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WebSphere

Building solutions for smarter governments

Six ways to increase responsiveness, service quality, accountability and taxpayer value

IBM

Governments at national, regional and local levels are under more pressure than ever to work smarter. Smarter government means collaborating across departments and communities—to become more transparent and accountable, to manage resources more effectively and to give citizens access to information about decisions that affect their lives.

Why smarter government now?

The world is changing. Powerful forces are affecting virtually every nation, from changing demographics and growing environmental concerns to the accelerated pace of globalization. Societal relationships are evolving, while new threats to social stability and order are emerging. Governments at national, regional and local levels are under more pressure than ever before to manage these forces. And, they must contend with the additional challenges of economic slowdown.

Their business network—non-government organizations, community-based programs, other domestic and international government entities and, of course, citizens—is constantly changing and becoming more dynamic. In this increasingly global world, government agencies and organizations need to be more interdependent and interconnected.

The expanding impact of technology opens up new opportunities to leverage this network and find new, innovative ways to respond to these pressures. Governments around the world are developing new initiatives to build more citizen-centric approaches, provide more agile responses to emergencies and improve performance and transparency.

Today, more than ever, each level of government requires cooperation between and within departments, agencies and borders—something that cannot occur without interoperability, shared systems and processes and a high degree of transparency.

> *"More connectedness and cooperation is needed than ever before: across agencies, across societies, across governments, and with more constituencies.[1]"*
>
> —IBM Institute of Business Value, Government 2020 and the perpetual collaboration mandate

There is a universal constituent need for better public services and multiple access channels to these services, mirroring their experience in the commercial world where they can shop, bank, find information and communicate on-site, online and through mobile phones. Smarter government means making operations and services truly citizen-centric, integrating their service delivery, coordinating programs and allowing a choice of access channels, as well as placing the most needed transactions on the Web. Cross-agency collaboration is needed to offer this mix of choice and a consistent, integrated experience and information while quickly responding to changing circumstances.

"By 2011, it is estimated that the Internet will reach 2 billion people—nearly one-third of the world's population.[2]"

—Let's build a smarter planet: Government, IBM, 2009

This heightened access to information and online services and greater collaboration among government entities must not compromise sensitive information whether citizen- or national security-based. Protecting public information while detecting and preventing fraudulent activities is critical to public trust, order and stability, and requires innovative approaches across the governments' business networks.

Governments around the world strive to protect against and respond to natural or manmade crises faster and more efficiently, and their ability to access consistent information in real time can often be a matter of life and death.

Governments are under pressure to meet all of these expectations at a time when budgets are being squeezed because of diminished tax revenue, higher unemployment and social costs and the global economic slowdown. They must do more, do it better and do it more quickly, with less. They also must demonstrate responsible and transparent management of the resources and revenue at their disposal.

"IT is the only silver bullet that Public Sector bodies have, to deliver more efficient services against a backdrop of limited resources.[3]"

—IBM Global CIO Study, "The New Voice of the CIO," IBM Institute for Business Value, September 10, 2009.

A smarter government will innovate safely—breaking out of past limitations to meet unprecedented challenges while acknowledging its inherent and necessary conservatism. Organizations must reduce the cost of their existing infrastructures, streamline processes, increase flexibility and use new technologies to fully utilize their dynamic network of government agencies, partners and citizens. Proven information technology (IT) solutions that enable innovation, agility, integration, connectivity and high performance will enable government organizations to work smarter.

Smart Government Solutions

Based on Smart SOA Connectivity and Integration and Dynamic Application Infrastructure

Transforming governmental operations and systems that have been in place for years is not an easy undertaking. Heavily customized, often inflexible and siloed systems in different agencies and departments make it difficult and expensive to support the fast pace of change to deliver citizen-centric services and agile emergency response within current budgets. Transformation must be done judiciously, with careful investments that deliver now and build the strongest foundation for the future. IBM understands governments' unique challenges and needs and has developed the IBM Government Industry Framework to fundamentally change the way that local, regional and national governments manage and deliver services to the public. The framework is supported by years of worldwide experience, proven methodologies, best practices and solution accelerators, all developed through thousands of successful IT projects in government. At the heart of the framework are smart service-oriented architecture (IBM® Smart SOA™) connectivity and integration, and dynamic application infrastructure capabilities delivered by IBM WebSphere®.

