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Good afternoon. Thank you for the opportunity to testify on the evolving role of the federal Chief Information Officer. This testimony reflects my role as the Chief Information Officer (CIO) at the U.S. Environmental Protection Agency (EPA). I appreciate having this opportunity to appear before this subcommittee today to discuss this important issue.

The role of the federal CIO has evolved significantly over the last several years. Today, information management and technology continue to be increasingly important where the need for timely information is critical. The main goal of the federal CIO is to improve services to citizens to operate the federal government in a more efficient manner and to help the federal government achieve results. Thoughtful investment in information technology (IT) infrastructure and information technology has the potential to significantly improve government's effectiveness and efficiency. Technology alone, however, cannot achieve a better government and to achieve the goals the President's Management Agenda. Technology serves as a critical enabler, but it must work in concert with people, processes, and information to achieve real results.

Responsibilities most Critical to the Federal CIO:

As the federal CIO at EPA, my work to improve the quality and availability of information is critical to the functions of the Agency. Accurate, timely, and usable information is the foundation for decisions and actions taken by Agency officials, states, tribes, and others responsible for protecting human health and the environment. Effective information management and technology support plays a key role in the ability of the Agency to achieve its mission and attain its strategic goals.

I believe the responsibilities most critical to the success of EPA include enterprise architecture planning, capital planning and investment control (CPIC), and information security. The responsibilities of the CIO is to move the enterprise toward enterprise thinking by developing: an enterprise architecture, a portfolio approach to managing and securing IT investments, and a capacity to direct resources to implement and operate enterprise solutions. Without this foundation, an agency is not able to efficiently interoperate with other federal, state, local, and tribal entities in a coordinated approach to provide service to the public.

An enterprise architecture serves as a tool for the agency leader to readily visualize how and where to best apply resources-people, technology, and money-to attain the organization's strategic goals. Once the agency's business is captured in the enterprise architecture, an appropriate IT Portfolio can be established that truly supports the Agency's mission. Once the appropriate portfolio is determined, the capital planning and investment control (CPIC) practice ensures that IT projects are properly managed.

An enterprise architecture allows the agency to secure its valuable and critical assets, and assists the agency to establish priorities for the protection of national assets.

A CIO must be able to direct limited security resources to protect the most critical assets.

Most Useful Reporting Structure to Achieve Responsibilities

At EPA, the CIO reports directly to the Administrator, through the Deputy Administrator, ensuring high visibility and support for information management issues. In addition, the CIO is a peer to EPA national program managers and the Chief Financial Officer. This reporting structure is critical in providing the CIO with the appropriate authority to fulfill information and information technology management needs.

As the EPA CIO, I lead an organization responsible for a full range of information technology, information management, and information policy duties. In addition to serving as the CIO, I also serve as the Assistant Administrator for Environmental Information, the Chair of the EPA Quality and Information Council, and the EPA Agency Senior Management Official for Quality. In my role as CIO, my primary responsibilities includes supporting all aspects of the Agency's national information systems including the infrastructure, architecture, applications development, hardware, capital investment and security measures. In addition, program offices across the Agency have IT and information management (IM) officials who work with EPA's Office of Environmental Information to ensure policies are implemented on an Agency-wide basis.

Minimum Duration of Federal CIO Tenure

The minimum tenure for a federal CIO is driven by many variables including the individual's knowledge base, the placement of the individual within the organization, and

the degree to which the organization must respond to changing internal and external requirements. Clearly, the length of time a person chooses to stay in a position is a deeply personal decision. In my case, I have made the decision that three years is the minimum needed to effectuate the changes I envisioned for EPA. Three years is needed to experience a full budget cycle - from request to execution. Three years is often needed to see a project from concept to reality. And three years is about the time needed to not only introduce transformational thinking, but also to institutionalize the changes within the organization.

Characteristics and Qualifications of Successful Federal CIO

A successful CIO should possess certain skills and attributes. Most important among these, the federal CIO must be both a visionary and a leader. The capacity to lead people and effectuate change is paramount in the evolving federal IT environment. Now, more than ever, the federal CIO must possess the ability to manage collaborative processes that lead to consensus. This consensus is best realized through open, balanced, and inclusive approaches where stakeholders work together to develop solutions. This ability to build consensus both inside the organization and the broader government community will continue to be one of the most important skills the federal CIO must possess in order to be effective.

