

Government In the Digital Age: Myths, Realities and Promises

A Candid Assessment and Road Map for Success

2004 Symposium Paper



NATIONAL ELECTRONIC COMMERCE COORDINATING COUNCIL

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NECCC is a national think tank of public and private sector leaders working to identify and develop best practices for e-government.

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Executive Summary

At the end of the 1990s, there were ambitious hopes for e-government. Some went so far as to predict that government would be “100% E by 2003.” While none may have reached that goal, government agencies at all levels have made great progress. Along the way, people have met, formed organizations and created a community to make sure that the business of putting technology to work in government would be that much more successful in the years to come.

The National Electronic Commerce Coordinating Council (NECCC) is a leader in that community.¹ At the NECCC’s 2004 Symposium, it took a closer look at the progress made towards realizing the hopes for e-government and defining the expectations for the future. The analysis focused on four necessary components of any successful program: vision, governance, architecture and stakeholders.

All of these factors are intertwined; all have to work together to create a viable e-government program. More importantly, their exact relationships and connections have to be determined and enacted locally, contingent on the unique variables peculiar to each situation; there is no single, national, broadly applicable model that anyone can simply copy without further analysis and adaptation.

To decide what is right for them, government entities should look towards how to improve and innovate. That will not be easy. In 2000, P.K. Agarwal defined e-government in terms of five phases.² Those five phases are not inevitably linked in some natural, inevitable growth cycle. Each phase may lead to a distinct end point. That is, putting information online does not necessarily position a government entity to put transactions online, then to share information or ultimately to transform itself. The right technology may be available, but no one, in or out of government, might be ready or capable to put it to use.

From that perspective, it is clear that while the value of technology has increased, its importance, its singularity, should not be the sole focus of a program. Technology makes change possible, but it does not drive change. To be successful, e-government has to encourage adoption rates; people have to take advantage willingly of what technology has to offer.

Adoption rates will rise when e-government encompasses a larger process, covering the connections and relations of technology to the organization of government, the business of government, the constituencies of government and the personnel of government. Adoption rates will become additionally meaningful when there are some consistent and significant ways of measuring performance.

Right now, measuring performance is haphazard. In some ways, the early promise of e-government has been obscured by claims that were too ambitious and goals that were too vague.

But we should not let the over-use or abuse of the term e-government discourage us. It is important to keep sight of what made technology so exciting just five years ago. The end result of this analysis should be a re-invigorated sense of what e-government can do, with the awareness, as we become older and wiser, of what it will take to realize that potential.

The Framework for E-Government

Vision

Several years ago, the potential of e-government seemed limitless. While that may still be true, a more accurate vision of the potential stresses that e-government will not be effortless. That suggests the realization of e-government's potential means picturing a vision that recognizes the boundaries government has to cross and the transformations that have to occur. Those boundaries are framed by the different definitions of e-government.

E-government defined in the strictest technological sense has to do with new ways to deliver services or information online. The "or" is important, as new services can be defined broadly to encompass cutting edge technologies and significant re-engineering. In contrast, information online can be construed simply as complementing a help line with a web page. There is a difference: online transactions are much more demanding and often first demand re-engineering business practices.

A Better Vision of E-Government

- Refresh your vision statement
- Learn from others
- Define goals and measurements
- Show what you have accomplished
- Cross boundaries: local, state and federal
- Meet the expectations of citizens
- Develop better government, not just e-government, services

When e-government is measured in terms of outcomes, the results have also to distinguish between promise and performance. A Hart-Teeter poll from 2001 was entitled "E-Government: the Next American Revolution," a risky venture into hyperbole. From that perspective, e-government is variously supposed to deliver efficiency, economy and innovation; to improve trust, democratic engagement and accountability; or just to make Americans feel better about themselves and their elected representatives. There is an obvious and enormous difference between just adding another tool to the toolkit and fundamentally reforming politics.

We can categorize these different definitions. As analogy, P.K Agarwal defined five phases for portals, with each representing a different level of complexity:

1. Information online.
2. Transactions online.
3. Web services that mutually authenticate users.
4. Integrated Web services, which share data.
5. Customer-centric Web services, which bundle and channel customizable data.³

Each different phase comprises not just more complex technology, but a broader and more inclusive array of partners, audiences and functions, which together total a daunting set of transformations for any enterprise. As well, each phase could be articulated in a distinct vision, as one does not logically and necessarily flow from another. Any government entity could accomplish a single phase and in no way be adequately prepared to move on to the next.

To account for that, a vision statement has to understand and anticipate the challenges it encompasses. One that simply relies upon and repeats the three most common components – better service, reinventing democracy and economic development – does not reflect all that we have learned. At this point, government entities should be past the point of experimentation and wishful thinking. They should have a vision for e-government that is practical and productive.

To do that, a government entity has to put its vision into a context that adds details. These should include strategies, stakeholders and measurable goals. These will necessarily entail addressing funding and legislative mandates. Today, most government entities face increasingly severe budget restrictions. While “doing more with less” has a definite appeal, it has nowhere proved possible to achieve that as a simple function of budget cutting. Invariably, innovation in e-government is going to be a consequence of innovations in funding.

The more complex and more productive e-government projects will also demand some transformations in organizations and business functions. As these, for the most part, are legislatively defined and determined, any vision for e-government will have to encompass revisions in mandates and organizations at a political level.

What To Do

- Analyze constituent needs
- Get support up-front
- Look to the private sector for guidance on metrics and measurement
- Define and capture returns on investment
- Emphasize e-government’s role in economic development

That will demand collaboration at many different levels and with many different constituencies. At the very least, a government entity has to provide some new vision of a working relationship with its staff. Whether that demands new definitions of work rules, more intensive training and education and/or planning for the looming, wholesale retirements of the baby boomers will depend on the opportunities and challenges unique to each entity.

