

E-Government in the Information Age: The Long View

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INTRODUCTION

(SLIDE: Presentation Title)

- I appreciate the opportunity to be here today to address this important conference on electronic government
- The array of speakers and panels is impressive and is no doubt providing rich context for some of the major opportunities and challenges facing governments around the world in today's global information age
- Certainly, today's computing technologies combined with the explosive growth in the use of the Internet for information access and service delivery is presenting unique opportunities for enhancing citizen interactions with government
- While we can leverage technology to improve government services, we must do so in a manner that learns from the mistakes of past information technology projects
- In my remarks today, I want to make note of the progress that is being made by the federal government but also touch upon some of the more pressing issues that will continue to impact the future of public sector digital initiatives
- Without careful thought to these matters, agencies are likely to miss out on a great deal of electronic government's promise.

SIGNIFICANT CHANGES IN THE GLOBAL ENVIRONMENT

- From a timing and psychological perspective, we have entered a new millennium. The beginning of the 21st century creates a natural tendency to reflect on the past and contemplate the future.
- There are certain key trends that are undeniable, without borders, and which have significant implications for all of us in this country as well as many other industrialized nations around the world. Some of them are:

(SLIDE 2: Estimated Internet Users Worldwide)

- **Globalization** – Globalization of markets, information and enterprises. There are no islands in today's wired, inter-connected and inter-dependent world. As this slide illustrates, by some estimates, in the next few years, there will be approximately 150 million American adults using the Internet, and a global Web population of more than 350 million people worldwide.

(SLIDE 3: Estimated Investments in E-Government Related Technology)

- **Rapidly evolving technologies** – Investments in information technology are expected to account for more than 40 percent of all capital investment in the United States in 2004. As shown in this slide, total federal, state, and local e-government spending on e-business-related hardware, software, and internal and external services is estimated to grow from nearly \$2 billion this year to more than \$6 billion by 2005. New technologies provide opportunities to increase productivity and decrease cost but they also pose an increased threat to national security and personal privacy. They can also lessen emphasis on the critical human element.

(SLIDE 4: Percentage of Local Governments Offering Web-based Transactions)

- **Devolution** – Devolving more activities closer to the people and from the federal government to state and local governments and other sectors leads to shared responsibilities and increased accountability challenges. From an e-government perspective, we already see aggressive growth and plans on the part of state and local governments to deliver a variety of Internet-based services; this slide just depicts a few examples of services already offered and what we can expect to see from more and more local governments. As you know, many federal programs are state administered—such as Food Stamps, Medicaid, and Temporary Assistance for Needy Families—and similar information is collected by different levels of government (taxes, business fees, etc.). So, the possibilities for simpler, single on-line entry points for information and data collection are likely to grow and may very well be positioned at the state and local level where citizen on-line access, experience, and expectations are fast growing.
- These trends and others present us with a range of emerging issues and impact a number of long-standing challenges relating to government. Let me touch on a few as they relate to e-government.

FEDERAL E-GOVERNMENT OPPORTUNITES AND CHALLENGES

- Government use of the Internet is broadening and becoming more sophisticated. A recent study by Accenture of 22 countries' e-government development found that our federal government has a strong on-line presence (ranked #3 behind Canada and Singapore) in relation to other nations. Specifically, it found that the United States is one of the top three nations in connection with IT innovation, along with Canada and Singapore. All levels of government are increasingly turning to the Internet to conduct paperless acquisitions and provide interactive electronic services to the public. The number of Web portals—or on-line electronic front doors to common services and functions—is growing daily. While we may be in the top three, we have a long way to go. After all, these rankings are based on relative standings, not desired outcomes.

(SLIDE 5: Categories of Constituencies for Federal E-government Initiatives)

- As shown here, in early 2001, agencies reported that over 1,300 federal E-government initiatives were underway, covering a wide range of activities involving interaction with citizens, business, other governments, and employees. Some examples include:

Access America for Seniors – designed to an entry portal for senior citizens to reach government services and information on topics such as benefits, taxes, health and nutrition, and consumer protection

Savings Bond Direct – a Treasury Department initiative to provide Internet sales of Treasury bonds (generated \$230 million in bond sales in the first 18 months)

National Environmental Information Exchange – an inter-governmental initiative between EPA and the states to improve quality and access to nationwide environmental data by using common language and secure Internet connections.

FedBizOpps – a single governmentwide point of electronic entry for access to federal government business opportunities greater than \$25,000 that is expected to replace the paper-based *Commerce Business Daily*.

(SLIDE 6: Types of Federal E-gov Initiatives – Information, Forms, Transactions, Transformation)

- As noted [here](#), by far, the vast majority of the federal initiatives underway are information dissemination oriented rather than more difficult applications, such as end-to-end transactions. The Accenture study I previously mentioned noted this: the U.S. is a global leader in the use of Internet for government; but even so, is relatively immature in content sophistication. This serves to highlight the evolving use of Web based services in government which has tended to evolve slower than the private sector. Many of the on-line initiatives to date have been relatively easy to implement and had good, quick payoff. For example, making high-demand documents or high interest information available—like certain GAO reports—on a web site, accessible 24 hours a day can do wonders to help improve citizen's satisfaction with government responsiveness. Other more complicated transactional services may be more difficult to implement because of lingering security and privacy issues that need resolution.
- As you are aware, federal agencies are now **required** to increase the ability of citizens to interact with the federal government electronically – in fact it is a federal goal to have "one-step access".
- For example, the Government Paperwork Elimination Act (GPEA) requires that by 2003 federal agencies provide the public, when practicable, the option of submitting, maintaining, and disclosing required information – such as employment records, tax forms, and loan applications – electronically, instead of on paper. We are discovering that this is a formidable challenge.
- GAO has found OMB has gotten the federal government off to a good start on this particular initiative by developing and issuing useful guidance and procedures for implementing and reporting on the Act's objectives.
- Still, our reviews of agency GPEA plans are showing that progress is at best, mixed. Rather than a strategy, many of these plans show listings of activities that are not tightly linked to expected improvements in mission performance. OMB Director Mitch Daniels has also noted in recent testimony that most of the agency GPEA plans to date are not what is needed.
- However, as I'm sure many of you understand, we have pointed out that guidance and procedures alone will not ensure successful outcomes. Agencies will need to address five critical areas in order to be successful on this and other related electronic government initiatives, including how to show that electronic government actually produces **better** government:

