Smarter Government

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The Case for Smarter Government

As federal agencies work diligently to pare already sparse budgets even more, boost security and comply with a slew of regulatory mandates as well as the Obama administration's call for greater transparency, it's clear that government must become "smarter," sharpening its focus on delivering the value that citizens expect.

And that goes beyond simply dispensing services or supporting other functions of government to encouraging interaction with citizens to share information and improve lives.

To get smarter, government must interconnect systems and devices that are more intelligent and offer users access through a wide variety of methods from PC to cell phone. With government tech spending tipping the scales at $80 billion annually, it came as no surprise that President Obama charged government's first CIO Vivek Kundra to use "the power of technology to improve performance and lower the cost of government operations."

Obama is counting on the new federal CIO and his team to invoke technology to enable a new kind of government-one that operates effectively, transparently yet securely, and adopts innovative technology but applies it wisely.

Already, advances in technology – for instance, a growing body of top-notch cybersecurity solutions, the emerging trend toward cloud computing, the more precise application of business analytics, and even green alternatives – promise to help agencies reinvent their existing infrastructures and make them leaner, more flexible and ultimately, smarter.

Drivers

One thing is certain, smarter government is a top down proposition inside the Beltway and aligns quite well with the White House's pledge for government to become more transparent and accountable. President Obama envisions a "context driven government" that makes services accessible through citizens' everyday activities via whatever form of technology they are using.

The nation's sharp focus on security will continue to drive smarter government. Without a doubt, keeping citizens safe and secure is the top priority of government. Prudent security policy dictates that government must abandon a reactive posture in favor of a more dynamic and proactive stance. The proliferation of threats to the U.S. government has risen exponentially. And, of course, those hazards are not confined

to the physical-cyber-savvy criminals and terrorists have ramped up their attacks. For all the dollars spent on cyber security our nation is still vulnerable.

The push to become greener is also causing government to boost its IQ. More intelligent systems and devices do more for less-reducing power consumption and the need for supplies such as ink and paper. They also offer a way for different departments within agencies to share and manage resources. What's more, a federal mandate to offer staffers a telework option will not only reduce traffic and emissions on the road and pare back the money spent on office space, it also will spur government to support a wide variety of technology that allows users to access systems.

Challenges Abound

Restoring public confidence and upping accessibility will require bringing the federal government's four million staffers and 10,000 IT systems in line, a daunting task that is bound to meet with some resistance.

For too long, agencies have found themselves working within the framework of aging infrastructures and governed by outdated business processes. Years of splicing new technology into outdated business models has hardly gained government a reputation for operating efficiently or collaborating easily among agencies, much less responding quickly to citizens.

Ultimately, Kundra's mission is to counter that. And he has a tech-savvy citizenry, who has grown accustom to near-instant gratification in everyday life, behind him. Recognizing their direct and enduring relationship with government upon whom they rely for a plethora of critical services, they are demanding the same level of response and "customer" centricity as they get from a JetBlue or Starbucks in the corporate world.

While improving response to citizens is a core goal of smarter government so is sharing information among staffers and between agencies. Seamless collaboration is critical if agencies are to run smoothly and efficiently and make the wisest decisions based on the most current data available. But collaboration is not just a technology matter, it is also a people issue that requires a cultural shift away from established routines and processes. That kind of change often meets with resistance.

The 2010 fiscal year also will bring marked changes to the way agencies spend their money. While President Obama and Congress grapple with the federal budget during these trying

economic times, the president has challenged agencies to trim $100 million from their budgets, a trend that is expected to continue through fiscal years well into the future. Many of the cuts could come from notoriously misspent tech funds. In that respect, the president's challenge is both a driver for and a challenge to smarter government.

Clearly, too, government agencies must provide services to a growing number of citizens, particularly those agencies that deal more closely with the onslaught of needs from aging Baby Boomers. Unfortunately, at the same time, they must meet rising demand with fewer resources (read: budget dollars) than they had last year. In a way it is a timeless story for government – fewer dollars and a lot more to do with them-and more rules to comply with.

Smarter government, however, may give that tale if not a happily ever after, then at least on a happier ending, that puts agencies on a clear path to efficiency and savings.

Just Do It

To become truly smarter, government must change its business models while enabling the new models with current, advanced technical capabilities. In other words, plugging new technology into tired, old business models just won't cut it any more.