Collaboration in e-government also demands working across established organizational, functional and conceptual boundaries. In e-government, this is best known as cross boundary integration (XBI).⁴ XBI is an essential aspect of more advanced e-government visions, but it presents the most challenging obstacles. American government is intentionally and constitutionally fragmented, with authority, responsibilities, resources and mandates distributed across multiple entities and levels.

A vision encompassing that landscape has to be compelling. It should reflect what other government entities have done and learned. It should be drawn to a scale that allows for the measurement of achievements and difficulties. Most important, it should capture the unique features of the environment - legal, cultural, organizational, economic etc. - that determine what is possible and practical. Governments can certainly learn from each other, but they also have to understand and account for the unique nuances of their situation. Defining and implementing a vision has to occur locally. Making that vision a reality then demands active governance.

Governance

Governance is critical to success. It has two aspects. The first is leadership: someone, some group, some entity makes things possible. The other is management: someone, usually someone else, takes the responsibility to make things work. Both are equally important, but they represent different roles and demand different skills.

Leadership very often takes the form of inspiration. A leader can act as a catalyst, articulating a vision, breaking down boundaries, facilitating cooperation and finding resources. For e-government, leadership almost always demands collaboration between the executive and legislative branches.

The reason for that is simple: as e-government means change, often radical change, any project has political ramifications. To enact a vision, then, means developing a compelling business case; revising laws; finding and allocating funds; engaging stakeholders; and building a coalition for change. At a time when budgets everywhere are running deficits and are often structurally imbalanced, those are daunting tasks.

Leading and Managing

- Enact your vision statement
- Create public value
- Manage across the enterprise
- Balance risk against return
- Work across boundaries
- Improve contract and performance management
- Use technology to facilitate business, not lead it
- Promote bipartisan solutions

The reality is that the need to develop e-government is just one of many that leaders face in government. It has to compete for attention and for priority. As a result, the consequent demands of managing conflict, allocating resources and negotiating the ambiguities of multiple responsibilities demand effective and sustained leadership.

What do leaders have to consider? For e-government, they have to answer questions about:

1. **Quality vs. Cost:** The more ambitious a project, the more expensive the technology can be. As many projects have demonstrated, potential is not the only thing about e-government that is limitless.
2. **Individual Rights vs. Community Interests:** In the area of homeland security, these issues are encountered in terms of the conflict between public safety and individual privacy. Legitimacy and public support often turn on this.
3. **Efficiency vs. Equity:** Change means a revision to the status quo, with far-ranging impact. Not everyone will be satisfied. What is the fairest allocation of resources? What are the benefits? Who gets the benefits?
4. **Risk vs. Return:** Information technology and innovation represent risk. Government tends to be risk averse and generally is not effective at calculating and differentiating political and economic risks. When is something worth doing? What is the return on investments?

These are nearly impossible questions for individual managers to resolve. Such a broad vision of e-government absolutely demands leadership at the highest political levels. To get beyond the initial, basic phases of e-government, leaders have to make it possible for a wider array of partners, constituents and technologies to work together.

Leaders then hand off responsibilities. Management puts a good idea into practice. Ideally, it turns e-government into the routine. That most often involves a wholly different set of skills than leadership. The most critical is knowledge of the business functions and of the technologies. As these are often organizationally separated in government, effective governance of a project means successfully balancing the two.

What To Do

- Emphasize enterprise funding; discourage single point of business solutions
- Let business experts manage business; let IT experts manage technology
- Build and test prototypes
- Evaluate and measure throughout the project life cycle
- Create project specific steering committees

In the best possible mix, the information technology experts, the CIOs, act as facilitators for collaboration with the business managers, who make the decisions and manage the projects. It has proven especially

difficult for technology to lead changes in the business functions. The exception is infrastructure projects, which should be managed by the CIO. Those nonetheless should receive the same, rigorous analysis for value and efficacy as any purely business proposal. That analysis should include portfolio management as a basic governance tool. Too many initiatives, driven by individual agencies, can overwhelm an enterprise's capacity both to manage its resources effectively and to derive the most benefit from its investments. Managing an IT portfolio keeps strategic objectives foremost, mitigates risk and drives performance measurement. Communication between the business and technology staffs, along with the ongoing prioritization and evaluation of projects, makes portfolio management work.

Effective governance also means better contract management. Typically, government entities tend to envision projects on the largest scale and the resulting contracts simply cover too much ground. The more complex the design of a project, the longer it takes to complete and the fewer the incentives in the contract, the less likely an effort will be to succeed and the more difficult it will be to manage. Projects are ideally designed in modules, with distinct and measurable deliverables due in one to two years time. Given the frequency in the turnover in CIOs, any project that lasts more than three years will probably be complicated by multiple managers with different styles, agendas and expertise.

As e-government is a moving target, with governments continuing to learn and technologies continuing to change, one key to success is maintaining progress, by building on one project and moving towards another, improving programs and creating value in an iterative and ongoing process. That sort of continuing collaboration puts a premium on the social or soft skills necessary to promote cooperation, manage change and support re-engineering. The leaders and the partners in a project have to appreciate and enjoy the benefits of an ongoing relationship. Governance in that sense is made simpler by an effective architecture, which will serve as a blueprint, a touchstone, for ongoing guidance and reference.

Architecture

Governing Magazine defined the ideal enterprise architecture in these terms. An architecture should include the:

- Appropriate mix of centralized and decentralized hardware and software systems for consistency of capacity across the state government in support of key functions such as human resources management and financial management
- Quality and level of integration across various management systems that included timely access to information.