(SLIDE 7: E-Government Critical Success Factors)

- First, agencies need to use *disciplined management practices* to ensure that the full costs of providing electronic services are identified and examined within the context of expected benefits, such as lower transactions costs and increased productivity. Strong business cases for major electronic government initiatives should be the rule, not the exception.
- Second**, agencies need to adequately plan for and implement *computer network and telecommunications infrastructures and technical architectures* to provide the capacity and connectivity needed to support the expanded electronic world. Operating in the 24x7 Internet environment requires adequate network capacity, system reliability, and greater interoperability to facilitate efficient access to and among governments.
- Third**, agencies need to provide a *secure computing environment* to reduce the risks of unauthorized access that could lead to fraud, theft, destruction of assets, and service disruptions.
- Despite some recent progress in this area, federal operations and assets continue to be vulnerable to computer-based attacks. We and federal agency inspectors general have made scores of recommendations to agencies regarding specific steps they should take to make their security programs more effective. One piece of the solution to this issue will be the development and implementation of so-called Public Key Infrastructure or "PKI" technology. (Our recent report on this subject received approximately 30,000 "hits" in the first 8 hours.) Note: DMW has requested a bullet or two on knowledge-sharing in this section.
- I think it's also important to note that there appears to be much more sensitivity to personal privacy with e-government than with e-commerce. This will be due to the public's concern to avoid a "big brother" world like the one depicted in George Orwell's novel "1984." For example, the use of "cookies" causes more concern at federal web sites than at commercial web sites. As a result, it is imperative that federal e-government solutions clearly articulate privacy policies and implement security controls necessary to enforce those policies.
- The **fourth** thing agencies must do is develop *adequate capabilities for storing, retrieving, and, when appropriate, disposing of electronic records*. This is an enormous challenge and involves not only storing records but also having more intelligent, advanced, and user-friendly search capabilities to retrieve official government records.
- And **last**, but certainly not least, agencies must overcome two basic challenges related to *human capital* – a shortage of skilled workers and the need to provide a broad range of staff training and development – so that staff can effectively operate, and maintain new e-government systems, adequately oversee related contractor support, and deliver responsive service to the public. I want to emphasize this point.
- From a broader perspective, I have found over the years that three factors must be in place to make real and sustainable progress in connection with key policy and operational matters. These are: (1) incentives for people to do the right thing, (2) transparency to help assure that the right thing is done, and (3) accountability if the right thing is not done.

HUMAN CAPITAL CRISIS EXTENDS TO "IT" WORKFORCE CHALLENGES

- The key competitive element in the 21st century will be people!
- People are the source of all knowledge and in the knowledge age – and we have transitioned now from the industrial age to the knowledge age. Having enough of the right people with the right skills will make **the** difference between success and failure – particularly in the area of technology.

(SLIDE 8: Estimated Employment for Computer Analysts, Engineers & Scientists)

- While technology is an important enabler that we must exploit, people are critical, and we must take more steps to value them. After all, only people can exercise real judgment.
- IT human resources are in short supply: as illustrated in this [slide](#), the Bureau of Labor Statistics projects that demand for computer systems analysts, engineers, and scientists will almost double between 1998 and 2008 and the demand for computer programmers will increase by 30 percent during this same time period.
- While IT demand has recently declined due to the current economic slowdown and the number of dot coms that have been dot bombs, demand still exceeds supply, especially in the network services, web applications, and computer security areas. In addition, this relative cooling of IT demand is likely only temporary in nature.

(SLIDE 9: Shrinking Federal Workforce)

- Our federal workforce is shrinking and has been doing so consistently over the last decade.

(SLIDE 10: SES Retirement Eligibility Rates)

- Moreover, as shown [here](#), large numbers of experienced senior management and staff are eligible for retirement in the next few years.

(SLIDE 11: Selected Federal Workforce Retirements)

We just recently estimated that by 2006 about 31 percent of 24 major departments and agencies' employees working in 1998 will be eligible to retire, and that through the end of 2006 about half of those eligible will retire. As noted on this [slide](#), for computer specialist series, we estimated that 30 percent of these employees would be eligible to retire by the end of FY2006 and that 14 percent would actually retire by then. The numbers are even higher for telecommunications and program management series. Of course, this problem is not unique to the federal government; state and local governments and even the private sector also face similar IT human capital concerns.

- Electronic government technology applications work only if people have the right training to execute them properly. Without fully developing staff capabilities, agencies stand to miss out on the potential customer service benefits presented by technology. Employees must have the training and tools they need to do their jobs.

(SLIDE 12: Shift in Federal Contracting Activity)

- Another dimension to this issue is that federal agencies are increasingly contracting out for IT services. In fact, government purchase of services now accounts for 43% of all federal contracting expenses -- surpassing supplies and equipment as the largest component of federal contract spending. The dollar growth in services *has largely been driven by increases in information technology services*, which have grown almost 260 percent (adjusted for inflation) over the last 15 years.
- Unfortunately, government has all too often treated all their employees as a cost to be cut rather than an asset to be valued.
- This treatment has serious consequences. For example, a decade of downsizing has led to a situation in which the federal acquisition workforce cannot keep pace with the government's demand and need for contracting. We now have severe deficiencies in the contract management processes at many federal departments and agencies such as Defense and Energy. And the problem will be further compounded by the fact that 27% of the federal acquisition workforce will be able to retire by 2005.
- This treatment of the federal workforce must change. In fact, we recently put "strategic human capital management" or the lack thereof on our "high risk list" of issues that threaten the capacity of the federal government to deliver services effectively, efficiently, and economically.

(SLIDE 13: IT Recruitment and Retention Comparisons: Public, Private, Non-Profit, Academia)

- The federal CIO Council has recognized increasing difficulties that agencies have in recruiting qualified staff. NAPA is conducting a study for the council to validate and substantiate the extent of the federal IT workforce challenge; the results are expected to be used to develop and implement strategies for recruitment, retention, and development of IT professionals. I understand that this project has been discussed on one of the earlier panels, and I think *this chart is quite illuminating*:

NAPA's assessment comparing IT recruitment and retention practices across different levels of government, the private sector, academia and non-profits shows some interesting variances. Using a general scale of Low, Medium, and High, this shows how each sector—government, private, non-profit, and academia—stacked up relative to each other.

