Managing Risk, Improving Results
Lessons for Improving Government Management from GAO's High-Risk List

Donald F. Kettl
University of Maryland

Managing Risk, Improving Results: Lessons for Improving Government Management from GAO's High-Risk List

Donald F. Kettl
University of Maryland

IBM Center for
The Business of Government

Table of Contents

Foreword

On behalf of the IBM Center for The Business of Government, we are pleased to present this report, *Managing Risk, Improving Results: Lessons for Improving Government Management from GAO's High-Risk List*, by Donald F. Kettl, University of Maryland.

For more than a quarter century, the U.S. Government Accountability Office has been highlighting and tracking a handful of programs that it judges as being at high risk for waste, fraud, abuse, and mismanagement. That list has grown from 14 programs in 1990 to 32 by 2015, when it was last updated. These programs range from Medicare benefits to food safety oversight.

Daniel J. Chenok

Dr. Kettl, one of the nation's most insightful observers of government operations, reviewed what changes in the high-risk list mean over time. The author explored:

- What government can learn about how programs got onto GAO's high-risk list

- What agencies did over the years to get their programs off the list

- How to stay off the list in the first place

The report also describes instances where some agency leaders actively sought to have their programs placed on the list, and it explains why.

Lisa M. Mascolo

Dr. Kettl's advice is well-timed reading for the administration turnover, when new agency leaders will step into their positions and find themselves managing huge enterprises that oftentimes have a long history of complexities and opportunities. As Dr. Kettl points out, agency leaders can benefit by reviewing lessons learned from the past and moving forward with the right mix of leadership, talent, resources, and legislative support.

This report builds on several reports that the Center has released over the last several years on the topic of risk management in government, including *Improving Government Decision Making through Enterprise Risk Management* and *Risk Management for Grants Administration: A Case Study of the Department of Education*. We hope this report will be helpful to federal leaders with improving government operations and citizen trust that government can address large, complex challenges.

Daniel J. Chenok
Executive Director
IBM Center for The Business of Government
chenokd@us.ibm.com

Lisa M. Mascolo
Managing Director
IBM Global Business Services, U.S. Federal
lmascolo@us.ibm.com

Introduction

The past several decades have seen far greater attention to the challenge of making government programs work better. There is no better bellwether of this movement than the "high-risk" report of the U.S. Government Accountability Office, a biennial assessment of the biggest challenges facing some of the federal government's most important programs. The 2015 edition catalogs 32 programs at risk of waste, fraud, abuse, and mismanagement, ranging from Medicare and NASA's acquisition system to the Pentagon's supply chain and healthcare in veterans' hospitals. The cumulative tale is one of huge challenges throughout government, challenges that put at risk hundreds of billions of tax dollars. It points to areas where government performance falls short of what citizens and policymakers alike expect—but it also shows examples of where stronger management can deliver vastly better services for taxpayers.

A careful look at the high-risk list reveals very useful insights. As GAO documents in its report, many agencies are making big strides in attacking the problems that got them onto the high-risk list. Progress is possible; over the years many agencies have gotten their programs off the high-risk list. Failure is not inevitable. Patterns emerge from the progress agencies have made and it is possible to draw a roadmap for improving performance of all government programs. A careful analysis of the *root causes* of high-risk problems yields a strategy for *root solutions* to the knottiest public management problems across the full range of governmental activities.

The high-risk list is important in its own right. The federal government faces an enormous imperative to solve the problems that got these programs on the list, both because of the scale of the programs and because of the costs that mismanagement brings. But the report has a bright, if hidden, silver lining. Every manager on the list wants to get off of it, and every manager who gets off the list wants to stay off. Some managers have been able to do just that. What it takes to do so defines the fundamentals of good management for government in the 21st century.

The high-risk list thus is a roadmap for improving performance throughout government. The steps that managers in high-risk areas need to take for their programs on an urgent basis are the steps that all managers need to follow every day.

An Introduction to GAO's High-Risk List

The Development of GAO's High-Risk List

GAO's reports have always been an acquired taste. As Congress's audit arm, the agency has long focused on tracking the accuracy of government spending. Over time, however, its strategy gradually shifted to embrace the management and performance of public programs. In 2004, the agency's name changed to reflect its changing focus, from the General Accounting Office to the Government Accountability Office. Frederick C. Mosher, in his definitive 1979 historical study of GAO, anticipated the shift. The subtitle of his book was "The Quest for Accountability in American Government," and it is that quest that has increasingly framed GAO's work.[1]

Since 1990, as part of the quest for accountability, GAO has produced a report every two years on the government's nastiest problems. The high-risk reports detail the programs most prone to waste, fraud, abuse, and mismanagement.[2] (For the high-risk criteria, see *Criteria for Identifying an Area as "High Risk"* below.) These reports have been rich treasures for reporters trolling for stories.

The CBS newsmagazine *60 Minutes* did a 2009 report on Medicare, highlighting "how easy it is to steal millions." The segment came with a warning for viewers: "This story may raise your blood pressure, along with some troubling questions about our government's ability to manage a medical bureaucracy."[3] In 2015, there was another *60 Minutes* story, this one on problems homeowners had in collecting on flood insurance after Hurricane Sandy's devastation in the Northeast. Many homeowners said they had been cheated out of payments they were due. "Making matters worse," the report went on, "appeals to the federal agency in charge of all of this, FEMA, went nowhere."[4] For both newspaper editors and television producers, GAO's work has proven a window into some of the federal government's very worst performance problems.

Criteria for Identifying an Area as "High Risk"

GAO uses this definition for "high-risk" areas:

> Government operations that are high risk due to their greater vulnerabilities to fraud, waste, abuse, and mismanagement or that are in need of transformation to address economy, efficiency, or effectiveness challenges.

Source: GAO, *High-Risk Series: An Update,* GAO-15-290 (February 2015), p. 1.

---

1. Frederick C. Mosher, *The GAO: The Quest for Accountability in American Government* (Boulder, Colo.: Westview Press, 1979).
2. GAO, *High-Risk Series: An Update*, p. 1.
3. "Medicare Fraud: A $60 Billion Crime," *60 Minutes,* first broadcast October 23, 2009 by CBS, http://www.cbsnews.com/news/medicare-fraud-a-60-billion-crime-23-10-2009/
4. "The Storm after the Storm," *60 Minutes*, first broadcast March 1, 2015 by CBS, http://www.cbsnews.com/news/hurricane-sandy-60-minutes-fraud-investigation/

Evidence from the High-Risk List

Most readers of GAO's increasingly hefty high-risk report—the 2015 edition is 398 pages—are deep divers into the details of areas they care most about. Almost no one reads the report from cover to cover. A comprehensive look at what's inside not only reveals a fascinating tour through government's most difficult problem but also sheds light on:

- **Identifying root causes**. A careful look across the list provides invaluable clues about the root causes of some of government's most difficult performance problems. Most readers of GAO's voluminous report focus mainly on the details about particular programs. A look *across* the programs on the list, however, creates an invaluable diagnostic tool to the biggest issues plaguing government's most important programs. Improving government performance, in general, requires knowing which are the most important problems to solve.

- **Developing root solutions to escape the list**. There are jokes that getting on the list is like checking into the Hotel California made famous by the Eagles' 1977 megahit, where "you can check out any time you like, but you can never leave." In fact, six of the original 14 areas have been on the list since the beginning. However, in the list's first 25 years, GAO has removed 23 areas from the list. That's evidence that getting on the high-risk list isn't a permanent condition. Digging into what the government's managers did to get their areas off the list provides invaluable clues about how to check out of the Hotel California, so to speak. Even more importantly, these steps make the case that government can make progress on even its most difficult problems.

- **Mapping future risk**. GAO's 25 years of high-risk reports provide a map of the larger issues of risk that the government faces. Like all large enterprises, the federal government faces the risk that bad things—or unintended things—will happen as it attempts to manage its programs. As Douglas W. Webster and Thomas H. Stanton explain, a catalog of risks can affect federal operations, including problems involving hazards, finances, operations, strategic choices, and the government's reputation.[5] Understanding what can go wrong, how it can matter, what steps can make things right, and how to minimize risk to begin with can provide invaluable insights for improving government. There is no better future risk roadmap in the federal government than GAO's high-risk list.

These three elements make GAO's high-risk list a valuable tool in improving government's performance.

One can read GAO's high-risk report as a catalog of abuses that deserve media scrutiny. It is also possible, however, to read the report as an encyclopedia of GAO's best work on a relatively small handful of government's biggest problems. But most importantly, if least explored, is the possibility to read the report for fresh insights into improving the performance of government. That is the goal of this report.

The Politics of the High-Risk List

The high-risk list has been a regular source of intrigue for investigative reporters. The trade press and other media sources have used GAO's analyses in their own reporting. In addition to broadcast news stories like those on *60 Minutes*, *The Washington Times* awarded its "Golden Hammer" for waste, fraud, and abuse to the Medicaid program for paying $10 million in benefits

---

5. Douglas W. Webster and Thomas H. Stanton, *Improving Government Decision Making through Enterprise Risk Management* (Washington: IBM Center for The Business of Government, May 2015), http://www.businessofgovernment.org/report/improving-government-decision-making-through-enterprise-risk-management

to 200 dead people.[6] *Popular Mechanics* alerted its readers to the growing dangers of one of the least-known areas on the high-risk list, the nation's weather satellite system. "A legacy of mismanagement, budget overruns, and slipping deadlines means that satellites in both programs may well fail before their replacements are launched and become fully functional," the magazine warned in 2015.[7] In 2015, Citizens Against Government Waste wrote, "There is definitely one list that everyone seems to want to avoid, the Government Accountability Office's (GAO) biennial High Risk List."[8]

But some agency managers actually *want* to be on the list. Consider the case of the Department of Veterans Affairs, in which Secretary Bob McDonald met with Comptroller General Gene Dodaro and "encouraged him to put us on the high-risk list." Why would a cabinet secretary do that? McDonald replied, "We're a healthcare system. We're one of the largest businesses in this country. … I want to be on that list. I want to shine light on what we're doing. I want to improve. And that's what we're working to do."[9] With the 2015 edition, McDonald got his wish: The VA was added to the list.

Longtime information technology expert Richard Spires applauded GAO's decision in 2015 to put IT on the high-risk list. "I have found that having a program on the High Risk List focuses valuable attention and resources on systemic problems," he explained. There's "a chance," he said, "to make a real difference," and GAO's spotlight could help make progress.[10]

Spires's analysis is precisely on point. For agency managers trying to get the attention of top policy makers, both to obtain more resources and to extract action from a headline-conscious Congress, *getting on* the high-risk list can prove an enormous asset. For the Census Bureau, the incentives were clear. The United States Census is one of the few things that the Constitution mandates government do on a regular basis, but it's a complex job. Counting every citizen involves vast armies of temporary employees and ever-evolving technology. There's only a limited chance for testing in advance and no chance to learn from incremental changes along the way. Failure is conspicuous and embarrassing, and because the program involves the constitutionally mandated districting of the seats of every member of the House of Representatives, the political risks are huge. High-risk designation can thus prove valuable for the Census Bureau's top officials to get attention, leadership support, and resources invested early enough into the effort to minimize problems down the line.