- Standardization of hardware and software systems across state government agencies and divisions necessary to support management processes.
- Consistent enforcement of architecture policies and systems to ensure standardization and integration.⁵

While more and more government entities, especially at the state and federal level, are hard at work developing architectures, *Governing's* recipe calls for many rare ingredients. As well, there is often a gap between defining an architecture and implementing an architecture. The latter entails cultural, organizational, financial and legal changes that are even more complex than the technological challenges. But only an effective, enterprise-wide architecture will make it possible to move towards the more complex and innovative manifestations of e-government.

A Good Architecture Promotes

- Interoperability
- Security
- Integration of data and functions
- Efficiency and economy
- Flexibility
- Scalability
- Standards
- Incremental improvement

Such an architecture creates the potential for collaboration. To move towards the more advanced phases of e-government, to make XBI a reality, it is important to minimize the fragmentation of authority and responsibilities in government. The primary challenge is that current legislative mandates deliver responsibilities for budgets and functions to single agencies. This makes for an “agency-centric” approach to technology and helps sustain the information silos that characterize the e-government landscape.

An enterprise-wide architecture is a collection of tools that government can use to connect those silos and build a new framework for delivering government services. An architecture takes advantage of what technology offers and makes possible the incremental enhancement of services built around standards. That makes more things possible, especially when the essential infrastructure for e-government and e-commerce – the World Wide Web – is already on everyone’s desktop, linking government, business and citizens.

Because of the many different skill sets necessary to build an architecture, the development process will involve the creation of many communities, oriented towards specific domains, and aggregated in one larger, all-encompassing community oriented towards the enterprise itself. That sort of cooperation and communication is in itself valuable because it establishes a routine of working together. In a situation characterized by boundaries between agencies, functions and professions, with statutory and

bureaucratic practices separating the stakeholders in e-government, then all types of community building are an important step forward.

A collaborative project, an XBI project, will proceed much more effectively if people first know and trust each other. The development of an architecture in a laboratory can make that work, as it is a means to develop a community of interests. Some interests, of course, are easier to establish and manage than others. No architecture will have everything solved or, given the ongoing evolution of technology, will it have anything solved for the long term.

But an architecture remains essential because it is the sine qua non for governments to move from one phase to another in the elaboration of e-government. XBI means agencies have to be able to share information about citizens. To customize Web services, they have to accept standards for data and data formats, for interoperable applications, for the appropriate privacy and security controls and for enterprise-wide budgeting.

While the components of an architecture are most effectively developed through a collaborative, community-based approach, implementation and funding demand attention and support from both leaders and managers. Besides offering the possibility of successful XBI projects, the other appeal of an architecture is its potential to drive down the costs of doing business. It plays a key part in providing a return on the investment in information technology.

What To Do

- Provide incentives to use the architecture
- Discourage alternatives to the architecture
- Offer economically viable options
- Be sure of top-down leadership and support
- Capitalize on the energies of new administrations
- Set a good example – follow your own rules

Government cannot both cut its costs and deliver new services without making technology affordable; standardization helps to create the infrastructure for continuous improvement and the rapid adaptation of technology across the enterprise.

But increased value for the enterprise can often mean increased costs and unwelcome change to an individual agency. There are still many archaic systems in the back offices of government; but while they may not facilitate XBI projects, they work, they manage the function for which they were originally designed. In these cases, change represents risk, which has to be addressed by leadership. Incentives will help. Enterprise infrastructures should be centrally funded. Government should give credits to the employees who are using an architecture and encourage participation. It should find ways to discourage agencies that do not use the architecture.

The key point to remember is that an architecture improves the potential for success, but it does not automatically create e-government. It provides a set of tools that many have to use before the likelihood of incremental and iterative improvement in government becomes apparent. That means the involvement of stakeholders; they put an architecture to use.

Stakeholders

Government can have a compelling vision, a superb plan for governance and a state of the art architecture in place, all supported across the enterprise by an enthusiastic workforce. But it might still fall far short of having a successful and cost-effective e-government project. You can build it, but they might not come.

That makes the stakeholders the last and most important piece of the puzzle. Essentially, the rate of adoption will make or break an e-government project. Who actually can use the technology government introduces? Who actually will?

The investments in technology will not pay off without much higher adoption rates - and this, of course, assumes that the project made sense in the first place and the implementation itself moved forward smoothly. At this point, most projects are nowhere near where planners thought they would be. Instead of becoming the dominant, most attractive mode for service delivery, e-government often becomes just an additional mode, along side the traditional options of phone, mail and in-person service.

There are some notable exceptions, with the electronic filing of tax returns the most prominent. Recently, the IRS reported that, in 2004, 60 million returns were filed electronically, an increase of 15.4 percent over 2003. Note that there are three different ways to e-file, giving citizens the maximum in flexibility: 14 million people used their home computers to do their returns and filed electronically; almost 42 million filed through tax professionals; and nearly 3.5 million used the two year old free online filing service. This is e-filing made easier and easier.

Meeting Stakeholders' Expectations

- Define constituencies and markets precisely
- Deliver value
- Increase adoption rates of technologies and services
- Learn from the private sector
- Promote economic development

The mix of options represents a diverse array of choices for consumers, supported broadly by a variety of public and private partnerships. Marketing also makes this work, as e-filing promises an incentive that is widely advertised and extremely desirable to taxpayers (“get your refund faster”). Altogether, the package makes it increasingly attractive to forego the paper, pencil and calculator approach that has traditionally plagued Americans every April.⁶

States are successfully building off the IRS’s success with their own e-filing systems. In this instance, of course, the carrots are accompanied by some sticks, notably the costs of not filing. But it is undoubtedly clear that the rate of adoption here is accelerating, pushed forward by the delivery of a valuable service to one set of stakeholders, the taxpayers, and supported by the partnership of other sets, the tax professionals, and the software developers. This is an e-government service that spreads its benefits widely.