Note that the private sector, a chief competitor for IT skills, rates extremely well in all the areas – salary levels, work-life benefits, rewards & recognition, advancement training, and use of recruiting tools. Except for work/life benefits, the federal government is consistently rated LOW and generally not as well as academic institutions or non-profit organizations. NAPA has noted that special pay rates, signing bonuses, and pay-for-performance systems are much more commonplace in the other sectors and illustrate some of the challenges we face in the federal government in attracting and retaining top notch IT talent.

(SLIDES 14 & 15: GAO Human Capital Strategy)

- In my own appropriation hearings before the Congress, I emphasized the need to further enhance our human capital programs in order to be competitive in attracting, hiring, and retaining high caliber and talented staff.

[These slides](#) ummarize many of the steps we have taken and continue to take to meet our own human capital imbalances. One of the things we have done at GAO, for example, is to obtain the flexibility to appoint scientific and technical staff to senior level positions with the same pay, rights, and attributes as members of our senior executive service. This is one of many new steps we have taken to attract and retain a superior workforce.

- I would encourage each of you to closely examine this issue in your own offices and to take broad steps – including legislative remedies if necessary -- to ensure the successful delivery of electronic government.

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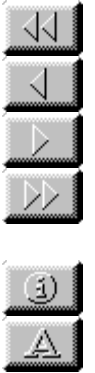
- If used effectively, electronic government can help reshape government, making it more innovative, efficient, responsive, and accountable to the public.
- Technology advancement, however, is not a panacea for government performance problems. The painful lessons learned from decades of failed IT modernizations remind us of this and also serve to highlight the importance of following sound management principles and practices.
- Successful e-government must still deal with some of the same basic challenges that have plagued federal information systems projects for decades – inadequate attention to technical and business architecture, adherence to standards, security, and people issues.
- Critical to its success are the leadership, innovation, and interaction of key accountability groups such as the federal CIO Council, NASCIO, OMB, and GAO. It is also imperative that the Congress be involved, informed, and exercise prudent oversight. It is clear that the Congress is increasingly interested not only in the promise of electronic government but in results. It is imperative that agencies **demonstrate** how Web based technologies are helping make us more cost effective, provide quality service levels, and achieve our strategic mission goals and objectives.
- It is also important that each of these groups and their members work closely together to continue to find ways to better leverage each other's knowledge and expertise. Knowledge management networks people across boundaries to share knowledge they would not normally share. It also provides technological tools to enhance knowledge sharing and helps organizations maximize their value and manage their risks.
- We at GAO have numerous reviews underway regarding electronic government, and look forward to sharing our analyses, best practices, and lessons learned.
- Thank you. I hope you have another constructive day of dialogue and discussion on e-gov issues facing us in government. I'd be happy to answer any questions you may have.



