

Chapter Six: Technology

IT can be a tool to change the way your agency does business, to redesign work processes, and to eliminate inefficient ways of working.



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MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

SUBJECT: **Technology**

While you may not have come to Washington to manage information technology (IT), you should pay attention to it for two reasons. First, if you leverage IT effectively, it will help you achieve your goals. Second, if IT is managed poorly in your agency, it has the potential to thwart your agenda, tarnish your legacy, become a major distraction, and take up a large amount of your time and energy.

While IT is an area which is subject to hype, over-promises, and significant risks, it also has great potential. You have more flexibility with technology than in changing the amount of funds your agency now has. IT can be a tool to change the way your agency does business, to redesign work processes, and to eliminate inefficient ways of working. Technology also increases economies of scale.

There are five elements to successfully managing information technology in your organization:

Begin with your policy and program objectives. Begin with what you want to accomplish. Then, and only then, bring in the technology experts to assess how technology can help you reach those goals. Get them to frame the technology agenda in terms of the mission to be achieved or the customers to be served. The technology agenda might include better service delivery, lower costs, or more transparency. The technology agenda linked to your mission is *not* faster processors, more bandwidth, or infrastructure.

A large number of big government IT projects involve upgrading infrastructure or various support systems, such as financial management systems. Though important, this is not where the big payoffs are. Infrastructure and financial systems should be viewed as means to an end. Make sure someone is watching them, but put your energy in the efforts to enhance what your agency actually does. Make sure those projects are driven by the mission, not your IT or financial folks.

Technology can be the enabler of new ways of doing business or can be used to make your existing business model more effective or efficient. Your vision can embrace either or both. If you embrace it as the enabler, consider getting other organizations to do some of the work and even to support your mission. Plan on significant changes to what work needs to be done. Look to similar organizations for lessons on how best to pursue this strategy. If you focus on improving the current business model, plan on fewer and more formally managed operations supporting multiple programs. These will replace the multiple program-specific applications that are typical in the government.

Get a handle on your ongoing IT projects before there is a crisis. Large IT projects often fail. In the federal government they fail publicly. It is a near certainty that your agency has projects under way that have been going on for years, with past or planned expenditures in the hundreds of millions of dollars. It is important for you to get a handle on these projects early in your tenure. You should consider bringing in outside experts to do a quick independent review of the projects and give you a sense of the risks the projects face. You should act on their recommendations.

You should also ensure that your chief information officer (CIO) has a process for reviewing progress on an ongoing basis. You should request that projects provide incremental deliverables every few months.

Make sure that the deliverables are used, user satisfaction is measured, and the results are factored into later phases. Even given all this, be prepared for a crisis involving a system development effort getting into trouble. Have a contingency plan.

Make sure you have a capable, qualified, and effective chief information officer. An effective CIO will be critical to your success and must be able to deal effectively with both technology and the agency mission it supports. Your CIO must have strong program, technical, management, and people skills, and will be the person who translates mission needs into technology solutions. This is a difficult job and those with the needed skills are in short supply. A key component of the CIO job will be to work closely with the Office of Management and Budget to secure resources and to respond to its oversight of your agency's projects.

Most agencies are limited by legacy IT systems that barely get the work done, cost a fortune to maintain, are inflexible, and lock operations into outmoded approaches. Technically savvy in-house staff is in short supply and much of the work is done by contractors. More modern technology that would give you needed flexibility is difficult to develop and requires a discipline across organizational lines that is rare in government agencies. Your CIO will be critical to making it all work.

Empower your CIO but have a process for reconciling IT and other imperatives. Making programs work depends on combining money, people, technology, and contracts. Effective technical solutions cross organizational lines and require that representatives of the different disciplines work together as a team. Solutions require reconciling various interests. The CIO must have the power to enforce technology decisions. You also will need to ensure that you have a process that reconciles the interests of key players in your department, such as your chief financial officer, and have mechanisms for balancing the very real issues that will arise.

