we can do this. The key is teamwork not technology. The technology exists; the rest is up to us.

How is your agency identifying and implementing proper security and privacy policies for information systems, both overall and with respect to systems that will be used for E-government initiatives?

The Treasury CIO Council identified Security, Privacy and Critical Infrastructure Protection as a key initiative. With the onset of E-Government initiatives, the CIO Council felt that the Department must develop baseline requirements and policies. The Council established several committees with cross bureau representation to address security issues for the Department. Most of the committees are chaired by the Department's Director of Information Systems Security. Some committees have bureau

CIOs as chairs. Policies and practices are shared and implemented across the Department. Baselines are established for security and privacy with more extreme measures for the law enforcement and crime prevention entities. The committees have established enterprise performance metrics to ensure that effective security controls are developed for every major system or application within the Department. All major systems or applications are certified and accredited. We have also established a computer security incident response capability to coordinate Treasury efforts with appropriate external Computer Emergency Response Teams and to collect agency-wide information and disseminate relevant incident reports within Treasury. Periodic audits are performed by the Office of Information Security. The Treasury CIO Council approved and adopted the IRS's Security Assessment Framework as a standard for Treasury. The IRS framework has been recognized by the General Accounting Office as a best practice within the federal sector. Treasury has also developed a web-enabled and CD-ROM based agency-wide information security awareness course.

I would like to thank the subcommittee for the support it has given to E-Government. Without your support we would not have been able to achieve the national success we enjoy to date. Mr. Chairman, thank you for the opportunity to appear before you this morning. This concludes my formal remarks and I would be happy to respond to any questions.

Mr. DAVIS. Dr. Callahan.

Ms. CALLAHAN. I appreciate you inviting me here today to be able to describe how the Department of Labor is streamlining and strengthening its information resources infrastructure for the purpose of improving the effectiveness and efficiency of our operations and our programs.

As you are aware, the Department of Labor is a decentralized organization. Therefore, taking an enterprisewide management approach is critical to making sure that our information infrastructure is not only efficient and responsive but most importantly ensuring that we have the appropriate infrastructure in place to improve service delivery to our customers. In this way, the Department of Labor can truly become a digital department.

The specifics pertaining to the Department's accomplishments and progress have been detailed in my written testimony and I would like to summarize some of the key highlights.

In May 2001, the Department of Labor created an e-government strategy that articulates a vision of guiding principles and provides the framework in order for us to manage through this time of change and transformation. We focus on four key programmatic areas as far as managing change with that strategy: customer relationship management to truly ensure we have a citizen-centered government, in addition to organizational capabilities which is where we deal with our people policies and procedures, as well as another key focus area enterprise architecture; and most importantly, something that crosses through all aspects and focus areas, security and privacy to ensure that we maintain the citizens' trust in the work we perform and the information we process and handle.

To implement the vision, the Department has established a several pronged strategy to include the management and budgetary framework necessary in order to govern enterprisewide issues. The structure that we have in place includes a multi-tiered investment review board that is led through the Secretary and her strong leadership. In addition, we have a capital planning and investment control process as well as we have established a central IT crosscut fund which allows us to focus into portfolio management areas. The portfolio management areas include enterprise architecture, common office administration suites, common management systems that are enterprisewide as well as security and privacy. Those initiatives and security and privacy cut across all aspects of our investment portfolios.

When an initiative is being considered for investment it undergoes a very rigorous process as part of the capital planning and investment control activities. Once it is selected, we then monitor it very rigorously through a quarterly review process to ensure that not only the investment itself but the portfolio as a whole is achieving our objectives in accordance with cost, schedule and performance goals.

As a result of these efforts, we have been able to realize cost avoidance savings. Particularly, we have been able to achieve a 40 percent reduction in our potential enterprise architecture expenditures. In one particular example is our common office administration suite in which the initial cost if each agency were to handle

this in a traditional stovepiped approach, it would have been an expenditure of $33.7 million. By consolidating the efforts at the enterprise level and managing it through the Investment Review Board structure under the leadership of the Secretary, we have been able to reduce the cost down to $26 million. This essentially is a $7.3 million savings or a 21 percent reduction in cost avoidance.

Building on our initiatives, we have established a very strong enterprise architecture program in which we handle our enterprise architecture activities in a phased approach. The Department of Labor is the only department in the Federal Government that has a federated enterprise architecture model, one that is designed to work in a decentralized environment. With that, we have established our functional levels of business, our data architecture, a mission critical applications architecture and a technology baseline.

We also function under nine enterprise architecture guiding principles, 37 standards and a technical reference model to ensure investments are closing the gap and moving us toward the target of where we want to be. In order to manage our enterprise architecture technology reference model, we also have a standards life cycle process in place to ensure that we are dynamic and flexible and can take advantage of industry revolutions and novel and emerging technologies in a way that makes sense to a minor business with our technology.

Our enterprisewide initiatives at the Department level have enabled us to be positioned to be able to lead a very important e-government initiative, one of the 24. The eligibility assistance on-line initiative which is now called Gov Benefits, is an initiative in which the Department of Labor is a managing partner.

We are looking at the opportunity of not only employing enterprise architecture activities at our department level, but across the Federal Government through this particular initiative, in particular the eligibility assistance on-line initiative is being hosted at First Gov, not at the Department of Labor. This management decision enables us to take advantage of the technological advances that have been realized through the First Gov Initiative without creating a duplication of effort.

This allows us to establish the fundamental processes and foundation in place to support the administration's goal of unification and simplification and mostly importantly, to collect information once we use it rather than place additional burden on the public.

As we manage our change and as we continue to transform ourselves, we are looking forward to incentives in the appropriations process to ensure that agencies are encouraged to collaborate across traditional boundaries and with that, an entire business transaction receives the resource requirements necessary to ensure that it is successful across traditional agency boundaries.

These activities coupled with an industry best practice as far as a self sustaining enterprise architecture will encourage more entrpreneurialship within the Federal Government and enable us to continue to foster collaboration across agencies which will be key

to our success as we move forward during this exciting time of transformation.

This concludes my comments and I look forward to answering your questions.

[The prepared statement of Ms. Callahan follows:]

STATEMENT OF DR. LAURA L. CALLAHAN, PH.D.
DEPUTY CHIEF INFORMATION OFFICER,
DIRECTOR OF INFORMATION TECHNOLOGY
U.S. DEPARTMENT OF LABOR
BEFORE THE
UNITED STATES HOUSE OF REPRESENTATIVES
COMMITTEE ON GOVERNMENT REFORM
SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY

MARCH 21, 2002

Mr. Chairman and Members of the Subcommittee.

Thank you for inviting me here today to describe how the Department of Labor (DOL) is streamlining and strengthening its information resources infrastructure to improve the effectiveness and efficiency of our operations and programs. As you are aware, the Department of Labor is a decentralized organization comprised of many agencies. Taking an enterprise-wide management approach is critical to making information infrastructure more efficient and responsive, which is necessary to achieve economies of scale, reduce duplication of effort, and--most importantly--ensure that we have the appropriate infrastructure in place to support our E-Government objective of improving service delivery to the Department's customers. In this way, the Department of Labor can truly become a "Digital Department."

The E-Government Framework

Before I address the specifics of our approach to managing technology, I would like to provide you with an overview of the context within which technology decisions are made. In FY 2001, the Department issued its E-Government Strategic Plan. The Plan identifies the vision, mission, and guiding principles of our E-Government activities. It also establishes the Department's overall E-Government framework comprised of the following four elements:

- Customer Relationship Management. The methodologies, technologies, and capabilities that help the Department identify customers more precisely, determine what customers want, and how to meet and continuously improve customer service.

- Organizational Capability. The policies, plans, people, and management processes that are required to develop, implement, and sustain a high level of digital services in support of the Department's mission.

- Enterprise Architecture. The explicit description of the current and desired relationships among business processes and information technology.

- Security and Privacy. The integrated planning framework and unified approach to developing and implementing security and privacy policies, procedures, and plans, including the analysis of threats and vulnerabilities as well as risk mitigation and management.

By defining our E-Government Program in such a way, we have established a comprehensive framework that positions the Department for successful technological integration. We have a common understanding of what E-government is and a unifying approach to guide our activities.

As a result, we are also well-positioned to partner with other federal agencies to implement priority E-Government and Information Technology (IT) initiatives. As the Administration's E-Government Task Force moves forward with its priority E-Government initiatives, the Department stands ready to support these efforts.

Addressing Enterprise-Wide Issues

The Department has established the management and budgetary framework necessary to efficiently and effectively govern enterprise-wide issues and initiatives.

Three years ago, as part of the overall investment review board structure, the Department established a Technical Review Board (TRB) to: (1) address Department-wide IT issues; (2) select major initiatives; (3) review on-going initiatives; and, (4) evaluate existing initiatives. The TRB bridges traditional organizational boundaries and is comprised of lead IT professionals and Administrative Officers from major departmental agencies and includes the participation of the Office of the Inspector General in an advisory capacity. The TRB is designed to improve Department-wide collaboration and communication to ensure the Department's IT decisions are in the best interest of all our customers. In FY2001, the Department established the Management Review Board to coordinate Departmental management issues among agency heads.

To overcome traditional appropriations and organizational stove-piped approaches, we also established an IT cross-cut budget line item to fund enterprise-wide IT initiatives. DOL is the only Federal department with department-wide IT financing. The Office of the Chief Information Officer manages the IT budget cross-cut fund. We have identified the following four IT cross-cutting portfolio areas:

- Enterprise Architecture. Focuses on upgrading the Department's outdated core infrastructure; which is necessary to implement the Department's Enterprise Architecture. Investments are made in Local Area Networks (LANs), software, cabling, and telecommunications equipment.

- Common Office Automation Suite. Moves the Department to a single suite of office automation tools (word processing, spreadsheet, graphics, e-mail, database) to permit full interoperability among departmental agencies.

- Common Management Systems. Concentrates on "enterprise solutions" and common management applications (procurement, human resources management) that are used by most or all departmental agencies.

- Security and Privacy. Includes security planning and plan implementation, risk management and mitigation, contingency planning, installing firewalls and intrusion detection systems, and related support contracts.

Candidate initiatives for IT cross-cut funding must undergo rigorous analysis in accordance with the Department's IT Capital Planning and Investment Control process. This includes conducting risk analysis, developing project plans and business cases, managing the initiatives in the Information Technology Investment Portfolio System (I-TIPS), ensuring consistency with the Department's Enterprise Architecture, and gaining TRB approval. Once an initiative has been selected, the initiative is then monitored, as part of the Department's overall investment portfolio, through quarterly reviews conducted by the Office of the Chief Information Officer to ensure the initiative itself, and the investment portfolio, continues to meet cost, schedule, and performance goals. The President's Management Agenda scorecard recognizes the cost-effectiveness of the Department's IT planning and financing processes.

In accordance with our E-Government Strategic Plan, we take a customer-centric approach to determine our enterprise-wide initiatives. In support of this approach we have grouped our Government Paperwork Elimination Act (GPEA) transactions by major customer groups, tied those transactions to specific IT projects, and linked those projects to Departmental Government Performance and Results Act (GPRA) documents to build a performance "results-chain." We are using this analysis to identify where the Department can best focus its customer improvement activities.

As a result of these efforts, significant cost avoidance is being realized. For example, our IT Capital Planning and Investment Control process reviews resulted in a 40% reduction in potential Enterprise Architecture expenditures from the initial internal FY 2003 Enterprise Architecture IT cross-cut request. Another example where we have reduced costs is with the departmental Common Office Automation Suite. The cost for the overall effort was initially $33.7M if managed independently by each agency. The Department consolidated this effort into a cross-cutting approach and applied a standard cost model that reduced the total budget request for the three-year effort from $33.7M to $26.4M - a savings of $7.3M or 21% cost reduction.

Building the Foundation for Enterprise Initiatives

The foundation for technological decision-making is the Department's Enterprise Architecture, which is why we have made it one of the four pillars of our E-Government Program.

The Department is implementing its Enterprise Architecture in a phased approach that is initially focused on enterprise functions, standards, and principles. We focus on enterprise functions first because they provide the greatest Department-wide return on investment. Successive phases will focus on shared functions (functions that some but not all of the departmental agencies perform) and independent functions (functions performed by only one or two departmental agencies). We are the only Department in the Federal government that is implementing a "federated" Enterprise Architecture, one that is designed to be successful in our decentralized environment.

