TESTIMONY

Committee on
GOVERNMENTAL AFFAIRS
The United States Senate

- COMMITTEE MEMBERS
- SUBCOMMITTEES
- HEARINGS
- KEY LEGISLATION
- JURISDICTION
- PRESS STATEMENTS
- SPECIAL REPORTS

- VIDEO OF SELECTED HEARINGS
- SITES OF INTEREST

**TESTIMONY
OF
ANNE K. ALTMAN
MANAGING DIRECTOR - U.S. FEDERAL
IBM CORPORATION
BEFORE THE
U.S. SENATE
GOVERNMENT AFFAIRS COMMITTEE
ON
THE E-GOVERNMENT ACT OF 2001
JULY 11, 2001**

Good morning, Chairman Lieberman, Senator Thompson and members of the Committee. My name is Anne Altman and I am the Managing Director of US Federal for the IBM Corporation. I have responsibility for marketing IBM's services, solutions, hardware and software to the U.S. Government. Thank you for inviting me here today to talk with you about IBM's views on e-government and the recently introduced E-Government Act of 2001. This bill will help speed the transformation of the federal government from its current form to a more contemporary knowledge-driven government that can improve services for its citizens and position the United States to lead.

This morning I would like to focus my testimony in three areas: IBM's own transformation and its relevance to the federal government, general policy issues and choices public officials must address as they manage the transformation to e-government, and finally IBM's view of the provisions of S. 803.

IBM TRANSFORMATION

IBM is the world's largest information technology company with 80+ years of leadership in helping businesses and governments innovate. Our business ranges from fundamental research, to semiconductors and other technologies which comprise information technology hardware, software and services. IBM software offers the widest range of applications, middleware and operating systems for all types of computing platforms, and our services enable customers to take full advantage of the new era of e-business. Today, we have over 320,000 employees in more than 160 countries around the

globe.

For the past 8 years IBM has been changing to better address the needs of our customers, to break down barriers between operating units - frequently known as stovepipes or silos - and to integrate the vast quantities of data and people that reside within the worldwide organization. We seek to achieve cost efficiencies while doing all three. The federal government with its hundreds of disparate IT systems, lack of interoperability and thousands of locations has many of these same challenges.

The Problem

IBM's transformation began in 1993 when we had reached a crisis point. Our financial condition was very poor and our market value had plunged. To save our company and restore profitability, we had to reevaluate every facet of our organization. At the time, IBM was a maze of complexity. We had nearly 400,000 employees doing business in more than 160 countries. We went to market as 20 different businesses, each with its own fulfillment, manufacturing, accounting and payroll systems, its own IT structures and marketing strategies. Unnecessary redundancy was everywhere. Our combined portfolio included more than 5,000 hardware products and 20,000 different software offerings.

This complexity was not only difficult for us to manage; it also made IBM a confusing organization for our customers. There was no point of integration that brought our vast resources together on the customer's behalf. Not surprisingly, IBM was also a highly inefficient organization. Our expense-to-revenue ratio was 40 percent above our major competitors, and development cycles for our major hardware products often lasted four years or longer. We maintained a diverse set of IT organizations, with more than 100 different IT officers. Many of them had the title "CIO," yet they supported different architectures, technologies and data standards for the individual business units or geographies. There was little integration of systems, vast inconsistencies and a good deal of redundancy.

IT Reorganization

In order to survive, we had to do a better job of integrating our global enterprise. The first step was to restructure our IT environment and redesign our IT management system to create efficiencies, improve our ability to communicate, and free up

funds to attack other areas in the overall transformation process. To regain control over our IT environment, we consolidated 155 data centers into just 28 (with a target of six); replaced 31 segregated networks with a single integrated global network; appointed a single CIO responsible for transformation and defining consistent architectures and standards across IBM; and restructured our IT management system to ensure that our IT strategy and investments were consistent with our overall business strategy. Along the way, we reduced IT costs by 25 percent annually, freeing dollars for reinvestment elsewhere. We reduced labor costs in the data centers by 28% and moved employees to customer facing responsibilities where they could generate revenue. Our hardware bill dropped 55% and the cost of raised floor facilities dropped by 67%.

