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BEYOND COMPLIANCE: VALUE-ADDING IT

Leveraging Compliance Efforts to Transform for Value

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Executive Summary

In both the public and private sectors, regulatory compliance is often spoken of derisively, as something to be done only to the degree necessary to check off a box, as more of an impediment to real work than a means to measure progress. **Legislative acts, in particular, are sometimes viewed as organizational taxes with limited benefits**; some see them as window dressing for external stakeholders, with little value beyond that end. **This view is misguided for several reasons**; even where the value of specific directives is suspect, the surrounding issues directly affect an organization's ability to transform into a more efficient, productive, and streamlined entity. If nothing else, **strong showings may yield more freedom and discretion for the agency, and botched outings can lead to loss of control** if OMB intervenes to manage or defund struggling investments.

This white paper covers the general characteristics of the Federal guidance that has shaped the IT landscape and how they impact an agency's ability to transform. It discusses **how these items were expected to work** at a high level, and examines the **gaps between that intent and the realities of their implementation**. The paper follows with an **investigation of benefits and, more importantly, an approach to closing those gaps** and expanding the usefulness of reporting efforts related to various metrics that already are or should be observed. This includes considerations for the focus, execution, and context for these efforts.

Note: this paper does not cover the minutiae of each governance item, but covers them in broad strokes and directs the reader to source documents for further details.

Beyond Compliance: Value-Adding IT

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Introduction

The roles of Federal Chief Information Officers and other IT leaders have evolved significantly since the Clinger-Cohen Act first redefined the role of IT in 1996. Some pressures are the result of technological developments, others due to changing regulatory environments, and still others due to societal evolution. These forces sometimes amplify each other and other times conflict with each other.

In both the public and private sectors, regulatory compliance is often spoken of derisively, as something to be done only to the degree necessary to check off a box, as more of an impediment to real work than a means to measure progress. **Legislative acts, in particular, are sometimes viewed as organizational taxes with limited benefits**; some see them as window dressing for external stakeholders, with little value beyond that end.

This view is misguided for several reasons: first and foremost, it sets a poor tone for compliance efforts as a whole. Non-compliance has greater negative consequences for organizations than the administrative costs associated with ensuring compliance. Second, most such mandates were developed with a broad view of performance that might stretch beyond the grasp or scope of a single organization. Finally, a well-run organization should find that it is able to handle most of these initiatives on the basis of being well architected.

Even in already-well-run organizations, however, it is crucial to understand the compliance landscape and the challenges that need to be overcome. **Even where the value of specific directives is suspect, the surrounding issues directly affect an organization's ability to transform into a more efficient, productive, and streamlined entity.**

Both OMB and the Federal CIO Council have established leading practices for strong IT governance and proper capital planning, but these are intended to guide and are not always explicit mandates. In these cases, OCIO and Capital Planning Executives' resources must determine how to best reconcile and execute several potentially conflicting strategies and implementation plans in order to ensure that they work *for* their agencies rather than against them. Even the best solution configurations can quickly become significant wastes of resources if improperly planned and executed; **strong showings may yield more freedom and discretion for the agency, and botched outings can lead to loss of control if OMB intervenes to manage or defund struggling investments.**

This white paper covers the general characteristics of the Federal guidance that has shaped the IT landscape and how they impact an agency's ability to transform. It discusses **how these items were expected to work** at a high level, and examines the **gaps between that intent and the realities of their implementation**. The paper follows with an **investigation of benefits and, more importantly, an approach to closing those gaps** and expanding the usefulness of reporting efforts related to various metrics that already are or should be observed.

The long-term goal is to aid in developing reports and visualizations that both **meet Federal agencies' compliance obligations and offer real insights** to better inform decision-making and enable

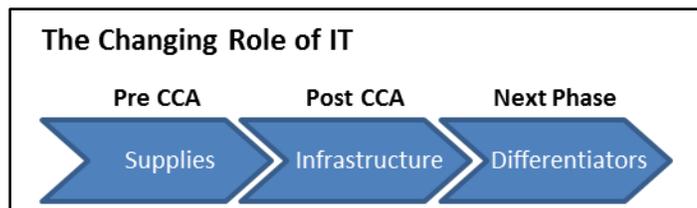
transformation efforts. Agencies should be able to **capitalize on the institutional knowledge produced by these processes rather than working parallel to them.**

Clinger-Cohen Act¹ (1996, Congress) & OMB Circular A-130² (rev. 2000, OMB)

The Clinger-Cohen Act (CCA), formerly known as the Information Technology Management Reform Act of 1996, was part of the National Defense Authorization Act of 1996. Effective August 1996, it was intended to improve the way the Federal government acquired and managed information resources. Among other things, it required agencies to create the CIO position and treat their IT shops as if they were profit-seeking businesses making capital investments rather than simple overhead expenses. It also laid the groundwork for current CPIC processes, and led agencies to attempt to align IT spending with agency goals. Many of Clinger-Cohen’s acquisitions guidance may seem obvious by today’s standards, as similar approaches were embraced by the private sector long ago. **Clinger-Cohen directs agencies to acquire technology as part of a wider framework with longer-term vision, rather than permitting a sort of Wild West environment scattered with disparate solutions that struggle to work together.**

In 2000, the Office of Management and Budget (OMB) updated OMB Circular A-130 – Management of Federal Resources (OMB A-130) to guide the implementation of the CCA. It consisted of both old and new direction from OMB, as it also incorporated several older OMB memos which were rescinded once made redundant.

