IBM

Expanding the business of government.

Throughout the world, governments are being asked to change the way they legislate, deliver critical services to the public, manage internal operations and interact with constituents. Citizens and businesses demand more convenient services — online tax filing, Web-based transactions and direct links to public policymakers. Political leaders mandate accountability for performance and use of public funds. And most government officials want to boost economic development by using the Web to attract new businesses, resources and educational opportunities.

At the same time, expectations about where, when and how citizens, government employees and private-sector businesses should interact are being reshaped by new technologies. Mobile computing enables fundamental changes in the nature of human interactions globally. Technology that lets citizens attend public hearings remotely or collaborate with government leaders through community dialogues is available today. Legislators attending formal sessions can even communicate silently with their office staffs and conduct realtime research on the Internet — all as political debates continue.

Driven by demands for such capabilities, you must transform your technology foundation and improve internal efficiencies so you can deliver citizen-focused services faster and more conveniently. Embracing Web-era technologies can help you build a government that operates like an e-business on demand™ enterprise — responding quickly to nearly any challenge, at any time. Whether that entails simply answering a citizen's questions about a recent referendum, or alerting your entire nation about a potential health risk.

To succeed, you must integrate all the applications, processes, management and delivery channels that link your internal agencies and outside stakeholders. You should also create a strategy tied to your short- and long-term goals. With tools and technologies from IBM, you can build an e-government that's prepared for the challenges — and rewards — of being intimately involved with and responsive to the needs of your entire constituency.

Use technology to improve government interactions

As the Internet becomes more universally accessible, many governments have started using Web-based technologies to deliver services to citizens, employees, intergovernmental departments and private-sector businesses. By delivering services through the Web, you can optimize interaction with constituents and gradually evolve into a full-service e-government.

One of the most effective first steps in becoming an e-government is to create a central Web site, or portal, that gives citizens, employees and businesses one easy access point to all the services you provide. Today, you may provide links to various agencies or services that allow people to pay parking fines, apply for healthcare coverage or renew real estate broker licenses online — just by selecting a few buttons. You might also give city workers direct links to career development and job opportunities, or let citizens file their tax returns electronically.

As your e-government becomes more sophisticated, you might want to provide *Call me* buttons on your portal, which can be tailored to the needs of various users. For example, if a customer using your portal had a question about transferring ownership of her automobile, she could select the *Call me* button and immediately chat with a motor vehicles division representative through an interactive video session.

The key to designing a successful e-government portal is to make it customer-centered at every point, rather than designing it around your existing departmental and organizational hierarchies. When a business owner needs to apply for a building permit, he can select one button that guides him through each step required to get the permit approved — without having to see all the layers of departments and processes required on the backend.

As you expand your portal with new services — and enhance integration among portal transactions and back-end applications and processes — you can begin to see the benefits. Streamlined workflows can eliminate duplication of effort by people and departments. You can also foster better communication, boost operational efficiency and deliver more responsive services, improving constituents' satisfaction with government interactions.

Technology can improve effectiveness of government services and operations. For example, when a road crew works in the field, you can connect them through a video with their supervisor working in the office and with the third-party contractor two states away. By sending live video streams to and from the construction site, the workers, supervisor and contractor can share engineering drawings and then make on-the-spot design changes based on any unique circumstances they encounter.

Governments can leverage Internet technologies to boost efficiency of routine, cooperative processes — like electronic funds transfer between agencies. For example, a regional government agency can increase public awareness by using grant funds it received electronically from the national government to pay for development of a public Web site to educate citizens about preservation of natural resources.

You can also show people on the other side of the world the streets of your major cities through virtual tours. Give them a preview of businesses located in each city, and let them go inside shops they choose to make purchases through your portal. Imagine the potential benefits to your economic development efforts if you could attract virtual tourists from around the world at a moment's notice.