System performance also improved. Our IT deployment team has placed measurement probes in more than 600 locations throughout our global network to measure server performance and traffic and ensure quality. Recently we have achieved server availability of 99.5 percent, average response times of less than two seconds, and dial-in availability exceeding 99 percent.

e-Transformation

The most important part of our transformation commenced when we decided to make a corporate commitment to becoming an e-business in 1998. We realized that we could not effectively sell e-business to our customers if we did not become a premier e-business ourselves. To do this, we had to integrate internet technology into our core business processes. We had to fuse business and IT strategy. As a result, we are now able to move with more speed, agility, efficiency and intelligence. However, to become a fully integrated e-business, we had to radically alter our structure and break down internal barriers within the company. We had to rebuild IBM to adapt to continuous change and use a foundation of simplified and integrated business processes. Of all the lessons learned in our transformation, this is the most important point. **We had to break down the walls between our operating units, or silos, and become a single, integrated organization with seamless connections between our employees and between our company, our suppliers, our customers and our business partners.**

Today, that core principle underlies all of IBM's internal

operations. We created just one IBM face to the customer, all the way from the creation of ideas through research, to our components business, to our work in the highest end of supercomputing. The transformation has strengthened relations within the company and with customers. But this type of change was not easy. It required the organization to change management concepts and long established practices and replace a collection of separated business units with an organization that is integrated.

Business Transformation - CIO Position (BT/CIO)

One area vital to the transformation process was the selection of our CIO and responsibilities of the position. Our management expected the CIO to be responsible for the company's technical leadership including:

Providing leadership for IT investments in new technologies & innovations

Providing leadership for corporate IT initiatives

Developing global IT strategies and goals

Defining IT architecture, infrastructure, standards, guidelines and processes

Developing and managing the deployment of the IT infrastructure worldwide

Optimizing the investment in IT infrastructure worldwide

Evaluating, selecting and negotiating enterprise-wide service agreements Developing and ensuring compliance with overall IBM service-level requirements

Additionally, the CIO is responsible for business transformation across the whole of IBM. The BT/ CIO has a strategic leadership function and is in effect an agent of cultural change. This requires a tight communication and control structure. IBM business units and cross-organization business processes had to be coordinated during transformation to avoid duplication or incompatible IT systems across the key processes or between business units.

The BT/CIO function works with business process executives and business transformation executives across the business

units globally to create and manage an integrated application architecture and ensure compliance with corporate standards and processes. This function provides the tools, standards, processes, and audit services. The BT/CIO function is also responsible for enterprise-wide application and standards selection and deployment. The BT/CIO places particular focus on transforming core business processes and leveraging knowledge and information.

With change being managed by the BT/CIO, managers had to transfer the daily operations of business systems to a centralized group out of their personal control. Initially this raised anxiety, created doubt, and heightened the sense of risk. It was a major cultural change for an institution that had been comfortable as the world changed around it.

But the results were worth it. Let me give you some examples. IBM did $23 billion in business over the Net in 2000. That is up from $3 billion two years ago. Last year, we handled 99 million self-service customer inquiries and transactions over the Web, up from 14 million in 1998. In procurement, we have moved from $7 billion in 1998 to $43 billion in 2000. This allowed us to do 96% of our invoicing in a paperless manner. The savings from Web-based transactions are impressive, as we save 70% of the cost of a service transaction cost when it is done over the Net. **Let me repeat that. We save 70% of the cost of a service transaction when we perform it over the Net as opposed to the old paper or manual format.** All of this has resulted in a savings of $377 million in 2000 in the procurement area alone, but also a huge $2.4 billion in cost avoidance. These are not insignificant sums. For a company with $88B in revenue, this is 2.7% of revenue. Apply this percentage savings to the budget of a federal agency, such as the Department of Commerce budget of $8.7 billion in FY 2001 and the opportunities for savings could be $234 million. Applied across all Federal agencies, the potential for savings is enormous.

IBM's transition was driven from the top down, with strong CEO and other senior executive leadership. The resulting changes could not have been achieved without sustained leadership, commitment and accountability. Our company now is one of the leading e-business companies in the world. Our e-business focus on services, software and hardware has allowed us to prosper in an ever more competitive IT environment. These changes have fundamentally altered how

we address customer needs, how we do business and how we approach building an IT infrastructure.

THE NEW NETWORKED ECONOMY

In today's networked economy, the way in which Americans and others around the globe interact with government has changed dramatically. The Internet has emerged as a powerful means for conducting all types of transactions in government and business:

Transactions among employees within government -- to improve how

services are provided, how ideas and knowledge are shared, how teams are formed, how work gets done;

Transactions between a government and its suppliers and partners,

to reduce cycle time, increase speed, efficiency and reduce costs;

Transactions between a government and its citizens to facilitate easier access to information and transacting business.

This is only the beginning in this next phase of e-transformation. We hope the lessons learned from our transformation and our experience with more than 20,000 customers can help you and other government leaders obtain similar operating results. The goal should be to build a truly integrated government, capable of efficiently interacting with itself, its citizens and the other entities with which it deals.