For agencies, the most significant developments are the implementation of the CPIC process, the introduction of the Agency CIO, and the teeth given to OMB for defunding underperforming programs. In 2005, Sponsor William Clinger had acknowledged small-scale successes, but observed, “... we’re not there yet” on large-scale projects.³ **As FY 2013 approaches, improvements have been made, but many of the same challenges remain.** While the CCA moved the government from buying IT as it might office supplies to procuring it like any other capital investment, **the government is still arguably transitioning IT’s role into that of a true business enabler that drives agencies’ evolution beyond simply supporting their existing structures.**



¹ <http://www.au.af.mil/au/awc/awcgate/sp/s1124.htm> 02/1996

² http://www.whitehouse.gov/omb/circulars_a130_a130trans4 2000

³ <http://fcw.com/articles/2005/06/20/a-decade-ago-clingercohen-brought-reforms.aspx> 06/2005

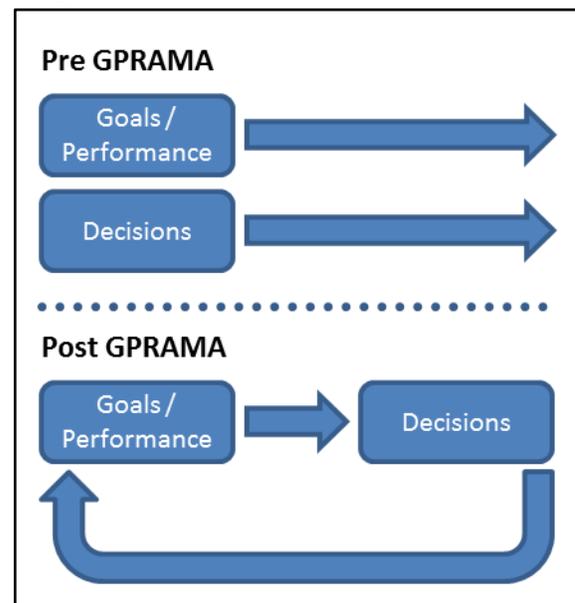
Government Performance and Results Act⁴ (1993, Congress) & OMB Circular A-11⁵ (rev. 2011, OMB)

The Government Performance and Results Act (GPRA) was passed by Congress in 1993. It was intended to induce agencies to improve their project management practices by requiring them to produce 5-year strategic plans outlining the agencies' mission, goals, and operational areas; annual performance plans outlining fiscal-year goals, approaches, and methods to assess performance; and annual performance reports illustrating the agencies' progress, successes, and failures in meeting their annual goals. Over the years, OMB A-11's guidance has become standard practice, although some agencies have been more effective than others in developing clear, actionable strategy items and in meeting their goals.

While the GPRA provided a solid foundation for performance-based accountability in government, its provisions were arguably too open-ended for its own good and left agencies free to peg performance to goals that were difficult to quantify. According to a 2011 GAO report,⁶ GPRA had seen some success, **but the performance information it yielded was not driving decision making to extent intended. GPRA plans and reports were being produced in silos, without regard for interagency cooperation, and OMB had yet to provide a full view of government-wide performance.**

GPRA Modernization Act⁷ (2011, Congress)

The GPRA was updated in January 2011, when the GPRA Modernization Act of 2010 (GPRAMA) was signed into law. As outlined by the GAO that March,⁶ GPRAMA "creates a new government-wide planning and reporting framework, amends agency level planning and reporting requirements, requires leadership involvement and accountability, requires the identification of key performance management skills and competencies, [and] creates an annual process to reduce duplicative and outdated planning and reporting." GPRAMA also designates the deputy head of each agency as its respective Chief Operating Officer (COO), and establishes a new Performance Improvement Officer (PIO) position and interagency Performance Improvement Council. According to



Jeffrey Zients, Federal Chief Performance Officer and OMB's Deputy Director for Management, GPRAMA's approach to performance management has already facilitated marked improvement at various agencies, even with respect to interagency cooperation on common goals (e.g. VA and HUD

⁴ <http://www.whitehouse.gov/omb/mgmt-gpra/index-gpra> 1993

⁵ http://www.whitehouse.gov/omb/circulars_a11_current_year_a11_toc 2011

⁶ <http://www.slideshare.net/JMKamensky/gao-gpra-modernization-act-overview> 03/2011

⁷ <http://www.gpo.gov/fdsys/pkg/BILLS-111hr2142enr/pdf/BILLS-111hr2142enr.pdf> 01/2010

working together to reduce veteran homelessness).⁸ A more complete comparison of the GPRA and GPRAMA was compiled to accompany the bill and is available from the White House website.⁹

While GPRAMA offers significant advantages over GPRA, it also poses challenges that may inadvertently undermine the usefulness of some of its protocols if not mitigated or avoided. A simple glance over the performance data from itdashboard.gov shows that **performance and requirements are inconsistently reported by different agencies and bureaus**, and these cannot always be compared directly to each other. The scopes, scales, levels of granularity, and even nature of the requirements can vary greatly between organizations. Considering that many reporting requirements are intended for Congress' benefit, this also implies that **Federal agencies will be liable for effectively communicating and justifying their activities and progress**; regardless of whether there is an official audit, managing crosscutting interagency activities may be easier said than done, especially if the partner agencies are inconsistent in their presentation of the facts. In the same vein, though, **GPRAMA's requirements lend themselves well to a line-of-sight approach** to maximizing value from both IT and strategy or operations. Specifically, by establishing liability for setting, meeting, and tracking goals, it should give teeth to executives faced with the trend that only what is codified tends to be consistently prioritized.

25 Point Implementation Plan to Reform Federal Information Technology Management (2010, OMB)

Published in December 2010 by then-Federal CIO Vivek Kundra, the 25 Point Implementation Plan to Reform Federal Information Technology Management attempts to clear the obstacles that have historically prevented the Federal government from adopting IT best practices and leveraging their benefits to provide more efficient and effective government. The Plan divides this into two sections: achieving operational efficiency (via cloud solutions and shared services) and effectively managing large-scale IT programs (via structural improvements within the government). In addition to providing an overall vision for Federal IT, the Plan provides and assigns ownership of action items to be accomplished within 1-6, 6-12, or 12-18 months. These are intended to set goals and expectations, as well as develop a baseline of capabilities for agencies around which to build or evolve the rest of their IT programs.