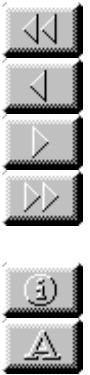
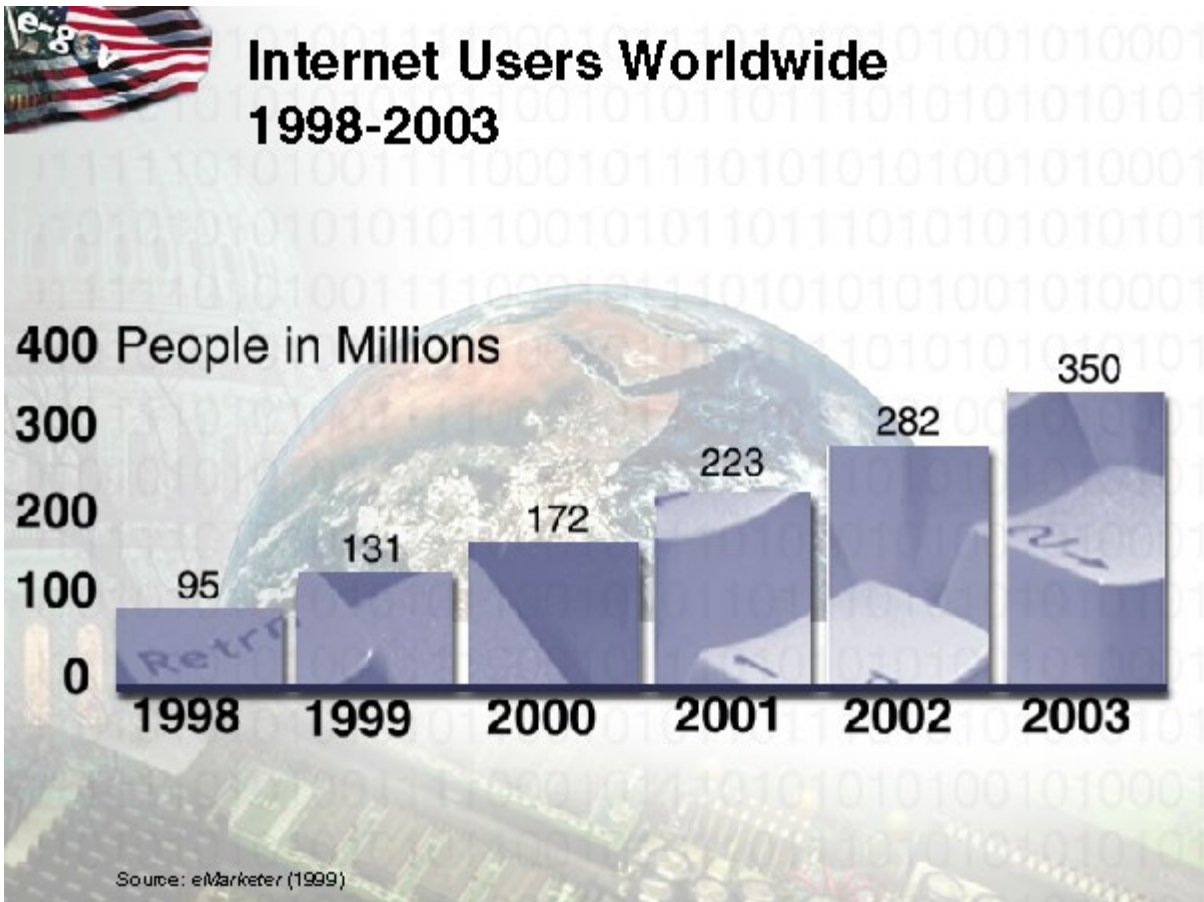
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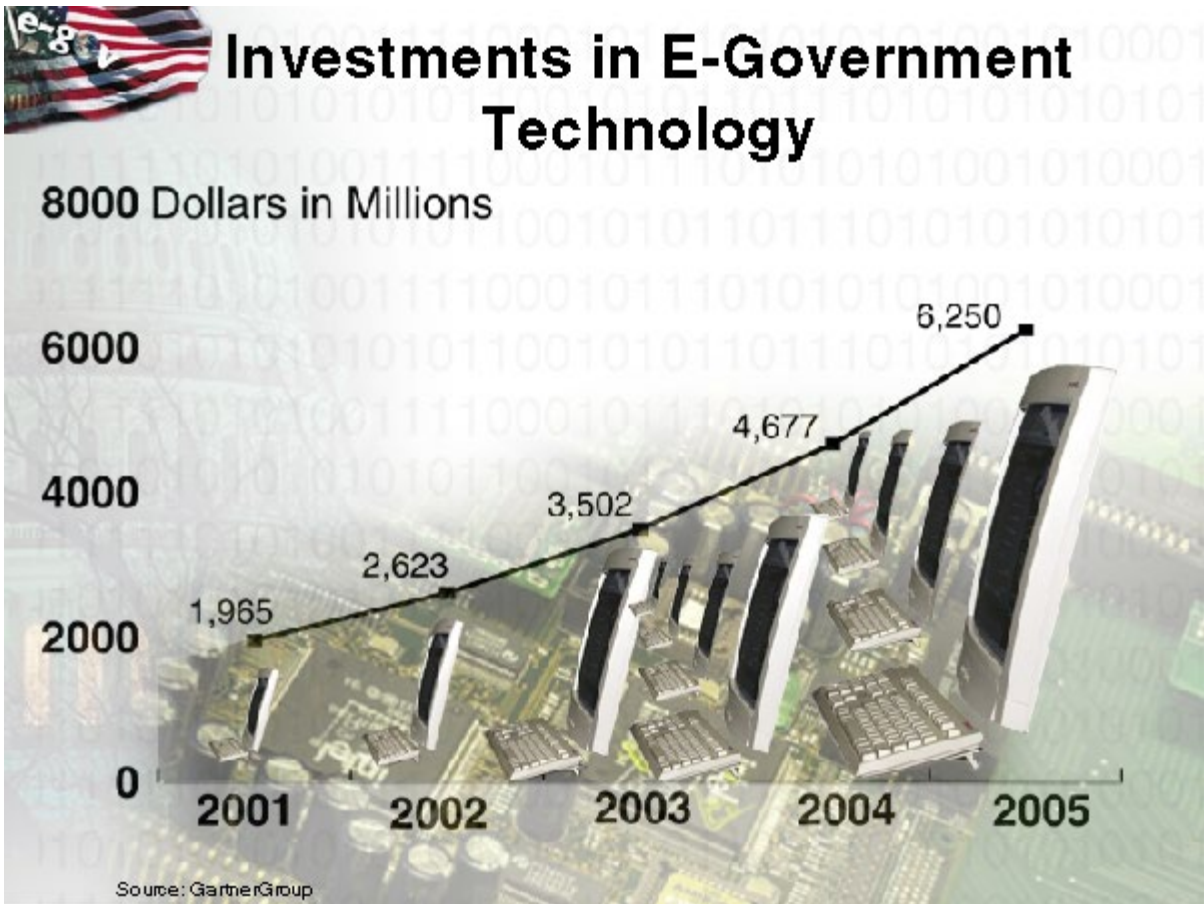
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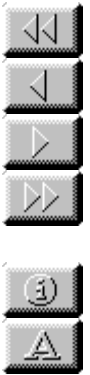
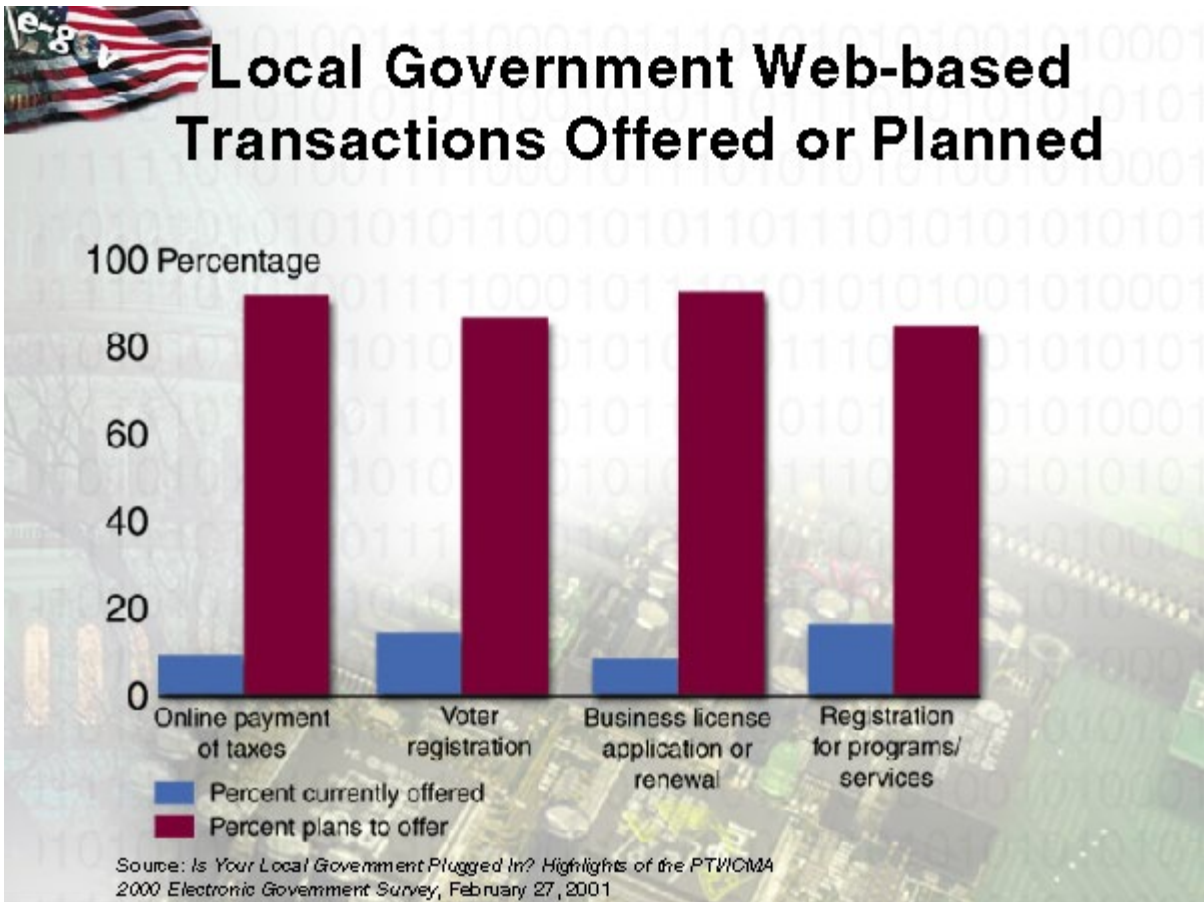
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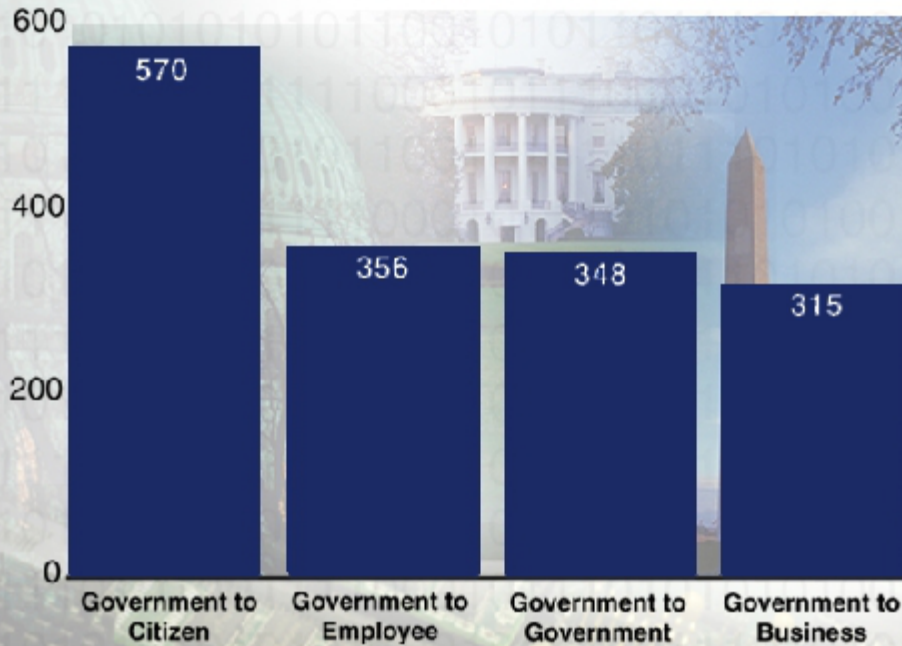