Agencies must also leverage the ability to "instrument" many things, interconnect them and make them intelligent. Not an easy task but one that is being played out to some success in other countries like the UK where motorists can renew their car tax online rather than taking paperwork to the post office.

The online service automatically checks authorization and issues new discs. Surveys record over 90 percent satisfaction with the service.

Popularity aside, intelligent and interconnected systems could release resources to needier areas. In the Southwest One partnership, Somerset County Council, Taunton Deane Borough Council and Avon & Somerset Police have come together in the UK's first multi-agency shared services venture. As well as delivering an expected £200m of taxpayer savings across the three authorities by 2017, it will also provide citizens with better value and more easily accessible services.

Cheshire's two new unitary authorities, Cheshire West and Chester Council and Cheshire East Council with the Primary Care Trusts have put in place a pioneering IT solution to improve the needs assessment for older people. Instead of multiple assessments with different agencies, care staff now complete a holistic needs assessment then share the information. So all the support agencies involved know about any problems and Cheshire's older citizens get the specialized care they need. In other countries, data that can be used multiple times on a citizen's behalf-such as in registering a newborn or applying for social system benefits-need be entered only once, eliminating the need for users to input data multiple times when interacting with government online.

In the U.S., government already is making strides in its quest to become more responsive to citizens. In 2008, 89 percent of state and federal web sites had at least one service that was fully executable online. ❑

Smart Government Begins with Security

From the inception of this nation, and especially in the years since September 11, security has consistently topped the list of government's concerns and priorities. And although the $44.1 billion 2010 Homeland Security bill sent to President Obama in October is more than $230 million lighter than its 2009 predecessor, it is a clear indicator that government is serious about keeping its citizens safe.

According to market research firm INPUT, the demand for security products and services in the federal government will increase from $7.9 billion in 2009 to $11.7 billion by 2014.

While the bulk of the monies in the Homeland Security bill are aimed at areas such as transportation security and guarding the nation's borders, more than $899 million has been designated for information security and protecting the infrastructure. Not surprising, since information security is on the minds of every agency leader. In a recent survey by IBM and 1105 Government Information Group, network and data security rose to the top of the priority list for most of the respondents.

Multiple Forces Shaping Security

Security investments at government agencies are being shaped by a number of drivers, according to INPUT.

- The rapid proliferation of cyber attacks and assaults on IT operations, as well as a growing concern over privacy, have helped push network and data security to the top of government's priority lists. If the color-coded terrorist alert system developed after the 2001 terror attacks were applied to information security, the threat level would hover between orange and red.
- The complexity of cyber attacks has increased and the severity of their potential impact is undeniable. Cyber enemies are well-funded and tech-savvy. As a growing number of functions and activities worldwide move onto the Internet, the potential to exploit vulnerabilities will continue to grow.
- What's more, legislators have proposed, and ratified, a number of bills and mandates designed to push agencies to fill their gaps in security.
- The president has ordered a cyber review and will soon name a cyber coordinator to implement changes.
- Evolving threats require "broad technology needs for global defense."

The Obama administration's pledges for greater transparency and government responsiveness, have agencies scrambling to find and develop security strategies that can accommodate a greater flow of information and securely support multiple types of access. Various mandates, such as providing teleworking options to staffers, are also driving agencies to boost their security and reduce vulnerability.

Challenges

While agencies are undoubtedly security-minded, their mission is not any easy, or even intuitive, one. Much of their existing security evolved in reaction to a security breach and was knitted into aging infrastructures. Therefore, many security strategies resemble a patchwork quilt of products and services.

Additionally, they must support a greater number of users and devices, protect an ever-growing amount of information and comply with a wide variety of regulations. Increasingly they walk a fine line between being transparent and being vulnerable.

How to Do It

Government agencies need to proactively protect their critical applications, data and processes from external and internal threats throughout their entire life cycle. By taking a comprehensive and integrated approach to application vulnerability management, agencies can measurably improve operational security, mitigate risks, and reduce costs. They must pay particular attention to:

- **Securing Virtualized Environments** – From dedicated hardware for dedicated purposes to shared hardware for dedicated applications.
- **Alternative Ways to Deliver Security** – Prepackaged security for easy deployment and quick time to value.
- **Managing Risk and Compliance** – Business risk-based and policy-driven approach to managing IT security.
- **Trusted Identity** – Toward trusted, privacy-enabling, shared and easy-to-use identities.
- **Information Security** by reflecting the business value of data at risk.
- **Predictable Security of Applications** – Integrated security throughout the application lifecycle.
- **Protecting the Evolving Network** – Real-time security regardless of network speed, with protection against the rise in application-specific attacks.
- **Securing Mobile Devices** – Agencies must find a trusted channel for conducting business and a primary means for authentication.
- **Sense-and-Response Physical Security** – Efficient and decisive physical security.