While ownership of many items is split up among several government organizations, Agencies and Agency CIOs are responsible for ten of the twenty six at the local level. All twenty six action items have already come due; however, many of them seem to guide ongoing operations or refine approaches, rather than request one-and-done chores. Furthermore, they are largely non-partisan mandates and goals, based instead upon scientific advances and industry changes; in other words, they will likely have more staying power than many other administrative initiatives, and any debate will likely center upon feasibility or execution rather than philosophy or expediency.

⁸ <http://www.whitehouse.gov/sites/default/files/omb/performance/Zients-Opening-Statement-to-Senate-Committee-05102011.pdf> 05/2011

⁹ <http://www.whitehouse.gov/sites/default/files/omb/performance/title-5.pdf> 2011

A good partner or in-house team should be able to **grasp the 25 points' interconnectedness rather than seeing them only as individual challenges**, and should be able to **apply both IT and broader business approaches to either execute them** if the agency is behind schedule, **or maintain or improve on them** if they are up to speed. For example, an efficient operations team should be able to use agile methodologies to ensure that each iteration or development phase yields a usable product. The agency can continue work if the project is on track, or modify or cancel it if it is not, and (optionally) still maintain the last useful version or switch teams. This also builds in rebaselining time that can accommodate fluctuations in budget or other resources. In terms of enterprise management, Veterans Affairs CIO Roger Baker has found success approaching the Office of Information & Technology as if it were simply a \$3 billion IT company with one major client¹⁰:

“That is why I led in with the fact that it’s a lot like running a \$3 billion corporation — because if you run it that way then you will make the same kind of decisions here that you would make in the private sector.”

By keeping the perspective of an IT *executive*, even if one hails from the software development business as Baker does, IT decision makers are better able to exploit IT without creating or enabling fiefdoms that would self-perpetuate beyond their useful lifespans.

Shared First¹¹ (2012, EOP memo)

Shared First was outlined in the aforementioned 25 Point Plan, and is one of several initiatives seeking to improve ROI across agency IT portfolios, close productivity gaps, and improve communication with stakeholders. It is designed to enable agencies to innovate with less as budgets tighten but requirements continue to mount. In contrast with the traditional model of an agency commissioning an IT solution for a group who requests it, the shared service model promoted here would realign government agencies as customers consuming a service, commercial organizations or government agencies as suppliers providing the service, and (typically) a Program Management Office as the managing partner overseeing the service and managing relationships among the partner groups. This model is intended to foster the development of reusable services that can be leveraged by various organizations, rather than forcing each agency to reinvent the solution whenever a new resource is needed.

Agencies implementing solutions based on the Shared First approach should expect mixed reviews and varying levels of enthusiasm for the process. Even with strong support from senior executives, agencies should **expect some cultural pushback from those who consider local control to be more valuable than cutting edge resources**. This can be partly due to concerns that a given program may be disadvantaged by shared services, or that the burdens of red tape would outweigh the benefits of a lighter footprint

¹⁰ <http://www.washingtonexec.com/2011/08/interview-with-roger-baker-cio-of-veterans-affairs-modernizing-government/> 08/2011

¹¹ https://cio.gov/wp-content/uploads/downloads/2012/09/Shared_Services_Strategy.pdf 05/2012

and reduced inertia, or concern that a favorite project could be made redundant and its stakeholders deprioritized.

A good team or partner in this approach would offer – in addition to the requisite technical and administrative skills – strong competencies in change management, communication, and training. The technical challenges are significant, reconciling existing solutions with the shared model, and integrating or reusing future components where possible. As the Federal CIO documentation for the strategy states, CIOs can first look to convert their commodity IT for relatively quick progress and visible benefits. However, the riskiest areas of the approach are typically the ones complicated by the human element – feeling threatened, being skeptical of new strategies, being wary of reorganization, doubting the adoption strategy, etc. – so these resources should be able to **convey and guide a shift in attitude to focus on exploiting technology rather than just managing it.**

These are things that could be achieved by government groups in the long term, but may be infeasible without outside assistance for agencies lagging behind the 2012 or 2013 migration milestones. Similarly, planning and implementation teams should be familiar with the related initiatives such as PortfolioStat, Future First Architecture, Future-Ready Digital Government, Cloud First, Datacenter Consolidation, and FSSI, among others. **Also important is the ability to leverage prior experience and lessons learned to know when shared services are *not* better,** lest the government inadvertently forgoes a sufficient solution in favor of one that may have unexpectedly proved inefficient in a prior implementation.

Federal Data Center Consolidation Initiative¹² (2010, EOP memo), Cloud First¹³ (strategy, EOP), and FedRAMP¹⁴ (2011, EOP memo)

The Federal Data Center Consolidation Initiative (FDCCI) kicked off in February 2010, seeking to address the runaway growth in investment in data centers by the Federal government.¹² Data centers under management had nearly tripled from 432 to over 1,100 between 1998 and 2009¹⁵, and that count nearly doubled to 2,094 mid-2010, as more were discovered and definitions were refined;¹⁶ however, utilization rates were unreasonably low and resources were seldom leveraged across agencies, leaving many of them without much to show for it. In addition to wasting investment resources, these data centers required significant operating resources and collectively consumed a significant amount of electricity (over 6 billion kWh in 2006 – at 60 Watts each, over 1 *million* 17-inch iMacs from the same year could be run continuously on that amount of energy).