Dynamic application infrastructure solutions from IBM WebSphere offer governments the means to meet mission objectives consistently, nimbly and cost-effectively. The solutions enable applications to adapt to changing conditions and address extreme transactional demands of constituents and service models. Smart SOA connectivity and integration solutions from IBM WebSphere offer fast, flexible and reliable access to information, and trust, management and security for applications—making it easy for government agencies, departments and partners to deliver programs and services. A combination of these solutions can help government organizations at all levels meet their business goals through smarter infrastructures that offer more flexible and responsive architectures and applications, lowered costs and improved ability to address both public satisfaction and government mission goals.

Six ways to transform government operations

1. Streamline interagency operations for a citizen-centric approach.

Like the needs of the citizens they serve, social services and social security agencies such as home health services or the fire department are highly diverse and specialized, relying on their own IT systems and data stores. As demand for public services grows, social services and social security agencies need to offer more and better quality services while relying on the same level of funding. Getting the agencies connected seamlessly through enterprise service bus (ESB) messaging and enrichment ensures a complete view of the services a citizen receives, and the relevant citizen information can be accessed by all. Maintaining duplicate systems is no longer required, saving taxpayer money. Less time is spent by agencies and citizens collecting the same information over and over again. For example, a typical disability benefit process requires multiple applications and assessments and often the person qualifies for multiple benefits, resulting in the data and processes being duplicated across agencies. Integrating different departments and benefit management systems means that client information is submitted once and viewed by all department personnel with appropriate permissions. Access to this information can be extended easily to partner organizations if needed. Reliable standards-based connectivity is at the core of improved quality of services, streamlining services planning and reducing errors. Discover more about an ESB by visiting: **ibm.com**/esb. Learn more about extending connectivity to customers and partners by visiting: **ibm.com**/extend.

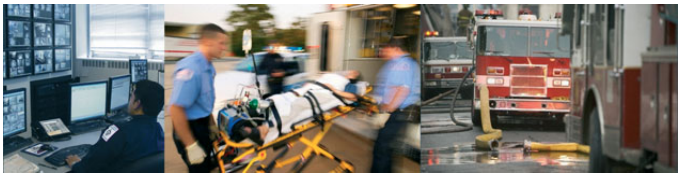
2. Achieve superior online services to meet mission goals and public demands.

To better meet growing public needs for multiple access channels while administering operations cost-efficiently, governments must extend information and services to the Web. People today expect nearly all services they receive in-person to also be available online and they expect Web sites to be "always on." Smarter governments will use an application foundation that delivers 24x7 availability, agility and high performance whether citizens are applying for licenses, accessing medical records, filing taxes, requesting aid or seeking information on road closures. A smart SOA application foundation helps agencies maximize their budgets by reusing existing applications and extending them to the Web to broaden the accessibility and reach of government services and programs cost-efficiently. It enables the rapid delivery of new, innovative or time-sensitive citizen services using situational Web 2.0-based applications, and citizens can securely access these services in real time through their mobile phones. Governments can enhance their customer service, and therefore encourage greater trust and satisfaction, by providing "click-to-call" and cobrowsing functionality. Imagine a local contractor seeking to apply online for a building permit for a residence or building. The forms can be complicated but the contractor can easily click a button to reach a clerk by phone if they can't find the information they seek. This saves both the contractor and the agency time and money by avoiding erroneously completed forms. Find out how a smart SOA application foundation can make your agency more responsive by visiting **ibm.com**/appfoundation. To see how cobrowsing and click-to-call technology works, visit: **ibm.com**/websphere/was.

3. Provide faster emergency response with a virtual operations center.

Cities, states and nations need emergency response systems that integrate, mobilize and coordinate police, fire, ambulance, military and community aid response. However, these efforts are often hindered by the use of different communication systems and technologies. Virtual operations centers (VOCs) built on smart SOA solutions can ensure that the entire network of emergency response teams and their external partners, like charitable organizations, can collaborate seamlessly when planning ahead to reduce disaster risk and responding quickly to emergency situations. A flexible infrastructure and connectivity can get accurate information to the right people at the right time for critical decision making and help develop and rapidly deploy a shared virtual workspace. ESB messaging and enrichment provides the reliable, secure and assured data access and movement needed for a successful VOC operation, regardless of platform, network, device or data format. This seamless access to existing systems from a wide variety of remote devices is critical to collaboration across geographically dispersed response teams.

In addition, in times of emergency, data transaction volumes spike as people search for, exchange and record information, and governments cannot afford for data to be lost or delayed. Extreme transaction processing capabilities can handle tens of millions of transactions almost instantaneously without error, allowing real-time insights and opportunity patterns to be detected. Whether on a national or municipal scale, governments can confidently respond to crises with VOCs powered by WebSphere infrastructure solutions.