For areas that have been on the list for a long time, the high-risk designation can be more troublesome because it's a constant reminder of problems unsolved. But GAO has adjusted its system over time to counter institutional melancholy. Beginning in 2015, it has set standards for getting off the list and has reported on the progress agencies have made in removing the high-risk designation from their programs.

Behind the media coverage and internal dynamics is a fundamentally important point: The high-risk list is not just a thick, comprehensive catalog of problems embedded in an arcane collection of management minutiae. It creates a strong political dynamic for action that can

6.   Kellan Howell, "Federal government gives $10 million to 200 dead people," *The Washington Times* (June 4, 2015), http://www.washingtontimes.com/news/2015/jun/4/golden-hammer-federal-government-gives-10-million-/?page=all
7.   Kathryn Miles, "Why the Entire U.S. Weather Satellite System is at Risk," *Popular Mechanics* (January 16, 2015), http://www.popularmechanics.com/science/environment/a35/us-weather-satellite-noaa-goa-report-2015-17640539/
8.   Leslie Paige, "The List Nobody Wants to Make: The 2015 GAO High Risk List," Citizens Against Government Waste (February 2015), http://cagw.org/media/wastewatcher/list-nobody-wants-make-2015-gao-high-risk-list
9.   Patricia Kime, "VA health system on GAO's 'high-risk' list," *Military Times* (February 18, 2015), http://www.militarytimes.com/story/military/benefits/veterans/2015/02/18/va-health-care-gao/23575127/
10. Richard Spires, "Why being on GAO's High Risk List is good for federal IT," *FCW* (February 23, 2015), http://fcw.com/articles/2015/02/23/spires-high-risk-list.aspx

attract criticism or drive progress—or both—depending what agency leaders make of it. That circles back to one of GAO's increasingly important points of reference: Leadership commitment is the necessary, if not completely sufficient, condition for progress, so the high-risk list has become an increasingly important engine for generating and driving leadership for results in federal programs.

GAO's first high-risk report in 1990 was brief—just seven pages. Interest in examining high-risk problems was stimulated by the mounting issues at the Department of Housing and Urban Development in late 1980s, where a scandal had erupted regarding charges that top officials had accepted payoffs in exchange for steering housing subsidies to well-connected politicians. Faced with a damning report from the department's inspector general, Secretary Jack Kemp acknowledged in 1989 that the allocation of money during his predecessor's tenure "was based on the perception and reality of favoritism."[11] (Interestingly, HUD did not make the first high-risk list released in 1990).

The scandal led key committee chairmen on Capitol Hill, Sen. John Glenn (D-Ohio) and Rep. John Conyers, Jr. (D-Mich.), to wonder whether similar problems existed in other programs. In response, GAO produced its first high-risk report. Released in January 1990 by then-Comptroller General Charles A. Bowsher, its conclusion was stark:

> …it is evident that the government continues to be plagued by serious breakdowns in its internal control and financial management systems. Unless something more is done to correct the material deficiencies in management information and accounting systems, and material weaknesses in internal controls, *major losses of federal funds and the collateral fraud and abuse incidents will continue*.
>
> The basic deficiencies are known and, in many instances, have been known for many years, but they remain uncorrected. It is not enough for agencies to identify problems; they must act effectively to correct them. Currently, no mechanism exists to ensure that agencies take corrective action.[12]

That launched GAO's biennial effort to identify "government operations that are high risk due to their greater vulnerabilities to fraud, waste, abuse, and mismanagement or that are in need of transformation to address economy, efficiency, or effectiveness challenges."[13] The first list contained just 14 programs (see Table 1). By 2015, the high-risk list's 25th anniversary, there were 32 programs (see Table 2). Along the way, GAO had added 43 new areas and removed 23 from the list (see Figure 1).

In 1989, the U.S. Office of Management and Budget (OMB) produced its own high-risk list but decided to discontinue it in the mid-1990s. Since its initial high-risk report, GAO's long-term effort and its relatively consistent methodology have made it the most useful tool for assessing the areas most prone to fraud, waste, abuse, and mismanagement, as well as those most in need of transformation.

11. "Housing and Urban Development (HUD) Influence-Peddling Scandal Unfolds Before Hill Panels," *CQ Almanac* (1989), http://library.cqpress.com/cqalmanac/document.php?id=cqal89-1139712#H2_1
12. Comptroller General Charles A. Bowsher, letter to John Glenn and John Conyers, Jr. (January 23, 1990), http://www.gao.gov/assets/660/659029.pdf. Emphasis in the original.
13. U.S. Government Accountability Office, *High-Risk Series: An Update*, GAO-15-290 (February 2015), p. 1, http://www.gao.gov/assets/670/668415.pdf

Table 1: Original 1990 High-Risk List

1. Resolution Trust Corporation (managing and disposing of assets acquired through collapse of savings and loans)
2. * Internal Revenue Service Receivables (collecting taxes owed to the federal government)
3. Management of Seized and Forfeited Assets (collecting assets through federal law enforcement programs, especially in drug control)
4. * Medicare Questionable Claims (potential for fraud and abuse through improper payments)
5. ERISA/PBGC (ensuring sound management of employee benefit and pension programs)
6. Guaranteed Student Loans (overseeing the management of student loans to reduce default and prevent abuse)
7. State Department Real Property Management Overseas (reducing mismanagement of facility construction abroad)
8. * DOD Inventory Management Systems (managing inventory to reduce excess inventory)
9. * DOD Major Systems Acquisition (improving management of acquisitions, including reducing cost overruns and production delays)
10. * NASA Contract Management (improving acquisition management for space systems)
11. Farmers Home Administration Loan Programs (reducing losses through agricultural loans)
12. Superfund Enforcement and Contractor Oversight (strengthening management of environmental cleanup projects)
13. Urban Mass Transportation Administration Grants (improving oversight of transportation grant program)
14. * Department of Energy Contractor Oversight (strengthening contractor oversight to improve performance and reduce overpayments)

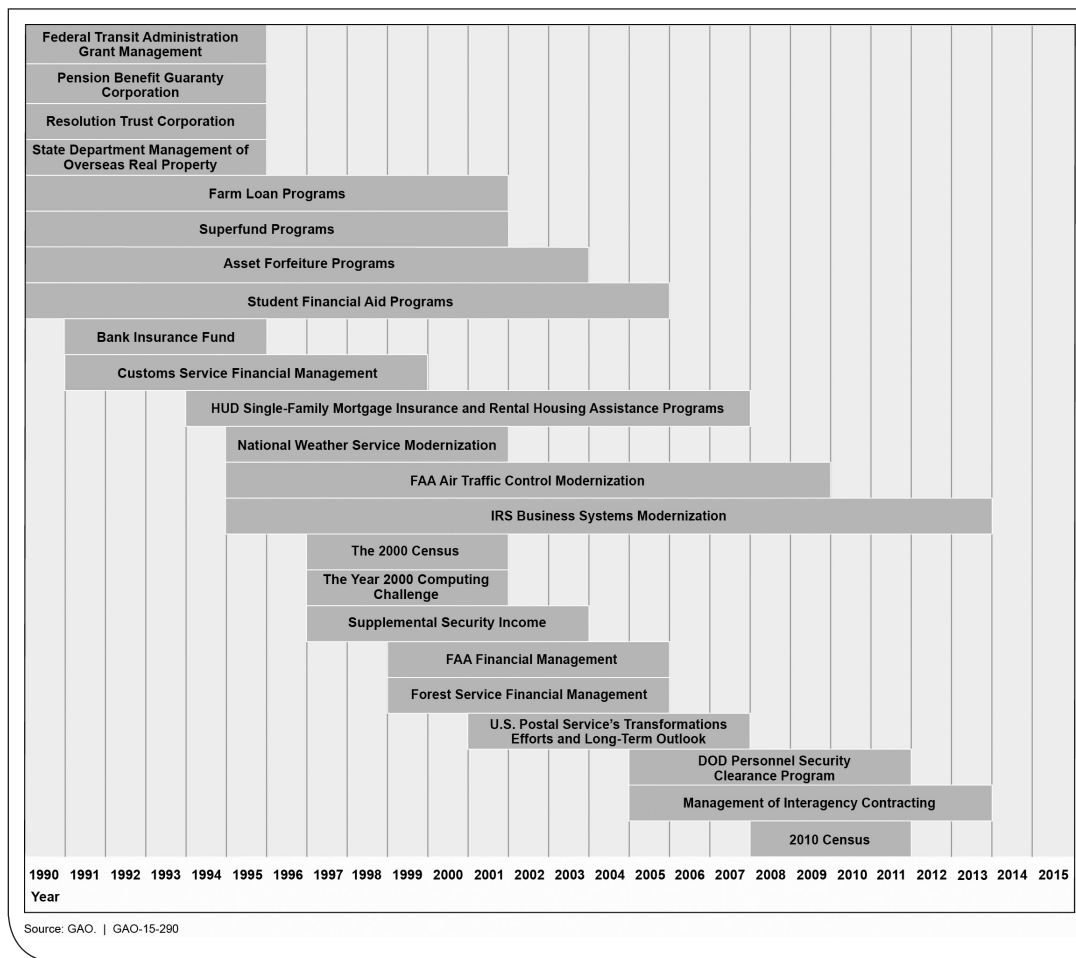 * Programs that have been on the list for 25 years, through the 2015 report

Table 2: High-Risk List (2015)

Strengthening the Foundation for Efficiency and Effectiveness
- Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks
- Management of Federal Oil and Gas Resources
- Modernizing the U.S. Financial Regulatory System and the Federal Role in Housing Finance[a]
- Restructuring the U.S. Postal Service to Achieve Sustainable Financial Viability[a]
- Funding the Nation's Surface Transportation System[a]
- Strategic Human Capital Management
- Managing Federal Real Property
- Improving the Management of IT Acquisitions and Operations **(new)**

Transforming DOD Program Management
- DOD Approach to Business Transformation
- DOD Business Systems Modernization
- DOD Support Infrastructure Management[a]
- DOD Financial Management
- DOD Supply Chain Management
- DOD Weapon Systems Acquisition

Ensuring Public Safety and Security
- Mitigating Gaps in Weather Satellite Data
- Strengthening Department of Homeland Security Management Functions
- Establishing Effective Mechanisms for Sharing and Managing Terrorism-Related Information to Protect the Homeland
- Ensuring the Security of Federal Information Systems and Cyber Critical Infrastructure and Protecting the Privacy of Personally Identifiable Information[a]
- Ensuring the Effective Protection of Technologies Critical to U.S. National Security Interests[a]
- Improving Federal Oversight of Food Safety[a]
- Protecting Public Health through Enhanced Oversight of Medical Products
- Transforming EPA's Processes for Assessing and Controlling Toxic Chemicals[a]

Managing Federal Contracting More Effectively
- DOD Contract Management
- DOE's Contract Management for the National Nuclear Security Administration and Office of Environmental Management
- NASA Acquisition Management

Assessing the Efficiency and Effectiveness of Tax Law Administration
- Enforcement of Tax Laws[a]

Modernizing and Safeguarding Insurance and Benefit Programs
- Managing Risks and Improving VA Health Care **(new)**
- Improving and Modernizing Federal Disability Programs
- Pension Benefit Guaranty Corporation Insurance Programs[a]
- Medicare Program[a]
- Medicaid Program[a]
- National Flood Insurance Program[a]

Source: GAO. | GAO-15-290

[a]Legislation is likely to be necessary to effectively address this high-risk area.