The federal CIO must also have a strategic perspective of information and information technology, perceive information as a vital resource, and have the ability to align solutions to meet the agency's mission. The federal CIO must have the business acumen to run a disciplined operation to meet increasingly more difficult performance

goals and accountability objectives required by this position, again in a way to ensure the agency's mission is achieved.

Major Challenges Facing the Federal CIO

Although the federal CIO encounters a vast number of challenges, the two most significant challenges include maintaining a high quality IT workforce and managing enterprise-wide projects.

In my opinion, enterprise architecture, capital planning and investment control, and information security are the federal CIO's three most important responsibilities in striving to achieve the President's Management Agenda. As the federal government migrates toward interoperable enterprise architecture through collaboration with state, local, tribal partners, and other stakeholders, the success of the E-Government initiative will be dependent on each Agency's ability to contribute. The federal CIO must possess sufficient resources to invest in the workforce in order to embed these skills within her/his organization. According to a recent report from the National Academy of Public Administration (NAPA), the marketplace for IT talent will remain competitive for the next 20 years making this task more difficult. The NAPA study also reported that the retirement of a significant number of IT leaders and staff will occur over the next five to ten years and it will be necessary to add up to 45,000 new IT employees to the federal workforce over this time period.

Another major challenge to the federal CIO is the IT governance relating to enterprise-wide solutions. As an example, EPA currently serves as the lead Agency for the E-Rulemaking initiative. Through collaboration and a commitment to the benefits

inherent in E-Government, the E-Rulemaking initiative has made significant strides toward creating a more efficient, integrated, publicly accessible approach to the regulatory process. The goal of the initiative is to help overcome barriers to public participation in the federal regulatory process by improving the public's ability to find, view, and comment on regulatory actions, as they are developed.

Despite our progress, we continue to face a number of critical challenges to the implementation of this enterprise solution. These challenges do not stem only from technology, but also relate to organizational change, communication and coordination, and funding.

EPA and its partner agencies have developed and continue to develop information technology solutions for E-Rulemaking that could impact and ultimately benefit over 150 federal departments and agencies, many of which have well established regulatory processes in place. Approximately 25 departments and agencies have existing technology systems in place (ranging from accepting public comments via email and posting materials on simple HTML Web sites to sophisticated document management systems). Resistance to change within an agency can be significant. Implementing new technology within the agency and across government is challenging and often requires institutional and organizational changes.

Addressing and adjusting to organizational change requires constant coordination and communication among agencies at many levels (from CIOs, General Counsels, and Deputy Secretaries, to technical staff, attorneys, budget personnel, and rulewriters). We have established a permanent organization in my office to facilitate this process as well as to develop and deploy the centralized Federal Docket Management System required

under the E-Government Act. In addition, I established a number of inter-agency groups to guide and govern this process-starting with an E-Rulemaking Executive Committee, which I co-chair, an Advisory Board comprised of senior Agency managers that meets monthly, and various workgroups (e.g., legal/policy, budget, Regulations.gov, FDMS development). This constant need to coordinate takes a significant amount of time and effort on my part and that of my staff.

The other challenge we face is funding from a two-fold perspective. The success of the E-Rulemaking initiative, like other E-Government initiatives, is dependent on contributions from participating federal departments and agencies. Participating agencies developed a cost allocation approach that covers start-up and development work, and we will move toward a user-fee approach for on-going operations and maintenance. Currently, this requires separate agreements and memorandums with each of the approximately 40 paying agencies. The process can take several months before the final agreements are signed and the money transferred. We are working cooperatively to overcome this funding challenge.

The two most significant challenges the federal CIO faces include maintaining a high quality IT workforce and managing enterprise-wide projects. These challenges will only be accomplished through strong leadership by the federal CIOs.

Conclusion

In closing, it is apparent that the role of the federal CIO has evolved significantly in the past several years. Advances in information management and information technology can help federal departments and agencies improve the delivery of service.

Creating the federal CIO in federal departments and agencies was a critical first step.

To be truly effective, the federal CIO must have a seat at the agency's leadership table. They must work toward enterprise solutions within their agency and across the federal government through the federal CIO Council. The federal CIO requires the ability to hire and retrain the needed skilled workforce, particularly in information security and enterprise architecture and solutions. The challenge of meeting higher performance standards and managing more complex projects, which often extend beyond traditional agency boundaries, reinforces the Clinger-Cohen requirement for high level CIOs.

Thank you for the opportunity to testify on the evolving role of the federal Chief Information Officer. I would be happy to answer any questions you may have.