The Quest for Electronic Government:
A Defining Vision

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Foreword

     In times of rapid change, anthropologists will tell you the single biggest challenge is mastering language and vocabulary. The fast-paced onset of the digital age as it relates to 'electronic government' is no exception. What is electronic government, or 'e-gov?' What does it mean? What action agenda is inherent? What does it take to become an electronic government? I'm amused when I read the sometimes narrow definitions of electronic government -- citizen services, re-engineering with technology, or procurement over the Internet. In fact, electronic government is nothing short of a fundamental transformation of government and governance at a scale we have not witnessed since the beginning of the industrial era. Asking the question "What does it take to become an "e-government?" would be like asking the question "What does it take to become an industrial state?" in the 50s. The answer is not simple. And those who attempt to simplify its meaning may create enduring setbacks in the race for new competitive advantages in a digital society and economy.

     To a certain extent, we're all still 'reading the tea leaves' of a digital future. However, one thing is clear. The quest is multi-dimensional across leadership, policy, economic competitiveness, education, digital citizen services, internal government operations, digital democracy, and enabling technologies for each dimension. There are enough indicators, harbingers, and warning signs along these paths to begin to effectively navigate the terrain. This short paper outlines a vision and basic steps governments can and should be taking now.

The Quest for Electronic Government: A Defining Vision

The term "e-government" has attained conversational status in just four short years. However, a common definition remains elusive. Some define e-government as digital information and online transaction services to citizens. Others use the term to refer to electronic commerce, namely online procurement. At this stage in the evolution of a digital economy and society, 'too narrow' a definition can constrain opportunity and 'too broad' a definition dilutes its value as a rallying force.

This paper incorporates our best advice from our past four years' research, literature searches, innovative practices from around the world, emerging strategies and future indicators and trends. Together they garner a powerful and, most importantly, an attainable vision of electronic government.

The fact is e-government has multiple dimensions. Each dimension demands leadership, strategy, cross-coordination, and know-how, all combined with a technology strategy to take vision to reality. Identify the dependencies along the critical path and then prioritize and take action in a coordinated fashion. Each initiative should be designed to leverage others -- e-government, infrastructure, leveraging local on line businesses, attracting high-tech industry and knowledge workers, creating e-communities and improving the quality of life. The connections among these variables are what create strategic advantage. Otherwise, good intentions fall victim to fragmentation and sub-optimization of opportunities.

Each of the following components is addressed individually and collectively within an overall technology strategy.

- Leadership
- Policy
- Economic Competitiveness
    Traditional competitive assets
    Education
    Getting small and medium businesses online
    Web presence & brand recognition of online businesses
    Attracting knowledge workers and high-tech industry
- Citizen Services
- Intranet & Extranet
- Community
- Digital Democracy
- Pulling it All Together -- Technology Behind the Scenes

Leadership

Leadership in technology policy and strategy is increasingly found at the level of the chief executive officer (governor, mayor, president, premier,etc) and from elected legislators. These leaders experience direct pressure from constituents. And, they understand the urgency for establishing competitive advantage in a digital economy and society for their economies, their citizens, and their children. A growing trend at national, state and local levels includes mandates (by executive order or legislation) to forcefully move citizen services on line at an accelerated rate and transform education to insure the raw material of a digital economy -- the knowledge worker.

Our early studies with the Kennedy School of Government revealed that a 'center of gravity' for technology policy and strategy is a fundamental critical success factor for governments to move forward aggressively. That can come in the form of a Chief Information Officer (CIO) or a Technology and Policy Advisor to the Chief Executive.

Other leadership ingredients for an e-government include smart businesses, smart citizens, smart non-profits, and collaboration. Establishing a special governance body, such as a steering committee, blue ribbon task force, or advisory

board representing business and community, is an effective method to actively engage the multiple public and private stakeholders in planning and execution of strategies, public policies, initiatives and pilot projects.

Policy

Electronic government requires a regulatory and public policy environment that is conducive to electronic commerce, protection of rights, and an enabling legal framework for the digital transformation of government operations. Policy agendas include issues such as a cyberlaw, privacy, security, universal access, credit card transactions, digital signatures, consumer protection, international trade, telecommunications, taxation and a host of others. Industrial age laws, their interpretation and intent are many times not applicable or, worse, detrimental to a growing digital economy and society. All the rules are changing. Virtually every law and public policy at national, state and local levels need be examined from a digital age perspective. At each step of executing an e-government strategy, a policy examination should automatically be included up front.