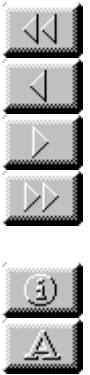


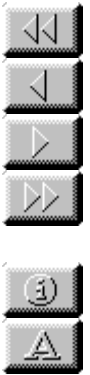
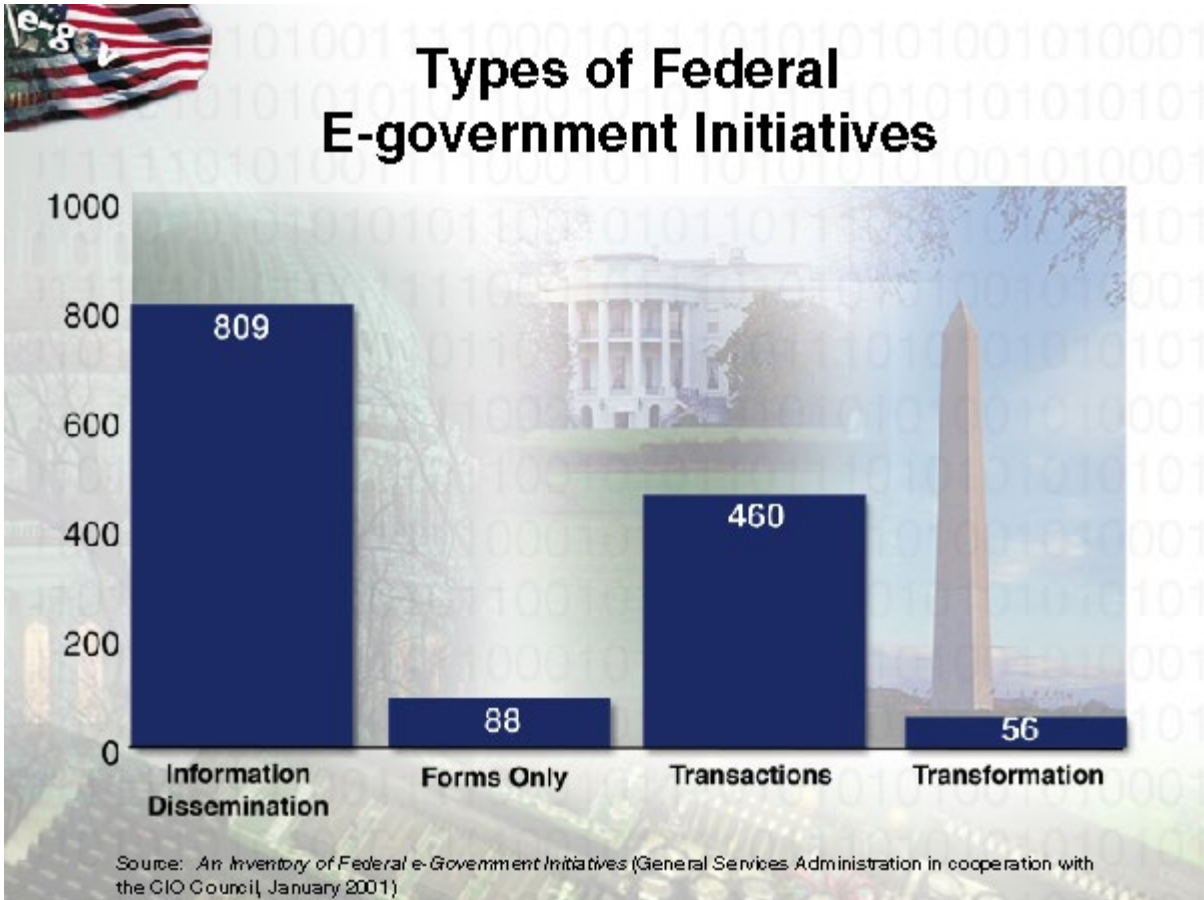


