Government in the Future:
Technology Vision for Integration and Interoperability

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Introduction

An integrated day…

2:45 AM – A deputy sheriff in California requests an arrest warrant on his wireless laptop. A judge responds from home via a digital signature. The deputy prints the warrant on location, and a critical arrest is made within minutes.

3:15 AM – Driving home from work, a man in North Carolina notifies the city road division of a pothole on a major street. A repair crew is scheduled instantly.

10:30 AM - During a custody hearing, a family judge in Lincoln, Nebraska is notified on her “digital dashboard” of a precedent set in a child custody ruling made by a Connecticut court 2 days earlier.

12:15 PM - A woman having lunch in Chicago, Illinois accesses and reviews her local property tax and submits her payment—all from her PDA.

1:20 PM – A delivery man in Florida completes an online application for a beach vehicle permit. The state’s new services-designed environment reviews the state DMV for a valid Driver’s License, the local tax collector’s system for property ownership, and verifies the vehicle is a 4x4.

3:15 PM – A resident uses the Web to check his community’s schedule for mosquito spraying and notifies the health department of a dead bird.

4:30 PM - A court in Tennessee provides jury duty notification and instructions by email as well as by traditional paper-based mail.

6:15 PM - A family notifies the Post Office of their new address, and the change is automatically cascaded to all local, state, and federal government agencies.
The future of government is becoming clear, and it promises to be as efficient for agencies as it is convenient for constituents. As individual demands offer new challenges to today’s government, the need for an overall strategy is more critical than ever. Multiple stops for information, frustrated users/employees, and even those who work at night have difficulty functioning under current business operation hours. The good news is that the technology to reach the desired state already exists. The bad news is that the process does not. Implementing solutions that enable world-class process improvements and leading-edge constituent services requires much more than just installing new technology or hiring a computer company — it requires vision, strategy, and most importantly, joint execution among government agencies.

Naturally, this is much easier said than done. Along with the core services each individual government agency must provide, there are challenges that face the industry as a whole:

- Limited funding
- Demands for greater service
- Disparate and/or antiquated systems
- Business process improvement
- Agency interoperability
- Network, data, and physical security
- New solution integration

In many cases, public officials find it difficult to see past these and other obstacles to focus on what’s possible on the other side, once the challenges are overcome.

This white paper is intended to:

- Create a future vision for integration and interoperability within and between government agencies.
- Showcase some of the issues facing today’s government agencies.
- Demonstrate how thought leadership could be utilized to improve the ways state and local governments manage their future.
- Briefly discuss the new requirements for information-sharing.

The need for speed

There is no question that sharing data across agencies could help reduce costs while saving time and valuable resources. Processes like reviewing appraisal value, creating a tax bill, determining millage rate, and shared purchasing/inventory can all be improved through faster, leaner, more efficient sharing of knowledge. However some areas are more critical in nature than others, and truly illustrate an immediate need for improvement in this area. It is widely speculated that September 11, 2001 forced government agencies to communicate and share data with one another faster and more effectively. It was perhaps the war on terror that brought the need into public view, but for a long time, law enforcement agencies have recognized the potential benefits instant information access could produce.

The reality of an individual being stopped on a traffic violation and released because the officer was unaware of a warrant from a neighboring city, county, or state is very real. The national vision of porting data from a criminal system has been discussed for many years. A national
criminal database (NCIC) was even developed to solve this issue. However, utilizing a top-down approach—cascading information from the federal level down to the local level—does not allow for the amount of detail and up-to-the-minute input capabilities required for the right information to be accessible to the right people at exactly the right time. Only local governments have the ability to react fast enough to capture and relate the information necessary to meet the emerging demands of law enforcement. Utilizing a “push up” approach (from the local up to federal), therefore, enables real time, real on-demand action.

Discussions of how to solve these law enforcement issues have shed light on other advantages that can be attained by implementing solutions that streamline the flow of information among agencies and with the public. These possibilities, some of which are outlined in the beginning of this white paper, have made many state and local government agencies take notice because they are continually asked to find solutions that improve services. Now, they see that by engaging thought leadership, business process improvement, and implementing information-sharing strategies, meeting that directive is well within reach.

Overcoming obstacles

An observer looking in from the outside may wonder how it could be so difficult to share information. After all, there are many companies who have incorporated knowledge-sharing systems with great success. There are challenges unique to government, however, that complicate matters:

Size
The United States government is the largest employer in the country. One point eight million Federal employees serve in more than 75 agencies geographically dispersed throughout the country. Then combine the number of state government employees in more than 50 agencies in the Executive, Legislative, and Judicial branches with the number of employees serving at local agencies in 3,200 counties and 19,000 cities and realize that because of its sheer size, government has logistical issues that other organizations do not have to contend with.