Economic Competitiveness

Just as governments grew and their economies flourished along civilization's earliest trade routes, the ability to leverage the world's new trade route -- the Internet -- will determine competitive advantage in a global digital economy. Becoming a "competitive e-government" involves systematic technological transformation of traditional economic development assets such as great schools, safe streets, a clean environment, quality health care, livable land use, and good governance.

How well technology is exploited in each of those assets is the new differentiation. What is the student-to-PC ratio? Are the schools wired? Can citizens and businesses conduct business with government on line? Is there a healthy and growing market of high bandwidth capability - telecommunications, wireless, cable - to the home and businesses? Do transportation systems, law enforcement, and hospitals employ the latest technological advances? Are higher education resources committed to new technologies, reskilling and producing a work force of knowledge workers?   Are technology strategies employed in urban planning and to help alleviate urban sprawl? Are processes in place to continually reevaluate traditional competitive assets in a digital society? Are public policies and the legal environment conducive to electronic commerce?

In addition to transforming traditional assets with technology, a new set of competitive assets is emerging. This new domain includes the following:

Getting small & medium businesses online

History teaches us that businesses bypassed by 20th century mass transportation systems declined or disappeared. The same risk exists today in the digital economy. Whether a business serves only the local community or considers the world its market, an on line presence is mandatory in order not to be left behind

E-business is defined as any exchange of value over the Internet. E-business is projected to grow to over three trillion dollars by 2002. But that figure represents only the tip of the iceberg. For example, only a small percentage of car buyers actually purchase a car over the Internet today. However, the majority of prospective car buyers conduct pre-purchase research on the Internet, make their decisions, and then complete the transaction off line. Buyers present themselves armed with downloaded information on safety statistics, models, option packages, color selections and the price they're willing to pay for the car. Economic growth hinges upon both the on line and off line aspects of business.

Economic development used to focus on attracting a few large corporations to build plants and bring jobs to a jurisdiction. Although still a building block, the tide has turned toward small businesses - the fastest growing economic sector worldwide. With tens of thousands (perhaps hundreds of thousands) of small businesses within a jurisdiction, leveraging each as an e-business and helping them grow by adding just one job each per year produces healthy economic growth.

In collaboration with economic development groups (such as Chamber of Commerce) governments can facilitate strategies, educational programs, outreach and exposure to technology services geared specifically for small businesses are effective measures.

Building Web presence & brand recognition of online businesses

Becoming an e-business is one thing. Establishing presence and on line brand recognition is quite another. In the economic shift to e-business, small and medium businesses are losing customers to heavily-advertised Internet brands. Consider the scenario of a resident who remembers his mother's birthday and wants to send flowers or purchase a gift over the Internet. Search engines are still primitive and frustrating. Chances are the local resident will take the path of least resistance and

go directly to a known Internet brand instead of searching for local on line businesses. Under most current Internet taxation laws, those companies without a physical presence in the jurisdiction do not collect/pay sales tax nor do they buy business licenses. The answer is not changing tax laws - it's making those businesses within your jurisdiction which do collect sales tax, pay business license fees, property taxes and contribute to employment just as competitive.

Governments can combat this with strategies as simple as providing a 'yellow pages of online local businesses' on their Web site so that residents and other businesses 'think local' first - whether it's to shop, arrange lawn services, hire an electrician, or find a manufacturing supplier.

Attracting knowledge workers and high-tech industry
People no longer have to work where they live. Their jobs may be located in another city or state or even in another country. This new breed of knowledge worker is a scarce resource, just as raw materials were in the Industrial Age. Millions of new jobs are being created by e-business. And, worldwide, there is a dramatic and growing shortage of skills. The US Department of Commerce reports that the information technology economic sector is growing at three times the rate of any other sector worldwide. Jobs displaced in the digital economy are being replaced with new Internet-related jobs at both a higher rate and at higher-pay.

Governments are competing to attract knowledge workers to live within their jurisdiction, regardless of where they work, in order to preserve and grow property taxes, sales taxes and other revenue sources. New knowledge workers and high-tech industry look not only for good schools, transportation, low crime rates to determine where to live and raise their families and establish their businesses, but increasingly for a state-of-the-art technology infrastructure to sustain their careers and way of life.

Citizen services - A Good Place to Begin an Integrated Web Strategy

Already, sixty percent of the population in more than 10 US cities are online, outpacing even the most liberal Internet growth projections. We already know the business case is there to move citizen services from 'standing in line' to online. Depending upon the service, the population required to use that service, and other variables, early studies indicate governments are saving up to 70% by moving services online compared to the cost of providing the same services over the counter. And that figure does not include public costs -- taking a day off work,

driving, traffic congestion, parking, and waiting in line. Each enabled on line transaction -- business or government related -- means one less car trip and its effects on traffic congestion and pollution. When on line transactions number in the millions, the cumulative benefits are profound.