Gain the benefits of e-government

To become an e-government, you'll need to transform your business systems and processes. In turn, you can deliver tremendous benefits to citizens, businesses and employees. An e-government can provide:

- *Economic development*
- *Enhanced citizen participation*
- *Improved policy formulation*
- *Better quality of service to businesses and citizens*
- *Increased operational efficiency*
- *Redefined special-interest communities*
- *Organizational effectiveness*

Transform your government for success

You can help transform the way your government works, collaborates and serves its citizens by using software from IBM. Many governments worldwide take advantage of the broad variety of e-government solutions IBM offers, as well as its consultants and project managers with implementation experience. These e-government solutions are built on an extensive array of capabilities included in the five major brands of the IBM software portfolio. These IBM brands include WebSphere® infrastructure software for dynamic e-business, DB2® information management software, Lotus® messaging and collaboration software, Tivoli® security and storage management software and Rational® software development tools and best practices. With an e-government solution from IBM, you can:

- *Manage information across organizational lines by integrating applications and systems, and automating related processes.*
- *Extend government to citizens quickly and cost-effectively, leveraging your existing systems.*
- *Improve service delivery and enable transactions with constituents, other government departments and private-sector businesses.*
- *Build a strong, dynamic infrastructure that's flexible enough to address your unique accessibility, privacy and security concerns.*
- *Create new applications on demand that can work in conjunction with existing systems to satisfy constituents' needs and link with private-sector businesses.*

Integrate applications and enhance transactions

To succeed with your e-government initiatives, it's essential to create an easy-to-use portal that can help citizens, employees and businesses conduct transactions and access information from one central location. To make your portal work most efficiently, you'll need to link each portal transaction with a multitude of applications, databases and processes on the backend. You'll also need to design your portal so that users don't have to understand the intricacies of how you function behind the scenes, or interact with an assortment of departments just to conduct a basic transaction, like applying for healthcare coverage from the national government.

The open standards-based WebSphere software platform from IBM is a proven infrastructure solution that can integrate your isolated back-end applications and processes and help orchestrate delivery of existing legacy information and services through your portal. Citizens, employees and businesses can easily find the information they need to perform transactions quickly — regardless of how many different people or applications are involved in your internal process.

For example, businesses could report taxes through your portal and send a single digital check to cover everything — sales, property and beverage taxes. On the backend, you can automatically link all the people, applications and processes that work behind the scenes as part of the tax collections process at your revenue department, tax collector's office and alcoholic beverages board. With a unified process in place, these employees can work together efficiently to assess, bill, collect and account for business taxes. Businesses benefit from simplified tax reporting and payment. You benefit from more accurate, streamlined services.

You can enable dynamic interactions using WebSphere software to integrate and automate applications and processes across multiple platforms and departments. Quickly build, test and deploy a high-performance e-government portal for your constituency. Create new applications and processes on demand as you leverage existing systems and developer skills. With wireless and voice capabilities of the WebSphere software platform, users can even connect to your portal through various handheld devices, fixed and mobile phones — and interact in different languages.
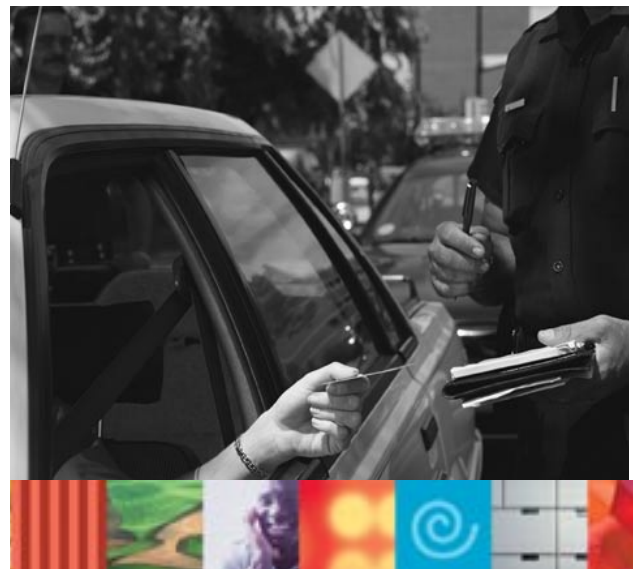
Enhance services by delivering access to targeted information

To empower employees so they can respond rapidly and decisively during routine or unexpected events, you must give them access to the right information—when they need it and in a format they can understand. Web-ready DB2 software from IBM provides comprehensive database, content management and business intelligence capabilities that span departments and other layers of government.