To date, we have completed the first two Phases of the Department's Enterprise Architecture, which established the functional level business model, data architecture, mission critical applications architecture, and the technology baseline. We have established nine Enterprise Architecture guiding principles and 37 standards as well as our Technical Reference Model. In addition, we have developed a standards life cycle management process and identified stakeholder interactions. We are also in the process of populating the Enterprise Architecture Management System (EAMS) with enterprise-level data. This use of EAMS is intended to automate the Enterprise Architecture to facilitate real-time analysis of how our data and technologies can better support our business lines. Phase III of the Enterprise Architecture effort, currently underway, is focused on developing a complete target architecture and transition strategies within each agency and bureau of the Department. Through the Enterprise Architecture effort, we are continuously identifying cross-cutting functions for Department-wide standardization and implementation. For example, the human resource management function had been addressed in a stove-piped manner, utilizing different systems and procedures throughout the Department. As a result of our Enterprise Architecture effort, we streamlined this process, approached it from an enterprise-wide perspective, and implemented a commercial-off-the-shelf solution. Our efforts to streamline the Department's human resource management systems are linked to the President's E-government Enterprise HR initiative, which will enable the electronic transfer of HR data throughout the federal sector and improve government-wide reporting and data analysis.

Enterprise-Wide Initiatives

Managing information technologies in a dispersed environment can result in individual agencies making individual technology-related decisions that are not in the best interests of the overall Department. The Department's Enterprise Architecture efforts are designed to address this fundamental problem and we will ensure that agency-level architectures are consistent with the Department's Enterprise Architecture. Initiatives are governed via our investment review boards to ensure they are consistent with the Enterprise Architecture Technical Reference Model and standards. Initiatives are also compared to the Department's Business Architecture section to ensure that

process simplification and unification occurs to improve the overall efficiency of operations. Some examples of the architecture evolution include one agency changing its network infrastructure strategy to comport with the Department's network management strategy to improve interoperability.

The Department is leveraging the knowledge gained through the Enterprise Architecture efforts and has begun to identify opportunities for intergovernmental collaboration to improve services to customers. Additional opportunities are expected to surface as the Department continues to mature its customer relationship management program and further integrate its Enterprise Architecture activities.

These efforts have positioned the Department for successful development of the Quicksilver initiative, GovBenefits (formerly Eligibility Assistance Online), for which we are the Managing Partner. In the case of GovBenefits, however, the initiative will be hosted on FirstGov and not at the Department of Labor. This management decision enables the Department to leverage the existing FirstGov infrastructure and harness its technology benefits to avoid duplication. As a result, we are coordinating with the General Services Administration to ensure consistency with the FirstGov architecture. In a broader sense, GovBenefits, and the other Quicksilver initiatives, point to the need for consistent standards and approaches across the entire Federal enterprise.

These efforts provide the Department's foundation for supporting the Administration's stated goals to: (1) unify or integrate islands of information; (2) simplify business processes to maximize the benefits of technology; and, (3) collect information only once and re-use it rather than place additional burdens on the public. For example, the Department is consolidating multiple financial databases into one data warehouse and emphasizing the use of web-based technology coupled with commercial-off-the-shelf applications to eliminate stove-piped systems. Like other diverse Departments, we have inherited three different e-mail systems that limit the ability to exchange information between employees and impacts our ability to implement a unified digital signature solution. Under Secretary Chao's leadership, we are progressing toward a single e-mail solution for better communications that will integrate with the General Services Administration's E-Authentication effort, and thus provide more effective interaction. These efforts position the Department to efficiently manage and streamline enterprise-wide functions and lay the foundation for the Department to benefit from E-Government initiatives.

Security and Privacy

The Department's customers must be confident that they can conduct transactions with the Department in a secure environment, with the appropriate privacy protections. We risk losing public trust and confidence if we do not actively pursue our efforts to become a "Digital Department" in a manner that comprehensively addresses security and privacy.

Consistent with the other major elements of our E-Government Program, the Department is taking a phased approach to its Security and Privacy efforts. During the first phase, we developed a comprehensive Cyber Security Program and accomplished the following:

- Developed Security and Privacy IT Budget Cross-cut;
- Issued revised DOL policy for computer security;
- Developed computer security guidance and issued the Computer Security Handbook;
- Established an Emergency Incident Response Team;
- Installed an intrusion detection system on the Department's core network backbone;
- Upgraded the firewall on the Department's core network;
- Implemented an automated tool to perform log analyses functions;
- Developed Change Management Control Procedures for the Office of Administration and Management;
- Conducted risk assessments of the Department's major applications, general support systems, and financial systems resulting in a better understanding of security risks and improved ability to address them;
- Developed System Security Plans for major applications, general support systems, and financial systems;
- Developed an enhanced Computer Security Awareness Training Plan;
- Demonstrated compliance with Level II of the Federal Security Assessment Framework and provided lessons-learned to Federal CIO Council;
- Issued the Systems Development Life Cycle Methodology that integrated IT security into each phase of the project's life cycle; and
- Conducted penetration tests on all major networks;
- Used OIG security testing and evaluation results for five major general support systems to help develop the DOL Mitigation Plan.

During the security Phase II we will conduct on-going vulnerability analyses (for a greater number of systems), continue implementation of the Computer Security Awareness Program, finalize the Certification and Accreditation Process, and develop plans for moving to higher maturity levels in the Federal Security Assessment Framework. This Framework is the Federal CIO Council's sponsored mechanism for measuring security progress. We also recognize that effectively addressing privacy requires that personally identifiable information that is considered "sensitive" be protected. Toward that end, we are developing privacy impact criteria and integrating privacy impact analysis into our vulnerability assessment process.

As the former Co-Chair of the Federal CIO Council's Committee on Security, Privacy, and Critical Infrastructure, I have collaborated with other Information Technology professionals, in government and industry, to ensure implementation of security practices within the Federal government to gain public confidence and protect government services, privacy, sensitive, and national security information. The

management of security is an area the CIO community needs to continue to show leadership and vision as stove-piped systems become integrated within agencies, and subsequently throughout the Federal Enterprise Architecture.

Computer interconnectivity and increased use of the Internet are providing unparalleled opportunities for agency improvements in mission-related operations. Historically, security issues have not been a predominant concern. The Council recognizes that due to the proliferation of the Internet and increased requirements for interoperability, a heightened focus on security is necessary. Recent audits document that security management is an issue in the Federal IT community. Agencies have made significant improvements in their ability to effectively protect the integrity, privacy, and availability of the systems and data on which they rely; however more work remains to be done. Agencies must also continue to build the management framework for dealing with the information security risks associated with their operations. One of the benefits of the Government Information Security Reform Act (GISRA) has been to give senior executives a greater awareness of information security issues.

Addressing Challenges Through Change Management

To achieve our E-Government vision requires us to reach a higher level of integration, both internally at the Department of Labor and externally with other departments and agencies. Managing change in this context requires a significant level of collaboration. For example, to develop our Enterprise Architecture the Department held approximately 28 workshops attended by 220 program and 85 IT representatives from all our major agencies. Many more workshops and outreach activities will follow. This approach is consistent with our change management strategy and based on our hard won understanding that efficient and effective Enterprise Architectures cannot be imposed. We apply this strategy for other major efforts in support of our overall Departmental E-Government vision and utilize our investment review board structure to promote collaboration, communication, and consensus-building. The collaborative approach ensures the Department: (1) leverages knowledge and expertise resident throughout our organization; and, (2) builds support and buy-in necessary for long-term change.

Another critical element of our change management strategy is risk mitigation. This is done by taking phased modular approaches wherever possible and practicable. The centrally-managed IT budget cross-cut account supports risk mitigation. The account provides us with the control and flexibility to manage necessary long-term projects and processes because the funding is not tied to an agency-specific program area. We also have developed key partnerships with other DOL components to include the Budget Office, the Office of the Chief Financial Officer, Procurement Executive, and other process stakeholders to effectively manage through these changing times.

Finally, we continue to recognize the need to integrate our Enterprise Architecture activities with our customer relationship management efforts. In doing so, we have

begun to identify customer groups we have in common with other departments and the need to coordinate improved services delivery across multiple Enterprise Architectures.

Facilitating Inter-Agency Cooperation

As the Department continues its transformation to become a "Digital Department," the ability to effectively manage risk will be essential during this time of change. The ability to partner with other agencies, and State and local governments, will be key to our success in delivering services that are of value to our customers. Incentives for agencies to collaborate should be apparent within the appropriations to ensure adequate resources are available for all participants of a business transaction. This would expedite inter-agency collaboration and engender business partnerships across traditional agency and government boundaries. Industry leaders use self-sustaining Enterprise Architecture strategies where cost savings are reinvested into the organization. These cost savings serve as seed money to further entrepreneurship for the purpose of providing better customer service. All parties involved in the appropriation process have incentive to reduce duplicative investments and channel resources to where they will best improve agencies' success.

Thank you for the opportunity to appear before you today. This concludes my formal remarks and I would be happy to respond to any questions.

Mr. DAVIS. Thank you.

Ms. Barnes.

Ms. BARNES. I appreciate the opportunity to be here today to update yo on our e-government initiative and the application of enterprise architecture at the Office of Personnel Management.

As you know, the President has a bold focus management agenda designed to deliver citizen centered, results oriented, market driven government to the American people and the Director of OPM is committed to reorienting the focus of our agency to achieve those goals.

OPM is the managing partner for five e-government initiatives. All of them focus on improving internal efficiency and effectiveness of the Federal Government. Our initiatives, which include e-training, e-clearance, recruitment one stop, enterprise human resources integration, and e-HR payroll affect all agencies cutting across the entire Federal Government. Accordingly, we need to be concerned with two levels of enterprise architecture, the one guiding information technology investment supporting OPM, and the government-wide enterprise architecture being developed by OMB.

In addition to high level views of our business processes and information flows, OPM's enterprise architecture includes the concept of a single enterprise network for all of OPM, one consolidated data center, technical standards, a planned agencywide technology refreshment cycle and a structured system development methodology.

Our enterprise architecture has played a critical role in helping us evolve technology in a cost effective direction. It has been a driving force in establishing our quality assurance program, implementing infrastructure upgrades and addressing the importance of security and privacy.

Capitalizing on the strengths in our enterprise architecture, OPM's e-government initiatives will play an integral role in streamlining and improving procedures for moving Federal employees through their employment life cycle. In each phase of that life cycle, OPM will use these initiatives to remove redundancy, reduce response time, eliminate paperwork and improve coordination among Federal agencies.

To achieve OPM's vision, its e-government initiatives will seamlessly integrate with each other. OPM's vision for its e-government initiatives is in fact based on that employee life cycle, beginning with recruitment, continuing through all aspects of employment, and culminating with retirement.

The core of this process is the enterprise human resources integration initiative or E-HRI which will provide for the electronic movement of H.R. data across the Federal Government. E-HRI will act as a central hub connecting all of the OPM initiatives and streamlining government processes. In addition, a two-way communication process between E-HRI and agency H.R. systems will allow E-HRI to share its data among the agencies and augment its information through data entered through the various agency systems.

The employee life cycle begins with the recruitment and hiring process. Recruitment one-stop will serve as the initial collection point for a variety of personnel data that subsequently will be used in all of the OPM e-government initiatives. Once the employment

phase begins, the recruitment one-stop system will pass relevant data to the E-HRI system as the foundation for an official personnel folder.

E-clearance will offer support during this phase by facilitating the clearance request process for providing electronic access to clearance information we already have. After applications are hired, during the employment phase of the life cycle, the systems supporting E-HRI will be updated with the latest clearance status of employees through the E-clearance system.

The E-training system will be able to share data with E-HRI to help formulate employee training plans and track their progress. Additionally, the product of the payroll consolidation effort or E-HR-Payroll will share appropriate data with E-HRI to ensure up to date and accurate information.

OPM's initiatives will facilitate a smooth transition to retirement when employees decide to leave the Federal Government. E-HRI will forward appropriate information to the retirement processing system to ensure that Federal Government retirees get paid promptly and accurately.

Clearly OPM has a vision for how these initiatives will work together but because these are interagency initiatives, we will be guided by the governmentwide enterprise architecture being developed by OMB as we move forward.

In closing, we are pleased to be leading the Federal Government's efforts to unify and simplify a number of human resources functions through the wise use of technology. However, we understand this is not just a technology challenge. Change management, the willingness to look for and use best of breed examples in the public and private sector and creative approaches to resolving longstanding process complexities will be equally important if we are to fully achieve our objectives.

Thank you for inviting me to be here today and I would be happy to respond to any questions.

[The prepared statement of Ms. Barnes follows:]

STATEMENT OF
JANET L. BARNES
CHIEF INFORMATION OFFICER
OFFICE OF PERSONNEL MANAGEMENT

before the

SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY
COMMITTEE ON GOVERNMENT REFORM
U.S. HOUSE OF REPRESENTATIVES

on

"THE ELECTRONIC GOVERNMENT AND INFORMATION TECHNOLOGY (IT) INITIATIVES THAT ARE BEING DEVELOPED BY THE OFFICE OF MANAGEMENT AND BUDGET (OMB) THROUGH THE NEWLY-CREATED OFFICE AND POSITION OF ASSOCIATE DIRECTOR OF INFORMATION TECHNOLOGY AND E-GOVERNMENT"

MARCH 21, 2002

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

I APPRECIATE THE OPPORTUNITY TO BE HERE TODAY TO COMMENT ON THE E-GOVERNMENT INITIATIVES BEING DEVELOPED BY THE OFFICE OF MANAGEMENT AND BUDGET (OMB) AND THE USE OF ENTERPRISE ARCHITECTURE (EA) AT THE OFFICE OF PERSONNEL MANAGEMENT (OPM).