Location
For local government agency employees to work most efficiently, they must share ideas, processes, and best practices with other employees working in similar agencies. Ironically, though, a local government worker will have far more interaction with other local colleagues, even though they do not share the same scope of work. For instance, even though a property tax appraiser in Sacramento, California can learn and share a great deal with another property tax appraiser in Topeka, Kansas, she will most likely deal much more with a Sheriff or Commissioner in her own city. Periodic conventions and intermittent swapping of phone calls or emails are not substitutes for true sharing of knowledge.

Variation
There are literally hundreds of different agencies, each with volumes of information that originate in many different formats on various platforms. Any solution placed, must therefore be capable of organizing, storing, and managing all the different types of information and solutions. For instance, an effective system must manage diverse solutions—as demonstrated by the circuit court clerk imaging documents in DuPage County, Illinois, public kiosks in Arizona and California, wireless court dockets in Philadelphia,
electronic filing capabilities in Colorado, and IVR/VRU solutions in Walton County, Florida. At the time of inception, the government leaders who implemented the systems that manage the above solutions used thought leadership, vision, and underlying technology to support *each individual solution*, which is important, but it is a perfect segue into the next barrier—Independence.

**Independence**
The barriers of size, location, and variation can often be overcome with technology, but herein lies perhaps the most daunting impediment—Independence. Because agencies run independently to a certain extent, it is possible for every agency to implement its own unique technology that may or may not be compatible with another agency in the same city, let alone in a city across the country. For instance, a district court judge stated recently at a state IT conference that there are currently 113 various, disparate county/state systems that could potentially hold data viable for his decision process. Most of these systems do not communicate with one another, making it difficult (if not impossible) to leverage pre-existing knowledge residing in all the systems. How many decisions are made every day without all the necessary information available from existing systems?

Local government agencies that could benefit from sharing data include:
- Property Appraiser
- Tax Collector
- Sheriff
- Elections
- Clerk of Court
- Court (Judges, DA, Public Defender)
- County Commission
- School Board
- Utilities
- Administration & Finance

- Law Enforcement Agencies (LEA)
- Ambulance / Fire / Emergency Care
- Public Works
- Road & Bridge
- Economic Development
- Social Services
- Fleet management
- Parks & Recreation

Each of these local government agencies may have a vision that is not unique in scope. That is, they may all share a vision of seamless information transfer. The trouble lies in how each deploys the vision. In many cases, the disparate systems, technologies, and work processes implemented to achieve the goal directly contradict the original intention. As a result, each agency wastes valuable time and resources performing duplicate tasks.

**Outdated standards**
As mentioned earlier with law enforcement’s NCIC, the federal government has made valiant efforts to implement national systems and standards within which local and state governments could operate. The problem here is that the national standards that have been developed are now antiquated and result in more of a national database that is inadequate to solve the needs of today’s complex environment. Today’s methods of sharing information are more sophisticated and capable of much more than what the standards allow. This is no one’s fault—we just know more and can do more than what was anticipated when the standards were initiated. Another issue with national standards is the need for localization. In some cases, variances between regions cause legitimate differences in methods of operation. The resulting standard should be representative of 60-80% of the local need, allowing for a 20-40% degree of change to accept local “rule”, change, and/or statute. In Florida, one county may have a coastal region
and a neighboring county may not. Although they both adhere to certain Federal and Florida laws, they both have different local rules (laws) governing the usage of their individual environments (i.e. building codes, parks & recreation, and environment issues).

**Human factor**

The final challenge, the one the industry will have the most difficult time overcoming, is the human factor. Simply put, elected officials with good intentions often make inappropriate decisions regarding integration and interoperability with Information Technology. Uncovering the roots of these decisions is the first step in eliminating them.

- **Misinformation/misunderstanding.** Sometimes inappropriate decisions are based on misinformation by advisors or salespeople. In other cases, the decisions are made because of misunderstanding the underlying problem, which could be process-based and not technological.

- **Lack of an “umbrella” strategy:** In many cases, officials will implement solutions that solve niche problems or solve problems partially due to budget constraints. This “band-aid” approach does not take the big picture into account—and while that particular agency may operate smoothly within itself, it hinders interoperability among agencies.

- **Technology as the panacea:** Every year, there seems to be a new technological idea that promises to solve all the problems of government—from typewriters and word processors, to client/server and LAN, to more recent imaging, electronic filing, and wireless solutions. Though technology is not inherently bad, applying technological solutions without a true understanding of the business problem just makes it a worse problem faster.

- **Politics:** To succeed in politics, it is often necessary to see what others are doing, and then do the exact opposite. The idea that leaders aren’t made by following in other’s footsteps could inherently be the problem. A Democratic city official may see what a Republican county official is doing and purposely take a different course of action and vice versa. In other cases, officials will walk away from collaborative initiatives because of partisanship or because they are not the driving force behind the idea. The result is redundant effort, disparate, non-compatible systems, and wasted resources.

- **Same old ways.** There are many instances when government agencies may not recognize a problem exists because the way they operate now is the way they always have operated. In these cases, the only bad decision made is the decision not to change.