Running a data center may be more efficient than acquiring similar resources piecemeal, but only if the data center is *used*; ownership requires operations & maintenance commitments even for the excess capacity. According to Joe Powers of the US Forest Service, which had shut down 227 legacy servers by

¹² https://cio.gov/wp-content/uploads/downloads/2012/09/Federal_Data_Center_Consolidation_Initiative_02-26-2010.pdf 02/2010

¹³ <https://cio.gov/wp-content/uploads/downloads/2012/09/Federal-Cloud-Computing-Strategy.pdf> 02/2011

¹⁴ <https://cio.gov/wp-content/uploads/2012/09/fedrampmemo.pdf> 12/2011

¹⁵ <http://www.cio.gov/documents/State-of-the-Federal-Datacenter-Consolidation-Initiative-Report.pdf> 10/2010

¹⁶ <http://gcn.com/articles/2010/10/15/federal-data-centers-undercounted-initially.aspx> 10/2010

2011 and aims for 311 more by the end of calendar 2012, “Twenty kilowatts hours per day [are] saved per server. So in perspective, that’s enough energy to run about 13 refrigerators a day. You can also save 950-kilowatt hours per day in AC cost for trying to cool the room that houses the servers. And that would be equivalent to cooling 11 homes a day.”¹⁷

Data.gov currently (as of 08/2012) names 318 datacenters already closed and 681 total datacenters to be closed by the end of Fiscal 2013. This includes facilities less than 500 square feet.¹⁸

The **Cloud First** initiative, outlined in 2011 by then-Federal CIO Vivek Kundra, requires agencies to evaluate viable cloud options before spending on new investments. While this is not an explicit mandate, it has been designated the default approach, and if nothing else requires due diligence by organizations seeking new IT resources. Several early adopters have seen success with this approach, including HHS, GSA, DoD, RATB, and USDA; they have captured the gains in efficiency, agility, and ease of innovation that well-run cloud resources can provide. Agencies seeking or investigating cloud resources should be aware of the various types of clouds (private, public, community, and hybrid, which offer varying degrees of access), and various types of cloud services (software, platform, and infrastructure), as well as the benefits of the combinations of them.

A good cloud team or contractor should be able to differentiate and advise on the best implementation approach for the agency’s goals. The “best” approach may differ for two agencies with similar needs but different parent organizations, based on other constraints, the bureaucratic environment, or other ongoing efforts. **Those responsible for cloud efforts should be aware of these differences, as well as how an implementation may be effected by other new and evolving IT guidance or mandates.** This part is very important, as the team will need to navigate incomplete and potentially even conflicting guidance from OMB and legacy policy from Congress that inadvertently prevents one from executing Cloud First efficiently. Cloud services offer significant flexibility on requirements and elastic capacity, but due to bureaucratic considerations the best solution may still sometimes be suboptimal. Indeed, InfoWorld declared it “lifeless” in October 2011 due to organizational challenges.¹⁹ Some practitioners believe appointing a “cloud czar” might resolve this,²⁰ but the Cloud First initiative is explicitly defined as guidance, and not something to be enforced the same way an executive order would. Cloud First is also strongly tied to Shared First and Future First considerations.

In the near future, GSA’s **FedRAMP** program will likely begin granting provisional ATOs (authority to operate) to low- and moderate-level FISMA systems. These ATOs will essentially serve as a running start for full authority to operate for cloud-based systems, which agencies will still need to provide. Ideally, FedRAMP will shorten the turnaround time between identifying needs and implementing appropriate solutions to maximize the useful life of a given service.

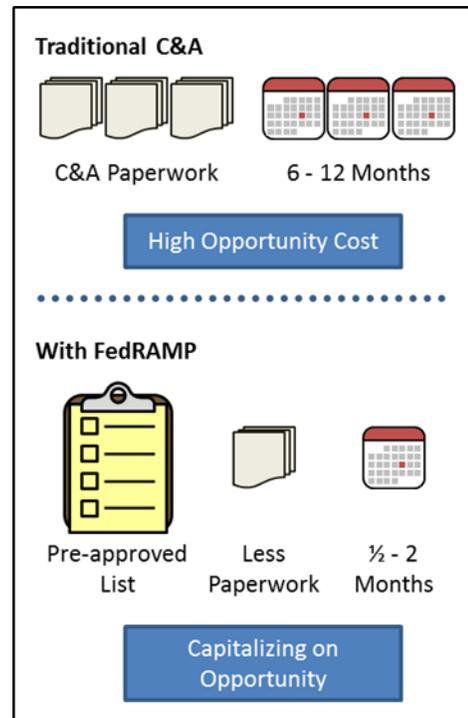
¹⁷ <http://www.fs.fed.us/sustainableoperations/documents/openmic2011may.doc> 05/2011

¹⁸ <https://explore.data.gov/Federal-Government-Finances-and-Employment/Federal-Data-Center-Consolidation-Initiative-FDCCI/d5wm-4c37?> [rolling updates]

¹⁹ <http://www.infoworld.com/d/cloud-computing/how-revive-the-feds-lifeless-cloud-first-policy-177056> 10/2011

²⁰ http://www.washingtonpost.com/business/capitalbusiness/the-government-needs-a-cloud-first-czar/2012/06/15/gJQAKaghjV_story.html 06/2012

Together, these three both represent and enable major progress toward the government **exploiting IT for the value it can provide, rather than just the requirements and constraints it can place** on an agency or the asset value it represents. Procurement and development teams alike should be on board with what immixGroup’s Steve Charles describes as “*shifting [acquisitions] from CapEx to OpEx... paying for the output of those things as operational expenses.*”²¹ **Vendors and service providers may see their roles change as a result of this.** While traditional arrangements will surely endure in many cases, the evolution of the supply chain may see some integrators and consultants (who were perhaps displaced when COTS gained favor at the expense of stovepipe solutions) become the service managers for agency clients. This may in turn precipitate preference for agencies to acquire capacity or time with services rather than buying products outright from vendors.



TechStat²² (2010, EOP)

First launched in early 2010, the TechStat model is intended to help agencies reform their Investment Review Boards by providing a toolkit for better-informed decision making. **TechStat sessions are interventions, not assessments.** Specifically, *a TechStat is a face-to-face, evidence-based accountability review of an IT investment; it enables the Federal Government to intervene to turn around, halt or terminate IT projects that are failing or are not producing results for the American people.* Since the governance model was rolled out in August 2011, all required agencies have completed at least one agency-led TechStat session, and continue to hold sessions and report to OMB on an ongoing basis. The IT Governance and TechStat Subcommittee facilitates sharing of best practices among TechStat groups. These sessions are intended to be used only when executive level influence is needed – not on a business-as-usual basis – and are used to determine *what to do* with an already-identified underperforming investment.²³