But most e-government projects are not going to work on this same scale. When government starts thinking about marketing and incentives to adopt e-government services, it will have to start developing much more precise definitions of its stakeholders and constituents. That demands a different focus. For the most part, government leaders tend to think first in terms of big, amorphous groups, with references to the “American people,” “citizens,” “voters,” “families” or “businesses.” But if we look to the private sector’s experience, we see that customization and personalization increasingly mark the appeal of e-commerce. These depend on identifying markets in much more closely defined terms, even as niche markets. Government must meet the expectations of its stakeholders by developing specific products for specific markets and audiences.

As the IRS’s example suggests, this process might work more effectively by marketing to businesses or by using businesses as intermediaries to larger sections of the population. The adoption of technology does demand access to the technology and the skills to use it. Government can work, especially using Web services, to lower these barriers, but the general populace is always going to be harder to reach than most business communities.

A good product still needs good marketing; that demands solid data.

A government entity has to understand its markets and its customers, but it has also to understand its own unit costs, of its services and products. It has to have that financial

What To Do

- Train managers to promote change
- Cultivate private sector support of public sector projects
- Reward and recognize success
- Provide financial incentives for innovation, adoption and change
- Measure technology expenditures and their returns
- Allow open competition between public and private sector entities to deliver government services

data readily available for ongoing analysis. To make that analysis meaningful, it has to measure the performance of its business activities for comparative purposes.

If a government entity starts providing incentives or working with the private sector as an intermediary, it has to measure performance in those areas as well. The incentives have to be cost effective. And the private sector partners have to create real value.

In that context, the public sector has to recognize that it can learn from the private sector and take it as a model, but it has to remain aware of the differences between the two. As noted, there is a wide gap between political and economic motivations. As a 2003 Accenture poll discovered, “93% of the government executives we surveyed rated ‘improving citizen satisfaction’ as the key factor driving the development of their service initiatives ... Cost pressure rated second to last.”⁷

The corollary is that the benefits of e-government might accrue to the stakeholders, rather than the government. E-government can directly provide value to citizens. It can also serve as a catalyst for economic development, by promoting tourism, creating new markets or simplifying business expansion. This is a key component of any political argument for e-government; stakeholders will be interested in economic development and, as the United States moves from an industrial to an information economy, government at all levels will play a critical role.

Measuring Performance

As noted, no government has managed to achieve the goal of “100% ‘E’ by 2003.” Clearly, where we are now is not where we planned to be. To understand what happened and what did not, and to get a grasp on what might come next, we need to determine some measures of performance.

The trick to measuring the progress of e-government is first to define it. Many of the various surveys and polls conducted over the past decade have not done this clearly or consistently. As we learned in the dot.com boom (and bust), analysts often do not have the time, experience or the expertise to get below the surface of things. For example, reports on Web portals rarely address the critical deficiencies in metadata and taxonomy standards that leave state portals simply “skin deep.” These often do not make services and information more clear and transparent to citizens because they do not actually level agency walls and the towering babble of disparate systems; they simply group them at a higher level of abstraction (e.g., “living,” “working,” “learning” etc.).⁸

To add to the confusion, most of the available analyses mix up their definitions. That should not be surprising; e-government actually does mean many different things. Inevitably, any prospect of change in government crosses boundaries, causes debate and evokes conflicting mandates; an ambitious and encompassing prospect of e-government makes that all the more complex.

But despite these uncertainties, as we look at the evaluations of e-government that are most prevalent, we can gain some hints about what we need to take into consideration to understand what we did well and where we can improve. What can we provisionally conclude?

- All the evaluations considered here are based on disparate definitions of e-government.
- They are all necessarily based on a more or less cursory analysis.
- There is a learning curve, curves, actually, to take into account. Everyone, on all sides of the equation, gained in expertise and increased their expectations in the past several years. In some cases (e.g., Brown’s 2003 report), the change affected scoring drastically and the annual results are no longer strictly comparable.
- Along the same lines, the scoring systems are essentially arbitrary from both an internal and an external perspective. Which of all these factors are especially significant? Should an architecture be weighted more heavily than a specific service? Notable differences in rankings can result from minimal differences in scoring.
- Finally, all the results are dependent on the quality of the input, which is not scientifically constant either over the years or across the evaluations.

As a result, all of the resources available provide only ballpark figures. But that gives the NECCC an opportunity to evaluate the evaluators and to determine what performance measurements really count. Even better, the disparate evaluations can be the catalyst to come to a stricter definition of e-government. From that perspective, several items again appear most important to consider:

- **Adoption Rates:** E-government will not deliver a significant return on investment without a significant adoption rate. If citizens and customers prefer traditional methods of doing business, then e-government will not have a transforming effect.
- **Infrastructure:** Government entities face a different sort of adoption issue. Without the right infrastructure, they are not in a position to share services, information or functions. They need the wherewithal of standards and an enterprise architecture to realize e-government.
- **Vision:** The public sector may have been as overly optimistic as the private sector when envisioning the future. The vision of dot.gov may have been as unrealistic as that for the dot.coms.
- **Funding:** The resources for re-engineering, developing systems, supporting e-government have to come from somewhere. What are the different models and where are they effective?
- **Continuous Creation of Value:** If e-government is a moving target, with governments continuing to learn and technologies continuing to change, then one key to success is maintaining progress, building on one project and moving towards another, improving programs and creating value in an iterative and ongoing process.
- **Social Skills:** Continuing collaboration puts a premium on the social or soft skills necessary to promote collaboration, manage change and support re-engineering. The leaders and the partners in a project have to appreciate and enjoy the benefits of an ongoing relationship.
- **Leadership and Governance:** The mandate for e-government is just one of many that government entities face. Managing conflict, allocating resources and negotiating the ambiguities of multiple responsibilities demand effective and sustained leadership.
- **The Limits of Technology:** A new application will not leapfrog old conflicts. The political challenges to re-engineering government have to be addressed before any technology can achieve its full potential.