Read how the City of Madrid improved its emergency response system by visiting: **ibm.com**/ibm/ideasfromibm/us/smartplanet/cities/pdf/Public_Sty_Ruiz.pdf. For more information about WebSphere Extreme Transaction Processing, visit: **ibm.com**/xtp.

"All the different groups that aid and protect citizens are now able to deliver information to the emergency response center concerning events and emergencies happening in Madrid. And they receive instruction on where and how to intervene.[4]"

—Fernando Garcia Ruiz, Department of Security, City of Madrid

4. Protect sensitive citizen information and improve public trust.

With new e-Government initiatives and the drive to increase access to public services through the Internet, transactional security is more important than ever. Any misuse of data or accidental disclosure to an unauthorized party is damaging to the public trust. A smart SOA application foundation from WebSphere provides a highly capable and secure programming environment to build and deploy solutions that can handle online payments, for example, and other sensitive transactions. IT administrators can prevent costly security breach exposures with security domains that deliver granular and flexible control. Whether filling out passport applications online or paying registration fees, citizens can be assured that their sensitive personal information is received, processed and stored accurately and securely. An agile application foundation can also keep pace with constantly changing country and international standards and regulations. ESB messaging and enrichment can be used to ensure the security of public data held in existing applications as it moves through the different stages of citizen interaction without the need for further application changes. As data is stored within government organizations, the access to the infrastructure can be further protected with a drop-in, hardened SOA appliance for scalable security, policy enforcement and load balancing. And as agencies and departments increasingly share services, services visibility and governance solutions allow organizations to associate shared services with agency and operational policies. Investigate IBM WebSphere DataPower® appliances for hardened security by visiting: **ibm.com**/software/integration/datapower. Find out more about services visibility and governance by visiting: **ibm.com**/svg. Discover the strengths of IBM WebSphere Application Server by visiting: **ibm.com**/websphere/was.

5. Intelligently manage resources for accountability and optimized public spending.

Responsible and efficient management of resources is an imperative for local, regional and national governments today. Government chief information officers (CIOs) are under pressure to control costs by making the most of existing hardware investments and managing operations with little to no increase in staff, while increasing flexibility and scalability to be responsive to dynamic organizational needs. At the same time, citizens are demanding accountability for how their tax dollars are used. Governments can reduce costs while improving quality of services by intelligently managing their infrastructures using application virtualization and cloud technologies. Application server consolidation and utilization can reduce energy consumption by up to 40 percent and lower hardware budget needs. Application virtualization can cut administrative costs up to 55 percent and provide significant improvements in responsiveness. Agencies can dynamically allocate resources to priority applications, such as emergency information or aid requests resulting from a natural disaster, and ensure uninterrupted online services regardless of traffic by diagnosing and automatically correctly common application server problems before they impact users. New government applications can be quickly and cost-efficiently provisioned in a virtualized environment to respond to sometimes unforeseen, sudden needs such as recording, tracking and sharing the pandemic H1N1 information. Application virtualization and cloud technologies provide government organizations with flexibility, scalability and improved service availability and quality. Find out more about intelligent management for your government infrastructure by visiting: **ibm.com**/intellmgmt.

$1: the cost to government of renewing a driver's license online. $8: the cost to renew in person.[5]

—**ibm.com**/smarterplanet/us/en/government/ideas/

6. Meet taxpayer expectations and improve tax systems efficiency.

Tax and revenue agencies are under pressure to improve taxpayer services across the board and minimize operational barriers such as data duplication and overly complicated administrative procedures. With many governments facing an economic slowdown, aging population and growing demand on public services, every penny counts. Collecting taxes accurately and promptly, helping businesses keep their reporting costs down and keeping the public informed are not simple tasks—especially when managed across siloed systems associated with different tax pipelines, legacy applications based on different standards and tightly coupled systems and processes. In addition, government tax and revenue agencies face many other challenges: concerns about taxpayer data management, privacy protection and changing national and international tax regulations, and the need to address fraud and noncompliance. A dynamic application infrastructure and smart SOA connectivity and integration are at the core of IBM's solutions to modernize and connect core tax applications through business and IT alignment, and help governments meet these challenges cost-effectively. For example, as a simple first step to transforming revenue reporting for businesses, tax agencies can use one single, secure interface for financial analysts and businesses alike by managing access policies with WebSphere DataPower XML Security Gateway XS40. With consistent enforcement of security and governance policies, it enables lowered costs and eliminates unnecessary paperwork and duplicate access to different systems. To find out more, visit: **ibm.com**/software/integration/datapower.