Categories of Constituencies of Federal E-government Initiatives



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

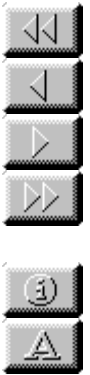




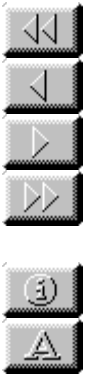
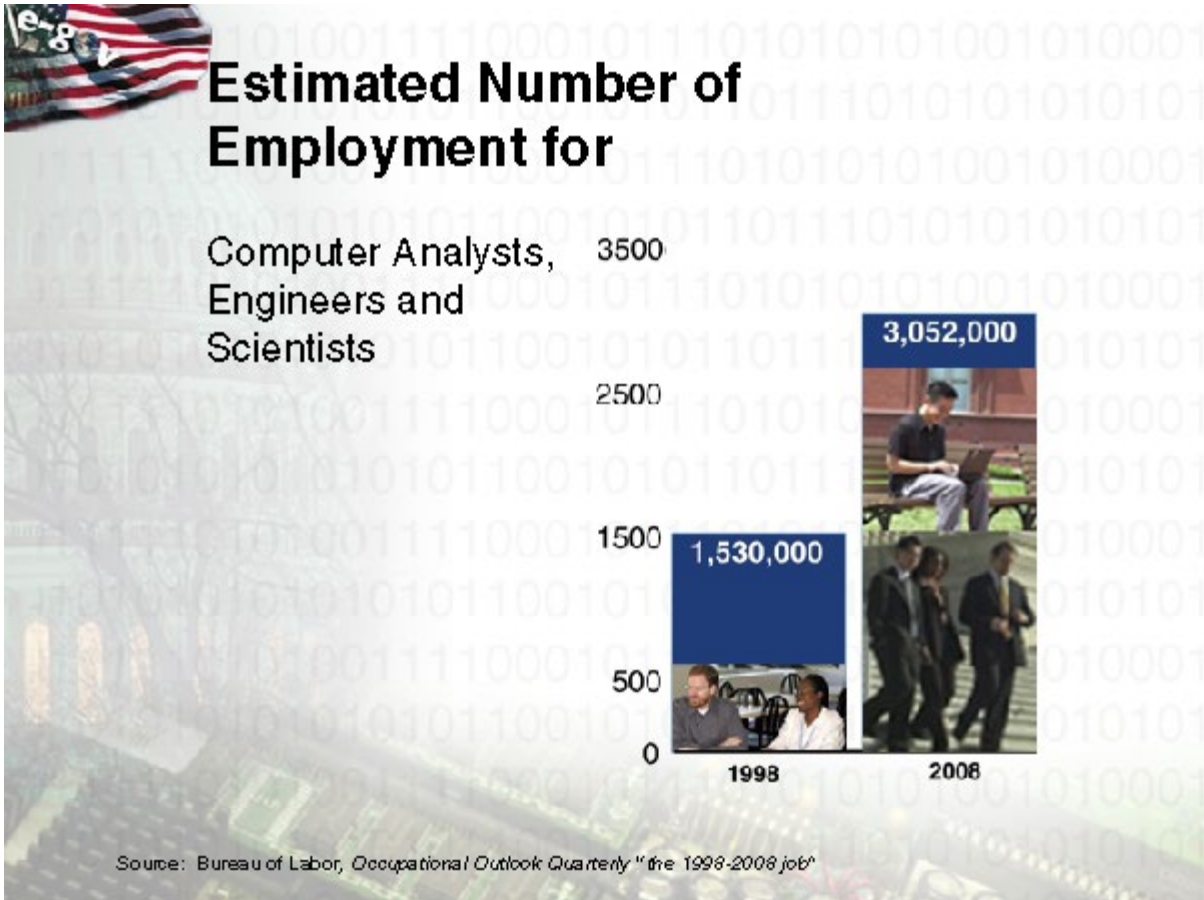
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Critical Success Factor for
e-gov

- Disciplined management practices
- Technical architecture/infrastructure
- Secure computing environment
- Electronic records management
- IT human capital