AS YOU KNOW, THE PRESIDENT HAS A BOLD, FOCUSED MANAGEMENT AGENDA DESIGNED TO DELIVER CITIZEN-CENTERED, RESULTS-ORIENTED, MARKET-DRIVEN GOVERNMENT TO THE AMERICAN PEOPLE. OUR

DIRECTOR IS COMMITTED TO RE-ORIENTING THE FOCUS OF OUR AGENCY TO ACHIEVE THOSE GOALS.

SINCE SEPTEMBER 11TH, THE WORLD HAS CHANGED – AND OPM HAS ACCELERATED THE PACE OF OUR ACTIVITIES TO SUPPORT THE GROWING HUMAN CAPITAL DEMANDS ACROSS GOVERNMENT. THE E-GOVERNMENT PROPOSALS IN THE PRESIDENT'S MANGEMENT AGENDA LEVERAGE OUR RESOURCES TO PROVIDE THAT SUPPORT.

OPM IS THE MANAGING PARTNER FOR FIVE E-GOVERNMENT INITIATIVES, ALL OF THEM FOCUSED ON IMPROVING THE INTERNAL EFFICIENCY AND EFFECTIVENESS OF THE FEDERAL GOVERNMENT. OUR INITIATIVES AFFECT ALL AGENCIES; ACCORDINGLY, WE HAVE LARGE PARTNER AND STAKEHOLDER GROUPS THAT ARE VERY ACTIVE IN DETERMINING THE GOALS AND OBJECTIVES FOR EACH OF THESE EFFORTS. WE NEED THEIR OWNERSHIP AND SUPPORT IF WE ARE GOING TO BE SUCCESSFUL IN USING TECHNOLOGY TO UNIFY AND SIMPLIFY THE INTERAGENCY DELIVERY OF HUMAN RESOURCES (HR) SERVICES.

AS THE MANAGING PARTNER FOR INITIATIVES THAT CUT ACROSS THE ENTIRE FEDERAL GOVERNMENT, WE NEED TO BE CONCERNED WITH TWO

3

LEVELS OF ENTERPRISE ARCHITECTURE -- THE ONE GUIDING INFORMATION TECHNOLOGY INVESTMENTS SUPPORTING THE OPM ENTERPRISE AND THE GOVERNMENTWIDE ENTERPRISE ARCHITECTURE BEING DEVELOPED BY OMB. LET ME FIRST DISCUSS THE ENTERPRISE ARCHITECTURE AT OPM.

OPM IS A RELATIVELY SMALL AGENCY. INFORMATION TECHNOLOGY MANAGEMENT AND OPERATIONS IS LARGELY CENTRALIZED IN MY OFFICE, THE OFFICE OF THE CIO. BECAUSE WE ARE SMALL, WE DO NOT HAVE MANY MAJOR SYSTEM INITIATIVES OR A PROBLEM WITH DUPLICATE SYSTEMS. FOR EXAMPLE, WE HAVE ONLY ONE ADMINISTRATIVE FINANCIAL SYSTEM, ONE HR SYSTEM, ONE PROCUREMENT SYSTEM, ONE OFFICE AUTOMATION STANDARD – AND ARE MOVING TOWARDS A STANDARD DESKTOP CONFIGURATION. IN ADDITION, MY OFFICE IS INVOLVED IN THE REVIEW AND APPROVAL OF INVESTMENTS FOR ALL NEW SYSTEMS AND MAJOR ENHANCEMENTS. COMPLIANCE WITH OPM'S ENTERPRISE ARCHITECTURE IS A CRITERION FOR APPROVAL.

OPM HAS DEVELOPED AN ENTERPRISE ARCHITECTURE VISION THAT INCLUDES HIGH LEVEL VIEWS OF OUR PROCESS FLOWS, PRIMARY DATA ELEMENT GROUPS AND TECHNICAL STANDARDS. IT ALSO DESCRIBES THE

4

OVER-ARCHING PRINCIPLES THAT GUIDE INFORMATION TECHNOLOGY INVESTMENT MANAGEMENT AT OPM, SUCH AS ESTABLISHMENT OF:

- A SINGLE ENTERPRISE NETWORK FOR ALL OF OPM,
- ONE CONSOLIDATED DATA CENTER,
- A STANDARD, AGENCYWIDE TECHNOLOGY REFRESHMENT CYCLE, AND
- A STRUCTURED SYSTEM DEVELOPMENT METHODOLOGY ORIENTED TOWARDS THE SOFTWARE ENGINEERING INSTITUTE'S CAPABILITY MATURITY MODEL.

OPM'S ENTERPRISE ARCHITECTURE HAS PLAYED A CRITICAL ROLE IN HELPING US EVOLVE TECHNOLOGY IN A COST-EFFECTIVE DIRECTION. OUR EA HAS:

- ALLOWED US TO FOCUS TECHNICAL TRAINING ON OUR STANDARD HARDWARE AND SOFTWARE PLATFORMS,
- ENABLED US TO CONSIDER RESOURCE SHARING IN SUPPORT OF MULTIPLE PROGRAMS,
- ENSURED RESULTING SYSTEMS WILL INTEGRATE WELL WITH OUR NETWORK AND TELECOMMUNICATIONS INFRASTRUCTURE, AND

- SAVED US MONEY ON LICENSES, BUNDLED PROCUREMENTS AND THE TIME REQUIRED TO DELIVER NEW SYSTEMS.

OUR ENTERPRISE ARCHITECTURE HAS BEEN A DRIVING FORCE IN ESTABLISHING OUR QUALITY ASSURANCE PROCESS, IMPLEMENTING INFRASTRUCTURE UPGRADES THAT CONSIDER CURRENT AND FUTURE TECHNOLOGY NEEDS, AND IN ESTABLISHING OUR DESKTOP AND SERVER UPGRADE CYCLES.

OPM'S ENTERPRISE ARCHITECTURE ALSO RECOGNIZES THE IMPORTANCE OF SECURITY AND PRIVACY ISSUES. WE RECENTLY COMPLETED A SIGNIFICANT UPDATE TO OUR IT SECURITY POLICY, TO BRING IT INTO COMPLIANCE WITH CURRENT LAWS AND REGULATIONS. IT IS BASED ON THE INFORMATION TECHNOLOGY SECURITY STANDARDS DEVELOPED BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST). WE HAVE ALSO IDENTIFIED SECURITY CHECKPOINTS IN OUR SYSTEM DEVELOPMENT METHODOLOGY.

OPM'S FIVE E-GOVERNMENT INITIATIVES SUPPORT PRESIDENT BUSH'S MANAGEMENT AND PERFORMANCE PLAN – *EXPANDED ELECTRONIC GOVERNMENT*. AS ARTICULATED BY THE OFFICE OF MANAGEMENT AND BUDGET, THE VISION OF E-GOVERNMENT IS "AN ORDER OF MAGNITUDE

IMPROVEMENT IN EFFICIENCY AND EFFECTIVENESS OF GOVERNMENT OPERATIONS."

AS YOU WILL SEE, OUR E-TRAINING, RECRUITMENT ONE STOP, E-CLEARANCE, ENTERPRISE HUMAN RESOURCES INTEGRATION, AND E-HR/PAYROLL INITIATIVES ALL MOVE TOWARD AN ACTIVE, BUT LIMITED GOVERNMENT: ONE THAT EMPOWERS STATES, CITIES, AND CITIZENS TO MAKE DECISIONS; ENSURES RESULTS THROUGH ACCOUNTABILITY; AND PROMOTES INNOVATION THROUGH COMPETITION.

I WOULD NOW LIKE TO BRIEFLY DESCRIBE EACH OF THE INITIATIVES AND HIGHLIGHT HOW THE WORK WE ARE DOING AT OPM SUPPORTS A CITIZEN-CENTERED, RESULTS-ORIENTED, AND MARKET-BASED NEW VISION FOR GOVERNMENT.

E-TRAINING

SPECIFICALLY, E-TRAINING WILL:

- PROVIDE COST-EFFECTIVE ECONOMIES OF SCALE FOR THE DELIVERY OF GOVERNMENT E-TRAINING SERVICES;
- EMPLOY A WEB PORTAL FOR ACCESS AND DELIVERY OF E-TRAINING COURSES, CURRICULA, AND SERVICES; AND

- PROVIDE USERS ACCESS TO A WIDE RANGE OF CONTENT THAT IS MANDATORY ACROSS GOVERNMENT.

E-TRAINING SUPPORTS THE PRESIDENT'S VISION FOR GOVERNMENT BY:

- FACILITATING TRAINING DELIVERY TO FEDERAL EMPLOYEES,
- IMPROVING THE ABILITY OF THE FEDERAL GOVERNMENT TO ATTRACT AND KEEP EXCELLENT EMPLOYEES BY OFFERING THEM PROFESSIONAL DEVELOPMENT OPPORTUNITIES, AND
- SETTING A FRAMEWORK FOR CREATING ECONOMIES OF SCALE IN THE PURCHASING OF SOFTWARE LICENSES, TRAINING PROGRAMS, AND EQUIPMENT.

RECRUITMENT ONE STOP

TO IMPROVE THE ABILITY OF THE FEDERAL GOVERNMENT TO ATTRACT HIGH QUALITY PROFESSIONALS, RECRUITMENT ONE STOP WILL:

- ENHANCE JOB APPLICATION SERVICES TO MIRROR THE BEST CURRENTLY AVAILABLE THROUGH COMMERCIAL, INTERNET-BASED SERVICES;
- PROVIDE A ONE-STOP-SHOP APPROACH TO FEDERAL EMPLOYMENT JOB POSTINGS, APPLICATION/RESUME SUBMISSION, AND STATUS TRACKING;

- MAXIMIZE ELECTRONIC AND WEB TECHNOLOGY TO ENHANCE THE FEDERAL GOVERNMENT'S ABILITY TO COMPETE IN FILLING CRITICAL JOBS; AND
- FACILITATE AGENCY USE OF TECHNOLOGY TO RATE AND RANK JOB APPLICANTS ACCORDING TO "FIT" FOR THE JOB OPENING.

RECRUITMENT ONE STOP SUPPORTS THE VISION BY:

- ELIMINATING THE NEED FOR AGENCIES TO DEVELOP, OPERATE AND MAINTAIN REDUNDANT SYSTEMS FOR JOB POSTING AND INITIAL APPLICATION/RESUME SUBMISSION;
- GIVING FEDERAL MANAGERS, RECRUITERS AND HR PROFESSIONALS THE ABILITY TO SOURCE QUALIFIED, DIVERSE CANDIDATES THROUGH THE DEVELOPMENT OF A GOVERNMENTWIDE APPLICANT DATABASE;
- TRANSFORMING FEDERAL JOB SEARCHING AND APPLICATION SUBMISSION FROM PROCESS-CENTERED TO CITIZEN-CENTERED;
- USING MARKET-BASED SOLUTIONS TO DELIVER BEST-OF-BREED SERVICES TO JOB SEEKERS AND AGENCIES; AND
- REDUCING THE TIME TO SOURCE CANDIDATES AND CONNECT THEM TO AN AUTOMATED HIRING PROCESS.

E-CLEARANCE

TO RESPOND TO OUR NEED FOR FEDERAL AND CONTRACTOR EMPLOYEES WITH APPROPRIATE SECURITY CLEARANCES, THE E-CLEARANCE INITIATIVE WILL:

- REDUCE AND EVENTUALLY ELIMINATE USE OF PAPER-BASED APPLICATIONS FOR SECURITY CLEARANCES BY IMPLEMENTING A STANDARD ELECTRONIC INTERAGENCY FORM,
- ENHANCE THE ELECTRONIC PROCESSING OF REQUESTS FOR INVESTIGATION,
- IMPLEMENT A CLEARANCE VERIFICATION SYSTEM THAT WILL PROVIDE CROSS-AGENCY ACCESS TO CLEARANCE STATUS INFORMATION, AND
- CONVERT PAPER FILES OF CLEARANCE INFORMATION TO ELECTRONIC FORM.