Figure 1: Areas Removed from the High-Risk List

Area	Time period
Federal Transit Administration Grant Management	1990–1994
Pension Benefit Guaranty Corporation	1990–1994
Resolution Trust Corporation	1990–1994
State Department Management of Overseas Real Property	1990–1994
Farm Loan Programs	1990–2001
Superfund Programs	1990–2001
Asset Forfeiture Programs	1990–2004
Student Financial Aid Programs	1990–2005
Bank Insurance Fund	1991–1995
Customs Service Financial Management	1991–1999
HUD Single-Family Mortgage Insurance and Rental Housing Assistance Programs	1994–2013
National Weather Service Modernization	1995–2000
FAA Air Traffic Control Modernization	1995–2008
IRS Business Systems Modernization	1995–2013
The 2000 Census	1997–2001
The Year 2000 Computing Challenge	1997–2001
Supplemental Security Income	1997–2003
FAA Financial Management	1999–2005
Forest Service Financial Management	1999–2005
U.S. Postal Service's Transformations Efforts and Long-Term Outlook	2001–2007
DOD Personnel Security Clearance Program	2005–2011
Management of Interagency Contracting	2005–2013
2010 Census	2008–2011

Year: 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015

Source: GAO. | GAO-15-290

Managing Risk

Risk management in government has typically focused on individual programs. To what degree, for example, has the Transportation Security Administration (TSA) identified the items on its "prohibited items list"—things like knives, guns, explosives, and liquids—as most likely to cause problems for air travelers and avoided things that are not? The TSA went through an exhaustive study of just how large a knife passengers could carry in their pockets, and whether screeners would be able to focus more on explosives if they weren't looking as closely for smaller knives. The Federal Protective Service studied what kind of training the private security guards who protect most federal buildings need, including in the operation of the magnetometers designed to detect guns. At FEMA, officials considered how best to define federal flood insurance standards to reduce damage from major storms.

In parallel with GAO's refinements in 2015 to the criteria for getting on and making progress in getting off the high-risk list, the federal government has taken a more expansive strategy for understanding and managing risk in the federal government. There are two key elements here:

• One is an expansion of the notion of risk to include not only fraud, waste, and abuse but also "economy, efficiency, or effectiveness challenges," as well as areas "that are in need of

transformation."[14] GAO has embraced the broader approach of *enterprise* risk management, with a focus on challenges to advancing the goals of government organizations as a whole, as opposed to individual programs.

- The second is an increasingly broad vision of the notion of "enterprise" to stretch beyond individual organizations, like agencies and departments, to government as a whole. It keeps an eye on understanding the forces most likely to increase government's performance problems—and what steps are most likely to prevent or solve them.

This focus on managing risks has emerged most sharply with GAO's new high-risk tracking scorecard developed with five criteria to assess agency progress. For years, some agency officials from both parties had quietly criticized GAO, arguing that the criteria for being placed on and removed from the high-risk list seemed arbitrary. Agency officials also complained that it was hard to tell whether GAO recognized the progress they made beyond the oft-repeated GAO report conclusion: "progress made; significant work remains."[15] In particular, agency officials grumbled that they couldn't know whether they were close to or far from escaping the list.

The new scorecard not only laid out the five criteria on which GAO charted agencies' work but also the progress they were making. NASA, for example, needed to enhance its acquisitions capacity and demonstrate more progress in managing its contractors. DOE's contract managers needed work across the board. DOD learned with relief that GAO believed it had made substantial progress on all criteria, especially on the commitment of its top leaders. In food safety, by contrast, progress was more elusive, even in leadership commitment. Most other areas showed that agency managers were taking big steps but, as GAO tended to point out, "significant work remains."

GAO's long-term, high-risk work advances the understanding of risk analysis by pointing to the wide variety of ways in which performance problems can create risks for government programs—and for the citizens they serve. Moreover, my analysis of GAO's findings points directly to actions that can reduce this risk and improve performance. These actions begin with the GAO's five "criteria for removal," starting with a commitment from top leadership.

The action steps that emerge from my analysis also converge on the growing problem of talent and human capital management in the federal government. Not only were human capital issues a frequently repeated theme in GAO's analysis, they are directly mentioned in 18 of the 32 areas. Human capital never appeared alone in my analysis of root cause problems. Even when GAO's analysts did not explicitly mention human capital in their exploration of high-risk areas, it was present in the background of all of them, from creating good technology and contract management to ensuring strong financial management and the use of good performance metrics.

Finally, "strategic human capital management" is one of GAO's high-risk areas, and it ranks as one of the areas where the least progress has been made, with shortfalls on all fronts. Skills gaps—the space between the expertise that the government employs and what it needs to manage programs well—are significant and challenge the government's ability to perform. As GAO explained:

> Mission-critical skills gaps in such occupations as cybersecurity and acquisition
> pose a high-risk to the nation: whether within specific federal risk agencies or

---

14. GAO, *High-Risk Series,* p. 1.

15. For just one example, see U.S. Government Accountability Office, *Department of Homeland Security: Progress Made; Significant Work Remains in Addressing High-Risk Areas,* GAO-14-532T (May 7, 2014), http://www.gao.gov/products/GAO-14-532T

across the federal workforce, they impede federal agencies from cost-effectively serving the public and achieving results. Addressing complex challenges such as disaster response, national and homeland security, and rapidly evolving technology and privacy security issues, requires a high-quality federal workforce able to work seamlessly with other agencies, levels of government, and across sectors. However, current budget and long-term fiscal pressures, declining levels of federal employee satisfaction, the changing nature of federal work, and a potential wave of employee retirements that could produce gaps in leadership and institutional knowledge, threaten the government's capacity to effectively address these and many other evolving, national issues.[16]

Put sharply, most of the riskiest issues on the high-risk list are rooted in human capital. The challenges are increasing, especially because of the growing policy issues and difficulty of finding the right workers to solve them. Of all the issues on the high-risk list, this is the one most likely to lead future policy areas onto the list—and make it most difficult for policy areas already on the list to escape.

This conclusion, moreover, tracks precisely with the analysis that emerged from a 2015 "Ready to Govern" roundtable series focused on effectively managing in the next administration. Of the myriad answers bubbling in the public policy debate, there was strong and perhaps surprising consensus at the roundtable, co-hosted by the IBM Center for The Business of Government and the Partnership for Public Service, that developing "leadership talent" was among the most important challenges presidents face. "A new administration must both assemble and organize the talent required to meet these challenges (of governing) by recruiting and retaining political and career executives with strong management capabilities and organizing them into effective senior leadership teams in the department and agencies of government," wrote Douglas A. Brook and Maureen Hartney.[17]

It might strike some observers as an unusual finding that of the many competitors for the transition agenda, people and talent emerged from the forum as the top item. It might also strike observers as surprising that amid the vast complexity of the federal government's 32 most difficult and risky policy areas, people—in the form of leadership commitment and human capital—rise to the top as the biggest difference makers. These are the powerful conclusions, and on more careful thought, the conclusions are not so surprising after all. There's a profound paradox in the growing complexity of government: The more intricate its processes and structures become, and the harder it is for any agency or program to define problems or control solutions, the more important the skill sets of leaders become.

The enduring lesson is that the government faces enormous risks, which are growing. The wide swath of problems and their root causes is daunting, and there is no sign that either the problems or their roots will get easier to manage any time soon. But there is also great hope in the fact that the problems and their root causes are becoming better understood and therefore skilled leaders are successful in guiding their programs off GAO's high-risk list in a surprising number of cases.

Even more important is how these lessons speak to the performance of the federal government more generally. There is great value in focusing on enterprise risk management in gauging the obstacles that can stand in the way of making government work. There is even greater

16.   GAO, *High-Risk Series,* p. 122.

17.   Douglas A. Brook and Maureen Hartney, "Managing the Government's Executive Talent," Partnership for Public Service and IBM Center for The Business of Government (October 2015), http://www.businessofgovernment.org/report/managing-government%E2%80%99s-executive-talent

value in identifying the root causes for the high-risk problems, for they surely exist more broadly throughout government, if (one hopes) on a somewhat less imposing scale. There the greatest value of all exists in understanding the *root solutions,* which frame the game plan for improving the performance of government not only in the high-risk areas but across the vast array of government programs not on the high-risk list. Analyzing GAO's high-risk list is an important initiative in its own right, because the 32 areas on it are of enormous importance and present problems that virtually everyone, regardless of ideological background, would agree must be solved. This analysis has a strong "canary in the coal mine" quality in guiding government to the steps most likely to equip it to solve the critical problems it faces in the 21st century.

Root Causes of High-Risk Problems

GAO's high-risk list not only catalogs the federal government's nastiest problems, but it also provides an invaluable guide to the root causes of the federal government's management challenges. That guide, in turn, is perhaps the most valuable, but least explored, element of the high-risk list.