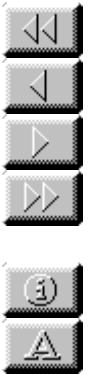
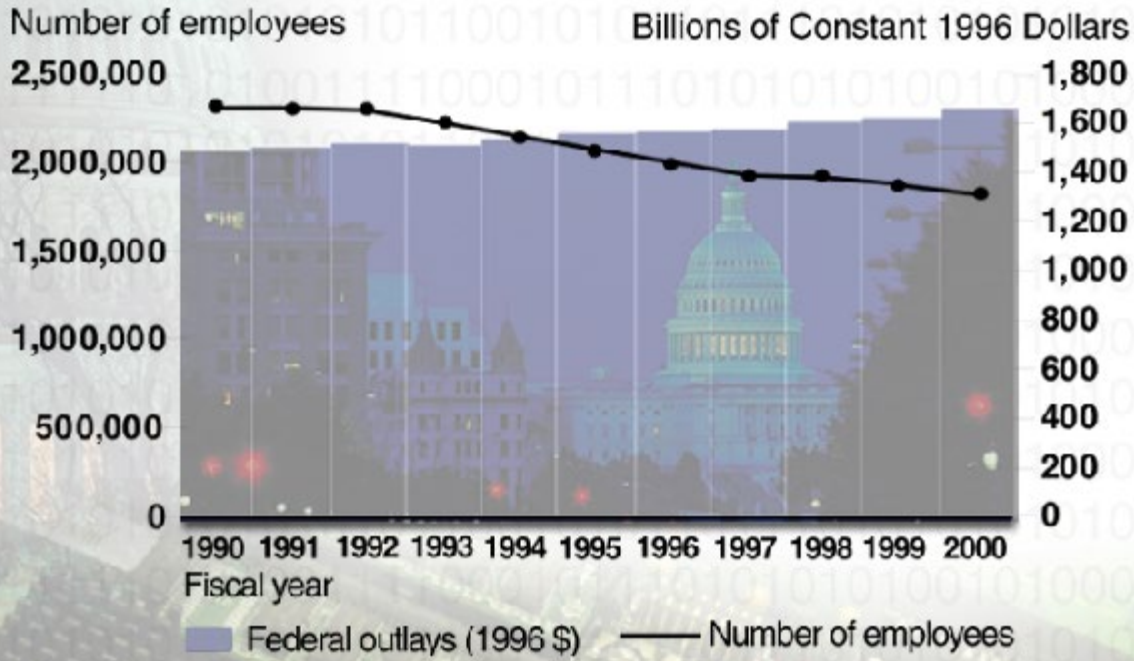


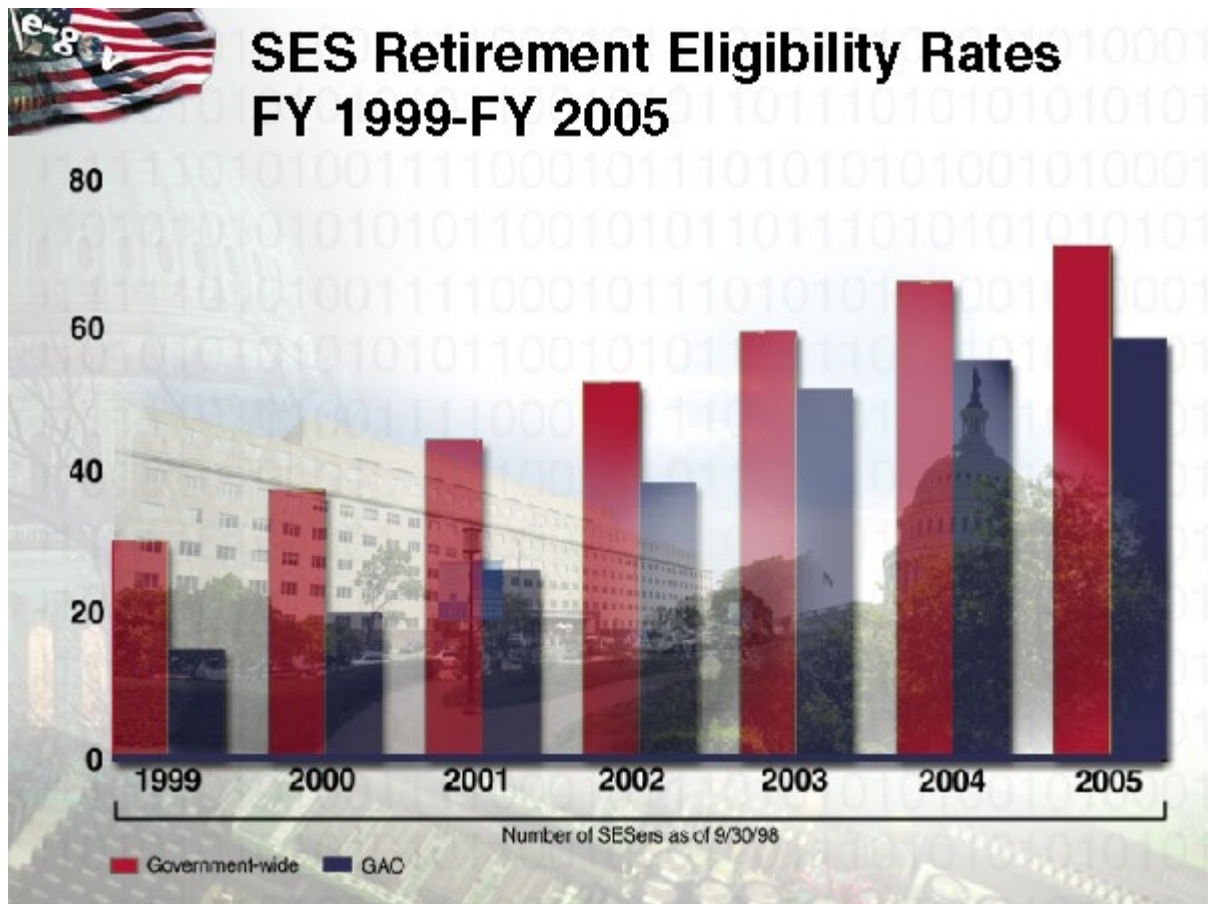
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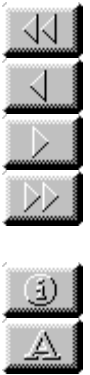
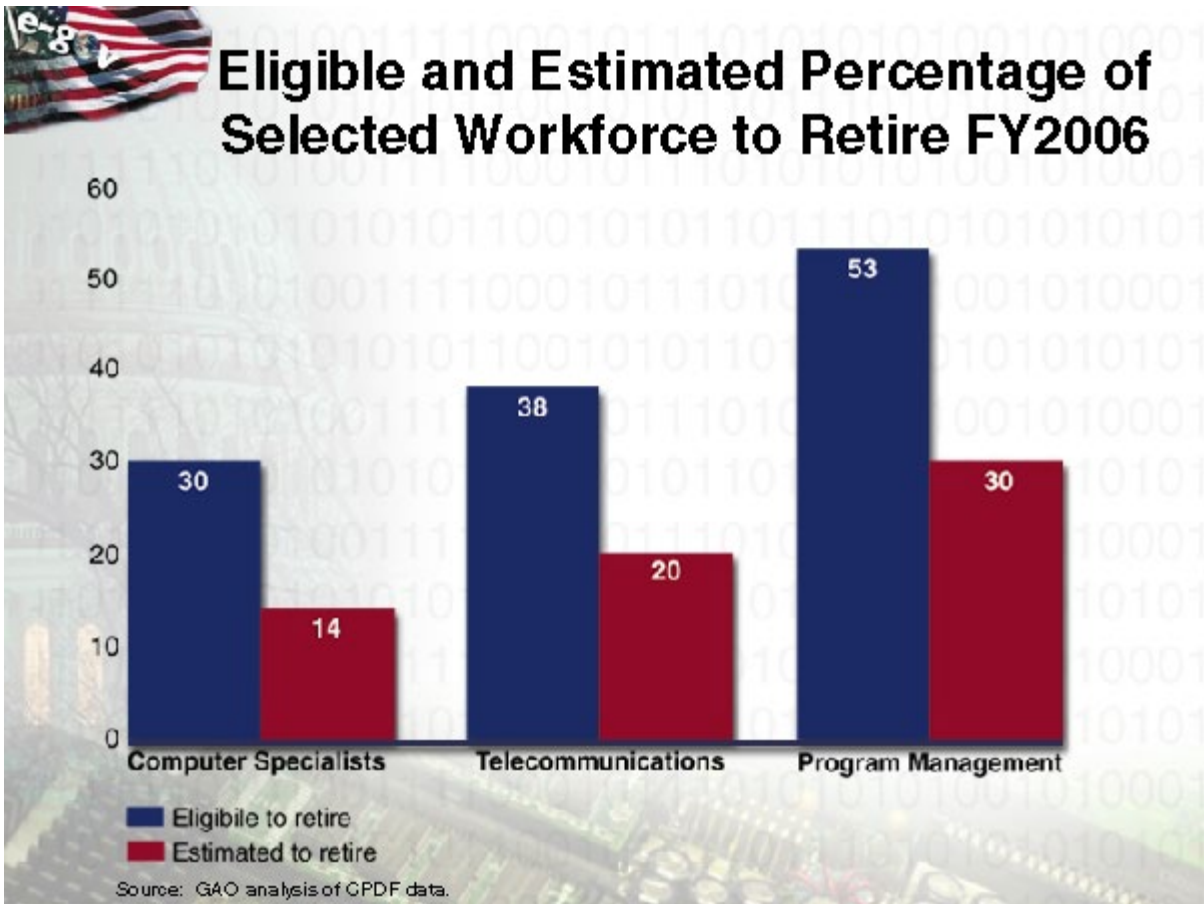