BENEFITS OF THE E-CLEARANCE INITIATIVE INCLUDE:

- REDUCING THE COST OF CONDUCTING BACKGROUND AND OTHER INVESTIGATIONS FOR OPM AND THE PARTNERING AGENCIES;
- IMPROVING THE ACCURACY AND ACCESSIBILITY OF INVESTIGATION INFORMATION TO OPM AND THE PARTNERING AGENCIES;

- IMPROVING THE ABILITY OF THE FEDERAL GOVERNMENT TO ATTRACT AND KEEP EXCELLENT EMPLOYEES SEEKING "CLEARANCE-REQUIRED" POSITIONS THROUGH A MORE AUTOMATED AND EFFICIENT CLEARANCE PROCESS;
- IMPROVING THE CLEARANCE PROCESSING TIME FOR FEDERAL CONTRACTORS, THEREBY REDUCING COSTS FOR SERVICES WHILE INCREASING THE AVAILABILITY OF CONTRACTORS TO SERVE;
- IMPROVING EMPLOYEES' SATISFACTION, RECRUITMENT AND RETENTION THROUGH A STREAMLINED CLEARANCE PROCESS; AND
- REDUCING THE COST OF MAINTAINING CLEARANCE INFORMATION.

ENTERPRISE HUMAN RESOURCES INTEGRATION (EHRI)

THIS INITIATIVE WILL:

- ELIMINATE THE NEED FOR A PAPER-BASED EMPLOYEE RECORD AND MORE THAN 100 MULTIPLE FORMS THAT ARE CURRENTLY MAINTAINED FOR A MINIMUM OF 65 YEARS AFTER EMPLOYEE SEPARATION, RETIREMENT, OR DEATH;
- ENABLE THE MANAGEMENT OF REPORTING BENEFITS AND ELECTRONIC TRANSFER OF HUMAN RESOURCES DATA THROUGHOUT THE FEDERAL EMPLOYEE'S LIFECYCLE;
- STREAMLINE AND IMPROVE GOVERNMENTWIDE WORKFORCE REPORTING AND DATA ANALYSES;

- PROVIDE TIMELY AND ACCURATE DATA FOR RETIREMENT CLAIMS PROCESSING; AND
- ENABLE STRATEGIC DECISIONS REGARDING USE OF HUMAN CAPITAL AND FINANCIAL RESOURCES TO IMPROVE AGENCY PERFORMANCE AND ADDRESS EMERGING NEEDS.

THE ENTERPRISE HUMAN RESOURCES INTEGRATION INITIATIVE WILL FUNDAMENTALLY CHANGE THE WAY IN WHICH FEDERAL EMPLOYEES, MANAGERS, AND HUMAN RESOURCES OFFICERS CONDUCT HUMAN RESOURCES TRANSACTIONS BY:

- STREAMLINING AND AUTOMATING THE EXCHANGE OF FEDERAL EMPLOYEES' HUMAN RESOURCES INFORMATION,
- REDUCING PROCESS CYCLE TIME AND INCREASING THE ACCURACY OF INFORMATION, AND
- MORE EFFECTIVELY SERVING A WIDE VARIETY OF CUSTOMER GROUPS AND STAKEHOLDERS THAT RELY ON FEDERAL HUMAN RESOURCES INFORMATION.

<u>E-HR/PAYROLL</u>

AND FINALLY, THE E-PAYROLL INITIATIVE WILL:

- ESTABISH CENTRAL GOVERNANCE OVER THE HR/PAYROLL FUNCTION,

- STANDARDIZE PAYROLL POLICY AND PROCESSES TO THE EXTENT THAT IT IS FEASIBLE,
- DEVELOP AN INTEGRATED GOVERNMENTWIDE ENTERPRISE ARCHITECTURE FOR HR/PAYROLL SYSTEMS, AND
- CONSOLIDATE HR/PAYROLL SERVICE DELIVERY.

OPM HAS RECENTLY BEEN ASKED TO ASSUME RESPONSIBILITY AS THE MANAGING PARTNER FOR THIS INITIATIVE, AND THE BUSINESS CASE IS BEING DEVELOPED.

OPM'S EA AND THE OMB GOVERNMENTWIDE EA WILL HAVE IMPORTANT ROLES IN THE DELIVERY OF OUR FIVE E-GOVERNMENT INITIATIVES. OPM HAS A CLEAR VISION OF THESE INITIATIVES AS AN INTERLOCKING ENTERPRISE SYSTEM SUPPORTED AND ORGANIZED BY THE OPM EA AND THE FORTHCOMING OMB E-GOVERNMENT EA. THE FIVE INITIATIVES PLAY AN INTEGRAL ROLE IN STREAMLINING AND IMPROVING PROCEDURES FOR MOVING FEDERAL EMPLOYEES THROUGH THEIR EMPLOYMENT LIFECYCLE. IN EACH PHASE, OPM WILL USE THESE INITIATIVES TO REMOVE REDUNDANCIES, REDUCE RESPONSE TIMES, ELIMINATE PAPERWORK, AND IMPROVE COORDINATION AMONG FEDERAL AGENCIES. TO ACHIEVE OPM'S VISION, ITS E-GOVERNMENT INITIATIVES MUST SEAMLESSLY INTEGRATE WITH EACH OTHER. THEREFORE, OPM

RECOGNIZES A ROBUST EA IS REQUIRED TO ENSURE CONSISTENCY AND INTEROPERABILITY.

OPM'S VISION FOR ITS E-GOVERNMENT INITIATIVES IS BASED ON THE EMPLOYEE LIFE CYCLE BEGINNING WITH RECRUITMENT, CONTINUING THROUGH ALL ASPECTS OF EMPLOYMENT, AND CULMINATING WITH RETIREMENT. RECRUITMENT ONE STOP AND E-CLEARANCE WILL BOTH PLAY A ROLE DURING THE RECRUITMENT PHASE. RECRUITMENT ONE STOP WILL BECOME THE INITIAL COLLECTION POINT FOR A VARIETY OF PERSONNEL DATA USED IN ALL THE OPM E-GOVERNMENT INITIATIVES. E-CLEARANCE CAN OFFER SUPPORT DURING THIS PHASE BY PROVIDING ELECTRONIC ACCESS TO UP-TO-DATE CLEARANCE LEVELS OF JOB APPLICANTS.

OPM'S E-TRAINING, E-CLEARANCE, ENTERPRISE HUMAN RESOURCES INTEGRATION (EHRI), AND E-HR/PAYROLL INITIATIVES WILL PLAY KEY ROLES IN SUPPORTING EMPLOYEES AND AGENCIES AFTER APPLICANTS ARE HIRED. ONCE THE EMPLOYMENT PHASE BEGINS, THE RECRUITMENT ONE STOP SYSTEM CAN PASS RELEVANT DATA TO EHRI AS THE FOUNDATION FOR AN OFFICIAL PERSONNEL FOLDER (OPF). WHILE MANAGING THE OFFICIAL PERSONNEL FOLDER, EHRI WILL ACT AS A

CENTRAL HUB CONNECTING ALL THE OPM INITIATIVES AND STREAMLINING GOVERNMENT PROCESSES. OPM WILL USE EHRI TO CONNECT TO EACH OF THE OPM E-GOVERNMENT INITIATIVES. EHRI WILL BE UPDATED WITH THE LATEST CLEARANCE STATUS OF EMPLOYEES THROUGH THE E-CLEARANCE SYSTEM. EHRI AND THE E-TRAINING SYSTEM WILL BE ABLE TO SHARE DATA TO HELP FORMULATE EMPLOYEE TRAINING PLANS AND TRACK THEIR PROGRESS. EHRI WILL SHARE APPROPRIATE DATA WITH THE E-HR/PAYROLL SYSTEM TO ENSURE UP-TO-DATE AND ACCURATE INFORMATION. A TWO-WAY COMMUNICATION PROCESS BETWEEN EHRI AND EACH AGENCY'S INDEPENDENT HR SYSTEM WILL ALLOW EHRI TO SHARE ITS DATA AMONG THE AGENCIES, AND AUGMENT ITS INFORMATION BASED ON DATA ENTERED THROUGH THE VARIOUS AGENCY SYSTEMS.

OPM'S INITIATIVES WILL FACILITATE A SMOOTH TRANSITION TO RETIREMENT WHEN EMPLOYEES DECIDE TO LEAVE THE FEDERAL GOVERNMENT. EHRI WILL FORWARD APPROPRIATE INFORMATION TO THE RETIREMENT PROCESSING SYSTEM TO ENSURE THAT FEDERAL GOVERNMENT RETIREES GET PAID PROMPTLY AND ACCURATELY.

THIS INTEGRATED HR MANAGEMENT VISION DEVELOPED BY OPM WILL GREATLY IMPROVE THE OPERATION OF ALL FEDERAL AGENCIES. ACHIEVING THIS VISION WILL REQUIRE CAREFUL ADHERENCE TO CONSISTENT ENTERPRISE-WIDE STANDARDS AND PRACTICES AS DEFINED IN AN EA.

CLEARLY OPM HAS AN EA THAT GUIDES INFORMATION TECHNOLOGY INVESTMENTS AT OPM. THE GOVERNMENTWIDE ENTERPRISE ARCHITECTURE BEING DEVELOPED BY OMB MUST GUIDE INTERAGENCY EFFORTS. BECAUSE OF THIS, AND OMB'S UNIQUE ROLE IN GUIDING INTERAGENCY TECHNOLOGY MANAGEMENT PROCESSES AND PROCEDURES, THEY ARE IN THE BEST POSITION TO COMMENT ON WHAT LEGISLATIVE INITIATIVES WOULD BE HELPFUL IN SIMPLIFYING AND UNIFYING REDUNDANT BUSINESS ARCHITECTURES.

WITH RESPECT TO INTERAGENCY EFFORTS, WE OFFER ONE SUGGESTION FOR ALIGNING THE BUDGET PROCESS AND CYCLE WITH THE CROSS-CUTTING NATURE OF THE E-GOVERNMENT INITIATIVES. FUNDING ENTERPRISE ARCHITECTURE PROJECTS IS ALWAYS A CONCERN. THEY USUALLY TAKE SEVERAL YEARS TO COMPLETE, YET THE BUDGET PROCESS IS NORMALLY ORIENTED TOWARDS SINGLE-YEAR APPROPRIATIONS. IF THE BUSINESS CASE SUPPORTS AN INFORMATION

TECHNOLOGY INVESTMENT AND FUNDING IS AVAILABLE, THEN IT PROJECTS, AS WITH OTHER CAPITAL INVESTMENTS, SHOULD BE FULLY FUNDED UP FRONT, EVEN IF DELIVERY OCCURS OVER SEVERAL YEARS.

IN CLOSING, WE ARE PLEASED TO BE LEADING THE FEDERAL GOVERNMENT'S EFFORTS TO UNIFY AND SIMPLIFY A NUMBER OF HUMAN RESOURCES FUNCTIONS THROUGH THE WISE USE OF TECHNOLOGY. HOWEVER, WE UNDERSTAND THAT THIS IS NOT JUST A TECHNOLOGY CHALLENGE. CHANGE MANAGEMENT, THE WILLINGNESS TO LOOK FOR AND USE "BEST OF BREED" EXAMPLES IN THE PUBLIC AND PRIVATE SECTOR, AND CREATIVE APPROACHES TO RESOLVING LONG-STANDING PROCESS COMPLEXITIES WILL BE EQUALLY IMPORTANT IF WE ARE TO FULLY ACHIEVE OUR OBJECTIVES. AT OPM WE WILL INCLUDE ALL OF THESE FACTORS IN OUR PLANS SO THAT WE CAN ESTABLISH A NEWLEVEL OF SERVICE TO THE AGENCIES AND CITIZENS WE SUPPORT.

I WOULD BE HAPPY TO RESPOND TO ANY QUESTIONS YOU MAY HAVE.

Mr. DAVIS. Thank you.

Mr. Blanchard.

Mr. BLANCHARD. Thank you for inviting the Small Business Administration to testify on its role as the managing partner for the Business Compliance, Assistance One Stop Initiative.

I am the Chief Operating Officer for the SBA, charged with the responsibility of implementing the President's management agenda at SBA. Joining me is Larry Barrett, SBA CIO and Dr. Jim Van Wert, SBA Senior Advisor for Policy Planning and the E-Government Project Manager for creating the Business Compliance One-Stop.

Small businesses repeatedly stress their concerns about the burden of laws and regulations. SBA's Office of Advocacy estimates that complying with laws and regulations costs small firms nearly half a trillion dollars in the year 2000 or $7,000 per employee for firms with less than 20 employees.

Few electronic tools exist to enable small businesses to cope with the myriad of laws and regulations that affect them at all levels of government. With this in mind, SBA launched businesslaw.gov in December 2001. We are leading the effort to build a government-wide business compliance assistance one-stop to present a single face of government to small businesses making it easier for all 25 million businesses to find, understand and comply with these laws and regulations.

The President's fiscal year 2003 budget for SBA includes $5 million to support the project activities of its eight participating Federal partners and other State and local government partners.

As the managing partner on this project, SBA will be accountable for project management, developing the enterprise architecture and locating private sector consultants who will develop the modules and assist in overseeing the effort.

SBA will begin by targeting several industries across four compliance functional areas: the environment, workplace health and safety, employment and taxation. The goal is to enable all businesses to electronically register their businesses, receive tax ID numbers, and do licensing and permitting on-line. SBA will buildupon businesslaw.gov which today is a library of legal and regulatory business information. The Business Compliance One-Stop can be thought of as the librarian. It goes beyond simply providing information; it offers services and solutions through interactive guides and on-line transactions.