As noted, P.K. Agarwal has defined e-government in terms of five phases.⁹ Looking back and looking at the measurements analyzed above, what we can better appreciate now is that those five phases are not inevitably linked in some natural, inevitable growth cycle. Each phase may be a distinct terminus. That is, putting information online does not necessarily position a government entity to put transactions online, to share information or to re-engineer itself. The technology may be available, but no one, in or out of government, might be ready or capable to put it to use. The technology does not drive the changes that make e-government possible.

To verify these premises, the four resources we will examine closely are: *Governing Magazine*; Brown University; the Council for Excellence in Government; and the Center for Digital Government. The reviews will cover a description of the resource; the process it follows; the criteria it uses to measure performance; and any caveats the results inspire.

Governing Magazine: Grading the States

In 1999 and 2001, *Governing Magazine* produced reports entitled “Grading the States,” with the help of the Maxwell School of Syracuse University and with financial support from the Pew Charitable Trusts. The reports covered these areas: financial management, capital management, human resources, managing for results and information technology. While all five are interconnected, only the last is a concern here.

In the 2001 report, the notable trends were: the development of architectures and enterprise wide strategies; the development and adoption of standards; project tracking efforts; and the introduction of web portals. The seven key criteria for measuring performance, along with the weights attached to their scoring, were (1) architecture (25%); (2) management support (25%); (3) planning (15%); (4) citizen involvement and engagement (15%); (5) cost-benefit analysis (10%); (6) procurement (5%); and (7) training (5%).¹⁰

Each of the criteria was defined in terms of specific elements. Architecture, for example, covered these items:

- Appropriate mix of centralized and decentralized hardware and software systems for consistency of capacity across the state government in support of key functions such as human resources management and financial management.
- Quality and level of integration across various management systems that included timely access to information.
- Standardization of hardware and software systems across state government agencies and divisions necessary to support management processes.
- Consistent enforcement of architecture policies and systems to ensure standardization and integration.

The information gathering process relied primarily on surveys submitted by the states (48 complied in 2001). As well, “*Governing* reporters conducted nearly 1,000 interviews over the past several months, with sources both inside and outside government, including budget officers, managers in personnel,

information technology, capital management — in both facilities and transportation — auditors, academics, legislative aides and representatives of government research groups. Individual states sent in box loads of documents, which were evaluated by graduate students at Maxwell, and that information was added to the mix. The expanding use of the Internet by states also made more information available.”¹¹

As the reports noted, the project was tracking some moving targets; over the years, everyone learned more, everyone expected more and, in consequence, the bar for information technology was progressively raised. Because of that and because of the inescapable subjectivity of self-analysis and self-reporting, the reports need a grain or two of salt. As *Governing* noted, “The whole process is a mixture of science and art, and the best one can genuinely claim for the result is cautious optimism.”¹²

To reinforce that cautionary note, consider these results from two of the questions on the IT section of the survey:¹³

- States with highly standardized coherent architecture for financial management, human resource management, capital management and managing for results: 19
- States with strongly enforced standards related to a coherent architecture: 39

The subjects of the two questions are not exactly the same, but the notable discrepancies in the answers raise some concerns. Financial management and human resource functions are among the easiest to standardize, not least because of the standardized personnel and accounting procedures normally mandated by law and professional practice, but also because of the enterprisewide HR and financial applications that are broadly marketed and available. It seems curious then that there are fewer states, by a distinct margin, with those standards in place than there are states with strongly enforced yet unspecified standards. It is tempting to conclude that the more precise questions elicited more precise and more reliable responses.

As well, it is anyone’s conjecture what “strongly enforced” means from place to place. In that vein, a more interesting and telling set of questions for state CIOs might have been, “Do you have any certified, trained systems auditors on your staff? Do those auditors use the guidelines established by the Information Systems Audit and Control Association? What are the penalties for agencies that fail to meet the standards specified in your architecture? Have any penalties actually been levied”¹⁴

Overall, though, there are good reasons to accept *Governing’s* reports as among the most reliable available. Research and analysis were conducted in cooperation with an established and reputable academic institution. Funding came from an independent non-profit with substantial experience and

interest in this topic. While there are always some caveats, we can conclude, just at a minimum, that the reports represent an impressionist's view of the situation and that their results have a comparative value. They tell us how states measure up to each other. Unfortunately, the results are dated, especially as most states have experienced significant budget problems since 2001.

Governing Magazine: State Grades, 1999 and 2000

State	1999	2001	State	1999	2001
Ala.	D	C-	Mont.	B-	C
Alaska	C-	B	Neb.	C+	C+
Ariz.	D+	B-	Nev.	C	C-
Ark.	D	C-	N.H.	C	C
Calif.	C+	B-	N.J.	B-	B
Colo.	C	C	N.M.	C	C+
Conn.	D+	C+	N.Y.	C	B
Del.	B	B	N.C.	C	B+
Fla.	C-	C+	N.D.	B-	B-
Ga.	C	C+	Ohio	B	B-
Hawaii	F	C-	Okla.	C-	B-
Idaho	D+	B	Ore.	C+	C
Ill.	D+	C+	Pa.	B	B+
Ind.	C	B-	R.I.	D	D
Iowa	C+	B	S.C.	B	B
Kan.	C+	A-	S.D.	B	B
Ky.	C+	B+	Tenn.	B+	B+
La.	C	B-	Texas	B	B-
Maine	C	B-	Utah	B+	A
Md.	C	B	Vt.	C	C+
Mass.	C	C	Va.	A-	A-
Mich.	B+	A-	Wash.	A	A
Minn.	B	B	W.Va.	C	C-
Miss.	C-	C+	Wis.	B	B-

Brown University: State and Federal E-Government Reports

Brown University's Taubman Center for Public Policy has annually since 2000 examined state and federal government Web sites to determine the variety of specific types of information and services available online. There is also a concern with measuring their use value to citizens.