Examples of e-Government

We are seeing a number of governments embracing e-business strategies and transitioning to e-governments because they recognize that improvements in government efficiencies and services to constituents affect economic competitiveness and quality of life.

Let me mention a few brief examples.

1. Maryland Department of Labor, Licensing & Regulation

Allows over 250,000 licensed professionals in the state to renew the licenses from a single

Web site. Over 50% of renewals are done via the e-government application. Time to renew has been reduced from four weeks to one day. The contractors paid for system development and will be paid back with transaction fees.

2. US Department of Commerce - BuyUSA

Developed to stimulate economic development by assisting U.S. small and medium businesses to compete and grow in the global economy. It is an innovative e-marketplace linking U.S. businesses with buyers and partners around the world. It allows foreign companies, pre-qualified by the U.S. Commercial Service, to view U.S. company catalogs and company background information.

3. New York State Governor's Office of Regulatory Reform

Helps businesses wishing to establish in the State or change their purpose to better understand the process and specific permits for their specific businesses. It allows a Web-based dialogue which determines the permits required for each business and creates a customized kit. A single payment is made which is automatically apportioned to the appropriate state agencies/departments - invisible to the user. Over 1,100 permits from 36 state agencies are available. Permit requests are up twofold, creating 4,500 additional jobs in the state. In addition, training costs for state employees to support the businesses have been reduced 90%.

GETTING TO e-GOVERNMENT

While these and other examples are encouraging, since they demonstrate the value in moving to e-government, the key question remains - how does one move the Federal government, as a whole, to this transformation? To be successful, the government should develop a plan that addresses the following fundamental choices: leadership, integration, infrastructure, human resources, privacy, security and resistance to change.

Government decision makers must play a crucial role in creating a framework and, most importantly, the urgency that drives the transition to e-government. The private sector can provide leadership in aspects of technology, strategy and services deployment, and can help apply its experience to the public sector. However, it will be strong leadership, and policy

decisions and practices within government itself that will move the change process forward. Governments around the globe are identifying the following policy issues as critical success factors in transformation.

Leadership - A fundamental issue is how to create an organizational structure that best enables strong, visible and accountable leadership committed to the full definition of e-government. The two most important things when designing this policy are to put someone in charge and to set up a government-wide implementation process. The President must provide a clear personal imprint and champion the widespread benefits of e-government to agency leadership. The President must appoint an e-government leader with the stature, authority, funding and accountability to drive change. This official must focus constantly on implementation.

Committed IT leadership will play a central role in overall government efforts to transform. Leadership choices include requiring agencies to adopt interoperability as a fundamental part of their IT strategy and enabling agencies to learn from each other's implementation.

Since e-government projects often affect multiple agencies or departments, effective leadership must ensure adequate funding for multi-agency/department projects. Also crucial is a measurement system to insure accountability and progress toward goals.

Integration - e-Government triggers a chain reaction throughout the rest of the government structure: across constituent delivery systems, data bases, suppliers, among agencies, and with logistics, inventory, distribution. All these core business processes must be integrated so they work together to deliver maximum value through improvements in speed, cycle time and constituent responsiveness. These processes are not only being transformed. They are being connected, fused together and integrated within the government.

An important and difficult e-government issue for CIOs concerns the governance models of organizations. Historically, business processes were stand alone. But since the real benefits of e-government come from integration, government leaders must reconceptualize their management systems and organizational models to build a fully integrated enterprise and

they must create the policy to enable it.

Infrastructure - The fundamental concern for government should be the creation of an information infrastructure that is based on truly open standards. e-Government infrastructure is built on heavy-duty software and heavy-duty hardware, such as servers, storage systems and user devices. It is "end-to-end" infrastructure. At one end are all the suppliers, partners, constituents, agencies, licensing boards, all outside a government's firewalls. At the other end, is an explosion of devices seeking access to the government network. In this environment, standards-based computing and interoperability are critical. Proprietary systems typically do not link easily to new applications and can be artificial gates, limiting system performance. This is particularly true as data sources become even more varied. In our experience, open protocols, open interfaces and open file formats are all elements which lead to interoperability.

The model for developing applications also is very important. The application framework should allow systems to extend government-wide easily and take full advantage of data, wherever it is located. Applications should readily connect into the underlying framework, or readily disconnect. Every step of infrastructure development includes a choice: going with a proprietary system or a solution built on open industry standards. The policy choice for government leaders is whether the systems that get designed, developed and procured are open, interoperable, and based on cross-industry open standards or whether they are to be closed, proprietary and isolated. The former enables connectivity for millions of people and businesses, wherever they are, using billions of pervasive devices. The latter ensures ongoing, parallel, system-by-system investments with neither connectivity, interoperability nor extensibility guaranteed. A number of governments have already concluded that the ideal framework is an open-source infrastructure which allows interoperability. We believe procurement regulations should explicitly allow for open-source alternatives.