SBA is well positioned internally as it is already made significant strides in creating an open systems technology environment supporting the interoperability of technologies and systems within and outside the SBA. SBA has also been a leader i providing cross-agency information and services via the Internet as exemplified by the CIO Council Award for Government to Business announced just yesterday.

Nevertheless, SBA must confront a number of technical issues to successfully implement the Business Compliance One-Stop. For example, a cross agency platform must be developed without dictating the data bases and applications that Federal, State and local agencies use. This platform must work with existing technologies but must also provide the Web services infrastructure that mini-

mizes system development. It must be open and secure while providing maximum flexibility for participating agencies.

The Business Compliance One-Stop will save businesses time and money by reducing their legal and regulatory burden. this will improve compliance with laws and regulations affecting their operations and thereby reducing Government's cost for enforcement and compliance activities.

Finally and most importantly, the Business Compliance One-Stop will make the Federal Government more accessible to its citizens, unifying and simplifying the delivery of needed services will result in a more cost effective government that is citizen-centered, market-based and results-driven. With leadership resources, the right industry partners and a lot of persistence, we can transform our public institutions into more accessible and responsible organizations.

This is what Congress asks, the President demands and citizens expect.

Thank you for the opportunity to appear here today and I will be happy to answer your questions.

[The prepared statement of Mr. Blanchard follows:]

U.S. SMALL BUSINESS ADMINISTRATION
WASHINGTON, DC 20416

STATEMENT OF

LLOYD A. BLANCHARD

CHIEF OPERATING OFFICER

U.S. SMALL BUSINESS ADMINISTRATION

ENTERPRISE ARCHITECTURE AND E-GOVERNMENT (BUSINESS COMPLIANCE ASSISTANCE ONE-STOP)

BEFORE THE

SUBCOMMITTEE ON TECHNOLOGY AND PROCUREMENT POLICY

COMMITTEE ON GOVERNMMENT REFORM

UNITED STATES HOUSE OF REPRESENTATIVES

MARCH 21, 2002

Good afternoon, Mr. Chairman and Members of the Subcommittee. Thank you for inviting the U.S. Small Business Administration (SBA) to testify today about our role as a managing partner for creating the Business Compliance Assistance One-Stop Initiative. I am prepared to discuss in general our views on the appropriate enterprise architecture to implement this effort and describe the basic goals and objectives of the initiative.

My name is Lloyd Blanchard and I am the Chief Operating Officer for SBA. Joining me is Larry Barrett, SBA's CIO, and Dr. Jim Van Wert, our Senior Advisor for Policy Planning and E-Gov and project manager for creating the Business Compliance Assistance One-Stop. I joined SBA a little over two months ago with the express goal of implementing the President's Management Agenda at the SBA. One of the core elements of the Agenda is enhancing E-Government at the SBA.

The Administration's vision for E-Government is "an order of magnitude improvement in customer service." E-Gov is all about improving citizen service and changing the way government and citizens interact. For SBA, it is primarily about changing how we do business and what we can offer our small business customers. In the case of the Business Compliance One-Stop, it's about presenting a "single face of government" to businesses to help them reduce the burden of complying with laws and regulations.

E-Gov is also about creating partnerships with other government agencies and breaking down the silo mentality that currently pervades. Perhaps there is no more difficult task than collaborating across organizational boundaries to provide integrated services, breaking down the agency stovepipes, eliminating the culture of command and control and replacing it with collaboration. And as someone once said, "teaming" is the most unnatural human act known to mankind. Our challenge is to create appropriate incentives for all of us to "take off our agency hats" and put on a government-wide hat. E-Gov asks us to "unify and simplify" our processes to eliminate redundancy and re-engineer what we do, making government more accessible to its citizens.

Let me briefly describe how the right Enterprise Architecture can help us achieve our mission, describe the Business Compliance One-Stop in more detail, and answer the questions contained in your letter dated March 7, 2002.

Enterprise Architecture

The IT architecture defines what data is collected and how it is processed. Roughly defined, the Enterprise Architecture (EA) is a framework that addresses how information is used. That is how we use it to achieve our mission of serving customers better, faster, and more cost effectively.

At the outset, I should say that we at SBA are only beginning to define the enterprise architecture to implement the goals of the Business Compliance One-Stop.

At the core of all the E-Gov initiatives is cross-agency (and perhaps intergovernmental) service delivery. Collaboration among agencies with a vested interest in a particular federal segment, such as regulatory compliance or licensing and permitting, will result in increased efficiency and economies of scale, not to mention reduced cost for the business customer, who can access government services more easily, cost effectively, anytime, anyplace.

It is critical to develop the right EA for this initiative. The use of an appropriate EA in a cross-agency initiative promotes development of shared common Federal processes, interoperability, and sharing of information across entities. The Business Compliance One-Stop functions are government-wide and multi-agency in nature, as well as intergovernmental. Without uniform standards and structures, information and data formatting, technology, and delivery systems, we will not be able to build robust, open, interoperable, and scalable portals.

Business Compliance One-Stop Funding and Governance

The Business Compliance Assistance One-Stop initiative is one of the 24 highest priority cross-agency Presidential E-Gov initiatives approved by the President's Management Council last October.

Small businesses tell us repeatedly that one of their major concerns is reducing the burden of laws and regulations. In 2000, SBA's Office of Advocacy estimated that complying with laws and regulations cost small firms nearly a half a trillion dollars, or $7,000 per employee for firms with less than 20 employees. While there are a myriad of laws and regulations that affect business at all levels of government, few compliance assistance tools and almost no capability of licensing and permitting online exists. The average business needs to apply for and receive approximately 10-15 licenses and permits, many of them from the state and local government level. With these needs in mind, we are building this Business Compliance Assistance One-Stop to make it easier for small businesses to find, understand, and comply with the laws and regulations at all levels of government.

SBA is asking for the funding to support program activities of the 8 participating agencies and other levels of government. We will do the same for another 25 digital guides in the environment, workplace health and safety, employment and taxation areas, integrating each part into one portal.

This project will also support a prototype of a transaction engine that can be used by local, state, and federal agencies in providing certain licenses and permits. These are not traditional line items in an SBA budget, but clearly creating these tools support our statutory mission of helping small businesses succeed—by eliminating one of the most important impediments to their success. As a managing partner for the Business Compliance effort, SBA represents the business customer, who wants a "single face of government" with whom to do business.

Business Compliance Project Management and Oversight

Both SBA and OMB are taking extraordinary steps to manage and exercise oversight over this project to deliver within 24 months value-added service to American business owners.

SBA management and oversight structure. SBA hired me as Chief Operating Officer (COO) to manage and coordinate the work of the CFO, CIO, and the new office of E-Government. SBA agreed with OMB's recommendation and is proposing to create the Office of E-Government, directed by a senior executive who reports directly to me with successful achievement of project deliverables as part of the position's performance criteria. This office will not only manage the Business Compliance One-Stop, but also will develop SBA's E-Gov policy and coordinate SBA's participation in the other E-Gov initiatives. These include Federal Asset Sales, E-loans, Disaster.gov, Integrated Acquisition Portal, Streamlined International Trade, Electronic Tax Tools for Business, Online Eligibility Assistance, and Online Rule Making.

The business compliance project manager submits weekly activity status reports and meets regularly with me to describe project plans, identify milestones and deliverables, and report on progress as part of the Agency's performance monitoring and managing for results. The business case also calls for contracting for a management specialist to manage and oversee project plans and expenditures. The E-Gov office will also hire a validation and verification contractor and a content and configuration manager to ensure that the project is meeting its milestones and that there is full documentation of ongoing efforts.

OMB oversight governance structure. OMB's Associate Director for Information and Technology and E-Government (ADITEG), Mark Forman, has created a top-down governance structure that reports to the leadership of the President's Management Council, which holds him accountable for delivery of the President's E-Gov agenda. Cascading transparency and accountability downward, Mr. Forman is using portfolio managers, steering committees, and individual project managers to implement the 24 project managers in each of the managing partner agencies. He is requiring each project manager to build business cases with goals, objectives, milestones, and costs and a series of "checks and balances" to hold these managers accountable.

Procedurally, OMB reviews the progress of each project on a monthly basis and briefs the President's Management Council (PMC) quarterly on the status of all the efforts and requests PMC members assistance, when appropriate, to ensure the projects meet goals and objectives. Mr. Forman has stated that OMB will use its authority under the Clinger Cohen Act to terminate or restructure individual projects when they do not perform as needed or are redundant.

To help Mr. Forman oversee the efforts, each customer segment has a portfolio manager who meets weekly with the project manager to guide, assist, and manage the individual project managers. In addition to providing Mr. Forman a monthly status of the overall program achievement, cost, schedule and performance goals, these portfolio managers will convene at least quarterly meetings with the individual project managers and OMB to discuss project status. The Portfolio manager is responsible for ensuring that the e-government program achieves, on average, at least 90 percent of the approved project cost, schedule and performance goals.

For still another level of oversight, OMB has established four Steering Committees composed of Chief Information Officers, Chief Financial Officers, Procurement Executives, Budget Officers Advisory, and Human Resources Councils, and other advisors and users. Their goal is to meet monthly with the portfolio manager and project manager to advise and assist project teams in achieving the objectives expected within the budget limits.

Business Compliance One-Stop Business Case

As stated earlier, OMB requires each project manager to develop a detailed business case that describes the value proposition (costs and benefits both to the clients and to the government), modular development approach, milestones and proposed deliverables, timeframes and costs (as required by the Clinger-Cohen Act). The business case also includes a description of the proposed enterprise architecture, which includes a discussion of the business needs and rules, information architecture, systems applications, data structure, and technology delivery systems. Our business case, summarized below, currently exceeds 40 pages and continues to be revised.

Problem. The cost of complying with laws and regulations is too burdensome for American businesses. SBA's Office of Advocacy estimates that the regulatory burden on citizens is more than $800 billion, with nearly $500 billion borne by small businesses in 2000. This translates to roughly $7000 per employee in firms with less than 20 employees. The volume of existing laws, expense of finding nearly inaccessible information, multi-jurisdictional systems, and lack of smart online tools contribute to this overwhelming cost.

Solution. Businesses need a single point of access – a "single face of government" -- to the applicable laws and regulations that affect them. They also need tools to help them know if they are in compliance with the law, and a one-stop that offers them an opportunity to conduct transactions. Because of the growing number of businesses with Internet access (NFIB August 2001 study states that 57 percent of all firms), the Web is currently the most viable delivery channel for these services. A one-stop compliance site will significantly reduce the time needed to find, understand, and comply with the legal and regulatory burdens facing them. For these reasons, OMB selected the Business Compliance One-Stop as one of 24 approved Administration E-Gov projects.

Project Goal

- Make it easy for business to find, understand, and comply with pertinent laws and regulations at all levels of government.

Functionality

- Enable quick access to laws and regulations. Site users can access appropriate laws and regulations in three clicks or less.
- Provide Compliance Assessment Aids. Online tools can help businesses determine what laws and regulations apply to them and whether they are in compliance more importantly, what to do and where to go to achieve compliance status.
- Perform online transactions. Businesses will register online at the state level and apply and receive selected licenses and permitting at all three government levels.

Objectives

- Improve customer service by providing a *single access point* to business laws and regulations, licenses and permits, compliance assistance tools and hands-on help.
- Further establish results-driven government by building the site in less than two years.
- Create a market-based government by using public-private partnerships (e.g., lawyers from every state, laws schools, Martindale-Hubbell) to build the site, relying on industry best practices and solutions (e.g., UK Gateway, Washington and Illinois online transactions).
- Expand outreach to small businesses by helping up to 25 million businesses, plus countless individual citizens find, understand, and comply with laws and regulations.
- Build effective partnerships by building horizontally integrated tools across the federal level and vertically integrated tools to help individual business industries (sectors).
- Compile and employ best practices learned in the building of the recently launched *BusinessLaw.gov* and existing online compliance guides built by other agencies.

Results

- Save businesses time and money by reducing the legal and regulatory burden.
- Increase business compliance, thereby reducing costs for enforcement/compliance activities.
- Transform the way the federal government works by using technology to offer e-business solutions.
- Make the Federal government more accessible to its citizens.

Governance Structure/Participating Partners

- As the managing partner for this project, SBA will perform project management, develop the enterprise architecture, and find private sector consultants to develop modules for the project, (e.g., permitting, compliance guides, and interactive tools) and oversee the effort (e.g., Microsoft, Accenture, Consad Research)
- Participating partners includes EPA, DOL, OSHA, GSA, IRS, DOT, DOE, DOI, INS, Trade Associations and selected State CIOs (e.g., Washington, Illinois, New Jersey Mississippi).