On average, a single government may have anywhere from fifty to seventy different agencies or departments. The typical first-generation government Internet presence is characterized by a proliferation of individual departmental Web sites each with a separate URL, offering its own department information and online services. Some governments had the foresight to create one central Web site, from which a citizen could then link to any department. Unfortunately, bottom line, either approach has the same effect. It forces the citizen to have to know what department to go to for what service.

Competitive e-governments have already moved beyond the pioneers who introduced one or two transaction services. Today, governments are planning to move hundreds and even thousands of services online. The challenge now is how to organize this transition. Leading-edge governments are rethinking their Web strategies from their citizens' perspectives. Instead of launching online services on a department-by-department basis, they are aggregating services across departments, accessible through a common portal.

A portal is a window to an array of Web-based content.   Portals are typically multifunctional which offer a variety of capabilities aggregated in one place. (In other words, if you didn't have the portal, you'd have to go to a lot of different places on or off the Web.) In government, the portal is most likely the main government Web site. On this government portal, people are given a variety of choices. For example, when citizens reach the portal and see a category, "Online Citizen Services," they click *once* to access an alphabetized list of all available online transaction services, regardless of department. So whether you need to pay a parking fine, apply for a marriage license, or renew a realtor license, the citizen simply clicks the desired transaction from the list. A form comes up along with secure credit card payment capability, if a financial transaction is involved. The citizen completes the transaction and gets confirmation right then and there.   They don't need to know, nor do they care, what department actually processes the transaction. Any, they don't have to surf down through multiple departments to find the service. Keep in mind how annoying lengthy phone menus can be. It's the same principle online. In the background, the transaction is processed using

Web-enabled tools which access, update and transfer data to and from disparate legacy systems and databases of the responsible department(s).

The first step in building a portal approach is to inventory services across departments. Then apply a comprehensive set of selection criteria to filter out online candidates. Criteria should address questions such as: What is the annual volume of transactions associated with the service? Is the service routine in nature? Does the service require positive identification? Does delivery of the service create staff or seasonal bottlenecks? Has this service process recently been reengineered? Are there any public policy issues which must be addressed? Is the service already online on a departmental web site? What is the current cost of providing the service? Using weights for these measurements, prioritize or rank the services. Know how fast the population in your jurisdiction is moving online and establish an aggressive timeline to transition services ahead of that rate.

Intranet

Not all government operations consist of one simple form and one payment. Many government services require nonlinear, complex collaboration among employees across departments. Those operations affect overall process, service quality and delivery time to citizens and businesses. Permitting and rezoning are examples which include multiple players -- citizens, businesses, utilities, multiple government departments and, many times, boards and authorities up through the executive office or legislative body and frequently involve intergovernmental levels. What if all those players had common and high bandwidth access to each other, seamless processes, electronic work flow and data exchange?

The same technology infrastructure built for citizen services can host employees through an intranet. (An intranet is just like the Internet -- same protocols and accessible through the Web -- except that it isn't open to the public. Intranets typically require IDs, passwords and are completely separate and secure through firewalls.) Through intranet technologies, employees as well as external authorized members can share information and collaborate across the boundaries of their work communities.

To achieve e-government, the quest is not so much for the "killer application" as it is for a set of "killer capabilities" and integrating strategies to leverage the power of the Internet.

Community

People are not just citizens of a government. They are parents, volunteers, neighbors, business owners and employees, people with shared ethnic backgrounds, consumers, students, sports enthusiasts, senior citizens, and children. Each community has its own members, its own networks of relationships, financial exchange, and interactions. Overlapping communities and their members weave the rich tapestry of society. Main Street, market square, town hall and even the local pub are being enhanced and even replaced by digital interconnectivity through the Internet.

With the birth of the Internet, our notions of 'community' were redefined. Unlike any other time in history, community is no longer constrained by geography. What if a resident could interact with his community - government, business, social, recreation - in one place in a way that provides competitive advantage, fosters community, and promotes economic development? Once an aggregating strategy is in place starting with citizen services, the marginal cost of adding other components, such as community services, is low. You may not save money or make money, but including a community service dimension in the overall Web strategy is the right thing to do.

An integrated approach enables the resident to check on a senior citizen, reserve a book at the library, register her child for a soccer team, buy tickets to a sporting event, email the teacher, shop locally online, express an opinion to an elected representative, participate in a public hearing, review employment opportunities, and get the local movie listing in one place. In the physical world, these activities increasingly encroach upon leisure time for people whose lives are already overextended. A citizen would have to make phone calls, check the newspaper, consult the phone book, and get in her car & drive around to accomplish those simple tasks. As cities explore competitive advantage, the 'quality of life' issues loom among the most important.