Flexibility is expected, as agencies can mold these to meet their organizational needs; this gives agencies latitude to work within their own contexts, but also adds a degree of complexity, since incorrect, incomplete, or irrelevant information could mislead decision makers into taking harmful action instead of remedying investments. A good TechStat workgroup or partner should be able to **identify and quantify data and information relevant to this process.** Some of these resources may be the same SMEs and executives who carry out the TechStat sessions and resulting action plans, while others may

²¹ <http://washingtontechnology.com/articles/2012/09/11/insights-charles-market-budgets.aspx> 09/2012

²² <https://cio.gov/wp-content/uploads/downloads/2012/09/techstatreport.pdf> 12/2011

²³ http://www.youtube-nocookie.com/v/hBgnwZTcooM?fs=1&hl=en_US&rel=0 (TechStat training video)

be technical or management **resources that can offer an outside perspective**. This includes understanding the following:

- **WHAT** data and information are important, and what influences those items have across the investment, portfolio, and agency
- **WHY** these items are indicative of the investment's health, and its likely reaction to certain types of intervention
- **HOW** these items are related and how acting on one or more can impact the investment or its parent portfolio

Also worth considering is the mounting support from both CIOs and contractor partners to **include non-government players in these sessions**. Arguments range from acknowledgement that contractors are responsible for 99% of operations in some programs, to concern that blame for underperforming investments could too easily be pinned on contractors. Regardless of specific motivations, non-government representatives may soon find their way into TechStat in operational or audit roles. Additionally, the TechStat process provided by OMB provides a solid baseline assessment of programs and projects, but even publicly available **data from other sources can augment these resources**. For example, **by harvesting data and experimenting with visualizations** to offer insight into some or all comparable engagements across other agencies, other FEA business or service segments, etc., TechStat teams may **uncover common challenges or systemic complications that may only be obvious when seen in aggregate with a larger sample size or similar context**. These sorts of off-label analyses could prove useful in drawing attention or sparking conversations about previously overlooked areas of concern.

PortfolioStat (2012, OMB)

While Clinger-Cohen paved the way for more controls and oversight of IT investments, the Federal enterprise features excessive numbers of stovepiped, low-priority solutions that fail to offer potential for reuse or expansion. PortfolioStat is a program aiming to “end investment in low priority and duplicative investment in IT” so the government can better innovate with less. It serves to assess the maturity of agencies’ IT portfolio management processes, make decisions on eliminating duplication, augment current CIO-led CPIC processes, and move to shared solutions to maximize returns on IT investments across the portfolio. It supports efforts such as the Administration’s Campaign to Cut Waste, and follows the Shared First and Future First initiatives. PortfolioStat is relevant to IT practices, financial and capital management, and acquisition processes; it is aimed at CIOs, CFOs, and CAOs (Chief Acquisition Officers), requiring them to provide appropriate data and analysis, and contributing to its five-phase process and review sessions.

While the PortfolioStat approach itself is fairly clearly defined, the required data gathering and performance management capacities may prove more challenging, particularly when factoring in inventorying tasks. The success of PortfolioStat is completely dependent on the integrity of the supporting data and information. **If these efforts would strain existing resources that may already be stretched thin, a team with a strong CPIC, performance management, and enterprise architecture**

background could be assembled or contracted to assist. Such a team should be able to leverage its knowledge and experience to track down and capture the relevant information from these overlapping areas, and should be able to add further value by serving as another analyst, offering its own insight and expertise on some of the more obscure relationships and influences between several types of information and assets or investments. They may observe useful indicators that have been uncovered through work with other agencies or private-sector clients, and are able to leverage this for the government's benefit as well. **Furthermore, the aforementioned multi-source approach to supporting TechStat could be applied to PortfolioStat.** Since portfolio metrics are not random and their projects or programs are (hopefully) not randomly allocated, awareness of characteristics of similar portfolios covering similar lines of business across the Federal government may be useful; if nothing else, it helps to understand whether a given portfolio is fairly run-of-the-mill, poorly organized, affected by strange influences, or is an outlier for some other deducible reason.

21st Century Digital Government

In May 2012, the White House issued the Digital Government directive and strategy, which is intended to enable and foster the efforts of early adopters of cutting-edge technology throughout the Federal government. Whereas the CCA attempted to resolve the shortcomings of earlier IT procurement and management guidance, the Digital Government directive seeks to proactively keep the government up-to-date in supporting new technologies, as well as positioning it to support emerging technologies without the setbacks that it experienced in moving from paper to computerized and web-based resources. A few of the more notable measures, as outlined in the directive:

- **Making government services more information-centric by decoupling data and presentation:** this enables people to reuse government data and other published content by referencing or downloading information from the source, rather than scouring web pages and copying information manually. It also allows for changes to web pages' style and organization without needing to recreate content each time leading to more value gained with less research or administration time required. **Liberating data for reuse in this way continues to support many of the data-oriented approaches for tackling the other challenges above.**
- **Pursuing shared platforms to improve service delivery and procurement efficiency:** by consolidating or at least *streamlining channels for content creation*, or merging bureaus' procurement contracts into *agency-level blanket purchase agreements*, the government can more easily and efficiently manage and pay for services it provides or procures. Additionally, since no single executive office currently has authority over who creates what web content and when or how, **the shared platform provision should facilitate higher quality and a more consistent user experience** as developers begin to launch similarly formatted information in similarly architected mediums.
- **Take a more customer-centric approach to government services:** by building on the previous two provisions and de-emphasizing the bureaucracy by hiding organizational complexity from the end user to the extent possible, the government should be able to more effectively allow citizens and other stakeholders to focus on what they are trying to accomplish at any given

time, without necessarily needing to know the roster of all the organizations required to get it done.

If the CCA sought to catch the government up to the IT industry, the Digital Government directive seeks to keep its services ahead of the curve. Stakeholders in nearly any context should be aware of these developments as they are implemented and refined, as they **may provide more information and data resources at no extra cost or significant burden** over the long term (i.e. research effort) for those who would put them to good use.