Fundamental Issues

To identify the root causes of the high-risk problems, I carefully reviewed the 2015 GAO report, identified recurring themes, analyzed the themes that were most important in determining the high-risk designation, and then reviewed each of the 32 high-risk areas to determine which root causes appeared in which high-risk areas. My analysis revealed the eight most important root cause problems, identified in Figure 2 (It is important to note that these root causes, and the labels attached to them, are the product of my own research, not of GAO's designations). In descending order of their prominence in GAO's analysis, according to my analysis, these problems were:

1. **The inability to span boundaries.** No single organization can, any longer, manage any program that matters. Indeed, building strong bridges to connect the disparate parts of government's policy networks is one of the truly great challenges of the 21st century.[18]

Figure 2: Root Causes of High-Risk Problems in 2015

Number of agencies on high-risk list experiencing this root cause

---
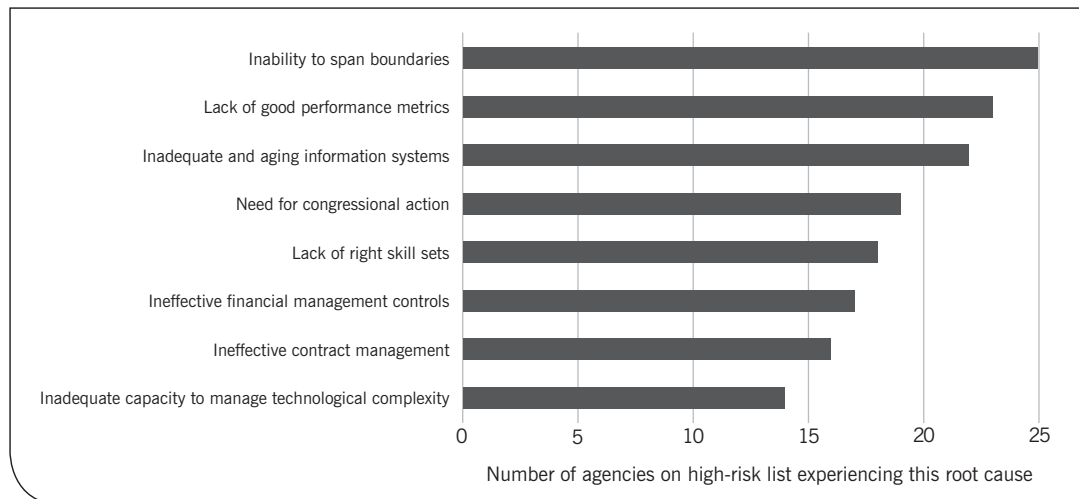
18. See Donald F. Kettl, *The Transformation of Governance: Public Administration for the 21st Century,* updated edition (Baltimore: Johns Hopkins University Press, 2015); and *The Next Government of the United States: Why Our Institutions Fail Us and How to Fix Them* (New York: Norton, 2009). See also Stephen Goldsmith and Donald F. Kettl, eds., *Unlocking the Power of Networks: Keys to High-Performance Government* (Washington: Brookings Institution Press, 2009); and Stephen Goldsmith and William D. Eggers, *Governing by Network: The New Shape of the Public Sector* (Washington: Brookings Institution Press, 2004).

Sometimes the boundaries are between different federal agencies that share responsibility for coordinating national policy, as in the case of food safety, where 15 different agencies are responsible for administering 30 laws designed to prevent food-borne illnesses. Sometimes the boundaries are between the federal, state, and local governments in programs like flood insurance, where local governments have a strong role to play in determining what can be built in flood plains. Sometimes effective management requires navigating intricate international boundaries, such as the information collected to support the fight against terror.

These boundaries separate different organizations that have different responsibilities for achieving the goals. But as the analysis of GAO's high-risk list reveals, difficulties in spanning these boundaries often create big performance problems that can only be solved by ensuring that different players find effective ways of connecting with each other in pursuing their common goal.

As government's reach has grown and its programs have become more expansive, and as the complexity of joint action has increased, it is little wonder that the inability to span boundaries has become the leading root cause of areas named to the high-risk list; the issues spill across virtually all policy problems. The challenge of building bridges among these players also makes this one of the most difficult root causes to solve.

2. **The lack of good performance metrics to drive project management.** The government has increasingly developed performance measures, both to define results and to measure the success in achieving them.[19] But the root cause of many of government's toughest problems doesn't just rely on the failure to create a measurement scheme. It requires mapping the road from present problems to future successes and on creating milestones along the way to chart progress.[20]

GAO has increasingly focused on how federal agencies define and use performance metrics in managing programs. But those metrics are not ends in themselves. Good project management and strong performance metrics go hand in hand. Thus, while GAO tends to report most on the creation and use of performance metrics, its analyses focus on the mapping role that they play in leading program managers toward more successful outcomes.

Many of the Department of Defense's troubled programs—including business transformation, systems modernization, support infrastructure management, and supply chain management—are rooted in the fundamentals of creating systematic project management systems supported by strong performance metrics. That's the case, too, for areas as different as managing the federal government's oil and gas resources and improving healthcare at the Department of Veterans Affairs. Agency managers certainly understand the importance of these fundamental steps, but they are difficult to perform due to the complexity of the programs.

3. **Inadequate and aging information systems.** It's a truism that the 21st century has become the information age, but the fact that it's a truism doesn't make it less important. The government needs effective information systems to manage its programs and to hold its managers accountable. In some cases like the nation's weather satellite systems, however, the information systems are aging and need to be upgraded. That's a matter of investment.

---

19. See Robert D. Behn, *The PerformanceStat Potential: A Leadership Strategy for Producing Results* (Washington: Brookings Institution Press, 2014).

20. For one approach, see Young Hoon Kwak and Frank T. Anbari, *Project Management in Government: An Introduction to Earned Value Management (EVM)* (Washington: IBM Center for The Business of Government, 2010), http://www.businessofgovernment.org/report/project-management-government-introduction-earned-value-management-evm. See also Project Management Institute, *Program Management 2010: A Study of Program Management in the U.S. Federal Government* (Washington: June 2010), http://www.pmi.org/Business-Solutions/~/media/PDF/Business-Solutions/Government%20Program%20Management%20Study%20Report_FINAL.ashx

In other cases like the management of the Department of Homeland Security, it's a hardware problem coupled with the department's challenge of managing the information system well.

Among the many issues plaguing VA hospitals, GAO found that outdated systems, coupled with the inability of many information systems to talk with each other, vastly complicated the department's patient scheduling system. That system, in turn, was 30 years old and out-of-date.

This is a root cause that requires both sufficient investment and good management; one won't work without the other. Good information systems are an essential foundation for 21st century government. But so, too, are good systems essential for building and using those information systems. Moreover, good bridges are essential for spanning organizational boundaries; those bridges are often built through information systems.

4. **The need for congressional action.** The solutions to some of the government's biggest problems often require congressional action—new legislation, additional funding, or both. GAO, of course, is a legislative branch agency, and there are substantial political challenges in pointing to legislative action needed to solve executive branch problems.[21] In the most recent rounds of the high-risk reports, however, GAO has more crisply identified the issues that can't be solved without congressional action.

    For example, some high-risk areas like gaps in the nation's weather satellite system and problems in the surface transportation system require Congress to appropriate enough money. Not all congressional action deals directly with money. Modernizing the financial regulatory system, for example, requires legislation to reform the system's fundamental underpinnings. Congress plays a critical role in the government's performance by the resources it provides, both in law and in funding. In that sense, it is involved in every high-risk area.

5. **Lack of the right skill sets for the job.** The notion that people are any organization's most important asset has also become a well-worn truism. In the case of the federal government, the recruitment, cultivation, motivation, and leadership of people ranks among its biggest challenges.

    Some areas are high risk because federal agencies simply do not have enough people to manage the problems at hand. GAO, for example, points out that the Department of Energy spends 90 percent of its budget on private sector contractors, but that just five percent of its federal workforce is devoted to managing these contracts. That, GAO concluded, was an extremely low number of acquisition specialists compared with other federal agencies. The Department of the Interior's difficulties in managing the nation's oil and gas resources stem largely from not having enough skilled experts in the field offices charged with overseeing federal assets and collecting the funds due from energy developers.

    Other areas are high risk because an agency does not have enough employees with the right skills sets for the job at hand. The oversight of medical products and the VA's healthcare problems both flow from the lack of the right skill sets, as well as from the lack of enough employees to do the job. Nowhere is this problem more serious than in the Medicare program.

---

21. The classic analysis of GAO's role and history is Frederick C. Mosher, *The GAO: The Quest for Accountability in American Government* (Boulder, Colo.: Westview Press, 1979).

More generally, there's widespread agreement that the federal government's human capital system is desperately in need of reform.[22] Indeed, GAO named strategic human capital management itself as a high-risk area.

Many skill sets today are in chronically short supply, as the Office of Management and Budget argued in the FY 2016 Budget. OMB believes that the problem is especially serious in cybersecurity, acquisitions, economic analysis, human resource management, auditing, and the STEM (science, technology, engineering, math) career fields.[23] Moreover, discussions among government experts, including a forum co-sponsored by the IBM Center for The Business of Government and the Partnership for Public Service, focus squarely on the need to improve leadership talent if the federal government is to deliver results.[24] Many programs are at high risk because they don't have enough talent in the right areas.

6. **Ineffective financial management controls.** Reducing risk and saving money always depends on strong financial management controls: estimating costs, tracking expenditures, and ensuring that increasingly ambitious program goals don't bust the budget. In fact, cost overruns and program delays plague many governmental programs, especially those on the high-risk list. The more government relies on extended networks of service providers through complex partnerships that cross boundaries, the harder it is to follow the money. Without strong financial management, exploding costs and extended delays are inevitable.

The Department of Defense has seven of the 32 areas on the high-risk list. Five of the areas have problems directly attributed to financial management (and six have problems in human capital as well). The flood insurance program's problems, as well as issues in Medicare and Medicaid, have roots in financial controls. In addition, many of the government's information technology problems are deeply rooted in financial management problems, GAO found.

7. **Ineffective contract management.** The Federal Procurement Data System, which tracks contracts executed by the federal government, counted nearly 16 million contracts in fiscal year 2015, amounting to $439 billion, or 12 percent of all federal outlays.[25] The contracts range from the gigantic, such as those managed through the Department of Defense and the Department of Energy, to one-time purchases for instructors in federal training programs. The government relies heavily on contracts with private companies and nonprofit organizations, yet many agencies struggle to establish strong acquisition management systems.

There are large and obvious problems with the management of big contracts for the Pentagon, NASA, and the Department of Energy. In most of these large contracts there is an extended implementation chain, from the government agency to subcontractors and from there to sub-subcontractors to progressively smaller pieces of the program. This creates an inherently difficult management problem of leveraging a broad policy goal through a network of providers of goods and services.

For the federal government, the problem is often magnified because of the lack of enough skilled acquisitions experts. Many federal employees begin their careers as subject-area specialists, such as scientists and engineers, and soon find themselves not so much doing science or engineering as managing private contractors who do the work instead. They

22. See Partnership for Public Service, *Building the Enterprise: A New Civil Service Framework* (Washington: Partnership for Public Service, 2014), http://ourpublicservice.org/publications/viewcontentdetails.php?id=18

23. Office of Management and Budget, *Budget of the United States Government, Fiscal Year 2016: Analytical Perspectives* (2015), p. 86, https://www.whitehouse.gov/sites/default/files/omb/budget/fy2016/assets/ap_8_strengthening.pdf

24. Douglas A. Brook and Maureen Hartney, "Managing the Government's Executive Talent," Partnership for Public Service and IBM Center for The Business of Government (October 2015), http://www.businessofgovernment.org/report/managing-government%E2%80%99s-executive-talent

25. See Federal Procurement Data System, at https://www.fpds.gov

end up in positions for which they have slim training—and, for that matter, for which there is often not much training except on the job. The result, not surprisingly, is a large collection of contract management problems the government does not have sufficient capacity to solve.