This concern takes some unique forms. For example, in 2003, the analysis used "the Flesch-Kincaid Grade Level Readability test to evaluate the readability of government Web sites. With half of Americans

reading at no higher than the eighth grade level, we wanted to determine how accessible government sites are to the citizenry.” It also tested “disability accessibility using the ‘Bobby’ evaluation software operated by Watchfire.”¹⁵

The research methodology uses two tools. There is a comprehensive analysis of Web sites: “An average of 32 Web sites is studied for each individual state so we could get a full picture of what is available to the general public.” Each site is evaluated in terms of its features:

such as online publications, online databases, audio clips, video clips, foreign language or language translation, advertisements, premium fees, restricted areas, user payments or fees, two measures of actual disability access (W3C and Section 508 guidelines), several measures of privacy policy, multiple indicators of security policy, presence of online services, the number of online services, digital signatures, credit card payments, e-mail addresses, comment forms, automatic e-mail updates, Web site personalization, PDA accessibility, and readability level.

The second tool tested the responsiveness of the government entities. Researchers sent an e-mail message asking the state’s human services department, “I would like to know what hours your agency is open during the week. Thanks for your help.” Because the evaluation criteria changed in 2003, principally to include readability testing, the scores over time are not strictly comparable. This corresponds to the situation in *Governing Magazine’s* reports, where everyone learned more about and expected more from technology over time.

As a sample of the research process, here is a detailed explanation of one criterion, “Democratic outreach.”

One of the most promising aspects of e-government is its ability to bring citizens closer to their governments. In our examination of state and federal government Web sites, we look for several key features within each Web site that would facilitate this connection between government and citizen. The first of these features is e-mail capability. In this instance, we determine whether a visitor to the Web site could e-mail a person in the particular department other than the Webmaster. In 2003, 91 percent have e-mail addresses, up from 81 percent last year. Other methods that government Web sites employ to facilitate democratic conversation include areas to post comments (other than through e-mail), the use of message boards, surveys, and chat rooms. Web sites using these features allow citizens and department members alike to read and respond to others’ comments regarding issues facing the department. This technology is becoming more prevalent. In 2003, 24 percent of Web sites offer this feature, more than double the 10 percent from the previous year.

Overall, Brown’s analysis is exclusively oriented to the Web and especially to the perspective and experience of the average citizen. This represents a particular definition of e-government that is not so closely concerned with infrastructure and organization, certainly not to the same extent as *Governing Magazine*. Moreover, *Governing* supplements its research with contact with government staff, giving them

some room for interpretation. Brown does the interpretation itself, as, for example, with the leap of faith it makes equating “bringing citizens closer to government” with easy access to staff e-mail addresses.

What might be worthy of further study are the swings in ratings over the years. The criteria for evaluation did change in 2003 and that might explain some things (e.g., the Massachusetts miracle, rocketing from twenty-fourth in 2002 to first in 2003), but not others. Alaska experienced a precipitous decline from 2000 to 2003. Indiana and Michigan both appear to be on a roller coaster.

Governing, in contrast, presents a much more stable picture over the years. It is, as well, instructive to note the differences in scoring between Brown and *Governing*: compare the rankings of Texas, Kansas and Virginia, among others. The rankings are quite different, which reinforces the idea, as noted earlier, that these two surveys are not always looking at the same things.

Brown University: State Rankings 2000-2003

State	2000	2001	2002	2003	State	2000	2001	2002	2003
AK	16	40	33	50	MT	41	20	25	43
AL	21	49	49	46	NC	12	11	17	20
AR	28	19	30	37	ND	7	12	20	29
AZ	39	46	32	15	NE	44	31	40	48
CA	18	6	3	5	NH	48	48	14	23
CO	42	29	47	39	NJ	34	18	2	13
CT	29	24	4	22	NM	35	47	31	49
DE	49	35	41	24	NV	46	33	8	32
FL	8	9	13	9	NY	3	7	11	8
GA	40	37	38	31	OH	17	10	21	26
HI	43	38	45	45	OK	38	45	29	38
IA	11	23	28	35	OR	10	21	18	34
ID	14	39	39	30	PA	4	8	5	7
IL	5	36	16	11	RI	50	44	35	33
IN	22	1	12	3	SC	25	27	26	42
KS	6	34	23	21	SD	47	22	9	14
KY	30	30	44	10	TN	36	4	1	4
LA	31	15	43	28	TX	1	3	6	2
MA	23	16	24	1	UT	26	17	10	17
MD	32	28	27	18	VA	19	13	15	19
ME	33	14	34	25	VT	45	43	42	44
MI	15	2	19	6	WA	13	5	7	16
MN	2	32	37	27	WI	20	26	46	36
MO	9	25	22	12	WV	27	41	36	41
MS	24	42	48	47	WY	37	50	50	40

Hart-Teeter Polls

Since 1999, the Council for Excellence in Government has commissioned annual polls from Hart-Teeter that examine citizens' perceptions of e-government. As the July 1999 report specified, the even more ambitious goal is to try and assess the quality of citizens' relationships with government and the impact technology has on that.¹⁶ Overall, the continuing concern seems to be whether technology can help reconnect the citizen and government and begin to restore some sense of "ownership with regard to government."

As a result, the surveys are a heady mixture, defining e-government in a shifting and, at times, superficial combination of technology, emotion, informational content and the impact of specific events in time. The last are especially important to note. For example, the 2000 report was entitled "The Next American Revolution," which may reflect accurately the irrational optimism of the dot.com years, but does not wear well in the aftermath. Similarly, the poll released in February 2002 explicitly addresses the effects of the events of 9/11.