Rather than require emergency response teams to track down critical information housed in autonomous government agency content repositories, you can use DB2 software to quickly provide them with accurate, targeted information—regardless of who collected the data originally, where it's stored or what data types are involved. For example, you can store geospatial information about geographic features of parcels, building locations, flood zones and natural resources and then present this information graphically to communications dispatchers and emergency crews, during events like hurricanes, train derailments or chemical spills, when time is critical.
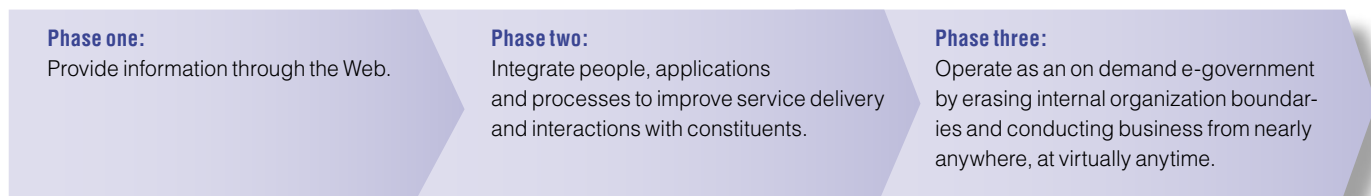
You can also use this database technology to speed and improve accuracy of routine application processing. For example, rather than sending a hardcopy application for national healthcare benefits through several staff members at multiple agencies, you could integrate your databases and automatically consolidate relevant data from each agency involved. By automating this workflow process and providing standard, easy-to-read digital formats, you enable staff members to perform work tasks more efficiently—so you can deliver benefits fast and with a high degree of accuracy.

With this powerful database software, you can make many types of information available through your portal. Customs authorities can use the portal to review and file reports while working in the field. Law enforcement officials can quickly obtain the most up-to-date information about missing persons or suspected criminals, regardless of what region or department created the original records.

With DB2 software, you can transform disjointed information from multiple databases into valuable insight—to facilitate information sharing at all levels of government while maintaining a security-rich infrastructure that can protect your confidential communication. DB2 information management software enables you to:

- *Use content management capabilities to store, access and manage mission-critical content on demand – including audio and video, word processing files and spreadsheets.*
- *Leverage business intelligence capabilities, like data warehousing and data mining, to transform disparate data from government agencies into fact-based information that can help you make better business decisions.*
- *Manage unpredictable, high-transaction volumes.*
- *Capture historical information to create a detailed audit trail.*

How do e-governments evolve?

Phase one:	Phase two:	Phase three:
Provide information through the Web.	Integrate people, applications and processes to improve service delivery and interactions with constituents.	Operate as an on demand e-government by erasing internal organization boundaries and conducting business from nearly anywhere, at virtually anytime.

Most governments today are in stage two of evolution where they offer basic portal transactions, like filing taxes and renewing licenses.

Facilitate more effective governance through realtime collaboration

In a Web-based environment, it's easy for people to be overwhelmed from an overload of information—causing problems ranging from lost information to lower productivity. To overcome this challenge, you'll need tools to cut across internal organizational boundaries and help you manage and facilitate all types of communication. Enhancing communication can help you deliver more effective services to citizens and provide a better work experience for employees. Give employees at all levels the opportunity to collaborate on projects, sharing their knowledge and helping to balance workloads. Citizens will appreciate the personal value they receive from fast and accurate government response.

To boost collaborative decision making, you can connect people in realtime using Lotus software from IBM. Foster virtual—or online—communities. Enhance employee productivity and keep up with the speed of on demand business by helping people communicate nearly anytime, anywhere.