Do not get engaged in the debate over who among the key players in your department is in charge, who is more important, or who reports to whom. Instead, empower the CIO to ensure that information technology issues are properly addressed. Your CIO will almost certainly be turning off obsolete systems, forcing the buying of different software than others want, and directing the migration of existing users to new systems. These moves, though necessary to meeting program or customer needs, will clash with existing ways of operating. Expect conflict, but ensure there is a process for resolving it.

Make sure security and privacy concerns are a priority for program managers. The trends in technology are to connect everyone to everything. Privacy and security problems that were minor with 20 participants are horrendous if millions of people might be involved. It is a near certainty that during your tenure, your agency will lose a laptop full of sensitive information, have a security breach that affects service delivery, or have some other public crisis involving security.

Previous crises mean your agency is already spending millions on compliance reviews and certifications. Your inspector general (IG) is doing reviews as well. Make sure that your senior managers take security and privacy seriously as an operational matter. Your program managers should be regularly testing security and using the results to improve it. They should not be depending solely on IG audits.

You should support these efforts. There is more to security than getting the paperwork right. Have a contingency plan for a possible incident. In short, security should be viewed as part of your program management responsibilities.

STARTING A PROJECT

QUESTION: What questions should I ask at the start of an IT project?

ANSWER: Asking a series of simple questions will usually lead to more insight than volumes of written justifications and PowerPoint presentations. This is particularly true when asking questions about large IT programs that develop their own momentum.

- **How does this project help my agency achieve its mission?** Any project that comes to your attention will be significant. The program manager needs to be able to explain why it is important in mission or customer terms. Don't accept justifications like the need for the latest technology, compliance with a regulatory mandate, or a previously made decision. Of course these factors can be important, but they must be tied to how they help achieve the mission. The justification should be framed in mission terms.
- **Who is the customer and what does that customer want from the project?** Meeting a need means there should be a customer who will say whether it was successful. Make sure that the customer is engaged and looking forward to the results, and that there is a process that balances customer desires with technical realities.
- **Does the project management team have the wherewithal to deliver, and is there a management framework to give them a fighting chance?** Any technology that matters will cross organizational lines in your agency and perhaps with other agencies. Success requires that you have a strong project manager and that there is a project management framework in place to work together effectively between those different organizations.

Your agency should have a systematic approach to project management including a standard methodology. Project managers should be full-time, have formal project management certifications, be accountable for project success, and have authority over project budgets. Are they, and do they have the necessary experience, given the size of the project?

- Projects should have deliverables in the short run (a few months) that are real and can be used by customers. Do they?
- There needs to be a formal process for raising and resolving issues that cross organizational lines. Is there?
- Important projects need regular and real executive involvement. Who is that executive and how is he or she engaged?

Projects tend to take on a life of their own once started. No one wants to take responsibility for stopping them if they start to fail. The temptation is to wait a while longer, hope for the best, and at worst give the problem to a successor. Projects need formal go/no-go "gates" at the end of each key phase. What are those gates and are they real?

- **Does the IT strategy make sense?** It may seem the height of arrogance to second-guess the technology judgment of experts in the field. Nonetheless, there are some basics that you ignore at your peril. They involve architecture, proprietary versus standard solutions, and what others are doing.

New technology may solve a business problem but may be proprietary and lock you into a single or very few vendors. If the approach is proprietary, why is it and what is the strategy to avoid being locked in?

What are similar organizations doing? If your agency is doing something different, why? Has anyone else done this? Did it work?

Finally, and most important, if the project fails, what is the fallback strategy?

MONITORING PROJECTS

QUESTION: How do I monitor ongoing IT projects?

ANSWER: Projects significant enough to warrant your attention will be tracked in your agency by project tracking systems and almost certainly will be tracked by the Office of Management and Budget (OMB) as well. Typically, these tracking systems will identify programs as green (everything working well), yellow (project in jeopardy), or red (project in real trouble). Deviations from schedule or budget by more than 10 percent usually trigger significant concern and a yellow flag. These tracking systems will be used by your CIO to track IT projects and intervene as appropriate. You will want to know why projects are yellow or red and what is being done to address this.

Don't rely solely on these tracking systems. Tracking systems do not always give a clear picture, and projects rated green can end up wasting hundreds of millions of dollars. Make sure that what is being tracked is meaningful. Projects have their own momentum. Milestones can become irrelevant as needs change. Ask what the milestones mean and why they are still relevant.