Up to £40 billion of taxes went uncollected last year due to fraud, evasion and other flaws in the tax system [in the UK in 2008].[6]

—www.express.co.uk/posts/view/146078/-40bn-lost-in-tax-revenue-due-to-fraud-and-evasion

Case study: District Health Bureau in China

Better information leads to better healthcare

China's District Health Bureau manages a broad network of community healthcare initiatives, and is also responsible for implementing the Chinese government's community healthcare policies. Its mission is to establish a healthcare management system that facilitates fast, automated and quality government healthcare services throughout the treatment lifecycle. The District Health Bureau provides patient registration, physical examination and symptom diagnosis, referral appointments for community clinics and major hospitals and disbursement of medicines at the pharmacies. There is a massive amount of medical information that must be made available, managed and protected. For effective services delivery, the health bureau required information access, systems integration and data sharing.

The challenge:

The District Health Bureau faced the huge task of drawing together disparate IT systems for 500 medical institutions and 22 hospitals to coordinate healthcare delivery for one million people. This involved sharing information among 500 healthcare organizations and 22 hospitals.

The District Health Bureau lacked the flexibility to integrate its multiple hierarchical and heterogeneous systems, which included systems for health information, electronic medical records (EMR), laboratory information, clinical information, pharmacy and prescriptions and multiple picture archiving and communications. It needed a central repository for patient records—a single, comprehensive EMR system to integrate all the information systems involved and enable medical information to be exchanged and shared among all the medical facilities in the district.

The solution:

Service-oriented architecture (SOA) enabled the health bureau to establish a common approach with the flexibility required to pursue system and data integration and sharing. Since it is standards- and services-based, SOA provides a means for integrating the various information systems and their data. IBM's smart application infrastructure and connectivity offerings are at the core of the solution and provide a high-performance foundation for creating and implementing agile and reusable SOA applications and services that enable the health bureau to speed integration and deployment while keeping costs to a minimum. The health bureau implemented an EMR system based on SOA that integrated vital patient information and comprehensive medical history from the myriad disparate systems, enabling the exchange and sharing of medical information among all the medical facilities in the district.

The benefits:

The IBM SOA solution enables the medical organization to achieve the following results:

- Faster healthcare delivery, reduced waiting times to schedule appointments and lower costs
- Ability to make better medical decisions
- Early detection, identification and control of potential epidemics
- Integration of all medical resources and information among local medical institutions

The SOA solution allows the District Health Bureau to deliver a first-of-its-kind unified healthcare management system and it was able to capitalize on reuse technology that is central to SOA.

According to an official at the District Health Bureau, "From an investment point of view, it is more cost-effective for us to use SOA than to purchase more siloed products that will just have to be replaced by more integrated, reusable technologies, which will cost us in the long run. Technology becomes a burden if we cannot reuse it."[7]

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—An official at the District Health Bureau

Conclusion

In order to address the issues that governments are facing today, infrastructures must be simplified and transformed to be agile, responsive to change and cost-effective. This will ultimately enable more dynamic government operations and networks and constituent satisfaction. The IBM Government Industry Framework, and the dynamic application infrastructure and Smart SOA connectivity and integration capabilities associated with it, can help governments meet these objectives. Talk to your IBM representative about scheduling an Industry Business Value Assessment or Information Agenda workshop to start to identify ways to get started.

Additionally, IBM Global Financing can tailor financing solutions to your specific IT needs. For more information on great rates, flexible payment plans and loans and asset buyback and disposal, visit: **ibm.com**/financing.

For more information

IBM application infrastructure and connectivity and integration government solutions:
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IBM Government Industry Framework:
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[1] IBM Institute of Business Value, Government 2020 and the perpetual collaboration mandate, **ibm.com**/services/us/gbs/bus/html/government2020-pcm.html

[2] Let's build a smarter planet: Government, IBM, 2009. **ibm.com**/ibm/sjp/07_31_2008.html

[3] IBM Global CIO Study, "The New Voice of the CIO," IBM Institute for Business Value, September 10, 2009

[4] **ibm.com**/software/success/cssdb.nsf/CS/RRAS-7DCNNN?OpenDocument&Site=corp&cty=en_us

[5] **ibm.com**/smarterplanet/us/en/government/ideas/

[6] www.express.co.uk/posts/view/146078/-40bn-lost-in-tax-revenue-due-to-fraud-and-evasion

[7] **ibm.com**/software/success/cssdb.nsf/CS/CPOR 7PJTP6?OpenDocument&Site=corp&cty=en_us

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