To allow for some counterpoint, Hart-Teeter also surveyed government officials as a separate group in these polls. The perceptions of the citizens are balanced by reference to the intentions and plans of those developing e-government. With both groups of respondents, "government" is writ large; that is, there is no differentiation along local, state and federal lines.

Over time, the polls document a consistent appreciation for e-government's potential; people think technology can provide useful and valuable services, as well as help to make government more responsive and accountable. Because of that, most people support greater investment in e-government. There is, though, a continuing concern with privacy. This was tempered somewhat by a surge in support of measures to protect homeland security, but it was still emphatically voiced.

These point to one caveat about the value of the polls. There is room here to gloss over the conflicting mandates that government entities face. The support for more investment in e-government, for example, is not necessarily a vote for higher taxes, or reduced investment in any other government function. As well, the polls do not specifically assess e-government components (e.g., architecture, services, standards etc.) in the same way that other resources do.

In sum, the Hart-Teeter polls complement, but are not comparable to, the other resources evaluating e-government. There is no explicit ranking of individual government entities; in fact, as noted, government is treated as a monolith. But no state has this amorphous national audience, so the conclusions would have to be validated in every state, since there could well be significant variations from state to state vs. the

national norm. In many ways, this is all too impressionistic to be more than a starting point for further analysis. It is more like what New York's former mayor Ed Koch used to say: "How am I doing?" It opens a conversation.

Center for Digital Government

The Center for Digital Government issues reports on digital cities, counties and states, as well as releasing a "best of the Web" ranking for various functions and services. The research is done by the Center, in collaboration with *Government Technology Magazine* and the Progress and Freedom Foundation. Different corporations have sponsored the work over the years. Both the magazine and the center are part of a for-profit company, e.Republic, Inc., that works in the e-government realm.¹⁷ Overall, the emphasis in these reports seems to be on evaluating transactions and services, with an appreciation for the needs of governance and infrastructure.

Unfortunately, not all the contextual information, nor some significant sets of the data itself, is online. For example, for 2001, 2002 and 2003, only the top 25 states are listed in the summary results. Neither is there much information on the research methodologies.¹⁸

The analysis covers eight categories of government functions where technology can be applied: law enforcement and the courts; social services; electronic commerce and business regulation; digital democracy; management and administration; taxation; education; and GIS and transportation.¹⁹ The raw data is acquired through surveys distributed to the states.

Over time, the criteria for analysis are refined. Here are the descriptions for one area, electronic commerce, as they evolved:

- 2000: Survey results in the Electronic Commerce category reveal what services are available online for citizens, if citizens can actually file or apply for a license online, if citizens can receive online customer service through a state employee, and more.
- 2001: Electronic Commerce/Business Regulation—The availability of regulations, forms and online assistance, and the ability to submit required paperwork using the Internet.
- 2002: Electronic Commerce and Business Regulation—The availability of regulations, forms and online assistance; the ability to submit required paperwork and payments; and the status of portals and e-procurement systems.

These obviously reflect some changes over time, analogous to the ongoing increase of expertise and expectations over time. As well, additional criteria were added and the categories were re-shuffled. In 2002, the concept of “digital democracy” came into play, and in 2001 GIS entered the picture. The former has a somewhat grander resonance than the ambiguous reality of the information evaluated: “the application of digital technologies to permit Internet access to laws, candidate information and electronic voting technologies.”²⁰

The 2003 survey introduced some new concepts.²¹ It focused on three main areas of concern:

- Implementation and adoption (“finishing what we started”).
- Capacity and collaboration (“the new platform for governing”).
- Institutionalizing innovation (“leaning into the future”).

The data for the rankings was self-reported from the states; the questions and criteria are described online. Altogether, it is worth noting that these criteria, as well as the results the survey generated, are notably different from those used in previous years. It is also worth noting that the Center’s conclusions vary significantly from those of *Governing*, which is arguably the most comparable resource.

In 2002, for example, the Center reported, “Arizona leads the nation in applying advanced technology to government operations ... The state’s top-ranked finish stems from a long-term commitment to electronic service delivery, according [to] Cathilea Robinett, executive director of the Center for Digital Government. ‘Since 1992, Arizona has been building the governance structure, the technical infrastructure and enterprise view to support electronic government,’ said Robinett. ‘It’s a gradual process, and they’ve worked steadily to put all the right pieces in place. Now, Arizona has essentially institutionalized e-government.’”²²

Governing, in contrast, graded Arizona D+ and B- in 1999 and 2001. Brown’s evaluations are similar. But, in some ways, the results can be misleading. There is certainly a methodological weakness to relying entirely on self-analysis as a means to gather data. Nonetheless, the criteria and details that the Center introduced in its latest survey represent critical issues; they are certainly worthy of close analysis.

Center for Digital Government: State Rankings 2000-2003

State	2000	2001	2002	2003	State	2000	2001	2002	2003
AK	3	18			MT	33			14
AL	49				NC	35	21	25	10
AR	31			9	ND	47			21
AZ	17	5	1	5	NE	14	17		22
CA	42	23			NH	41			
CO	21		19	10	NJ	6	7	16	
CT	27	24	10		NM	48			
DE	39		22		NV	19	25		23
FL	25	13	18	20	NY	32	16	21	
GA	7	19	14		OH	30	9	12	
HI	42				OK	44			
IA	20				OR	23			
ID	13				PA	12	11	14	24
IL	4	1	4	12	RI	50			
IN	26	22	8	4	SC	32			
KS	2	1	13	19	SD	14	12	9	6
KY	29		24	12	TN	40			7
LA	18				TX	10	15	23	
MA	27				UT	5	7	7	8
MD	9	4	10	15	VA	16		6	3
ME	35	5	16	13	VT	46			
MI	11	9	2	1	WA	1	3	3	2
MN	37	19	20	17	WI	8	14	5	25
MO	22				WV	24			
MS	37			16	WY	45			18

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Conclusion: What Lies Ahead?