Facilitate instant collaboration among work force, citizens and private-sector parties both inside and outside your firewall using standards-based messaging technology. Through instant messaging, online meetings and confidential virtual workspaces, you can help your employees work together faster, smarter and more effectively. You can also log, track and search messages to help ensure regulatory compliance.

Give teams the tools they need to quickly create personalized, online areas where they can store and exchange information about special projects. By immediately sharing actual experiences and proven resources, your staff can be more responsive to constituents' needs and make more informed decisions. Let employees attend interactive online meetings that combine voice and Web conferencing capabilities to improve remote collaboration. And support their requests to consult private-sector third parties that have expertise in their fields, or to take classes to develop their skills. With stronger communication links, you can foster an improved working environment, helping attract new employees and retain employees with critical skills. Lotus software can even help you capture, organize, locate and reuse knowledge that was held fleetingly in an instant message scenario.

Use Lotus software to give constituents immediate access to political leaders and candidates so they'll have a stronger voice throughout the entire legislative process. Provide forums for people with similar interests and facilitate additional involvement with government by making it easy for citizens to find the information and groups they're interested in. When they have questions about how to conduct a transaction, connect them quickly with government service representatives who can help.

Manage your complex security and privacy requirements

Because you handle extensive amounts of sensitive information from countless users—including health and income information—you need tight controls over privacy and security. As your e-government grows in size and scope, your challenges in this area can multiply. You have to account for multiple layers of policies and regulations that affect information exchanges at all levels of government. And you must be prepared to deal quickly with new security incidents that may emerge with no warning, exposing you to service disruptions, loss of citizen trust or theft of vital government assets. Tivoli software from IBM can help you manage the complexity of your environment.

Tivoli security management software helps you confront two critical security challenges that all e-governments face—identity management and event management. Through identity management, you can automate and centralize control of user identities, access rights and privacy policies throughout your departments. Incorporate multiple operating systems, security directories and Web and legacy environments to help you consistently and comprehensively enforce security and privacy policies across multiple departments and applications.

Tivoli software-based security event management lets you actively monitor, correlate and respond to security incidents virtually anytime, anywhere. With centralized, policy-based security management, your IT staff can quickly identify and proactively respond to potential security threats. By consistently enforcing security and privacy policies for your full infrastructure, you can lower overall security administration costs and improve your responsiveness to millions of users and multiple events.

Protect your constituents' privacy rights and safeguard their trust in your e-government services with a solution that extends protection to your portal through secure, personalized access. Set up portal applications to automatically link with trusted identity data sources, like your human resources department database. This software helps alert your applications to problems before they occur by identifying symptoms of potential failure, finding the root cause, determining corrective action and initiating automatic fixes.

You can also use Tivoli storage solutions to protect yourself from data loss by keeping backup and archive copies in offline storage. Benefit from autonomic computing technologies that help reduce your administrative costs. And get increased storage capacity on demand, just when you need it—for example, after a natural disaster triggers a sudden, unexpected surge of assistance requests that all need to be archived simultaneously.

Create and integrate new applications on demand

One of the biggest challenges governments face is having multiple layers of software and systems that are incompatible. To help support critical, decision-making processes for local and remote teams and regions, you can use an integrated software development platform to provide common methods for communicating and sharing assets and data. With a fully integrated communication foundation, your critical employees can deliver optimal services to protect the public good.

With the Rational integrated software development platform from IBM, you can improve the speed, quality and predictability of your software projects. A fully integrated information technology infrastructure gives you flexibility to adapt quickly to changing economic and business demands as your e-government grows and expands its reach. So you can accommodate new technologies and new processes on demand, whenever conditions dictate a change.

The Rational software development platform provides a repeatable process, requirements management, software configuration management, visual modeling to help you design a solid architecture and proven testing capabilities. This platform can help your developers write software faster and with less risk of errors. The Rational software development platform also includes specialized solutions for realtime or embedded software in systems such as those used for air traffic control.