8. **Inadequate capacity to manage technological complexity.** From advanced weather satellites to sophisticated unmanned drones, the federal government has developed a host of very complex high-tech systems to deliver its programs. This introduces a host of risks into the programs' management.

Highly complex programs are, by their very nature, highly risky. Cybersecurity, federal information systems, privacy issues, and the sharing of terrorism-related information are all complex and interrelated, and they therefore are inherently hard to manage. Any crack in the system can quickly spill over to larger problems everywhere.

Technically complex problems also require a high level of technical expertise. In these programs, the government often finds itself dealing with private contractors and foreign nations for whom the stakes are also enormous. They often invest in hiring the very best experts, and to oversee these relationships the federal government cannot afford to be outgunned. In enforcing the tax laws, for example, IRS auditors and accountants are up against the nation's very best tax specialists.

Collaboration often brings its own technological challenges, even in less obvious areas like the National Flood Insurance Program and the ongoing effort to integrate the Department of Homeland Security into a single, well-functioning entity. All these areas bring great technical challenges, and inadequate capacity can quickly push an area into high risk.

Clusters of Root Causes

Each of these root causes individually is troublesome. The high-risk problem, however, is complicated by the fact that most high-risk areas are afflicted by *multiple* root causes, which interact and multiply the challenges (see Figure 3). In fact, almost three-fourths of the areas on the high-risk list shared five or more of the eight potential root causes; 41 percent shared at least seven of the eight root causes. Among the 32 areas on the high-risk list, each averages 4.8 of the eight root causes.

Some clusters of root causes are especially important:

- The clustering of financial management, contract management, and information systems: 12 of GAO's 32 high-risk areas

- The clustering of boundary management, human capital, and performance metrics: 11 of 32 areas

- The clustering of contract management, human capital, and information systems: 8 of 32 areas

These clusters are certainly not surprising. Managing contracts well requires good information systems to create and support good financial management. It often also requires good managers equipped with the information systems to track progress. Negotiating boundaries between one federal agency and its partners, in and out of government, requires smart managers and especially good performance metrics to support the process.

Root cause analysis can be interpreted in three ways:

- First, the government's biggest risks are not the product of a small number of especially serious problems. Rather, the typical high-risk area is risky because it is the product of

Figure 3: How Many High-Risk Areas Share Root Causes?
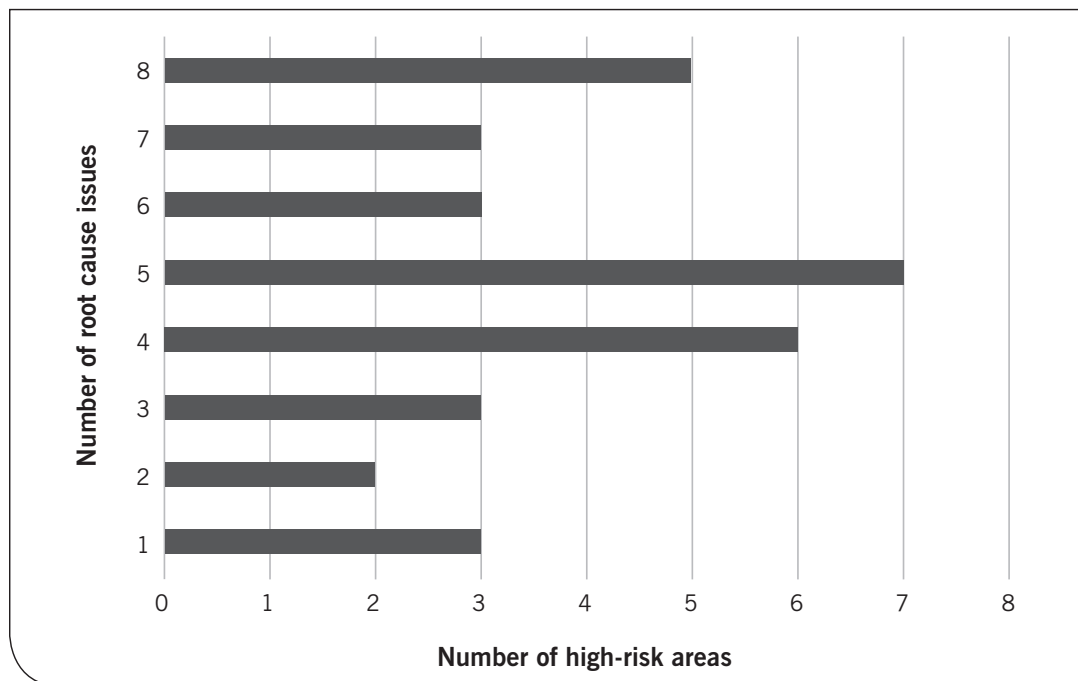
complex, interrelated problems, many of which are serious and *all* of which have to be tackled to produce improvement.

- Second, the high-risk problems cannot be solved by a focused effort on a small set of issues. Rather, they require agency leaders to create an integrated strategy aimed at the broad constellation of interrelated issues. That makes working across boundaries with strong leadership and human capital all the more critical in making progress to get the area off the high-risk list and keep it off. The more complex government's problems become, the more important people-based solutions become.

- Third, many of these root causes are issues that affect government far more broadly in areas that are:

  – Already high risk or areas that may be drifting toward high-risk status

  – Areas that have escaped the high-risk list and want to stay off

  – Areas throughout all of government, where these root causes point to fundamental issues that must be tackled across government as a whole and not agency by agency

These issues, of course, appear daunting. On the other hand, the issues are relatively small in number, they are interconnected, and as we will see next, they are eminently solvable. For these problems, there is a relatively compact package of effective solutions.

Getting Off the High-Risk List

Although the high-risk problems are surely enormous, the good news is that they are solvable. In fact, of the 57 areas that GAO has placed on the list since 1990, it has removed 23 of them, a rate of escape of 40 percent.[26] And that leads to the most important finding of this report: *Significant improvements in management—and significant reductions in waste, fraud, abuse, and mismanagement—are possible in even the government's most difficult and complex areas.* Although cynics might believe otherwise, success is possible.

In previous years, GAO removed areas from the list that had demonstrated substantial progress. Starting in 2015, it made the criteria for removal from the list explicit (see *GAO Criteria for Removal from the High-Risk List* below).

GAO Criteria for Removal from the High-Risk List

- **Leadership Commitment.** There is demonstrated strong commitment and top leadership support.

- **Capacity.** The agency has the capacity (i.e., people and resources) to resolve the risk(s).

- **Action Plan.** A corrective action plan exists that defines the root cause and solutions, and it provides for substantially completing corrective measures, including steps necessary to implement solutions we recommended.

- **Monitoring.** A program has been instituted to monitor and independently validate the effectiveness and sustainability of corrective measures.

- **Demonstrated Progress.** The ability to demonstrate progress in implementing corrective measures and in resolving the high-risk area.

Source: GAO, *High-Risk Series: An Update,* GAO-15-290 (February 2015), p. 5.

Root Solutions for High-Risk Problems

What does it take to make the big step off the list? To determine what successful program managers had accomplished, I reviewed the 23 areas that the GAO has removed from the high-risk list since 1990 and the reasons GAO gave for their removal. That analysis leads to my list about the "root solutions" for the federal government's high-risk problems (see Figure 4):

1. **Improve legacy information systems.** Aging legacy information technology systems, and ineffective efforts to modernize them, have been a stumbling block for many agencies. Leaders that undertake fundamental management changes to bring together the

---

26. Of the 34 remaining areas, two areas were consolidated which now leaves 32 areas on the 2015 high risk list.

Figure 4: Root Solutions for Areas Removed from the High-Risk List

Number of agencies on high-risk list pursuing this root solution
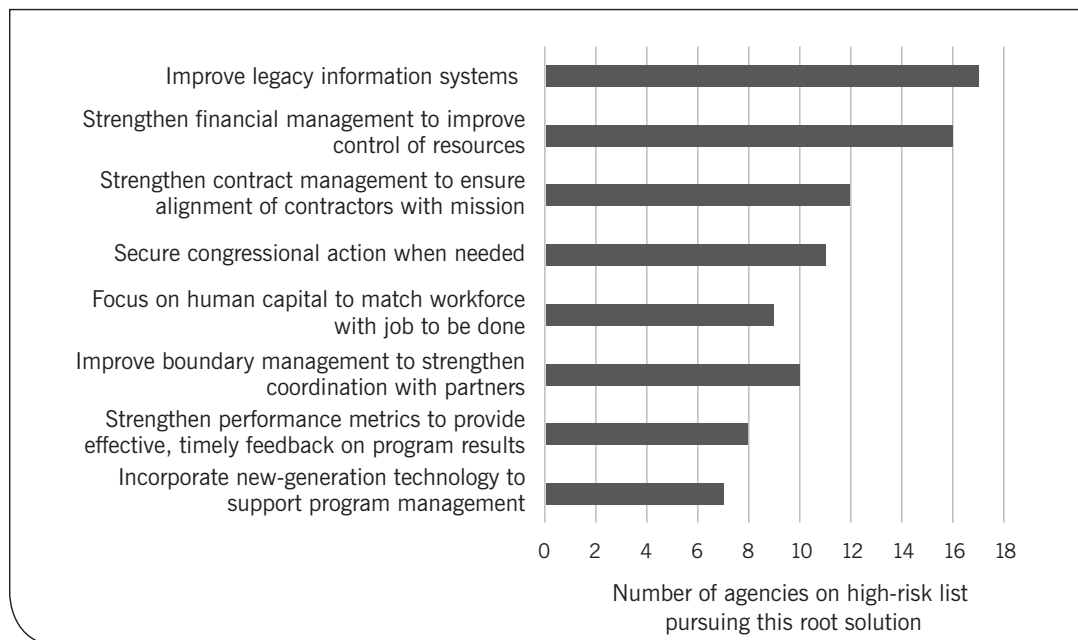
technology, contracting, and program management skills needed to effectively orchestrate modernization efforts are more likely to see their programs removed from the high risk list. For example, GAO removed the management of overseas property from the list in 1995 because the State Department's improved management information systems allowed its managers to better track the status and condition of the vast network of properties the department owned and leased abroad.

2. **Strengthen financial management to improve control of resources**. Every high-risk problem, at its core, involves making better use of increasingly scarce budget dollars. Doing so, however, requires managers to know where the money is going and how to redirect it. Better financial management helped federal student financial aid programs get off the list in 2005.