Federal Government Doing More With Fewer People





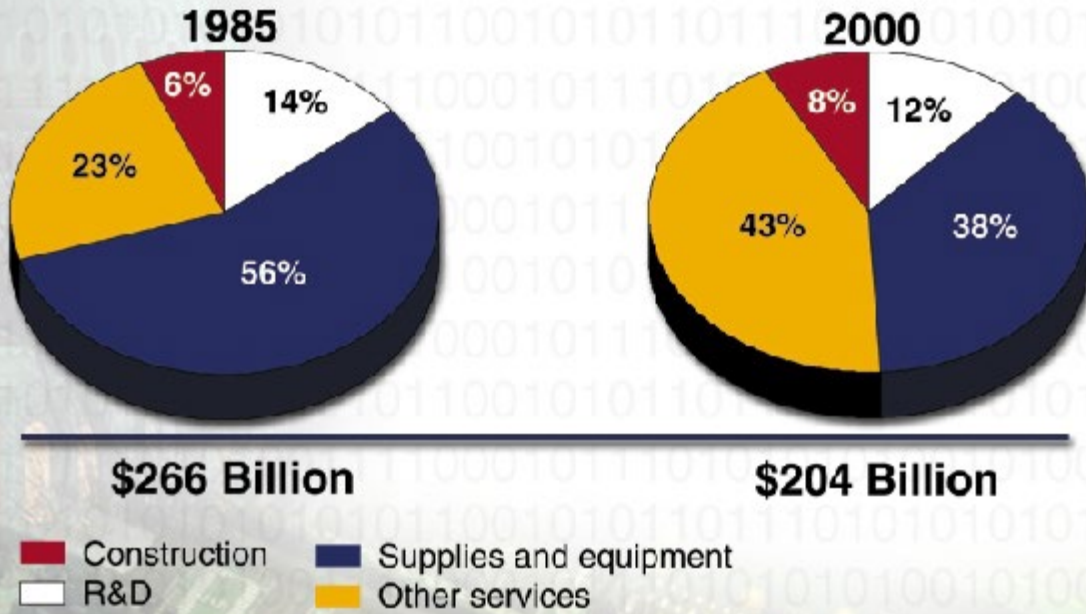
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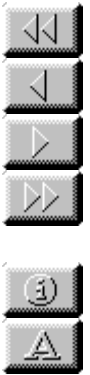
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Contracting Activity Has Shifted



Note: Figures expressed in constant 2000 dollars.
Source: Federal Procurement Data System. These data reflect actions generally excluding less than \$25,000.





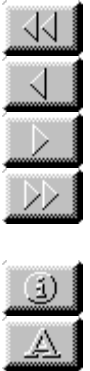
NAPA Assessment of IT Recruitment and Retention Practices Across Sectors

	Salary Levels	Work-Life Benefits	Rewards/ Recognition	Advancement/ Training	Use of Recruiting Tools*
Federal	L	H	L	L	L
State	L	M	M	M	M
Local	L	M	M	L	L
Non-Profits	M	M	M	M	H
Private	H	H	H	H	H
Academia	M	H	M	M	M



L-Low M-Medium H-High

*Includes branding or selling the mission of the organization
 Due to differences among countries, international governments were not included in the comparison.
 Source: NAPA





Efforts to Address GAO's Human Capital Challenges

Administrative

- Self-assessment checklist
- Human capital profile/planning
- Employee feedback survey & suggestion program
- Employee Advisory Council
- Enhanced employee communications participation
- Skills/knowledge inventory
- Employee preference survey
- HQ and field realignment and restructuring
- Workforce & succession planning
- Recruiting & college relations
- Training/development
- Recognition and rewards
- Flexitime and Flexiplace
- Business casual and business cards
- Enabling technologies
- Commuting subsidy (pending)
- College loan repayment fund (pending)
- Opportunity/Inclusiveness



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