Position your government for the future
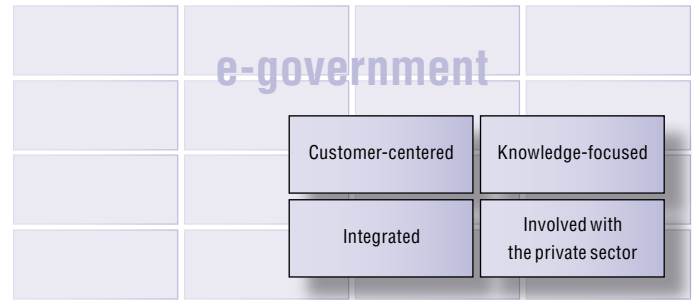
To operate like an on demand business, you start with four basic cornerstones of online government, or e-government.

Give your developers proven, open-standards-based tools that work together smoothly to overcome the turmoil in software and systems development. And streamline your team's development efforts with a common software development platform that can speed development and leverage investments in your legacy systems.

Rational software development tools can help you reduce operational costs and choose the process components that are right for your objectives. With the Rational platform, you can accelerate success by following a lifecycle approach to application development that relies on proven best practices and market-leading tools and services to mitigate the risk of software development project failures.

How should an e-government work?

Imagine a citizen who wants to research political candidates and issues in her region, find out about local voting procedures and then vote electronically using your e-government portal. How should this process work for an e-government?

First, the citizen registers to vote through your portal, using a unique identification code and password that's been assigned to her. From the citizens' home page of your e-government portal, she accesses a regional issues site to learn more about pending referendums, candidates and voting procedures. She also has the option to join a live Webcast where candidates express their opinions about key topics.

Next, she submits questions directly to the candidates and gets realtime responses through her Web-enabled personal digital assistant (PDA). And she visits a private-sector Web site — linked to your portal — to review an independent, third-party assessment of the candidates and their stances on certain issues.

When the citizen is finished with her research, she logs on to a secure Web site and places her votes. Her votes are stored centrally and then processed automatically. Later, a post-vote analysis confirms the validity of the results.

On the backend, your government systems have been hard at work. They have identified and authenticated the citizen and presented her with relevant information based on her profile. They've also assured that her transactions were accurately analyzed and distributed to all related applications — and stored a record of every moment to create an audit trail of the entire process.

Rely on a solution from a world-class technology provider

IBM works closely with governments to deliver a comprehensive set of consulting and integration services, targeted offerings and a solid technology infrastructure foundation. IBM software and services can help you transform your management systems, program and service delivery frameworks and information technology infrastructure to provide efficient, value-added services.

With IBM software as your base, you can:

- *Sustain investments in current systems by updating them to work in tandem with your e-government initiatives.*
- *Minimize the time and expense required to become an e-government by giving your developers tools to shorten costly development cycles.*
- *Link data and information from many different sources and applications – and provide an environment for flexible, dynamic e-business development.*
- *Drive faster, more collaborative interactions among citizens, employees and private-sector businesses to enhance overall government responsiveness and efficiency.*
- *Give employees the tools they need to make critical decisions at the point of customer interaction.*
- *Empower your leaders to automate and optimize government processes, delivering greater value to citizens.*
- *Support cross-departmental communications at all levels – so you're freed from organizational constraints.*

Strengthened by alliances with key IBM Business Partners — like Siebel, KANA, PeopleSoft and ESRI—the IBM e-government solutions portfolio is highly flexible and can be used in multiple environments. The IBM vision for e-government includes centers of dedicated experts who can help government professionals like you leverage technology to serve society. For example, the IBM Center for e-business Innovation, the IBM Endowment for the Business of Government, the Institute for Electronic Government and the IBM Government Solution Center. With all its resources, IBM is ready to provide technology leadership that can help governments everywhere meet the challenges presented by an on demand world.

For more information

To learn more about e-government solutions from IBM, visit **ibm.com**/solutions/government.

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