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In the next few years, security requirements will be driven by a number of variables. First, government will need a highly dynamic IT environment that can respond efficiently to elastic scalability demands. They will also require the ability to use electronic identities for sensitive and mission-critical purposes. End-user demands for more control and self-determination with their online identities will shape the way security plays out at an agency. And government will continue to seek secure, reliable, flexible and composable applications that can facilitate a rapid response to changing business needs.

The challenge is daunting but not impossible. The Veteran's Administration has made substantial headway in securing information as part of a massive overhauling and consolidation of IT, begun in 2005 under its One VA initiative. The efforts have also created a more nimble, flexible agency that can respond more quickly to its constituents, mainly the nation's 26 million veterans. ❏

A Lofty Goal: Government in the Clouds

Cloud computing represents a paradigm shift in the consumption and delivery of IT services that can help agencies save money and increase their flexibility. One of the best ways that government agencies can meet the President's call to lower costs while providing more services is by harnessing the power of the Internet to share resources and distribute applications among departments and with other agencies.

From storage to batch processing, government is increasingly turning to "clouds".

While cloud computing for both government and enterprise represents a new consumption and delivery model that enables self service, economies of scale and flexible sourcing options, at its heart it is a new take on an old idea of computing as a utility.

According to researchers at UC Berkeley, cloud computing encompasses "both the applications delivered as services over the Internet and the hardware and systems software in the datacenters that provide those services" with the hardware and software in the data center comprising the "cloud".

Benefits

No doubt exploiting the benefits of Cloud computing-among them scalability, pay-as-you go and service on demand-will better position agencies to meet the President's challenge to lower costs while becoming more accessible and responsive to the public. It represents a dynamic infrastructure optimized for IT/business services which is highly virtualized, standardized, automated and end-user focused.

The UC Berkeley study identifies three distinguishing characteristics of cloud computing that could translate into benefits for agencies. First, there is the "illusion of infinite computing resources available on demand." As a result users don't need to plan ahead for provisioning. Cloud computing also eliminates the need for an upfront commitment. Agencies can start small, adding computing capacity only when they need to.

And finally, because agencies can pay for using computing resources as needed and on a short term basis, they conserve machines, storage and IT dollars.

Drivers

Facing a data explosion, leaner budgets and increasing pressure to become more "customer-centric," government IT has no choice but to become smarter about new workloads, and

delivering services. About 70 percent of every IT dollar on average is spent on maintaining current IT infrastructures versus adding new capabilities. And in distributed computing environments, up to 85 percent of computing capacity sits idle.

The current financial crisis has made saving money the top priority. Sharing compute capability saves money. Using standardized applications saves money. Cloud computing applies technology advancement to solve economic needs, delivering a new user experience as well as a new business model.

Technology advances have paved the way-as well as created the need-for cloud computing. The internet, high speed data services, Service Oriented Architecture, software and hardware virtualization, systems and service management software, optimization, and open platforms have made IT platforms more flexible, manageable, and scalable. By 2011, the world will be 10 times more instrumented then it was in 2006. Internet connected devices will leap from 500 million to one trillion. An explosion of information is driving 54 percent growth in storage shipments every year.

There are a number of areas in which to shift to a cloud computing paradigm makes sense:

- Single virtual appliance workloads
- Test and Pre-production systems
- Mature packaged offerings, like e-mail and collaboration
- Software development environments
- Batch processing jobs with limited security requirements
- Isolated workloads where latency between components is not an issue
- Storage Solutions/Storage as a Service
- Backup Solutions/Backup & Restore as a Service
- Some data intensive workloads if the provider has a cloud storage offering tied to the cloud compute offering

Surmounting Obstacles

Despite the hype, cloud computing is not without its detractors. Still others point to discrepancies in the definitions of cloud computing among competing vendors.