3. **Strengthen contract management to ensure alignment of contractors with the mission.** As the federal government's reliance on contractors has grown, so too has its challenge in ensuring that the contractors deliver the goods and services the government pays for.

   Stronger controls over contracting and better collaboration among federal agencies resulted in GAO's decision to remove interagency contracting from the high-risk list in 2012.

4. **Secure congressional action when needed**. Management reforms can go a long way toward improving government programs, but sometimes Congress must pass legislation to help agencies achieve what must be done, especially when the necessary steps require more funding.

   Increased congressional funding of the Resolution Trust Corporation allowed it to better dispose of hundreds of billions of dollars of assets from failed savings and loans, and that in turn resulted in GAO's decision to remove the RTC from the high-risk list in 1995 after five years on the list.

5. **Focus on human capital to match the workforce to the job at hand***. Almost nothing is more fundamental to strengthening federal management than determining what talent is needed to solve tough problems—and then hiring and retaining employees with the needed skills.

    GAO removed the management transformation of the U.S. Postal Service from the high-risk list in 2007 because the service did a far better job of restructuring its workforce to account for retirements and operational changes. Of course, the Postal Service continues to face fundamental challenges from private parcel delivery services and changes in the way citizens communicate.

6. **Improve boundary management to strengthen coordination with partners.** In almost every high-risk area, managers must build bridges to their partners in other agencies, levels of government, and sectors because no agency can fully manage any responsibility assigned to it.[27]

    Better management of the relations with its state government partners and with private contractors helped the Superfund program escape the list in 2001 and produced world-class success in grappling with the Y2K computer transition, which the GAO removed from the high-risk list the same year.

7. **Strengthen performance metrics to provide effective, timely feedback on program results.** Hand-in-hand with these steps is an action plan, and tracking the action plan requires strong performance metrics to communicate the direction, motivate managers, and track manager's progress.

    The Department of Defense's strong, effective performance management system allowed GAO to remove the Pentagon's personnel security clearance program from the high-risk list in 2011.

8. **Incorporate new-generation technology to support program management.** Big steps forward sometimes require next-generation technology. The Census Bureau has struggled with these challenges every 10 years, each time facing a new test to connect its centuries-old mission to brand new technology. The Census sometimes has struggled to manage these technologies, especially in the 2010 count, where an effort to deploy new handheld devices failed. Twice (in 2001 and 2011) the Census Bureau has worked its way off the list. In preparing for the 2020 Census, its deputy director, Nancy Potok, said the intense scrutiny that comes from high-risk designation can prove invaluable in focusing attention and developing enterprise-wide strategies. Because of the high-risk designation, Potok said, the bureau has "embraced oversight" as a way of galvanizing action and, she hoped, improving the Census Bureau's management of the 2020 count.[28]

The root solutions do not precisely match the root causes, which often are more numerous and more complex. In contrast, there is a relatively small cluster of root solutions that help agencies get their programs off the high-risk list—and keep them off.

*   Some of the most important root solutions that I found did not always match the most important root problems. Improving financial management and contract management, for example, proved more important in GAO's decision to remove some from the high-risk list, compared with their importance in explaining root causes.

*   Over time, GAO has focused increasing attention on some of the root causes my analysis identified, especially boundary management and performance metrics. These two root

---

27. Donald F. Kettl, *The Next Government of the United States: Why Our Institutions Fail Us and How to Fix Them* (New York: Norton, 2009).

28. Charles S. Clark, "The Odds of Getting Off GAO's High-Risk List Aren't Good," *Government Executive* (May 12, 2015), http://www.govexec.com/management/2015/05/odds-getting-gaos-high-risk-list-arent-good/112603/

causes proved relatively less important in GAO's explanation of why some areas were removed from the high-risk list. Two reasons might account for this. First, these approaches have become more prominent in both theory and practice since the launch of the high-risk list in 1990. Second, GAO has focused more attention on the most stubborn high-risk areas. Because the stubborn programs are among the government's most organizationally and technically complex, they have required some of the most intricate solutions, which have increasingly depended on tools that can bridge boundaries.

Some of these changes are certainly the product of how GAO has changed its approach to the high-risk list in the last 25 years. In the last quarter of a century, GAO has more than doubled the number of areas it has identified as high risk. Does this mean that the federal government's problems doubled in that period? That, of course, is unlikely. Rather, GAO has used its high-risk list more aggressively to identify big problems and focus action on solving government's toughest problems. The growth in the number of high-risk areas is more the product of GAO's shining a brighter light than what the light is shining on.

Some of these changes are the product of new strategies and tactics that have emerged within the federal government's reform movement, in both Republican and Democratic initiatives. For example, GAO has increased its attention to issues of performance metrics and cross-boundary management tracks with the developing presidential management strategies and the way that OMB has implemented them, especially in the performance management process and identification of cross-agency goals. Evolving congressional attention, especially through the Government Performance and Results Modernization Act of 2010, has reinforced this shift.

Finally, some of the changes within the high-risk analysis are the result of GAO's own growing emphasis on identifying the root causes of high-risk problems and how those problems can best be solved. For example, GAO has increasingly focused on the importance of leadership commitment in producing change. GAO has increased its emphasis on human capital and has paid growing attention to the importance—and the complexity—of boundary management in federal programs. Finally, GAO is more forthright in identifying those areas where solutions require legislative action. That's an especially bold move for a legislative agency whose budget and political support depends on the decisions of the legislators that GAO sometimes calls to task.

The comparison of the early high-risk areas with the newer ones thus frames GAO's changing strategies and tactics, broader strategies about how best to solve government's biggest problems, and the growing difficulty of the problems themselves. It would be impossible to disentangle these forces to uncover whether more government areas are, in fact, at higher risk. But with these forces combined the high-risk list provides keen insights on: identifying ongoing problems that have proven most complex and daunting, emerging challenges and strategies that GAO increasingly believes are important, and GAO's own process of discovery and prescription as it struggles with some of the nation's biggest problems.

Mapping the Road Off the High-Risk List

What conclusions emerge from a careful look at the programs that have been *removed* from the high-risk list in the initiative's first 25 years? First, with 23 programs removed from the list during that time, it demonstrates that progress is possible. That, in itself, is an important finding.

Second, as Table 3 shows, getting programs off the list often involves solving a large number of problems. Among the areas removed from the list, 53 percent shared five or more root solutions, compared with 72 percent of five or more root causes for programs on the 2015 list. The average number of root solutions—what GAO identified as evidence of success

leading to removing the areas from the high-risk list—was 3.9, compared with 4.8 root cause problems for areas on the 2015 list. But, as we shall see later in this report, there is a relatively small number of actions that prove most important in leveraging agencies' success in solving these problems and getting their programs off the list.

Table 3: High-Risk Areas Share Multiple Root Solutions (for areas removed from high-risk list)

Number Of Root Solutions	High-Risk Areas Removed from the List Sharing Root Solutions (1990–2015)
1	5%
2	9%
3	14%
4	19%
5	24%
6	29%

Third, this suggests that the issues affecting areas on the high-risk list have become larger and more complex. The *high-risk list has become riskier*, not just because there are more programs on the list (32 in 2015, compared with 14 in 1990) but also because the financial and programmatic stakes are greater. For the following six areas that have been on the list for 25 years, escaping the list is a distant goal:

- **IRS.** Enforcement of the tax laws remains a daunting task, made ever more difficult by the inherent unpopularity of tax collection, the increasing difficulty of enforcing the tax code, the unwillingness of Congress to invest in the resources required to collect taxes, and scandals within the IRS that have weakened political support.

- **Medicare.** The program is extraordinarily complex, and it is managed by a relatively tiny handful of federal employees. In fact, just 0.2 percent of the entire federal workforce is responsible for managing the 20 percent of federal spending accounted for by Medicare and Medicaid. As the nation's population grows grayer, the financial and managerial pressures on the program are certain to increase.

- **NASA contract management.** NASA is heavily dependent on external partners—80 percent of its budget is spent through contractors.[29] It also operates on the extreme edge of the technically possible—and sometimes a step beyond it. The combination of complex projects managed through complex systems creates enormous challenges.

- **Department of Energy contractor oversight.** GAO concludes that 90 percent of the department's budget operates through contractors and much of that is for the development, maintenance, and operation of the nation's nuclear weapons systems. A substantial amount of the department's budget goes to clean up the environmental legacy of more than 70 years of nuclear weapons production, which has created problems that will require generations to solve and waste that must be safeguarded for millennia. Improvements in DOE's contract management system have been halting at best.

- **DOD inventory management and major systems acquisitions.** DOD shares many of NASA's and DOE's characteristics, in buying and operating extremely complex, cutting-edge systems through private partners. It also depends on an extended supply chain of parts and supplies to keep troops in the field and to keep its equipment running. In sheer scale, its operations bring great risk.

---

29. http://msd.hq.nasa.gov/NAC/July_2014/NAC_presentation_McNally_Final_Tagged.pdf

At the same time, however, being named to the high-risk list is not a sentence without possibility of parole. Some of government's biggest problems are so large and the roots are so deep that some of the areas may never escape the list. But many of the federal government's leaders have managed their programs off the list. Moreover, the steps toward escaping the list are not random and the "root solutions" show the way.

Four Strategies to Stay Off the High-Risk List

Beginning with its 2015 list, GAO identified five criteria for assessing progress toward removing an area from the high-risk list. For each of the 32 areas on the list—and for each of the sub-areas GAO identified in many of the programs—GAO assessed the progress made. GAO presented its conclusions in the form of an all-American star, a variant on a radar chart, showing the progress on each of the five criteria on a three-level scale: "not met," "partially met," and "met."

The findings varied tremendously among the items on the high-risk list. NASA's acquisition management is closest to escaping the list. GAO concluded that NASA had met all the criteria except for building its capacity and demonstrating progress, where it needed to take additional action. On the other hand, DOD's business systems modernization had the longest road for developing an action plan, with a large gap on each of the five criteria.[30] In reviewing the 32 areas on the list, GAO rated progress for 28 of them (two of the others were new, and the remaining two required congressional action and thus could not be resolved by executive branch actions on the five criteria). GAO determined that among the 140 possible ratings—28 areas, with five criteria each—there was progress on 87 percent. The underlying story here, yet again, is the genuine reality of progress, as well as GAO's considerable advancement in determining what steps are most likely to produce progress on the high-risk list.

As GAO points out, it is impossible to make sustained progress in reducing risk without progress on all five of the criteria. But *leadership commitment* turns out to be clearly more important than all the others. Indeed, it is the prerequisite, without which the others are impossible. GAO characterizes leadership commitment in four ways:

- Establishing long-term priorities and goals
- Developing organizational changes and initiatives
- Providing continuing oversight and accountability
- Initiating or implementing legislation[31]

Most of all, though, leadership commitment grows from a frank recognition by top agency officials that there is a serious problem, that strong and effective action can solve the problem, that the action requires careful definition and powerful rhetoric support, and that improvement requires unceasing follow-up. Indeed, that is the prescription that emerges from the GAO analysis. All five areas are important, but there can be no real progress without strong leadership commitment.