Conversely, some projects are always updating milestones to meet changing needs. This can lead to a vicious cycle that leads to nothing being accomplished while millions are spent. If milestones are changing, find out why.

Your CIO should establish systems that go beyond project tracking to address these issues, but while you are waiting, here are some additional factors you should consider. These draw on the insights of Gopal K. Kapur from the Center for Project Management, but other project management frameworks would have similar questions.

- **What is the total cost of the project to date?** The longer a project has been going and the more that has been spent, the harder it is to kill. No one wants the responsibility for ending a project, so the incentives are to interpret optimistically and pass problems to the next manager.
- **Is the project still in alignment with the agency's strategy?** It would be silly to continue a project to improve a system that is now scheduled to be replaced, but it happens. Ask whether the same strategy would be followed if starting today.
- **Is there an engaged executive sponsor with the necessary clout?** Is the executive sponsor engaged? Projects usually need an executive sponsor to remove roadblocks and keep the project focused on the business problem. Executive sponsors in name only are an indication that the project is going south.
- **Are the contractors you are depending on (and it will almost certainly be contractors) still viable?** Technology and markets change quickly. Ask if the contractors are still a good fit.
- **Do you still have customer buy-in?** Every project needs a customer. That customer needs to still want the results. It does not count that two years ago the customer wanted it. What do they want today? Ask the customer. Don't depend on the sponsor or the project manager to speak for the customer.
- **What are the unresolved issues with the project?** Any important project will raise issues that need to be resolved in order for progress to continue. Bureaucracies tend to be poor at raising and resolving issues. If there are more issues than milestones, expect trouble.
- **What are the risks and how are they being addressed?** No project is risk free. This holds doubly true for big projects. Ask what the risks are and what is being done to mitigate them. If your people tell you there are no risks, find someone more honest, more knowledgeable, or both.
- **Finally, what is the mitigation strategy should the project fail?**

TERMINATING A PROJECT

QUESTION: What are the factors to consider in ending a project?

ANSWER: The previous two questions covered what you should do to keep projects on track. Hopefully, problems will be identified while they still can be fixed. Unfortunately, hopes do not always become reality and you may need to shut down some projects. This will be harder to do the longer you wait. When you first come into your agency, you may even find projects that have been on hold, waiting for the “coup de grace” to fall on someone else’s (your) watch. Expect that the longer a project has been going and the more that has been spent, the harder it will be to kill.

Candidates for termination are:

- Projects that are in deep trouble according to basic project tracking criteria, such as milestones and budget being missed by more than 10 percent, substantial changes to scope or redefinition of milestones, and the absence of engagement of key stakeholders.
- Projects that are no longer in alignment with the business strategy of the agency.
- Projects that customers no longer value. Even a project that looks great in terms of milestones and budget should be canceled if the customers no longer need or want it.
- Projects that depend on issues being resolved but for which no resolution is in sight.

Skills of the project management team or engagement of the executive sponsor may also be a reason to terminate a project, but it is also quite likely that new staff can be brought in or the priorities of the executive sponsor adjusted. This may be much less costly than project termination.

However, what may be most important is what to do after the project is terminated. There may be practical and legal issues if one terminates a project. Find out what they are and then develop a strategy to address these issues. Terminating a project also requires an alternate strategy to meet the need that the project was to meet. Expect to consult with OMB, potentially Congress, and other stakeholders both before and after the decision. You may find many stakeholders eager to “help” you make a decision of this sort.

You should require your staff to develop the alternative strategy and have them assure you that it will not lead to the problems that led to the termination. It is also important to keep in mind that a decision to terminate is likely to attract attention from outside your agency. How you explain the decision will be an important part of the mitigation strategy.

ENSURING SECURITY AND PRIVACY

QUESTION: What do I need to do to address security and privacy concerns?

ANSWER: It is a near certainty that you will face a major security breach during your tenure. It could be a simple theft of a laptop, private information being released to the public, a compromise of your systems that prevents your agency from conducting its business, or one of a range of other possibilities too long to list. Any of these could lead to loss of trust in your agency, severely impact its operations, or cost millions to mitigate.