Market research firm IDC notes that its definition of cloud computing assumes that services "are provisioned dynamically via self-service mechanisms and that pricing/cost recovery is calculated on a usage or consumption basis. IDC's cloud taxonomy also implies the use of service catalogs, service levels, and service management tools to enable service delivery.

But the market research firm also notes that certain characteristics are cloud qualifiers:

- The solution is provided by an offsite, third-party provider.
- It is accessed via the Internet.
- The offering requires minimal IT skills for implementation.
- Provisioning is near real time, self-service, and dynamic.
- Pricing model is fine grained and, frequently, usage based.
- The user interface is browser/portal based.
- System interfaces comply with Web services APIs.
- Resources and common versions are shared across customers.

Many express concerns that services will not be available when needed, that agencies will suffer data transfer bottlenecks and security or data confidentiality will be compromised. Others resist cloud computing because the reduction in need for human resources will eliminate staff positions or greatly modify staffers' work roles. UC Berkeley researchers noted that implementing solutions for these problems can in turn result in advances that will stimulate cloud computing.

And ultimately agencies must carefully select which applications and functions will be shifted over to the cloud model. Some workloads may not be ready for cloud delivery, including:

- Those which depend on sensitive data normally restricted to the Enterprise

- Employee Information – Most companies are not ready to move their LDAP server into a public cloud because of the sensitivity of the data
- Health Care Records – May not be ready to move until the security of the cloud provider is well established
- Those composed of multiple, co-dependent services
- High throughput online transaction processing
- Those requiring a high level of auditability, accountability such as those subject to Sarbanes-Oxley, for example
- Workloads based on third party software which does not have a virtualization or cloud aware licensing strategy
- Workloads requiring detailed chargeback or utilization measurement as required for capacity planning or departmental level billing
- Workloads requiring a high level of service customization (e.g. customized SaaS)

In the future, there will likely be three models of computing, each suited for a different purpose. Private clouds will be best suited for test and development systems, storage and sensitive workloads in large diverse organizations. Public clouds will be widely used for variable storage, software as a service and web hosting. Finally, traditional enterprise IT will remain for mission critical applications, packaged apps and high compliancy. ❏

Smarter Decisions

Whether government agencies are planning military maneuvers, distributing benefits to aging Baby Boomers or tracking terrorists' movements, they can't make smart decisions, quickly, unless they have the best, accurate and most relevant data at their fingertips-and know what to do with it.

But with agency data coffers literally exploding with information and aging systems thwarting distribution, that's impossible to do without advanced analytics.

About 15 Petabytes of new information, or eight times the information housed in all U.S. libraries, are being generated each day, according to some estimates. More than 200 billion emails are sent daily. By 2010, the volume of digital information will increase to a whopping 988 Exabytes.

The wide variety of data types-80 percent of new data growth is unstructured content, generated largely by email, with increasing contribution by documents, images, and video and audio-and the increased velocity of decision-making further complicate the landscape for government organizations.

Government's interest in business intelligence has moved far beyond early descriptive analytics that include query, drill down, ad hoc reporting, and standard reporting functions. Today, the focus has turned to predictive (alerts, simulation, forecasting, predictive modeling) and prescriptive (achieving the best outcome) analytics.

Well applied, advanced analytics not only facilitate the seamless flow of information but they also are fueling a "New Intelligence" that enhances an organization's ability to tap into the massive data being created in an instrumented, interconnected world, capture it, analyze it, and deliver it so that it is complete and relevant to the decision maker and the decision. Instead of looking at isolated data points, or working off intuition and past experience, organizations can see a more fully rendered picture, including the consequences of any business decision.

Aging infrastructures, isolated data stores, security concerns, outdated business processes and agency culture are just some of the obstacles that stand in the way of "New Intelligence."

Making Progress
But developing a strategy with advanced analytics can have a huge pay-off for an organization, aligning lines of business, legal, compliance and IT management toward a common vision for solving issues and challenges.

Some agencies, like the Veterans Administration, are starting to apply analytics to improve the health and welfare of the veterans they serve. An electronic medical records system is being used to study aging and chronic disease in veterans, which helps the agency determine effective treatments and better manage its services.

A New Intelligence Plan
While agencies' needs differ, there are some guidelines for getting started:

Plan an information agenda – Make sure that you have a plan to align your information with business objectives, including understanding how information can best be applied in situations that may be unique to your industry or field.

Apply business analytics to optimize decisions and actions – Make better, faster, more accurate decisions through planning, monitoring, reporting and analysis of information.