Conducting seminars, educational programs and establishing a speakers' bureau for outreach to citizens, underserved communities, community groups and civic associations are also important ingredients to an informed and participative community.

Digital Democracy

No e-government vision is complete without a component dedicated to digital democracy. Digital democracy may be defined as any electronic exchange of value in the democratic process. The spectrum includes campaigns, elections, voter registration, voting, public opinion polling, communication among elected representatives and their constituencies, universal access to technology from public libraries, wired legislative bodies, and legislative processes that encourage greater citizen participation.

Technology strategy should include interactive capabilities which allow ordinary citizens to take active, real-time participatory roles in government. Online hearings, submitting expert testimony online, opinion polling and open communication and information provides opportunities for real-time participation throughout the democratic process - not simply disseminating information after the fact.

Legislative bodies around the world are beginning to understand how technology can transform full legislative sessions as members gather to debate and vote in live floor sessions. The predominant use of technology inside legislative bodies is limited to electronic systems to tabulate floor votes. Even then, output from these aging systems many times must be manually entered into other systems for reporting purposes and then translated into a different format for posting to Web sites. New technologies allow legislators - during formal sessions - to communicate silently with staff back in their offices, conduct real-time research on issues on the Internet, negotiate terms with members of their own or opposing parties while debate continues.

Pulling the Strategy Together -- Technology Behind the Scenes

Leaders need not know how to write JAVA code. But, you do need a fundamental "Technology 101" understanding of the capabilities of the kind of technology infrastructure essential to translating vision to reality.

Far and away, the Web is central to becoming an e-government. However, other traditional channels such as telephone voice response, fax, cable, etc., are still important. And, new channels and access devices will emerge throughout this

journey we can't even imagine yet. For purposes of this paper, the focus is on the Internet.

The extent and variations of an effective Web strategy are virtually unlimited. The best strategy is to 'start simple and grow fast.' From a business case perspective, a good place to start is aggregating citizen services and business services for two reasons. First, through innovative partnerships, cost savings realized from moving services online, and potentially generating new revenue from fees, governments can self-finance start-up projects and save enough to redeploy funds to unmet needs and introduce other components which may be financially neutral or require subsidy. Secondly, the overwhelming initial demand is clearly for online citizen and business services.

Once a technology infrastructure is in place and an integrated Web strategy defined, additional components can easily be aggregated right along with government services at marginal costs. Much of the work goes on in parallel but the sequence is basically the following:

- Establish a "portal" or integrated Web site to include phasing in the following components:

    Citizen services -- enable citizens to select from and transact business (pay parking fine, renew professional license, etc) in one convenient place without having to unnecessarily navigate numerous departmental Web sites.   Transparent to the user, Web-enabling technologies allow these transactions to be processed through a variety of existing legacy hardware and software without having to re-write code.

    Businesses -- post a "yellow pages of online businesses" with direct links to e-business services to increase brand awareness among residents of local business capabilities within the jurisdiction, thereby stimulating economic growth (this step assumes a strategy in place to first encourage businesses to become e-businesses - see section above)

    Education -- link to education extranets (K-12 and higher education sites) where parents can communicate with teachers and administration, students can take online courses, conduct research, access tutors

Community -- include community transaction capabilities such as registering for Little League, senior programs, health related services, volunteering

Digital Democracy -- incorporate such capabilities as online public opinion polling, access to legislative process, and communication with elected representatives

- Create an Intranet which allows the same Web technologies to link employees across departments for work-flow processing, email, collaboration tools, and enterprise applications (financial, human resources, and procurement systems such as SAP, Peoplesoft, etc)

- Introduce an Extranet capability which links external stakeholders (such as title companies, attorneys, insurance companies, suppliers) to core operational processes, replacing government-to-business paper-based interactions.

Electronic commerce is the most visible manifestation yet of the emerging Net economy and the strongest argument for the globalization of markets. It is, therefore, obvious why the role of the government in the digital age is directly, linked to the necessary policies and legislation needed to boost e-commerce. This paper claims than an e-government is much more than a lawmaker to enable e-commerce. Â It is, therefore, obvious why the role of the government in the digital age is directly, linked to the necessary policies and legislation needed to boost e-commerce. This paper claims than an e-government is much more than a lawmaker to enable e-commerce. Without using political and social science disciplines to envision a new reason of existence forâ€¦ CONTINUE READING. View on IEEE.