E-government is not getting any easier. The most sophisticated government entities have already plucked the low hanging fruit; others, less advanced, can follow their example, but all are learning that the expectations for e-government, hence the definitions of e-government, are changing. The fruit is increasingly higher and harder to reach.

The most attractive options are the most difficult. They require transformation. Overall, the transformation of government implies integration, simultaneously as a goal, a tool and a pre-condition. Technology can effect integration; it offers a means to overcome the fragmentation of government, the constitutionally and legally mandated separation of functions, responsibilities, data and entities. But technology just makes things possible. Someone one has to put it to use.

Transformation is all the more daunting because the fragmentation is there for good reasons. Traditionally, Americans have shied away from the prospect of bigger and bigger government; greater and greater integration awakens suspicions, often in the form of concerns over privacy, trust and accountability. These qualms are valid; it is undeniable that all of government's procedures for guaranteeing accountability are based on processes designed for paper records, not digital information. Policy and practice are not keeping up with technology.

The result is a conflict of mandates. Sharing data might reduce costs; it might also eliminate privacy. E-government transactions might increase efficiency; they might not produce trustworthy evidence. Public-private partnerships might produce technological innovation; they might not result in publicly accessible records and accountability.

But debates over policy can be never ending. Ultimately finances drive governmental decision making. The budget is inevitably the final argument because the budget is the common language of government; every different issue is translated into dollars and cents. That does not make other concerns unimportant, but it does make them negotiable. As a result, government should be prepared to change course. Mark H. Moore wrote, any "mandate for change is both ambiguous and vulnerable to change, and an efficient response to that reality may require organizations to be adaptive and flexible rather than rigidly focused on achieving a clearly defined objective."²³

In contrast to that approach, based on ongoing analysis and planning, the 1990s was a period of irrational exuberance when seemingly nothing could go wrong. Now government knows better and is more familiar with the costs and the benefits of technology. Since investments are always going to be a challenge,

government has to make the investments pay off. To manage risks, it needs to understand them clearly and break them down into pieces that can be more easily managed and more effectively measured.

Many e-government projects have tried to do more than government entities can effectively control. One response is a focus on small and incremental advances, with enhancements and elaborations of tangible products, based on collaboration with the customers. That could entail better contract management and contracting processes. The other response is facilitating transformation. Above all, government needs to understand and to address the political, legal, cultural and organizational challenges ahead.

Symposium Participants

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Mary Gay Whitmer	Issues Coordinator, NASCIO
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Endnotes

¹ The NECCC web site, at www.ec3.org, is a repository for a wide variety of documents and reports on e-government.

² P.K. Agarwal, "Portals: the path to e-everything," *Government Technology*, March 2000.

<http://www.govtech.net/magazine/gt/2000/mar/pov/notesfromthefield.phtml>

³ *ibid.*

⁴ For more details on cross boundary integration and e-government, see the report from the 2003 symposium of the National Electronic Commerce Coordinating Council, *XBI – Cross Boundary Integration: the Key to Successful E-Government*, at http://www.ec3.org/Downloads/2003/XBI_Report.pdf.

⁵ *Governing Magazine* and the Maxwell School of Syracuse University, *Grading the States*, 2001,

http://www.maxwell.syr.edu/gpp/grade/state_2001/information.asp.

⁶ Internal Revenue Service, "Strong filing season produces e-filing records," Press release, 10 May 2004, at http://www.whitehouse.gov/omb/egov/press/free_file_may04.htm. The release also notes that 19.2 million used the web feature "Where's my refund?" to track the progress of their check.

⁷ Steve Rohleder, Group Chief Executive, Accenture - Global Government, Keynote Speech, 2003 FOSE Conference, 8 April 2003, p. 4.

⁸ To appreciate the complexity of the task, see the dimensions of the federal effort to meet the mandate of the E-Government Act and "make it easier for all Americans to find and use the government information and services they need," at <http://www.cio.gov/documents/ICGI.html>.

⁹ P.K. Agarwal, "Portals: the path to e-everything," *Government Technology*, March 2000.

<http://www.govtech.net/magazine/gt/2000/mar/pov/notesfromthefield.phtml>

¹⁰ Complete information on the process, criteria and grades is available on at the project's web site:

http://www.maxwell.syr.edu/gpp/grade/state_2001/information.asp.

¹¹ <http://www.governing.com/gpp/2001/gp1intro.htm>

¹² <http://governing.com/gpp/2001/gp1intro.htm>

¹³ <http://www.maxwell.syr.edu/gpp/statistics/2001%20State%20%20%20IT%2011.02.html.asp>

¹⁴ See www.isaca.org for details on the COBIT (control objectives for information and related technology) standards.

¹⁵ <http://www.insidepolitics.org/egovt03us.html>

¹⁶ The Council is "nonpartisan, nonprofit and national in scope." For more on its background, as well as the results of the various polls noted here, see <http://www.excelgov.org>.

¹⁷ <http://www.erepublic.com/>

¹⁸ <http://www.centerdigitalgov.com/center/03sustained.php>.

¹⁹ <http://www.centerdigitalgov.com/center/02sustained.php>

²⁰ <http://www.centerdigitalgov.com/center/02sustained.php>

²¹ <http://www.centerdigitalgov.com/center/2004DigitalStatesSurveyandCriteria.pdf>

²² <http://www.govtech.net/magazine/story.phtml?id=29356>

²³ Mark H. Moore, *Creating public value: strategic management in government* (Cambridge, MA, 1995), p. 70.