In its 2015 report, GAO identified nine high risk areas in which agencies had made substantial progress. My examination of these areas reinforces the case that success is possible by pursuing a relatively small handful of root solutions that I identify in the roadmap toward

---

30. The two areas added in 2015, improving care at the VA and improving IT acquisitions, both have substantial problems. Because both areas are new to the list, GAO will wait until the next cycle to analyze their progress.
31. GAO, *High-Risk Series,* p. 6.

success in the Appendix. Even though these areas remained on the list, GAO credited agencies with substantial progress; consistent, strong, and effective leadership by agency officials, by advancing the steps in the Appendix, made the difference.

My analysis suggests that the steps toward success build on four major strategies that emerge from this roadmap. They not only represent the strategies that agencies successfully used to get their programs off the high-risk list, they also are a summary of practices that all agencies can use to *keep* their programs off the list and, more importantly, to provide the most effective management for government in the 21st century:

- **Strategy One:** Develop a plan of action linking top officials with frontline actions and secure legislative changes if needed.

- **Strategy Two:** Increase transparency and communication with stakeholders and create a communication strategy that provides information about outcomes.

- **Strategy Three**: Enhance governance through new structures, improved processes, and cutting-edge technology.

- **Strategy Four:** Obtain the resources needed to implement strategic responses to problems.

Let us explore each of these strategies in turn with illustrations from GAO's analyses.

Strategy One: Develop a plan of action linking top officials with frontline actions and secure legislative changes if needed.

Effective management begins with a plan. Every effective plan must engage the agency's top officials (to provide the necessary leadership) and must drive the leaders' strategy to the operating level (to ensure that plans on paper produce results). Sometimes executing the plan requires new legislation, so the plan must include a strategy for building the support needed on Capitol Hill. Consider these cases:

- **Establishing effective mechanisms for sharing and managing terrorism-related information to protect the homeland.** In 2013, the Department of Homeland Security developed an action plan that identified 16 priority objectives for improving homeland security. Each objective is housed within a particular government agency and has a single official responsible for coordinating action.[32]

- **Strengthening Department of Homeland Security management functions**. The secretary and deputy secretary of the department assumed personal responsibility for improving the department's management. The department produced a 30-point action plan, with specific steps required to meet each objective and with outcome measures for each one.[33]

- **Improving the management of federal oil and gas resources.** The Department of the Interior struggled for years to ensure that the federal government collected all the revenues due for oil and gas extracted from federal lands. The department developed an action plan to focus squarely on the issue, including the development of a clear focus on the issue, the development of a top-level coordinating group to ensure that the data the department collected tracked the revenues due, and developing strategies for automated revenue collection.[34]

---

32. GAO, *High-Risk Series,* pp. 221-24; and GAO, *Information Sharing Environment: Better Road Map Needed to Guide Implementation and Investments*, GAO-11-455 (Washington: July 21, 2011).
33. GAO, *High-Risk Series,* pp. 17-19; and GAO, *Department of Homeland Security: Progress Made and Work Remaining in Implementing Homeland Security Missions 10 Years after 9/11*, GAO-11-881 (Washington: Sept. 7, 2011).
34. GAO, *High-Risk Series,* pp. 94-96; and GAO, *Oil and Gas: Updated Guidance, Increased Coordination, and Comprehensive Data Could Improve BLM's Management and Oversight*, GAO-14-238 (Washington: May 5, 2014).

Strategy Two: Increase transparency and communication with stakeholders and create a communication strategy that provides information about outcomes.

Every plan of action builds on communication:

- Clear signals from top officials about what they want to accomplish

- Effective and transparent communication with key stakeholders to build alliances

- A strategy for communicating clearly about the results actually accomplished

Consider these cases:

- **Ensuring the security of federal information systems**. Improving cybersecurity depends not only on developing stronger protections for information systems but also on setting clear standards to assess the level of that protection. The National Institute of Standards and Technology has developed guidance for measuring cyber protection, especially in cloud computing, and the Office of Science and Technology Policy has reinforced that effort to communicate the standards throughout the federal government and the private sector.[35]

- **Plugging gaps in weather satellite data**. The National Oceanic and Atmospheric Association has identified risks that could come from gaps in coverage when satellites fail and before replacements can be put into orbit. NOAA has developed measures for assessing the likelihood of failure, strategies for mitigating the loss of data by repositioning satellites, techniques for using observations from manned and unmanned aircraft, and new computing techniques to make better use of high-performance computing.[36]

- **Modernizing IRS business systems.** The IRS was plagued by problems in modernizing the computer systems—both computer code used since the Kennedy Administration and machines prone to breakdown—used to process income tax returns. The IRS produced detailed annual reports to chart its progress in updating the systems, and Congress used those reports for sharply focused oversight to provide the support needed to reinforce the system updates.[37]

Strategy Three: Enhance governance through new structures, improved processes, and cutting-edge technology.

Getting better results depends on more than good plans and effective communication. New technologies, in particular, along with more effective processes for acquisitions and information sharing, can give performance a big boost. Consider these cases:

- **Strengthening NASA acquisition management.** NASA's programs rely especially heavily on private contractors, and in the past its programs were prone to cost overruns and long delays. NASA has created new tools, including earned value management (an advanced performance management technique), new metrics to track performance and cost, and new baselines for major projects based on past performance. These new systems have substantially reduced the space program's problems.[38]

---

35. GAO, *High-Risk Series,* pp. 238-39.

36. GAO, *High-Risk Series,* pp. 203-07; and GAO, *Polar Weather Satellites: NOAA Needs to Prepare for Near-term Data Gaps*, GAO-15-47 (Washington: December 16, 2014).

37. GAO, *High-Risk Series: An Update,* GAO-13-383 (February 2013), p. 8, http://www.gao.gov/assets/660/652133.pdf; and GAO, *IRS High-Risk Issues: Modernization of Processes and Systems Necessary to Resolve Problems,* GAO-T-GGD-97-52 (March 4, 1997), p. 2, http://gao.justia.com/department-of-the-treasury/1997/3/irs-high-risk-issues-t-ggd-97-52/

38. GAO, *High-Risk Series,* pp. 301-13; and GAO, *NASA: Assessments of Selected Large-Scale Projects*, GAO-14-338SP (Washington: April 15, 2014).

- **Establishing effective mechanisms for sharing and managing terrorism-related information.** Especially since the 2001 terrorist attacks, the federal government has focused on improving its ability to "connect the dots" among related streams of information on terror threats. Federal agencies have joined in an interagency policy committee that has substantially improved coordination. A lead program manager within the intelligence community has led the development of an implementation plan with specific, detailed policy objectives, each of which has clear performance objectives and milestones.[39]

- **Ensuring the security of federal information systems and cyber critical infrastructure.** Within the federal government's vast information systems, the risks from intruders is extraordinarily high. The federal government's new cybersecurity systems, with strong leadership and clear identification of who is responsible for what, have developed new ways to detect invasion, improve the construction of hardware and software systems to resist cyber attacks, and plan for continuity of operations in the event of natural disasters and cyber disruptions.[40]

Strategy Four: Obtain the resources needed to implement strategic responses to problems.

More money is not the solution to every problem—but solutions often do require more resources in budget dollars, human talent, and technology. Effective leadership means sorting out those problems where more resources are critical and then making the case to get them. Consider these cases:

- **Ensuring the security of federal information systems and cyber critical infrastructure.** The federal government's cyber strategy has required an investment in the cyber workforce and in identifying those areas where there is a gap between the critical areas of need and the government's workforce. The Department of Homeland Security has worked especially hard to identify and plug these gaps.[41]

- **Improving the management of federal oil and gas resources.** Billions of dollars are at risk from the Department of the Interior's challenges in collecting the revenue due from oil and gas extracted by private companies from federal lands. Interior has developed new data systems to identify errors in data supplied by private companies and has hired more inspectors to identify the revenues owed to the government, including a careful assessment of positions where the government needed to increase the pay of highly technical positions. The department has also created new metrics to measure its success.[42]

- **Modernizing IRS business systems.** An important element of replacing obsolete software and hardware in the IRS was not only buying the equipment but, even more importantly, strengthening its workforce to manage the process. Regular congressional oversight of the IRS's plans, coupled with careful and thorough reports by the IRS on its progress, reinforced the efforts of key agency leaders to transform the agency, its equipment, and its workforce. Strong continuity of leadership, especially in its chief information officers, proved decisive in turning the process around.[43]

---

39. GAO, *High-Risk Series,* pp. 221-34; and GAO, *Information Sharing: DHS Is Assessing Fusion Center Capabilities and Results, but Needs to More Accurately Account for Federal Funding Provided to Centers*, GAO-15-155 (Washington: November 4, 2014).

40. GAO, *High-Risk Series,* pp. 235-54; and GAO, *Information Security: Agencies Need to Improve Cyber Incident Response Practices,* GAO-14-354 (Washington: April 30, 2014).

41. GAO, *High-Risk Series,* p. 237.

42. GAO, *High-Risk Series,* pp. 94-100.

43. GAO, *High-Risk Series: An Update*, GAO-13-383 (February 2013), p. 8, http://www.gao.gov/assets/660/652133.pdf ; and GAO, *IRS High-Risk Issues: Modernization of Processes and Systems Necessary to Resolve Problems*, GAO-T-GGD-97-52 (March 4, 1997), p. 2, http://gao.justia.com/department-of-the-treasury/1997/3/irs-high-risk-issues-t-ggd-97-52/

Conclusion

GAO's high-risk list is much more than a catalog of government's toughest, nastiest management problems, although it certainly is that. More importantly, it is a guide to what it takes to solve those problems. Although many programs have been on the list since the beginning, many other programs have escaped. The high-risk list is not a sentence to eternal criticism. Rather, when seen through the lens of the root causes that got these programs on the list, it is a piercing analysis of the big challenges facing 21st century government.

When viewed through the lens of the root solutions that got some of these programs off the list, it is a catalog of what it takes to solve those challenges. More broadly, these root solutions are a guide to the steps that risky programs can take to stay off the list—and that all federal programs should follow to avoid drifting into the biggest problems plaguing federal management.

Amid the wide-ranging collection of programs on the list is a relatively small collection of steps, which emerge from an analysis presented in the Appendix. These broader steps frame the foundations for effective 21st century government:

- **Manage boundaries.** Few programs can accomplish their goals without collaboration with others.

- **Build human capital**. Boundary spanning is, at its core, a leadership challenge.

- **Create strong performance metrics.** Charting measurable steps toward goals drives progress.

- **Establish strong support systems.** Financial management, contract, and technology systems are the foundation for effective management.