You will find that your agency is already spending substantial sums on security. These include operational expenditures as well as systems of certification and reporting. You have a chief information security officer and a chief privacy officer to oversee this, and your inspector general will be evaluating them. A briefing on the status of these efforts will give you a sense of where your agency is, but you should go beyond this.

You should ask: What are our risks and vulnerabilities? What are we doing about them? Who is in charge? How much is enough? How can I tell?

Vulnerabilities from a security or privacy standpoint need to be balanced with the need to get the job done. There is no such thing as perfect security, but you can ensure that the right trade-offs are made as you perform your mission.

Key additional questions to ask include:

- **Who is accountable for security?** How can I be confident that person has the wherewithal to protect my agency?
- **What do our systems tell us about how safe we are?** Standard reports that cover all your systems go regularly to OMB. Find out the concerns they flag and how they are being addressed.
- **What are the threats?** What is their likelihood, our vulnerability, and how do we know? Look strategically, not system by system. Your people should put priority on the most likely threats that can do the most harm.
- **What is the operational impact of addressing the threats?** Find out the operational impact of security procedures from the operational people, not the security people. Security procedures with high operational impacts lead to workarounds. The two groups need to work together. Make sure they do.
- **Do we regularly test our systems to ensure that the process of certification is more than a paperwork exercise?** This should be done by program managers as part of their duties. Don't leave this key program management function to the inspector general.
- **What is the plan should something go wrong?** The plan should have been tested and include communicating to those affected as well as other stakeholders.
- **What don't we know? What are we doing about it?** The rate of technological change makes it hard to keep up with the threats. A bit of time spent anticipating surprises can be useful even if you get a different one. To quote President Eisenhower, "Plans are nothing; planning is everything."

USING SHARED SERVICES

QUESTION: How can shared services help me achieve my mission?

ANSWER: Supporting you and your agency's mission are many administrative processes that can suck away the time and attention of you and your senior staff. Shared services offer a way out of this morass.

What are shared services? In shared services, one consolidates support operations around an optimized business process, establishes accountability and metrics for both the suppliers of a service and its users, and benchmarks the operations against alternatives. Properly managed, it can substantially reduce your costs while increasing customer satisfaction and speeding up your agency's reaction time.

Effective use of shared services does not simply mean consolidating support operations. It also requires that those consolidated and optimized operations be accountable to customers for both customer satisfaction and cost as compared to external benchmarks. By the same token, it requires customers to be accountable for their responsible use of the shared service.

There need to be metrics for both suppliers and customers and a means of resolving disputes. Your staff may be conflicted on the approach. Internal service providers tend to resist being held accountable to customers and the customers don't want to depend on others. Without careful attention to these dimensions, shared services will fail.

Shared services are typically found in such areas as human resources, financial management, and information technology, as well as functions such as billing and call centers. Relevant services are transitioned into a single delivery organization, either supported by in-house resources or outsourced to an independent organization. Your agency may be a service provider, may obtain service from another agency, or both.

Businesses have moved to shared services in part to address problems in earlier rounds of consolidation that achieved savings from economies of scale, but often at the price of abysmal customer service.

Based on past experience, it has been found that successful use of shared services requires four key conditions:

- Roles and responsibilities of both suppliers and users of services must be explicitly addressed.
- Metrics for both must be developed, measured, and agreed to.
- A framework for resolving performance, customer service, and cost issues must be implemented.
- Shared service performance must be regularly benchmarked.

When considering shared services, you should ask the following questions of your IT team:

- Who is the service provider and why should I have faith in the provider's ability to deliver both the cost and quality of the service?
- Who are the other customers of the service provider? How can I be confident that those other customers are pleased with the service?
- How are we measuring cost and customer satisfaction?
- What happens if something goes wrong? How will disputes be resolved? What are our alternatives should the relationship not be salvageable?
- How are we benchmarking the service? How does the service compare to the benchmarks?