Human Resources - Demand for a quality IT workforce is rising. In fact, the Federal government is competing with industry for the same technically skilled workers. The entire knowledge-based economy requires highly educated workers who continually build and enhance skills throughout life. The policy choices for Federal government leaders involve creating

programs to attract, hire and retain these people. Agencies must assess their skill needs, develop plans for future hiring, upgrade existing training programs and develop creative incentives for retaining workers.

The needs in this area are even more compelling in light of the retirements in the federal workforce that are expected to accelerate in the next 5 years. Some job categories are expecting to lose one third of all employees according, to the GAO. Legislators and agencies need to carefully assess how these trends will affect the Federal IT workforce and take steps to balance the impacts.

Specific policy options include funding competitive pay or even premium pay for IT employees, improving hiring speed, establishing reward and recognition programs, and creating flexible, entrepreneurial workplaces. As the Federal government urgently needs managers for large-scale, IT-intensive projects, agencies should consider leading-edge projects as recruiting incentives, i.e., "space shot," cool projects to attract the best and brightest. Another policy choice is to integrate comprehensive electronic distance learning programs to allow employees to advance their skills wherever and whenever they choose.

An entirely different human resources policy choice for the Federal government would be the use of e-sourcing services or outsourcing. Agencies need not build and manage their own e-government infrastructure. Instead, they can access processing, storage, applications, systems management and security services over the Net using e-sourcing. This approach means that agencies pay only for what they use. The advantages are compelling: new applications can be deployed faster, scale up is faster for new workloads and benefits flow more quickly from new computing innovation and expertise. E-sourcing is flexible, allowing governments to start with a single service or application and grow from there. In an environment which is constrained by human resources and is risk averse, this can become a very viable e-government policy choice.

Further Choices - Other fundamental policy choices for government are not opportunities to leverage growth as much as they can be potential inhibitors, if not managed thoughtfully. Globally, governments are beginning to select approaches which balance risk and opportunity.

Privacy - Government provides organizations a powerful new capability to capture and analyze massive amounts of information, so they can serve individual constituents more effectively. Yet this very capability troubles some people, who see it as a means to disclose or exploit their personal information. These are legitimate and very real concerns, and they must be addressed if e-government is to reach its full potential. At its core, privacy is not a technology issue. It is a policy issue. Public officials must ensure that their actions support rather than hinder the development of a constructive dialogue between government, industries and individual citizens. A framework should enable individuals to express their privacy preferences and encourage users of personal information, whether government, industry or non-profit organizations, to offer services in a manner consistent with the preferences expressed.

Consumers will embrace e-government only to the extent that they trust the marketplace and government to respect their privacy. Government and industry both have responsibilities. Industry needs to demonstrate its commitment to privacy by managing its own conduct and making adherence to voluntary Codes of Conduct and /or legislation a corporate priority. Government must enforce existing laws to maintain a proper balance between consumers' reasonable expectations of privacy and the benefits afforded by a free and fair flow of information. Government has a particular responsibility to manage information about both its own employees and its constituents, and to ensure that its own privacy policies are successfully implemented. With the growing sophistication of tools to access and manipulate data, the provision of access to public records is a key issue.

Security - Online security must be an integral part of deployment of e-government solutions. Government policy makers must select and implement policies that enable government to be viewed as trustworthy and able to deliver services and safeguard information reliably. This pertains especially to its extensive holdings of personal data. Security failures can have far-reaching economic and political consequences. Policy makers should guide their organizations to a coordinated cybersecurity approach, which cuts across department lines. A comprehensive security framework should define how to assess and manage network risks and specify different levels of security commensurate with the identified

risks. Future security platforms will utilize self-detecting and self-healing networks. The government and private sector should consider a cooperative effort in this area to speed their development. In such a cooperative effort, we expect open-source development methodologies to prove beneficial. Open- source software, with an active community, is inherently more secure in that it renders all algorithms explicit and, by its nature, disallows "black boxes," "back doors" and "Trojan horses."

Departments and agencies must do baseline security risk assessments as required by the Government Information Security Reform Act (GISRA). Beyond this, government must recognize that security needs to be updated constantly and must incorporate new solutions such as continuous system monitoring, access management, and enhanced use of strong encryption. This is day-in and day-out commitment, and agency managers must be accountable for assuring appropriate cybersecurity as part of their mission stewardship responsibilities.