Approach. The initiative will incorporate best practices from the private and public sectors to build this tool. The business compliance will build upon the experience gained in the construction of the gateway and transaction engine in the United Kingdom (e.g., cross-agency permitting). The project will also use private sector best practices for knowledge management -- (i.e., individualized packaging of information to offer quick access to the right information for appropriate solutions). The technology solution will focus on improved navigation, personalization, expert tools, and interactive problem solving.

In particular, the team will begin by targeting several industries, i.e., restaurants, truckers, convenience stores and gas and oil companies, across 4 functional areas, i.e., environment, workplace health and safety, employment and taxation. Through prototypes and pilots business in these sectors will be able to electronically register its business, get a tax identification number, apply for a building permit, receive an employer identification number, and get a permit to use federal lands.

While better portal capability and consolidation of information is needed, the one-stop compliance site needs to provide real solutions to business problems within a local context in a minimal amount of time. Rules-based software, XML and other Web-based technologies make it possible to create a site that is both horizontally and vertically integrated to meet these needs.

Short Term Deliverables

- Pilot Portal Maximizer: This software will enable the project manager to have an automatic and intelligent information management capability to index, categorize, and universally link business users to both new and existing legal and regulatory content across all 50 states. SBA will pilot the software on BusinessLaw.gov (over 20,000 links to federal, state and local content); evaluate and user test and add new content, categorizing it by theme over the final 30 days.

- Legal and Regulatory Digital Guides: SBA will create and test for launching digital guides that help reduce the burden of laws and regulations on business owners, which may include the following:

    - Working with INS, we will develop an expert tool to assist restaurant owners understand and comply with applicable employer-based immigration statutes and regulations.
    - Working with DOT Motor Carrier Safety Administration, to develop an expert tool for truckers to find, understand, and comply with transportation laws and regulations will be created.
    - Working with Martindale-Hubbell (Lexis-Nexus), The team will build tools to help small businesses identify legal issue that require expert help and where to go to find an attorney.

- Business Registry-state and Federal Licensing: Working with Washington State and IRS, SBA will build upon the proof of concept work done by GSA to prototype a single application that satisfies business licensing and tax id requirements (state licensing and IRS Internet EIN). Working with Illinois, SBA will create a prototype truckers' one-stop that incorporates federal and state DOT regulations and online licenses and permits.

Funding. The President has requested funding in SBA's budget to develop this Business Compliance One-Stop. With E-Gov funding, SBA will build upon its legal and regulatory assistance site, *BusinessLaw.gov,* to create an intergovernmental portal that does three things: offer small firms access to governmental laws and regulations that impact them, provide compliance assistance digital tools, and offer online licensing and permitting. SBA will build compliance assistance content, and buy software that registers existing content by theme and facilitates site content management. It will also permit us to prototype/buy a transaction engine to do the secure licensing and support work in several states working through the National Governor's Association.

Projected Project Costs

Business Services/Products	FY 2003
General Management	
SBA Program Management Office (SBA funds)	$200,000
Maintain BusinessLaw.gov (SBA funds)	$150,000
Hire Content and Configuration Manager	$100,000
Work with NGA and 6 states (GSA funds)	$150,000
Design portal look and feel	$150,000
Hire Project Mgmt Contractor	$150,000
Document, Validate and Verify services	$300,000
Marketing plan and implementation	$100,000
Portal platform	$300,000
Legal & Regulatory Information	
Do inventory/metatagging (agency costs)	$0
Pilot COTS Portal Maximizer	$0
License software	$250,000
Build Profiler/self assessment tool	$150,000
Build guides and tutorials (agency costs)	$0
Build Personalized self service	$50,000
Test with focus groups (GSA funds)	$60,000
Compliance Assistance Expert Tools	
Develop IT & ERP Architecture	$200,000
Develop metrics, measure success	$150,000
Data modeling/build 25 tools	$1,200,000
Focus test expert tools	$90,000
Business Registration/Transactions	
Plan Registry Phase 2 including documentation Phase 1 (GSA funds)	$0
Prototype City (Bellevue), State, Federal	$0
Integrate 6 states and Fed EIN, Biz Name	$300,000
Develop Trucker One-Stop with Illinois/DOT	$60,000
License ERP COTS Transaction Engine	$500,000
Conduct focus sessions and surveys	$90,000
Security issues and software	$300,000
Sum	**$5,000,000**

Mr. Chairman, I will now address the questions you included in your invitation to testify that deal with having the right enterprise architecture.

How SBA avoids redundant information systems

The SBA organizational structure does not have autonomous bureaus and departments, which greatly reduces the occurrence of traditional issues involved in standardization of systems for agency-wide functions (i.e., payroll, personnel, accounting, travel, etc.). SBA has centralized management of information resources in the Office of the Chief Information Officer (OCIO). OCIO, originally the Office of Information Resources Management, has proactively sought to standardize and minimize redundancy of technologies and systems since the advent of desktop computing. These efforts have included standardization of hardware and software for the desk tops, local area (LAN) and wide area (WAN) networks, e-mail, and system development tools including relational databases, programming languages and tools, security, and communications protocols.

SBA's EA connects information use and needs to information provided by the IT infrastructure. Using these cross walks as a guide, information technology (IT) decision makers, including the IT investment council, can easily identify information systems that are candidates for enterprise-wide implementation.

SBA believes that its EA offers tangible benefits to the Agency and those responsible for evolving the enterprise. SBA has used the EA to:

- Improve communication among the business organizations and IT organizations within the enterprise through a standardized vocabulary;
- Provide architectural views that help communicate the complexity of large systems and facilitate management of extensive, complex environments;
- Focus on the strategic use of emerging technologies to better manage the enterprise's information and consistently insert those technologies into the enterprise;
- Improve consistency, accuracy, timeliness, integrity, quality, availability, access and sharing of IT-managed information across the enterprise; and
- Support the IT investment process by providing a tool for assessment of benefits, impacts, and capital investment measurements and supporting analyses of alternatives, risks, and tradeoffs.

Under the aegis of the Business Compliance Assistance One-Stop, the project team will follow the principles of unify and simplify, using industry best practices, reducing redundancy and re-engineering processes where appropriate. For instance, SBA will pilot the use of a COTS package that aggregates information across all 50 states, automating the content building function. SBA will also prototype the use of a transaction engine that permits the user to access modules for forms entry, validation and verification, and online transactions. Each state will be able to modify the business rules and still use the proposed software. For compliance assistance, we plan to use a variety of approaches including benchmarking, expert tools, tutorials, and online call centers to help the business comply with the pertinent laws and regulations. Although the rules, forms, and security requirements will differ from regulation to regulation, our approach will include XML-P to access information (in a variety of formats) across agencies to deliver a "single face of government" to the business user.

SBA eliminates redundant IT investments

Unlike larger agencies, SBA does not have multiple bureaus with unique appropriations sources. This simplifies budget execution and makes SBA's IT expenditures more visible. Because there are few funding sources, opportunities for duplicate investments are reduced. For the cross agency Business Compliance One-Stop, the President ha requested the entire funding in SBA's budget. This will minimize the chances of redundant systems being developed by the participating agencies.

In accordance with the Clinger-Cohen Act and implementing guidance from OMB, all of SBA's major IT investments are subject to planning and review -- including acquisition reviews -- that should detect any potential duplicate investment before it can be implemented. SBA has been moving aggressively toward capturing 100 percent of its planned and actual IT expenditures during budget formulation and in accordance with published OMB guidance (Circulars A-11 and A-130). SBA believes that adhering to a regimen of solid IT capital planning will prevent the likelihood of duplicative investments among IT projects across the Agency.

SBA introduces strong security and privacy policies

Over the past two years, SBA has revised its IT security program. SBA uses IT security standards, policies, procedures, and guidelines developed by the National Institute of Standards and Technology (NIST) as the basis for the IT security program. SBA also uses portions of the General Accounting Office Federal Information Security Controls Audit Manual (FISCAM) as a guide in developing information security controls. Finally, we rely on current industry best practices in the development of security policies and use of cutting edge technology.

Protection of business transactions conducted over the Internet has been a primary concern as SBA has introduced web enabled business transactions. To ensure data integrity of these business transactions, SBA requires high level encryption of all transactions and authentication of systems users to gain access to the web systems. SBA has also conducted penetration testing with an independent consultant to identify and correct potential weaknesses. The OCIO conducts periodic on site security reviews of SBA's offices and remote computing facilities as well. These steps continue SBA's efforts to be fully compliant with the standards and guidelines developed by GSA under the cross-agency E-authentication effort.

SBA provides benefits through its enterprise-wide infrastructure initiatives

SBA has made significant strides in implementing an open systems technology environment, one which supports interoperability of technologies and systems both within SBA and with external entities. SBA has been a government leader in conducting business via the Internet. These activities include many web enabled business transactions such as electronic application and self-certification process. The technology SBA use includes relational databases, supporting easier data sharing and data access, industry accepted communications protocols that support interoperability between disparate computer platforms, and XML based file transfer formats.

SBA's open systems environment, as with every Federal agency, is an important part of the federal infrastructure necessary to support federal e-government initiatives. Technology environments that support interoperability between agencies and between the government and businesses will require minimal changes as e-government initiatives are implemented.

Prototyping a transaction engine that uses XML and offers modules that is based on forms-driven inquiries, validation and verification against a database, and secure transactions will expand the utility of the Business Compliance One-Stop to all users. The software allows each piece of the system to use different forms and business rules at the user interface with a standardized set of processes for conducting the electronic licensing and permitting. Using this "off the shelf" approach and piloting the Portal Maximizer will provide significant savings to state and local governments reduce, cost to businesses by permitting online transactions, and reduce compliance and enforcement costs for regulatory agencies who use the templates to build the digital compliance assistance guides.

The impact of the Internet can only grow among small businesses. Of those using the Internet, 87 percent use it to gather business information. One third of those not presently using the Internet intend to begin using it within the next year. Taking advantage of the Internet to broadly distribute information, an agency can focus its scarce resources on addressing companies that disregard the value of community, employee health and safety, and environmental protection.

SBA is addressing enterprise architecture issues

There are technical issues that need to be addressed to ensure successful implementation of the Business Compliance One-Stop. One issue is developing a cross-agency platform without having to dictate the databases and applications that Federal and state and local agencies use. This platform must be interoperable with existing technologies but also provide the web services infrastructure that minimizes system development. It must be open, secure, and provide maximum flexibility for participating agencies.

The Internet used openly, or through a Virtual Private Network, has become the fundamental underlying transport system for E-government. XML (Extended Markup Language) is a non-proprietary set of standards designed to assist the exchange of information among computer systems. Key architecture design issues include linking to all relevant information sources, updating and downloading data across platforms, creating common forms that have multiple uses, providing content, and "value network integration."

Using the portal model, organizations can provide aggregated and customized services. Also, information to people in the subject areas that are of interest to them with technology that is available now. With this kind of a framework for E-government, organizations can build a secure, dynamic web presence with personalization, content management, analytics, and search capabilities for anytime, anywhere access. Additionally, the framework can assist other government agencies to reduce their operating costs and provide citizen and business services with rich transaction capabilities. At the same time these agencies will have access to data mining tools to help them understand salient citizen and business trends in demands and usage as well as measure key performance indicators.

Another major issue is providing navigational tools to make it possible for the user to arrive at desired information or have problem-solving capability with as few clicks as possible. This means providing advanced search engines that can handle "affinities or fuzzy sets," intelligent Frequently Asked Questions, using an optional profiler to characterize the user and what he is looking for, and having business rule driven wizards to aid in the search process. If possible, the software should simplify navigation with context dependent aids to prompt the user on where to proceed.

Conclusion

Using the Internet to deliver government services offers the business owner more accessibility, more timely and reliable information, more cost-effective and personalized service, and enables citizens to hold government accountable. The technology also permits the delivery of service across organizations, a key transformation from the "turf" consciousness of traditional government to strategic alliances in collaborative government. Unifying and simplifying the delivery of needed citizen service results in a more cost effective government that is citizen-centered, market-based, and results-driven. This is what the Congress asks, the President demands, the Citizen expects, and SBA intends to provide.

Thank you for the opportunity to appear before you here today. I will be happy to answer your questions.

Mr. DAVIS. Let me start with Ms. Canales. In your testimony, you mentioned that many government programs that share common elements could be vastly improved with stronger authority to enforce inter-agency and inter-governmental cooperation. Do you think the Federal Government needs a Federal CIO?

Ms. CANALES. I think what we have done to date with Mark Forman as the Associate Director for IT and E-Government has come a long way toward what the Federal Government needs. We need somebody at the Presidential level taking responsibility and accountability for the movement toward e-government and technology issues across the Government. We need somebody with authority at OMB to help agencies deal with budget issues. Budget issues were the mechanisms for us to fund cross-agency projects are not there for a single agency. If Labor and HUD and Treasury and OPM need to do a project together, we need help pooling our resources, pooling existing structures that we have built and funded, pooling resources for future development cross projects that are not just 1 year but 5 years.