Modular Development & Contracting

The nature of Federal contracting in years past has enabled, if not encouraged, a tolerance for large, long-term projects with significant cost and schedule variances. The Administration released guidance²⁴ in June 2012 to encourage agencies to “shift away from the bloated, multi-year projects” that they have historically struggled with. By breaking investments down into “more manageable chunks,” as the guidance phrases it, and holding contractors responsible for value-adding *deliverables* rather than just *progress* toward a long-term goal, the government will be able to escape the entrapments that sometimes come with depending on large, underperforming vendors, and will make large engagements available to smaller-scale specialists who could handle modules but would be boxed out of the wider investment by logistical limitations.

In terms of execution, *“all agencies [are asked] to assess and adjust their capital planning and investment control and acquisition process to more explicitly incorporate modular approaches.”*²⁵ While the Federal government likely has various qualified resources at its disposal, gathering input from agile developers may prove invaluable to getting to value on this front. While simply changing methodologies is (a) easier said than done, and (b) not a cure-all for monolithic approaches, the government can leverage agile shops and even their clients for lessons learned and best practices, avoiding growing pains and better understanding the practical opportunities and constraints of moving to delivering value in *tangible installments*.

In our experience, modular development allows us to better gauge progress and assess outcomes by forcing teams to timebox phases and uncover flaws that would prevent the next phase from moving forward. Teams are less likely to be able to put some fixes on the back burner and later find out their latest efforts actually depend on those old shortcuts or quick-and-dirty patches. This works well as long as people understand the need to develop around working **features** and are willing to accept occasional backtracking to incorporate requirements uncovered after the previous phase was completed.

Agile methodology also tends to impact documentation and reporting efforts. As Rob Vietmeyer, cloud computing portfolio manager for the Defense Department, puts it, *“We take our concepts of production and engineering from the 1970s and speculate on what value we want to have at this point of time and*

²⁴ <http://www.whitehouse.gov/sites/default/files/omb/procurement/guidance/modular-approaches-for-information-technology.pdf> 06/2012

²⁵ <http://www.federalnewsradio.com/?nid=517&sid=2905314> 06/2012

measure our progress against what we guessed. It just doesn't work. Earned Value Management has got to be thrown out. It changes. If you are fielding to production every two weeks, literally going through every step necessary to field a new system to production, system upgrades and enhancements every two weeks, the level of documentation, the level of conversation you are having is completely different than if you are planning for release every six months, 12 months and 18 months. To do this you really have to automate."²⁶ Reporting and documentation do tend to be lighter on agile projects, but does this mean the government must completely abandon EVM if it is to adopt effective modular approaches? Probably not. On the contrary, modular approaches allow teams to accommodate evolving requirements as they better understand their projects over time, emphasizes quality (necessary to close out a phase), and allow stakeholders to continue to use EVM to **assess working installments (not non-functioning works in progress) for value earned**. In other words, a good project team or partner that can maintain a healthy marriage between agile/modular and Earned Value Management that allows stakeholders to leverage both agile's operational effectiveness and EVM's administrative accountability.

Of all the major technology and acquisitions initiatives covered here, this may be the most significant administrative guidance since the passage of CCA, as its success would signal a major change in the way IT efforts are viewed and managed internally.

Future First & FY 2013 Budget Concerns

In October 2011, Steve VanRoekel delivered a speech at the Palo Alto Research Center (PARC) outlining a vision for a lean, agile approach to Federal IT. Highlighting some of the ways government has sponsored innovation in the past, and noting that many of the world's most successful companies were founded in difficult economic times, he argues that the current fiscal environment should enable more innovation, not less. This can be achieved by seizing the same opportunities that startup businesses are able to capitalize on under similar circumstances: in general, that such market and fiscal environments lead to underutilization of resources that then become available for exploitation. For anyone planning projects or investments for or with the government, this should amount to free advice on how to assess their value propositions to government enterprises. His lean startup approach has five major tenets²⁷:

- **Do more with less, maximizing ROI on IT investments.** The compound annual growth rate for FY09-FY13 IT budgets is projected to be approximately -0.004%, a significant drop from the 7.09% IT outfits maintained from FY01-FY09. To continue to improve the value-add for IT investments, the government and/or its contractors must continue to optimize what they need and cut what they don't.
- **Close the productivity gap between the public and private sectors by modernizing the Federal government's approaches and workforce.** More than simply reforming and updating the acquisitions process, VanRoekel argues for a mobile- and remote-friendly workforce that would be location-agnostic in the event of an emergency. This entails flexible schedules and telework

²⁶ <http://www.federalnewsradio.com/?nid=536&sid=2595381> 10/2011

²⁷ http://www.whitehouse.gov/sites/default/files/svr_parc_speech_final_0.pdf 11/2011

arrangements, device management, and a commitment to digital information over paper versions.

- **Improve service to the citizen by lowering barriers to the government.** This entails working on two fronts to reduce the burden of navigating Federal bureaucracies on small businesses, and to be more open with the citizenry about the workings of the government. Both of these are major changes to the organization and availability of data, and represent a real opportunity to reduce the distance between the government and its customers.
- **Build on top of a sound foundation of cybersecurity moving forward.** This is as much of a management issue as a technical goal; whether an organization has systemic policy flaws, human assets that are undertrained in vulnerability prevention, or even simply has large vendors whose systems are insufficiently interoperable without risky configurations or data exposure, it is important to mitigate security risks with awareness, cooperation, and sound architecture. As David Greer of the University of Tulsa put it, there is a strong need to weigh reasonability of a feature against its convenience, as each new capability also represents a potential attack vector.²⁸ Horace Blackman (VA) and Simon Szykman (Commerce) also emphasize the concept of securing the information resources more than just the hardware that is used to access them.²⁸ Blackman suggests that this approach changed for the VA when a laptop was lost several years ago, exposing 35 million veterans' personal health information; the laptop itself was far less important than the information that was compromised. Szykman argues that between this and the growing emphasis on mobility (not just portability), system perimeters and controls are becoming less clear and new approaches may be required to support them.
- **Change the way we invest, to “embrace modular development, build on open standards, and run our projects in lean startup mode,” and “work with Congress to change our approach to funding technology.”** More of an overarching theme than a single action item, this last point highlights a change in culture that is likely required in order to fully realize the potential of the latest developments in technology and management approaches. Furthermore, if funding continues to be awarded and project/program progress continues to be assessed as they have been in years past, many of the tenets of VanRoekel and Kundra's respective visions for IT could be avoided for bureaucratic reasons, as they could lead to progress patterns that trigger false alarms for some projects and programs, while others with real problems go undetected until too late.