Establish a flexible information platform and infrastructure – Get the necessary technology platform and infrastructure to support needs and to ensure that information can serve as a trusted asset that can be shared and accessed by all who need it, when they need it. ❑

IBM's Jumpstart

A *"Jumpstart"*
- Applies a rapid & effective solution definition approach to define a content & records management strateg – and – get you started
- Establishes a framework for achieving the benefits of an improved content & records management program
- Establishes a framework toward building a legally sufficient records program
- Leverages our experience and skills
- Experience and understanding of how records and content management can be leveraged to streamline tasks and business processes
- Experience in developing records programs by providing governance models such as "one stop shopping" for skills, best practices, goals, objectives and tools
- Experience in records management technology and integrating that technology with existing systems

Green and Lean? Not Yet

IT and energy costs account for up to 60 percent of an organization's capital expenditures and 75 percent of operational expenditures, so going green represents a good way for government to get lean.

Additionally, a slew of regulatory mandates, including an aggressive teleworking initiative, are aimed at moving the federal government into greener pastures with positive implications for the environment overall.

There are a number of ways that agencies can conserve resources and reduce consumption. In addition to investing in Green products with smaller energy needs, they are looking at how collaboration, virtualization and mobilization create more environmentally sound strategies. So why aren't Federal Agencies Green yet?

A survey by the Government Business Council (GBC) earlier this year showed that while agencies are exploring Green solutions or have Green initiatives in play, most have not articulated a specific policy for achieving Green goals. The GBC survey consisted mostly of respondents from the GS/GM-13 job grades and above. Five percent were senior executive service personnel and 18 percent came from the Army.

The Push for Green

Green has gone beyond fashionable trend and is quickly taking on serious overtones in the federal government. Nearly a third (30 percent) of the GBC study respondents said preserving the environment is the primary motivator for increased emphasis on Green Government.

But right on its heels is compliance with federal regulation, with 29 percent of the respondents identifying it as the primary reason for adopting a greener stance.

A specific goal among agencies is energy efficiency, with 45 percent of respondents identifying it as a top priority.

Stumbling Blocks

Agency green policies and initiatives with implementation plans lag behind the intent of the Executive Order. For Green policies that do exist, there is a lack of clarity and the overall goals are left unstated with only 40 percent of respondents' agencies indicating well-articulated green policies and goals.

A startling 22 percent of the respondents work at agencies where the top ten green practices listed in the survey are not prioritized, which runs counter to what staffers would like to see. One respondent noted that "the federal government should act as an example of the green practices they seek to promote."

But agencies do articulate some goals better than others-39 percent said that policies for regulatory compliance were clearly stated and 32 percent said the same about teleworking policies. Energy independence policies came in dead last-at 10 percent-on the clarity scale.

The respondents believe that part of the problem comes from a leadership void with fewer than 50 percent believing that the federal government has a clear vision for greener government. Surprisingly the majority of agencies represented in the survey had not even conducted a carbon footprint assessment or were uncertain if their agencies had conducted such an assessment. They noted that green would gain more gravitas and become standard practice if, in the words of one executive respondent, it was not seen "as something else we do" but rather "as part of the mission."

Ultimately, the respondents identified their top challenges as a "lack of accountability, lack of information, need for education, and lack of funding." Tightening budgets have not made going green any easier and have in fact, along with security and cultural issues, hamstrung initiatives like teleworking. The survey respondents also contended that Green initiatives are being hampered by the difficulty of measuring progress or of demonstrating compliance and poor implementation procedures.

To remedy these shortcomings in policy, respondents favor having senior management advocating Green Government. They also suggested boosting accountability as well as making a strong effort to educate the workforce on green issues. ❑

Get Greener!

Government agencies can take a few steps to help propel their green initiatives.

- Create a Green policy and enforce it. One focus group member said that "the environment should be framed as an issue of national security that cannot be ignored."
- Clearly state Green policy and train staffers accordingly.. Just under half of the respondents-49.2 percent-said that there was a lack of information and a need for education.
- Assign responsibility for implementing and enforcing Green initiative to a specific staffer or department. Thirty-five percent of the respondents said that no one at their agency was responsible for implementing green initiatives.
- Find an advocate in the upper echelons. At 30 percent of the agencies that is senior management; at 27 percent career executives assume that responsibility.