- **Build congressional support.** This is the foundation for the systems required to create success.

These five most crucial steps, derived from my analysis of the root solutions that helped agencies escape the high-risk list, reinforce the case that the federal government can conquer even its toughest management challenges—and, in the process, point the way forward to a government truly capable of delivering on the promises its elected officials make.

Appendix: Roadmap Toward Success

Table A.1: Root Solution Actions Taken That Led to the Removal of the IRS's Business Systems Modernization Program from the GAO High-Risk List in 2013

Root Solution Actions			
Improve Information Systems	**Strengthen Financial Management**	**Strengthen Contract Management**	**Secure Congressional Action When Needed**
New information system—Customer Account Data Engine 2—was the foundation for the changes made to get off the high-risk list	Financial resources were tailored to the pace of performance, with budget ratcheted down until results were proven and then ramped up as improvements occurred	New routines were established to ensure effective management of procurement	Congressional committees conducted regular, focused, detailed oversight, supported by in-depth GAO reports on the agency's progress and performance

Root Solution Actions			
Focus on Human Capital	**Improve Boundary Management**	**Strengthen Performance Metrics**	**Incorporate New-Generation Technology**
Sustained management by top information officers; hired and retained information technology specialists to support new system; all supported by new strategic business plan developed at the top and implemented through strong leadership and focus on human capital throughout the IRS	Focused on improving taxpayer service, especially through improved cost accounting among IRS units and integration of efforts among financial, procurement, information security, and strategic management elements of IRS operations	Performance measures established to drive deployment of new hardware and software systems	Upgraded from old mainframe batch processing system for returns to relational database on modern computers

Table A.2: Actions Taken by Various Agencies to Get Off GAO's High-Risk List

	Program	Designated	Root Solution Actions				
			Improve Information Systems	Strengthen Financial Management	Strengthen Contract Management	Secure Congressional Action When Needed	
1	**DOD Supply Chain Management**	1990	Improved systems created to forecast need for spare parts	Financial management tied more closely to forecasts of need for spare parts, which produced big cost savings	Information systems used to improve management of contractors	Strong oversight of supply chain management improvements	
2	**DOD Weapon Systems Acquisition**	1990		Improved from more use of past acquisition practices to predict costs and control cost growth	Improved in assessing impact of different contract types, contractor incentives		
3	**Ensuring the Security of Federal Information Systems and Cyber Critical Infrastructure and Protecting the Privacy of Personally Identifiable Information**	1997	Agencies strengthened collaboration to track, produce the information needed	Required budget increases embedded in department's funding to avoid separate budget battles	Common standards developed for information sharing to guide acquisitions	Congressional review of plans has provided support for initiatives	
4	**Establishing Effective Mechanisms for Sharing and Managing Terrorism-Related Information to Protect the Homeland**	2005	Improved in information sharing, especially in interoperable information systems	Improved in defining incremental costs for information sharing plans	Aligned agency goals with interoperability, through contractor-supplied equipment		
5	**Management of Federal Oil and Gas Resources**	2011	Needed improvements in systems to track oil and gas drilling and revenue due the federal government	Significantly improved collection of revenues from leases			
6	**Medicare Program**	1990	Strengthened clinical data registries to provide feedback on variations, quality of care	Strengthened connection between quality of care and financial costs; managing cost of high-use drugs; managing low-demand, high-cost medical procedures	Strengthened competitive bidding for products, like durable medical equipment including wheelchairs; stronger auditing and contract review	Legislation increased incentives to providers to increase quality, efficiency of service	
7	**Mitigating Gaps in Weather Satellite Data**	2013	Managed computer capacity for operational needs and research and development	More work needed to assess mitigation costs in event of satellite failures	Made progress in working with contractors to identify, mitigate risks	Continued ongoing conversations with Congress about how to meet needs of satellite system	
8	**NASA Acquisition Management**	1990		Improved baseline estimates of costs and schedules; more projects on time and on budget	New acquisition rules had independent cost estimates, "lessons learned" from previous projects		
9	**Strengthening Department of Homeland Security Management Functions**	2003	Information technology management significantly improved, with annual reviews of information portfolios	Made substantial progress in financial management; shortfalls remain in cost-estimating capacity	Made substantial progress in acquisition management; weaknesses remain in tracking whether acquisitions are on track for budget and performance		

	Root Solution Actions				
	Focus on Human Capital	**Improve Boundary Management**	**Strengthen Performance Metrics**	**Incorporate New-Generation Technology**	**Remaining Issues**
	Strengthened human capital system tied to performance metrics	Strong top-level leadership led to improved performance framework	Performance management framework created to track implementation of action plan	Improved inventory tracking, management	Strengthen performance metrics, close gaps in supply pipeline
	Improved in recruiting, retaining contract management workforce	Better Buying Power initiative strengthened management of acquisition system		Needed to assess challenges for designing, managing technologically sophisticated systems	Improvements in assessing contracting strategies; stronger contract management workforce
	Creation and support of stewards for each goal has improved match of skills with mission	Ensured each objective has a lead agency and each agency has a "steward" to ensure collaboration	Key departments created performance management system to detect, respond to terrorism	Better integrated information fusion centers	Further development of metrics to assess information sharing; develop enterprise-wide project management system
	New system of program managers created to establish leaders in key agencies	Interagency policy committee created to strengthen links across federal agencies and with state, local, and private partners	Metrics created to couple information sharing with improved homeland security	Technologies created to strengthen cross-agency information sharing	Maintain commitment; continue progress on all key areas
	Hired offshore staff to increase oil and gas inspections; more broadly improved identification of hiring needs, recruiting needed employees	Collaborated with private oil, gas producers to ensure strong partnership in information systems	Improved revenue tracking, but more work needed		More skilled employees needed; continued work required to track revenue due government
	Improved capacity to monitor contractors, providers	Improved feedback to providers on quality of care	Improved monitoring of patterns of patient use, provider care	Strengthened information systems and their connection to patient care and government costs	Improve feedback to physicians on quality of care; monitoring costs of long-term care; assess care for most vulnerable populations
			Made some progress in creating a monitoring system for assessing risk	Develop new satellites and mitigation plans in case of satellite failure, especially in high-performance computer capacity	Improvements needed in identifying, mitigating risks from disruption of weather satellites
	Talent management improved to assess whether operations centers have skills needed to manage projects		Corrective action plan defined, tracks program implementation with semi-annual reports		More workforce training needed; performance metrics need to be more consistent
	Improved in defining, recruiting workforce; significant workforce gaps in management remain, along with big morale challenges	Made progress in creating an integrated department more than the sum of its parts	Integrated framework created to monitor progress on all key management initiatives	Made progress in biometric assessment	Need to sustain top-level attention; identify resource gaps; develop personnel, systems, policy guidance to achieve long-term success

About the Author

Donald F. Kettl is professor and former dean in the School of Public Policy at the University of Maryland. He is also a non-resident senior fellow at the Volcker Alliance and at the Brookings Institution.

Kettl is the author or editor of many books and monographs, including *Escaping Jurassic Government: Restoring America's Lost Commitment to Competence* (2016), *System under Stress: The Challenge to 21st Century American Democracy Homeland Security and American Politics* (2014)*, The Politics of the Administrative Process* (2015), *The Next Government of the United States: Why Our Institutions Fail Us and How to Fix Them* (2008)*,* and *The Global Public Management Revolution* (2005).

He has twice won the Louis Brownlow Book Award of the National Academy of Public Administration for the best book published in public administration. In 2008, Kettl won the American Political Science's John Gaus Award for a lifetime of exemplary scholarship in political science and public administration. He was awarded the Warner W. Stockberger Achievement Award of the International Public Management Association for Human Resources in 2007 for outstanding contributions in the field of public sector personnel management.

Kettl has consulted broadly for government organizations at all levels, in the United States and abroad. He has appeared frequently in national and international media, including National Public Radio, *Good Morning America, ABC World News Tonight, NBC Nightly News, CBS Evening News, Anderson Cooper 360, The Situation Room,* Fox News Channel, the Huffington Post, Al Jazeera, *PBS NewsHour*, and the BBC*.* He is a regular columnist for *Governing* magazine.

He holds a PhD in political science from Yale University. Prior to his appointment at the University of Maryland, he taught at the University of Pennsylvania, Columbia University, the University of Virginia, Vanderbilt University, and the University of Wisconsin-Madison. He is a fellow of Phi Beta Kappa and the National Academy of Public Administration.

Key Contact Information

To contact the author:

Donald F. Kettl
Professor
School of Public Policy
University of Maryland
2202G Van Munching Hall
College Park, MD 20742
(301) 405-6356

e-mail: kettl@umd.edu

Reports from IBM Center for The Business of Government

For a full listing of IBM Center publications, visit the Center's website at **www.businessofgovernment.org.**

Recent reports available on the website include:

Acquisition

Beyond Business as Usual: Improving Defense Acquisition through Better Buying Power by Zachary S. Huitink and David M. Van Slyke

Eight Actions to Improve Defense Acquisition by Jacques S. Gansler and William Lucyshyn

Collaborating Across Boundaries

Inter-Organizational Networks: A Review of the Literature to Inform Practice by Janice K. Popp, H. Brinton Milward, Gail MacKean, Ann Casebeer, Ronald Lindstrom

Adapting the Incident Command Model for Knowledge-Based Crises: The Case of the Centers for Disease Control and Prevention by Chris Ansell and Ann Keller

Improving Performance

Leadership, Change, and Public-Private Partnerships: A Case Study of NASA and the Transition from Space Shuttle to Commercial Space Flight by W. Henry Lambright

Building Performance Systems for Social Service Programs: Case Studies in Tennessee by Patrick Lester

Innovation

A Playbook for CIO-Enabled Innovation in the Federal Government by Gregory S. Dawson and James S. Denford

Making Open Innovation Ecosystems Work: Case Studies in Healthcare by Donald E. Wynn, Jr., Renée M. E. Pratt, and Randy V. Bradley

Leadership

Best Practices for Succession Planning in Federal Government STEMM Positions by Gina Scott Ligon, JoDee Friedly, and Victoria Kennel

Risk

Improving Government Decision Making through Enterprise Risk Management by Douglas W. Webster and Thomas H. Stanton

Risk Management for Grants Administration: A Case Study of the Department of Education by Young Hoon Kwak and Julia B. Keleher
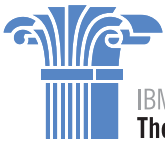
Strengthening Cybersecurity

Defining a Framework for Decision Making in Cyberspace by Dighton Fiddner

Using Technology

The Social Intranet: Insights on Managing and Sharing Knowledge Internally by Dr. Ines Mergel

Using Mobile Apps in Government by Sukumar Ganapati

Creating a Balanced Portfolio of Information Technology Metrics by Kevin C. Desouza