To put these into context, it can be helpful to keep a visual aid available for quick reference. Even for users who are intimately familiar with the subject matter, this can help to keep focused and not overlook some things when concentrating on others – much like surgeons who post a to-do list despite years of training and experience.²⁹

²⁸ <http://www.federalnewsradio.com/?nid=86&sid=2891937> 06/2012

²⁹ <http://www.neim.org/doi/full/10.1056/NEJMsa0810119> 01/2009

		Goals					
		Foster Inter-Agency Collaboration	Foster Intra-Agency Collaboration	Maximize ROI of Federal IT	Close Public-Private Productivity Gap	Improve Business & Citizen Interaction	Recommit to Cybersecurity
Compliance Items							
25 Point Plan	Complete detailed implementation plans to consolidate 800 data centers by 2015		✓	✓	✓		
	Create a government-wide marketplace for data center availability	✓	✓	✓	✓		✓
	Shift to a "Cloud First" policy		✓	✓			
	Stand-up contract vehicles for secure IaaS solutions		✓	✓	✓		
	Stand-up contract vehicles for "commodity" services		✓	✓	✓		
	Develop a strategy for shared services	✓	✓	✓			
	Design a formal IT program management career path				✓		
	Scale IT program management career path				✓		
	Require Integrated Program Teams		✓				
	Launch a best practices collaboration platform				✓		
	Launch technology fellows program				✓		
	Enable IT program manager mobility across government and industry				✓		
	Design and develop cadre of specialized IT acquisition professionals				✓		
	Identify IT acquisition best practices and adopt government-wide				✓		
	Issue contracting guidance and templates to support modular development			✓			
	Reduce barriers to entry for small innovative technology companies				✓	✓	
	Work with Congress to create IT budget models that align with modular development			✓			
	Develop supporting materials and guidance for flexible IT budget models			✓			
	Work with Congress to scale flexible IT budget models more broadly			✓			
	Work with Congress to consolidate Commodity IT spending under Agency CIO			✓			
	Reform and strengthen Investment Review Boards			✓			
	Redefine role of Agency CIOs and Federal CIO Council	✓			✓	✓	
	Rollout "TechStat" model at bureau-level		✓	✓	✓		
	Launch "myth-busters" education campaign		✓			✓	
	Launch an interactive platform for pre-RFP agency-industry collaboration					✓	
	GPRAMA		✓	✓			
	FISMA						✓
	E-Gov	✓	✓	✓	✓	✓	
Shared First		✓	✓				
FDCCI			✓				
TechStat		✓	✓	✓			
PortfolioStat			✓	✓			
21st Century Digital Government					✓		
Modular Development & Contracting		✓	✓				
Future First			✓				
FedRamp			✓		✓		
Cloud First		✓	✓			✓	

Decision Support: Goals and Challenges

The goal of any decision support effort should be to collect good data, process it into useful information, and interpret that to gain actionable knowledge. **However, requirements from above are often formulated with decision support for OMB or Congress in mind, not the local operation, so focusing exclusively on compliance can leave agencies with insufficient information resources to meet their own needs.** This includes both course corrections and improvements or advancement. Although staff or contractors may struggle to procure other useful data unless it is already being produced in the course of another compliance effort, individual agencies should embrace the development of their own, possibly more innovative decision support efforts, even if some effort is required to maintain good data. **The key to a practical, value-adding reporting effort is to focus on the decision(s) to be supported, rather than collecting every datum imaginable and later figuring out what to do with it.** Identifying what the agency needs to know, why it needs to know it, and how it can best understand or leverage it is important for outlining the appropriate context for the effort. It also goes a long way toward preventing misleading analysis.

With this perspective established, agencies can move to the more concrete pieces of the puzzle with less risk of scope creep: what data is required, what can be repurposed from existing efforts, what can be calculated or deduced, what other indicators would be useful to see, **and how they can make this happen.**

Prior to implementation, planning and design elements should pass a handful of sanity and practicality tests:

- **Ensuring data integrity:** Even if everything works well, will it be feasible to consistently identify, capture, and maintain relevant information on an ongoing basis? If the organization still runs in silos, are there opportunities for cooperation with other groups? Ideally, **the organization should bite off only what it can chew** (and leverage *success and real added value* to justify expansion), and should simply **capitalize on existing work or rediscover overlooked information resources** where possible. Getting the back of the house in order is a process, not a switch.
- **Choosing the right measures and dimensions:** have we chosen important measures and framed them in the appropriate context? This planning step is important for ensuring that the end product is both insightful and accurate. Through poor planning or poor documentation it is possible to mistake correlation for causality, or to misjudge how influential one thing is on another. The visualizations should be framed in a way that **clearly demonstrates the relationship in question** (or lack thereof), and should **strike a balance between “right” and “easy”** in order to be useful. This includes the information and the format of presentation for a given audience; for example, an accountant, project manager, and system analyst may be accustomed to seeing similar information presented in three different ways, and reusing a single standardized view might lose value to all three of them.