I think that what we have done to date has come a long way. I think we should learn from what we have done to date and possibly exist under this current situation for a while before we go much further and create new structures within government.

Mr. DAVIS. Anybody else want to answer that?

Ms. Callahan, let me ask you. You note in your testimony that Labor is the only department with government-wide IT financing. Can you comment on why other agencies and departments haven't pursued the same IT financial management structure and why, do you think, it has worked at DOL?

Ms. CALLAHAN. I am not able to comment on the other departments and their decisionmaking but I can articulate how it has helped us at the Department of Labor. Basically creating a central IT fund has enabled us to break down the traditional appropriations stovepiped approaches within the Department, within our respective agencies by putting a central fund at the department level that is managed through our Investment Review Board and strictly through our capital planning process and its rigors.

It allows us to have the flexibility and the dynamic capability to respond to changes in the environment around us to be able to basically invest in a more strategic way to enable us to pick those initiatives that are going to be most beneficial the Department in achieving its mission and make sure those investments are proceeding ahead to benefit the whole Department and leverage that benefit across the organization instead of within a particular organization, within a particular program.

Mr. DAVIS. Mr. Blanchard, in developing the Business Compliance Assistance One-Stop Initiative, to what extent are State and local government organizations participating up front in formulating the enterprise architecture?

Mr. BLANCHARD. They have participated to a large extent up front. We are working with the National Governors Association as well as the States of Illinois, Washington and Mississippi to develop the concept at least as it will relate to some of their needs.

To answer your question, they have participated significantly up front. I couldn't speak to the cost they have incurred but surely

they have incurred some in their previous efforts in this area and in the attempt to integrate with this particular initiative.

Mr. HOLCOMB. If I might add to that question from the Federal Council's Architecture Committee, there has been cooperation between NACO, the Federal and State CIOs on trying to harmonize the Federal architecture guidance with that which the States offer through NACO, so there has been some formal, higher level, architectural collaboration between NACO and the Federal CIO Council.

Mr. DAVIS. Mr. Holcomb, can you put into context how GAO's EA maturity framework might fit in with the work of the Architecture and Infrastructure Committee and also, would you agree with GAO's recommendation that it be implemented throughout the Federal Government?

Mr. HOLCOMB. First of all, we have piloted on a voluntary basis the use of that framework within the committee structure. We think it is a good framework. The one area I think we have had some discussion about is at what level do you apply that framework. You can apply it at the bureau level, you can apply it at the full agency level and it becomes more powerful as you raise it to the full agency level. I think it is a good framework, that we can use it on a voluntary basis to do self assessments, and I think it is a nice structure to use and potentially OMB might want to consider using aspects of that.

Mr. DAVIS. Ms. Stouffer, what other factors besides EA do you consider essential to IT management reforms?

Ms. STOUFFER. Certainly enterprise architecture gives you an understanding of what your business looks like and what the aggregate businesses of the government look like. That enables you to identify opportunities for reform and improvement. I think also important is an exploration of the processes and the people that contribute to the critical success factors that are important to those lines of business and that not only information technology but processes and organizations or people are all considered in any solution that is proposed to close performance gaps, to improve productivity and to improve the service we deliver to the customer.

Mr. DAVIS. Ms. Barnes, OPM is supporting, I believe, five of the President's Management Council selected e-gov initiatives, which together are designed to streamline the employment life cycle of the everyday Federal employee. How are you working as an agency to ensure that all these initiatives will be seamlessly interoperable with every other agency or department in the Federal Government?

Ms. BARNES. We have an extremely active partner and stakeholder group that has been involved from the beginning when we started these initiatives. They are all contributing from the very beginning of defining the vision for each of these initiatives through the goals and objectives. Even though work is proceeding because we understand where all of these are headed, we continue to make sure the phrasing of this vision, the goals and objectives really does reflect the work that is being done. I think they are active and are very concerned about the results of these efforts really going to improve the whole H.R. process in the Federal Government.

I think with the active involvement with our partners, both in the initial stages and as we continue through this process, that we will ensure it meets the needs of all our agencies.

Mr. DAVIS. Just a general question to you all. What obstacles do you anticipate in completing the initiatives by the project deadlines in the E-Government Strategy Report?

Ms. CALLAHAN. One of the challenges that we are facing is from a management perspective dealing with cultural changes and particularly the incentives necessary for cross agency collaboration which I think has been echoed in a couple of instances here today.

Incentives through the appropriations process would be extremely beneficial to help break down some of the existing barriers that promote the continued behavior and the cultural environment to do things within a program within a particular subcomponent, within a particular agency inside a department.

One of our challenges is elevating that type of activity to an enterprisewide level so that we can all take benefit from it and be able to enjoy the rewards the particular effort brings forward and leverage the technology solutions and the lessons learned universally instead of reinventing the wheel over and over.

Mr. BLANCHARD. I would echo Ms. Callahan's comments related to the institutional and cultural barriers that are probably the most transient. Surely there are some technical barriers that we face but the technology is there, whether it is in the private sector of across government and it has been applied, so we are continuing to draw on those best practices to overcome some of the technical barriers.

With regard to the interagency organization, I think the key for us in developing our business compliance portal is to focus on businesses, not to create an ownership of this portal that is agency-based but that is government-based and with the focus being on the businesses that the portal serves. With us simply being the managing partner and not the ownership or the owner of this project, I think we are able to make sure the participating partners all have a shared ownership in this project.

Ms. BARNES. I think what the e-gov initiatives are really about is transformational change which means not just an enhancement to what we have today but thinking about new ways of doing business. That can be a daunting task when you think about doing it especially in my area across the Federal Government. I think what is really important is that we understand how to deliver some results that we can see and appreciate the benefits they provide as a way of gaining momentum into the change process.

I believe that starting and getting moving with some quick wins, especially in this 18 to 24 month timeframe is particularly important to establish momentum and get everyone understanding where this can go and how powerful it can be.

Mr. DAVIS. Those are all the questions I have.

Mr. Turner.

Mr. TURNER. One of the projects that was mentioned by Ms. Canales, I believe, is the Project SAFE COM. That is an effort to improve communications capability between Federal, State and local agencies, law enforcement agencies, to enhance public safety. It is a wireless system, as I understand?

Ms. CANALES. Yes.

Mr. TURNER. Is the Treasury the lead on that?

Ms. CANALES. Yes, sir, we are the managing partner for the Wireless Public Safety Initiative. We had our first pilot test of the wireless initiative with the 2002 Olympics where for the first time in Olympic history we had just two networks that all the various local, State and Federal enforcement and public safety communities use to share information. Normally there are hundreds of wireless networks up there, none of which talk to each other, none of which communicate, no interoperability, so we had a very successful run at the Olympics. We hope to proceed further.

We are working out the goals with Mr. Forman and his team as we speak but the basic goal is to provide communication between local, State and Federal entities so that they can share case information.

Mr. TURNER. What are the Federal agencies working with you on that project?

Ms. CANALES. There are several. Treasury has several bureaus on the team, then we have the Department of Justice, FEMA, the Homeland Security team is on there. Those are our strongest partners right now.

Mr. TURNER. How do you share the cost of that project?

Ms. CANALES. That is the challenge. It is interesting that the technology seems to be the easy part in a lot of these instances. Several of the agencies have funding in their 2002–2003 appropriations for wireless initiatives, however, we have to find ways to create program management offices where we share responsibility and funding. The sharing of resources has been the critical issue for the wireless initiative.

Some agencies have more funding in their appropriations than others. Should they bear the brunt of the cost because they have the most funding, is that fair? Those are the types of questions we have to answer. Some agencies have structures, frequencies and staff that they have built for specific services to the public and what happens when we pool our resources and don't need as many people, products, services and resources. Those are some of the issues that we are tackling right now and we are in the midst of tackling those issues.

Mr. TURNER. Would that be the kind of project that could be funded through the E-Government Fund if there were actually money there to do so?

Ms. CANALES. Certainly. I think all of the 24 initiatives would qualify. I think in light of September 11th we are focusing on some more of the public safety type initiatives but in a way the E-Government Fund also should take a look at the underlying architecture and infrastructure and tools that we all use and we all need in order to progress.

So there is value in funding the tools and standards we all need to use across government because a lot of us don't have them. We need those capabilities before we can expand to actually provide the services and products. Certainly public safety initiatives would be very high on the priority list.

Mr. TURNER. If you are trying to get cooperation say with the Department of Justice and you feel they are not willing to carry their

fair share of this project and pay for their share of it but you know obviously they have to be a partner, who do you go to for help to encourage another agency to step forward and carry out their fair share, and who makes the final decision regarding the sharing that should and will take place?

Ms. CANALES. At the highest levels, we have cooperation. The Secretary of the Department of Treasury and the Attorney General for Justice fully support the sharing of resources. When the rubber meets the road is where we get into the trouble.

We start with the program managers and we try to work it out at those levels. If that doesn't work, we have several methods in place. One, through my role in the Federal CIO Council, E-Government Coordination, we have a facilitation task order in place that the program managers and agencies can use for facilitation.

It is a task order that helps program managers deal with the change management and the cultural issues. They do 2 and 3 day sessions and get the various agencies in a room, focus on the goals and business requirements and try to get away from the ownership issues and cultural issues and focus on the right answer and how to get there.

That has helped many of the initiatives move from that initial phase of this is what we want to do to this is how we do it. That is where we are with the wireless program right now. We have had two 1 day sessions of change management, cultural change, getting the partners together.

A lot of the issues are simply learning to work together, crossing our agency boundaries, developing trust, figuring out how to share information securely, who owns what, who is responsible for what, data quality, those types of issues. So that mechanism seems to work well because it allows the team members to work it out as a team rather than having OMB and the Secretaries come in and you must, you must, you must. I think it helps for the team members to work it out on their own.

Mr. TURNER. Ms. Callahan, you mentioned the eligibility assistance on-line or gov benefits I guess it is called. How many agencies are involved in that?

Ms. CALLAHAN. We have a total of 11 partners who work with us. They range from the Veterans Administration to HUD, Agriculture, and a variety of others including Energy, not to leave anyone out.

Mr. TURNER. How do you get all those agencies to cooperate and work together?

Ms. CALLAHAN. Extensive facilitation. What we have done is establish through the business case our strategy and then working with the individual agencies that are all partners to identify their strengths. Some agencies have in-kind contributions where they may not have appropriation funding available but they have an expertise, a particular skill that we need for accomplishment of the objective, in which case they provide that resource to the project itself to achieve the goal.

In other cases, it can be something as simple as in one instance we had a partner provide office equipment and some particular supplies that we didn't have. So we are leveraging it across the board ranging from actual appropriations and funding related re-

sources to in-kind contributions through IT work force related activities and general management principles for program management efforts as a whole.

Mr. TURNER. I understand that effort was originally at the Department of Labor and now it is hosted on First Gov. Could you tell us how that change took place, what were the reasons for it and what benefits have been derived?

Ms. CALLAHAN. One point of clarification. With eligibility assistance on-line, the initial emphasis to do it at the e-government level, architecturally speaking the early on business case planned it initially right up front to be hosted through First Gov. With that, we have been able to take advantage of the recent redesign and some of the new infrastructure investments that GSA has put in place for the current First Gov environment and as such, leveraging those resources and have been able to take advantage of their hosting facilities and plan to continue to build on their lessons learned and build on their investment through the Web content management services they are currently working on.

Mr. TURNER. You said there are 11 different agencies that have participated with this on-line portal. Do you find it difficult to get this done in a timely fashion when you have to work out agreements with 11 different agencies? Is this the type of project that if the funds were placed in the E-Government Fund, this project could be carried out more efficiently than is being done with the sharing of resources that have to be agreed upon by the 11 agencies that participate?

Ms. CALLAHAN. Definitely the focus on being able to achieve the objectives of the initiative would be more streamlined if we could put our attention on accomplishing the goals of the initiative versus the facilitation of resources to be able to do the work.

A central funding resource I think would help all initiatives, including eligibility assistance on-line in order to allow us to focus on getting the job done and basically break down the barriers we currently have in trying to identify resources to perform the work.

Mr. TURNER. Ms. Barnes, one of your initiatives you mentioned in your testimony is e-training. As I understand, it is designed to provide e-training services across government, correct?

Ms. BARNES. I think it is designed to improve access to e-training services across government. This is really not an attempt to recreate the wheel and go out and identify new training opportunities. What we are really trying to do is establish a one-stop so there is a common place all Federal Government workers can go to access some of the best training programs already in existence. To the extent we need to, we can create new ones but we believe there are a lot of good training programs already available. We are trying to simplify access to it, improve registration possibilities, and also establish the Federal Government as a single point of negotiating training, registration, licenses so that we are not paying for the same courses many times over.

Mr. TURNER. So your effort is really to collect in one place the e-training programs of the various agencies?

Ms. BARNES. Yes, and make them available.