Building Support and Overcoming Resistance to Change - For a variety of reasons, valid, invalid, cultural, legislative or mission oriented, government is generally more averse to risk than the private sector. Change in government can be more difficult. Thus it becomes critical to gain the commitment of key constituencies early if support of e-government is to grow within an organization. Highly visible pilot projects which bring change in incremental stages reduce exposure and risk, create buy-in, showcase success, raise the bar among peers, and create pull. For example, some governments choose to showcase pilot projects which integrate new and old data bases into a common architectural structure, to demonstrate continuity with legacy systems and reduce resistance. To ease fears of change, policy makers should create a dynamic, forward-thinking road map for the future with an integrated framework and a true customer focus, yet implement it on a project-by-project basis.

THE ELECTRONIC GOVERNMENT ACT OF 2001

IBM would like to applaud Senator Lieberman and the cosponsors of S. 803 for proposing this legislation. We believe that legislation can have a very positive impact in moving the

federal government toward a transformation. Governments will shape the future of the digital economy by their pace of change and the innovation they display in providing services to citizens and businesses. Other nations are embracing the move to e-government and the US must not lag behind. S. 803 will ensure that e-government is a visible priority in the Federal Government. We would like to comment specifically on three aspects of the legislation: the Federal CIO, the interoperability provisions and the E-Government Fund.

1. Federal CIO

The organization of the Federal CIO is important, but the most critical issue is whether the individual can provide strategic leadership and be an agent for change. Our own experience with IBM's CIO showed us that this position requires a broad vision and the ability to act in various capacities. We believe a Federal CIO must provide strong, credible and visible leadership and have the sustained support and attention of the senior leadership in the Administration. IBM believes moving forward quickly on inter-agency cooperation will require top-down, aggressive leadership to change the established practices. We agree that specifically identifying functional objectives for the "Federal CIO" responsibilities and for the CIO Council in the statute will create greater focus on measurable outcomes.

2. Interoperability

We strongly support the legislative recognition that standards for interoperability are fundamental. Given the breadth and sheer size of government legacy systems, interoperability is absolutely fundamental for these distinct systems to share information. We would suggest that the bill go further by including specific interoperability goals and by referencing the value of, and need for, "open source software" as identified in the President's Information and Technology Advisory Council (PITAC) report from September 2000. The PITAC report highlighted "open source" as being critical to the development of software research and called on the Federal government to make fundamental software research an absolute priority for Federal Investments in high end computing. The PITAC concluded that the open source model merited investigations because " it provided a unique approach through public, private and academic partnerships and that open source software offers potential advantages over the traditional

proprietary development model." We strongly agree with this perspective. In our experience, interoperability is predicated on the existence of truly open standards, and open source has proven to be one particularly effective way of establishing open standards.

3. E-Government Fund

Finally, the 'E-Government Fund' within OMB for interagency and pilot projects is extremely important. Pilot projects help overcome resistance to change; they reduce risk; they build success in measured steps and they create momentum. IBM supports a fund to promote interagency cooperation on IT projects, as suggested in S. 803, also in the PITAC's report, <u>Transforming Access to Government Through Information Technology</u> dated September 2000 and the report of the Council for Excellence in Government, <u>E-Government the Next American Revolution</u> dated February 2001. The operational demands on any agency's own funds may prevent creative projects without such an extramural source. We do not know the exact level of funding required, but the amount included in the bill appears to be the minimum required to have an impact.

We also support two unique features of the funding proposal. The first allows agencies to share in the savings of a particular IT project and redirect those savings to other IT projects within the agencies. This provides needed incentives to save funds, as they were previously required to be returned to the Treasury. A second important aspect enables OMB to utilize the fund without regard to fiscal year limitation. We think this will encourage funds to be allocated on the value of the project and not an artificial time line.

CONCLUSION

The Federal Government must catch up with both the private sector and many governments around the world. It is behind. It needs to adopt processes and practices to facilitate the transformation to e-government. IBM is concerned that there is a growing gap in e-transformation between the public and private sectors. The Federal Government must move beyond the traditional notion of government to lead the nation to economic growth and prosperity in the networked world. The choices of policy makers will determine if government can serve as a stimulant to economic growth, or as an impediment. Visionary thinking and strong commitment to change are

required. Most important is execution, based on milestones and accountability.

Chairman Lieberman, Senator Thompson and members of the committee, thank you for this opportunity to present IBM's views. We stand ready to work with you and your staff to further an issue that is vital to our government and economy in America today.