- **Practicality:** does this content clearly drive a decision or contribute to something that does? **The intent of the slide should be obvious to the viewer**, and anything that should be used in combination should be readily accessible if not simultaneously viewable. Even good information can go to waste if it is not converted into **actionable knowledge**. For example, some indicators are only insightful in conjunction with others, and some relationships or trends can be obfuscated if they are not displayed in certain ways. **A good team should know the difference and be able to work out a clear, concise, and actionable display or dashboard.**

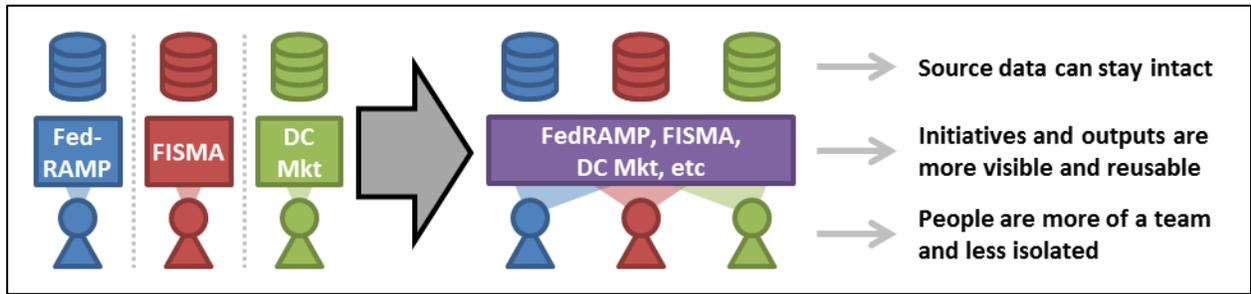
The Temptation of Using a Silo Approach

It can be tempting to use a silo approach to pursue a methodical, divide-and-conquer workflow for responding to compliance items. It is easy to task an individual or small group with developing built-to-order solutions as compliance regulations come out, and for that person or group to become an expert on each complex regulation. However, there are inherent pitfalls in doing so, which make transformation efforts difficult and increase the cost of compliance. This strategy **assumes** that there will be good knowledge transfer and change management when each wave of compliance changes is encountered. It also **requires** that there is good communication between groups that need to support the compliance effort. The silo approach also **depends on** the flexibility of all involved, as there is a great deal of logistics involved in ensuring that conflicting priorities are addressed and that staff from different departments are able to work effectively together to achieve the common goal.

In reality, these factors rarely all intersect, and the resulting effort ultimately fails. The intent of the compliance effort is generally greater than each contribution by disparate groups; **it can be easy to miss the benefits while still incurring the cost** without a strong guiding force to ensure that all this institutional knowledge is synthesized.

In some cases, there are budget considerations, where to achieve transformational value one group may need to financially support the compliance effort of another group. This results in **complex interdependencies that can hinder transformation**. Over time, overextended teams may overlook valuable data since they are tasked with the compliance effort and **cannot be expected to sift through the information requirements that would be of transformational value to other groups**.

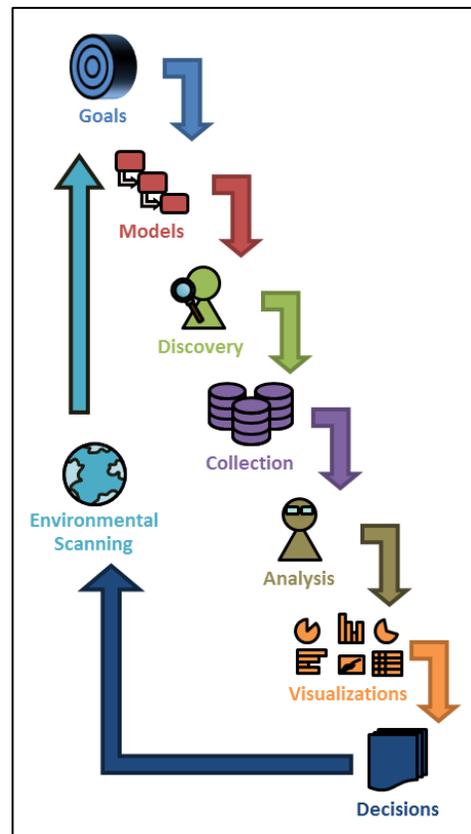
In sum, the silo approach does not often lend itself to driving performance, because it inadvertently facilitates fiefdoms and discourages collaboration, absent a strong counterforce to these tendencies. Too much information goes unrecognized or undervalued by those who have no reason to think otherwise. **If compliance items are to drive performance, they must be leveraged by the organization to better understand the big picture or facilitate transformation objectives.**



A Value-Added Holistic Approach: Challenges & Opportunities for Federal IT

Instead, agencies would be well-served to pursue a holistic approach to compliance and transformation. This approach would **ingrain compliance-oriented activities into the execution of normal planning and reporting efforts, improving both the efficiency and value of these tasks, and also making them more accessible for augmentation.** It is also important to maintain an appropriate organizational owner for these items, one that is familiar with the work and understands the value of its implementation beyond checking it off of a to-do list. Qualifiers for organizational ownership include familiarity with the data required, ability to garner executive buy-in, and capabilities required for execution. Once there is an understanding of where the compliance activity fits into the big picture of the organization, it is time to find a home for the requirement within the organization.

To accommodate these regulations and mandates in a way that adds value for the organization and truly enables better acquisition and management of IT, agencies would be well-served to **first ensure that they fully understand their current IT portfolios and operating models.** By implementing a repository of this nature, they are able to see an accurate and complete high-level picture of their as-is state for short-term reference, and they provide themselves with a strong foundation set of data to build on quantitatively, qualitatively, and associatively. With the right data and visualizations, decision makers are able to **quickly see the relationships and dependencies between various assets, organizations, and processes, as well as the projected impacts of changes to one or more areas of the enterprise.** Dashboards to this end are highly relevant to lifecycle planning, incident response, new technology procurement, and process reengineering. **A good in-house team or consulting partner** understands what drives both the business and technical sides of this coin and can provide insights into both how to implement the resource and how to best leverage and customize it for the agency’s specific needs. This **allows the agency to stay focused on its strategic**



mission and see where its IT assets and business units are in opposition or where they can better collaborate. By extension, the wider network of relationships also keeps decision makers informed enough to determine which of the two should be targets for change: is new IT needed to support business, or are outdated business processes impeding the benefits of innovative IT approaches? **This approach predates but compliments the PortfolioStat process in particular, but also serves to empower each of the other initiatives as they mature, providing many pathways for using compliance items to advance wider organizational advancement.**