Understanding Shared Services

From *Sharing an Understanding of Shared Services, A Brief Snapshot of What FM and HR Service Providers Are Offering Federal Agencies* by Amit Magdieli and Jonathan Breul
(*The Business of Government*, Fall 2006)

Momentum has been building in the federal government to align many of government's administrative functions with designated shared service providers in several "lines of business." To match the interest and need of current and potential clients, a group of shared service providers has been designated by the Office of Management and Budget. OMB has been working to ensure that the "offerings" of these service providers are robust and distinguishable enough to attract a large number of clients and provide them with a high degree of service over the long term.

The designated lines of business (LOBs) are areas in which shared services will be developed. Agencies will be expected to migrate their internal administrative activities to the designated shared service providers. The original six LOBs, established in 2004 and 2005, are:

- Financial management
- Human resources
- Grants management
- Case management
- Federal health architecture
- Information systems security

In 2006, three more were added:

- Information technology infrastructure
- Geospatial
- Budget formulation and execution

Much has been written about the benefits and issues surrounding shared service providers since OMB announced its plan in March 2004 for consolidating core government functions.

Rather than expend significant effort and resources modernizing existing agency-specific systems, federal departments and agencies are now expected to select, through a competitive process, a government-wide service provider for human resources management and financial management services. OMB has estimated cost savings of nearly \$5 billion over 10 years from the consolidation of common systems and the streamlining of similar business functions that occur across federal agencies. Even more can be gained if the service providers expand to provide services to quasi-governmental agencies with similar functions and missions to government agencies.

Financial Management

- Treasury Department, Bureau of the Public Debt, Administrative Resource Center
- Interior Department, National Business Center
- General Services Administration, Federal Integrated Solutions Center
- Transportation Department, Enterprise Services Center

Human Resources

- Treasury Department, Bureau of the Public Debt, HR Connect
- Department of Health and Human Services, Program Support Center
- Interior Department, National Business Center
- Department of Defense: Civilian Personnel Management Service and the Defense Finance and Accounting Service
- Agriculture Department, National Finance Center

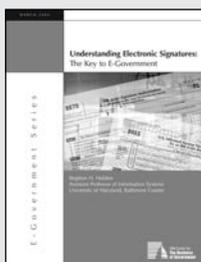


For Additional Information on Technology



Ramping Up Large, Non-Routine Projects: Lessons for Federal Managers from the Successful 2000 Census (2005) by Nancy A. Potok and William G. Barron, Jr.

The report examines the management challenges, including procurement issues, faced by the 2000 Census. The report discusses how the Census Bureau met these challenges and looks ahead to the 2010 Census and how the Bureau might best respond to future challenges.



Understanding Electronic Signatures: The Key to E-Government (2004) by Stephen H. Holden

The report describes the Internal Revenue Service's (IRS) use of electronic signatures for its electronic filing program for individual tax returns. The case study describes how IRS approached the need for electronic authentication solutions. Since its launch, the number of returns signed electronically has increased. Resolving the challenge of electronic signatures is a key element in expanding the use of technology in government.



Government Management of Information Mega-Technology: Lessons from the Internal Revenue Service's Tax Systems Modernization (2002) by Barry Bozeman

This report provides a history of computer modernization efforts by the Internal Revenue Service, beginning with the initial Tax Systems Modernization project. The study reviews the many hurdles faced by the IRS, highlighting those obstacles related to legislative constraints, bureaucratic entanglements, political complexities, civil service restrictions, and contracting and procurement requirements.



Public-Sector Information Security: A Call to Action for Public-Sector CIOs (2002, 2nd ed.) by Don Heiman

This report expands upon the themes and issues raised at a forum on Security and Critical Infrastructure Protection sponsored by the National Association of State Chief Information Officers (NASCIO). Conference participants identified a series of actions designed to combat emerging cyber-threats to security and critical infrastructure. The report includes recommendations for improving public-sector information security in three areas: management, technology, and homeland security.



Privacy Strategies for Electronic Government (2001) by Janine S. Hiller and France Bélanger

This report provides a framework for understanding the implications of privacy and security in the public sector, the challenges of the increased use of the Internet to deliver government services and information, and the lessons that can be learned from the private sector in dealing with privacy and security issues and experiences.