Mr. TURNER. Do you have any initiative to actively promote information technology training for Federal workers?

Ms. BARNES. Absolutely. If we do not promote and do training, if you establish the best portal in the world and there is no one using it, it is not worth anything, it is meaningless.

Mr. TURNER. How are you accomplishing that?

Ms. BARNES. It is part of our task plan. We are developing our road maps and detailed task plans to deliver each one of our initiatives. Part of every one of our initiatives is a communication, education and training module. In fact the approach we are using in all our initiatives is to come up with discrete pieces that will be delivered in phases so we can achieve earlier results for chunks of investment so we do not have to buy into the whole thing at once. Each one of these modules we are developing, we call usable modules. There is the education, training, communication and sales part of that.

Mr. TURNER. Do you envision your agency as being the central place where training of Federal workers for information technology will take place? Is that the way you view this effort?

Ms. BARNES. I believe that training in the IT disciplines will be part of this, yes.

Mr. TURNER. Do you find that all other agencies of our government are looking to you to carry out this responsibility or do we have the various agencies of government with their own independent programs in this area?

Ms. BARNES. Some have their programs and we have looked at them and are anxious to take advantage of them and provide the opportunities they have to other smaller agencies perhaps who do not have well developed e-training programs. That is the power of the initiative. Our partner group is very engaged in this and very supportive. There is really no conflict in that partner group about the idea of a one-stop training portal for the Federal Government.

Mr. TURNER. In your opinion, are we devoting sufficient resources to training in the information technology field for Federal workers?

Ms. BARNES. I can only speak for my agency and we have that as a priority and we devote the resources we need to training people both in the IT community as well as in our program offices with the people we need to interact with to deliver business capability. Sometimes there is an awareness issue, especially in the IT security area. It is a well known fact that the IT security programs in the agencies rest on the program people to deliver it. The program people have to certify and accredit their systems. They have to be the ones that can say, yes, we have the right level of security for these systems.

There is training throughout the organization in IT areas that has to occur. We are sensitive to that and we are actually trying to buildup that part of our program internally.

Mr. TURNER. Thank you, Mr. Chairman.

Mr. DAVIS. Anyone want to add anything?

Mr. HOLCOMB. Just a comment on training. We use an on-line training program for our IT security folks, 18,000 employees, and we have about 25,000 contractors, about 43,000 people use the on-line site today to do training. It is very efficient, you know who is taking the training, you know they have been certified. It is a very

effective tool, particularly in IT security. I think it will benefit the agencies to use on-line training.

Mr. DAVIS. Before we close, let me thank everybody again for attending this hearing. I want to thank our distinguished panel of witnesses and Mr. Turner for participating. I would also like to thank my staff for organizing it. I think we have learned a great deal and I look forward to continuing our work on these issues with my colleagues on this subcommittee.

I am going to enter into the record the briefing memo distributed to subcommittee members. We will hold the record open for 2 weeks from this date for anyone who might want to forward submissions for possible inclusion.

This hearing is closed.

[Whereupon, at 4:12 p.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

[Additional information submitted for the hearing record follows:]

Statement for the Record

Craig B. Luigart, Chief Information Officer

U.S. Department of Education

Committee on Government Reform

Subcommittee on Technology and Procurement Policy

Thomas M. Davis III, Chairman

March 21, 2002

Electronic Government and Information Technology Initiatives

Thank you for providing me the opportunity to provide your committee with my statement. I am honored to share the Department of Education's progress in its information resource management and our participation with OMB, other agencies, the states and the districts in the development of a citizen-centered electronic government in an effort to achieve the President's goal of No Child Left Behind.

As CIO for the Department of Education for just over 2 years, I bring a combination of prior public and private sector experience to my position. I share the citizens' expectations of an uncomplicated online government that operates similarly to Web-commerce. For instance, I should be able to change my personal address and other demographic information in one electronic government form for all local, state, and federal record needs. I am also concerned as a CIO and as a taxpayer that each government agency re-purchases the same information and information technology services. Such re-purchases mean that we are missing out on the dramatic economies of scale possible if we would just simplify and unify our processes. We need to change the way we do business both at the agency level and across the government. I can firmly say from experience that this task is not one dependent on technological solutions, though technology will play a key enabling role. Rather, the desired reform is dependent on breaking down historical barriers by providing managers the flexibility to cross programmatic, budgetary, and organizational boundaries.

When I arrived at the Department, it had only the rudimentary elements necessary for the formal review of its information technology investments called for under the Clinger Cohen Act. While we still have a way to go to meet the acid test of world-class investment management, the maturity and discipline of the process in use today is a great improvement. The Office of Management and Budget (OMB) says our process is robust. It involves our new Executive Management Team, comprised of our top political appointees and our critical career senior managers. The team actively participates in making the Department's investment decisions. Our new IT process has created both efficiency, by eliminating duplicate purchases and services; and accountability for our scarce resources, by giving everyone a role in the decision-making process. Now when we have an IT investment opportunity, we go through a formal Investment Management process to determine which IT initiatives we should undertake and to monitor the progress of those initiatives. While these processes are still maturing, the Department already is enjoying the benefits of a "Department-wide" view and the common investment goals this process fosters.

The Department—and especially the state and local governments—also will benefit from a new vision we have to transform the way we collect data. We have met with state representatives and agreed that we must reduce the state's burden of complying with the hundreds of different Department data collections. Some of our data collections are redundant, and some of the data we use is old. We plan to improve the accuracy, timeliness and usefulness of this data by setting up a system that automates the exchange of information between the Department of Education and the states. It's called the Performance-Based Data Management Initiative. The first step is to reach a consensus definition of data elements with federal, state and local representatives. Then we plan to use special transaction software to exchange and acquire data among disparate federal and state databases. We will house the data in a common data repository with user-friendly access tools. The repository will be integrated with ED accountability systems. Our plan is to change our core processes by 2003 and develop supporting data systems for this project by 2004. This data management system will not only vastly improve and streamline the burdensome data collection process; it also is projected to provide a 575 percent return on investment for the federal government and an astounding 1,064 percent return on investment for the federal and state governments. This initiative will create the proper business process and technical infrastructure needed to meet the information requirement of the President's "No Child Left Behind" goal.

The Department and its customers are reaping the benefits of the IT investment and initiatives we are undertaking. Our approximately 5,000 employees located across the United States are electronically connected on one common nationwide high-speed network protected by enhanced security measures and with one Department directory. Other infrastructure investments provide the Department with video teleconferencing, virtual private network, and voice over Internet protocol. Other management improvement investments include centralized asset management, reduced systems redundancy, and site disaster preparedness.

Perhaps one of the clearest indications of our improvements in IT operations is the fast response we to provided to our colleagues in the New York Region Office after the September 11, 2001 events. The Department's support and program offices worked together to quickly provide an infrastructure that allowed the New York employees to work from home.

The Department also has responded strongly to its security problems, and OMB has acknowledged our aggressive posture. We have developed a bold Plan of Action and Milestones to certify and accredit all our general

support systems and major applications. This Plan of Action and Milestones includes efforts to further enhance all our security procedures and guidelines.

In our aggressive pursuit of IT security over the past year, the Department has implemented significant upgrades in its systems, achieving the Gartner Group's recommendations for baseline defensive protection for network security. This includes firewalls, desktop virus protection, server defense software, intrusion detection systems, automatic software "push" capability and user training. We also now require the use of complex passwords and are activating disaster recovery sites for our primary support systems. Attesting to the robustness of our security measures, last summer's Code Red and NIMDA worms were totally blocked from the Department's network and did not result in any damage or downtime. Contrast this with estimates that the NIMDA virus shut down businesses around the world and fully two-thirds of government networks (or partial networks) for one to three days. Furthermore, we recently successfully protected our Student Financial Aid Direct Loan Origination and Direct Loan Consolidation Web sites from hackers who were trying to overwhelm our sites and force them off line.

The Department was able to successfully handle these security threats, and now we are aggressively strengthening our security to address a new threat, the worldwide SNMP security vulnerability. If this vulnerability is exploited, it could cause major outages across sectors of the Internet and bring down networks and IT infrastructures across the globe. To combat this new threat, the Department is taking decisive steps to protect its network. The Department is making its security enhancements upon the recommendation of Carnegie Mellon's Computer Emergency Response Team/Coordination Center (CERT/CC), recognized worldwide as a trusted source for IT security research, threat warnings and recommended actions.

While OCIO's technical team has skillfully protected us from such attacks, the Department's overall security also benefits from its educated users. During calendar year 2000, nearly 100 percent of the Department's employees took on-line computer security awareness training. We also provided specialized IT training for selected employees.

The Department's administration of student aid programs represents a major service to the citizen, and, as a performance-based organization, the Office of Federal Student Aid has been provided flexibility and funding to bring students more efficient, effective financial aid at a lower cost and with greater customer satisfaction by continuing to invest in the modernization of its systems. For example, Free Application for Federal Student Aid (FAFSA) on the Web offers electronic financial aid applications to the public. This offers many benefits to students

and schools as well as enables the government to lower processing costs. Students receive a response in 4 days instead of the 3 to 4 weeks it takes when the same application is filed manually.

The Department also takes great pride in being nationally recognized as a leader in providing comparable access to information to both individuals with disabilities and individuals without disabilities. In one visually impaired employee's own words, "Technology is going to make my life easier, and make me more productive and more efficient because I can do more of my work without any assistance. The access to information is tremendous because I don't have to wait for someone with a hard copy to read it to me." The Department's accessibility standards are a model for the entire IT industry. I am honored to serve as the Federal CIO Council spokesperson to share the benefits, tools, and techniques of assistive e-technology throughout the federal, state, and local governments.

The Department also is an active partner in the federal-wide e-grants initiative. In FY 2002, the Departments e-Application pilot was expanded to offer the option of submitting grant applications electronically in up to 50 percent of the Department's new grant program competitions.

Our success stories have been possible in part because we have worked these difficult and complex projects *across* the Department. It is almost easier to do it this way. From my viewpoint as a member of the Federal CIO Council, forging partnerships is a critical step in *all* e-government initiatives and in improving service to our citizens. This is especially true considering we all have limited resources for core missions and recognizing that we have more in common administratively than not. Furthermore, technology has removed all barriers to sharing data across systems, organizations and countries. From the government-wide perspective, the Department's partnership with the Federal CIO Council has already resulted in: development of a government-wide leadership position on Section 508 assistive technology requirements, a government off-the-shelf Investment Portfolio data base tool, an enterprise architecture handbook, a government off-the-shelf enterprise architecture repository data base tool, government-wide handbooks and training courses for security awareness and information protection systems--and many more collaborative, money-savings services and products that would otherwise need to be invented, developed, and purchased by each individual agency.

I believe that Mark Forman's leadership and his summons to "Simplify and Unify" are the essence of what is required to fulfill the President's e-government initiatives. Given our federal model, the placement of federal information resource management leadership in OMB is the correct organizational position. It is the President's

central review and integration agent of all the federal budgets and all the management initiatives. OMB's leadership of federal information meets GAO and corporate best practices criteria for success; that is, budget control, top leadership sponsorship, and armed to manage cultural change. One need only look to the success that has been forged in cross-federal partnership under OMB in the last 7 months to get a vision of our potential. We have completed a unified review of the core lines of business and duplication across agencies. Under Mr. Forman's leadership, we identified more than 20 processes that will make an "order of magnitude" difference in the business of government through sponsorship of the President's Management Council.

The Department is a managing partner for the e-loans initiative. The initiative will allow citizens and business to first find the government loan programs that meet their needs and apply on-line for a loan, create or modify an on-line repayment schedule or examine their loan account transaction history on-line. As managing partner for the initiative, the Department and its partner agencies have worked as a team to produce a business case. The business case has been submitted to OMB, and we're in negotiations with OMB to determine the scope of Phase I. Our next steps will be to establish a program management office and establish a budget and assess other resources from partner agencies.

Developing these e-government projects alone will not be sufficient to change the future look and feel of government because at the core is people's resistance to change, which is one, if not the largest inhibitor, to reform. The change will require 10 percent technology and 90 percent change management, and I am assuredly overstating the 10 percent. Mr. Forman's leadership of the e-government initiative, his chairmanship of the Federal CIO Council, and overall as Associate Director of IT and e-government, demonstrate he has the proven change management skills required to fulfill the President's IT reform goals.

We also need to examine the legal and political barriers to government reform. The Government Paperwork Elimination Act, for instance, has served as the statutory driver to electronic government as it unifies and simplifies the business process so that agencies identify and remove duplicative, expensive burdens within and across the government. Enhancing our ability to integrate and consolidate efforts around customer-centered services is critical, and it is incumbent on the executive and legislative branches to authorize, sponsor, and fund programs in the spirit of collaboration and accountability. We all must be willing to accept the roles, and risks, of change management leaders to facilitate this transformation.

I would like to thank the subcommittee for its support of e-government.