While all of these inappropriate decisions made by government agencies may be understandable, it does not make them less harmful to the communities they serve. No matter why the decisions are made, the communities are stuck with them until the solution’s contract expires or new public officials are elected.

**A plan of action**

With all the challenges compounding against effective knowledge transfer, government officials may become overwhelmed with the scope of what must be done to obtain it. But while there are certainly obstacles, they are certainly surmountable—oftentimes through
technology. Rather than implementing technology randomly, however, technological implementation decisions must be accompanied by a strategic vision. Currently, the aforementioned agencies that share data most likely exist within their own technology environment.

A recent Lean Six Sigma assessment by Xerox Global Services, Inc. showed that a local district attorney’s office created nine copies of one document per case to be disbursed to other agencies within the DA’s “shared community”. This creates wasted time and effort, added costs, and increased risk of error since the general practice of local government agencies is to share data by making paper copies of information, which is re-entered by the receiving agency. In many cases, the receiving agency will even create a new version of the document with additional data, which is then distributed back to the other agencies in the “shared community”.

Theses challenges take on a whole new relevance when one considers the negative consequences this paper-based, labor-intensive, process can have on agencies that interact by statute or by precedent and commonality—like Justice. Perhaps this is why the judicial community is pushing for an integrated system—one that would allow criminal and public safety agencies to share data more efficiently and effectively, such as law enforcement, clerks, courts (judges and administration), and agencies that respond to emergencies.

One notable missing environment from the CJIS model (Criminal Justice Information Systems) is how civil systems and outlaying agencies would interact within the shared approach. That is, using the Judicial example, how do sources outside the Judicial environment access data held within the judicial repository? The answer lies in a central base for knowledge transfer that does not impede individual agencies’ ability to collect the data vital to their operations. This holistic approach allows every agency within the system to leverage existing knowledge while eliminating waste and recapturing lost revenues.
Many corporate enterprises have already implemented knowledge-sharing solutions that are successfully helping them gain a competitive advantage in the market today. And while corporate entities are smaller and have fewer logistical problems, it is possible to use corporations to gain a clear view of a desired state in government:

To reach this desired state, officials should ask some very basic questions when implementing technological solutions, such as:

- What is the core need?
- What is the desired end result?
- What steps should be in place to accomplish our objectives?
- What could prevent us from achieving these objectives?

Once those questions are answered, however, they should follow up with additional, “visionary and compatibility” questions like:

- How will this solution affect other agencies inside and outside my immediate vicinity?
- Can I make this initiative a joint initiative with other agencies?
- Does this solution employ open standards?
- Can other governmental agencies tap into our resources?
- Will this solution facilitate a collaborative culture between similar agencies in geographically dispersed locations?

It is only after these questions are answered that officials have the data they need to make informed decisions that improve their own agencies and the government as a whole.

However in government, these answers change as quickly as they are discovered. The question: *what is the core need?* could be affected by the next legislative session. The question: *what is the desired end?* is more likely a moving target with a 20 year plan. And the question: *what steps should be in place?* relies heavily on the talent employed to accomplish them. Unfortunately, this variable nature of government is often seen as an excuse on why *not* to proceed in the first place.
Conclusion

Based on multiple successes in the corporate environment, many outside government looking in wonder why integration and interoperability hasn’t happened more rapidly. There seems to be a clear vision of how government agencies could collaborate and share information – so to make that vision a reality, it is imperative to keep looking and moving forward. The only thing public officials and leaders of local, state, and federal agencies can do about past mistakes is learn from them.

The desired state for an effective operation is to have a global vision and strategic plan for the operation environment and then start within one department and continue on, bringing the other agencies forward together. The best course of action to develop and sustain the government of the future can be likened to a grassroots political approach. Public officials must “take care of their own backyards”, do what they can in their own communities with the big picture in mind, and most importantly, work well with leaders of neighboring agencies, regardless of party affiliation. In short, they must work together as a single, cohesive unit—without being impeded by the politics of politics.

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For more information on how Xerox Global Services can help implement solutions that accelerate and improve document-related processes in government environments, call 800-ASK-XEROX ext. XGS or visit www.xerox.com/contactglobalservices.
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Newton’s career also includes a number of other accomplishments, including developing the strategic plan and model for a state-wide shared data environment for the Florida Supreme Court; helping to develop national court standards and Legal XML for the National Center for State Courts in Williamsburg, Virginia; adopting Interactive Voice Response (IVR/VRU), Image Processing of Documents, Public Access, remote site locations, and computers for the courts in Walton County, Florida; teaching courses and acting as Director of IT for Tennessee Temple University; serving on the ASP Technical Advisory Board within the State of Mississippi and as an Editorial Advisor for IBM’s System Management magazine; and consulting with Anderson Consulting and JusticeLink to aide in the development of an Electronic filing System for submitting documents into the Judicial system.

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