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# Electronic Records Management and Digital Preservation: Protecting the Knowledge Assets of the State Government Enterprise

## PART I: Background, Principles and Action for State CIOs

### I. Introduction

Electronic Records Management is a common state government business process with laws, policies, procedures and protocols in place and operational. Within the public sector domain, this activity touches almost all the business activities of state government from routine email to financial transactions, human resources, procurement, justice information, vital records, licenses, geographic information systems, project management, litigation, and collaborative information exchange. In addition – it constitutes the management of the knowledge assets of the state – many which ultimately belong to the citizens. Information contained in *records* are the subject of *security, disaster management, privacy, identity management, and collaborative (cross boundary) information exchange*.<sup>1</sup> These are some of the top priorities for state CIOs according the NASCIO's 2006 membership survey. State

archivists and records managers have been actively engaged in addressing this issue for decades, however many challenges remain. The ever-growing generation of digital content in state government has added a new dimension to this management challenge.

State governments create, receive, transmit and store electronic information at an alarming rate. Much of this information can be disposed of fairly quickly. Some information must be kept available for legal, administrative, or research purposes for many years. This requires that state agencies and organizations have the means to understand the value of information and how long to keep it. They must also have the capability to provide the ongoing stewardship of digital information for as long as necessary.

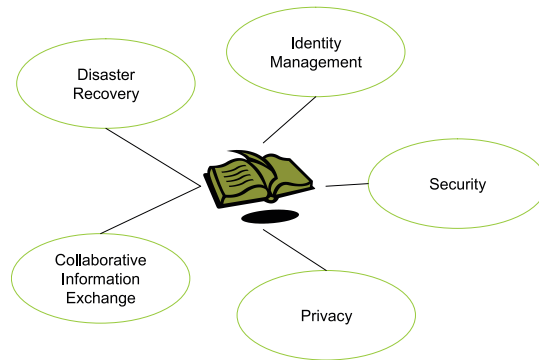
However, in state government, proactive management of electronic records is often overlooked as a potential resource, and as

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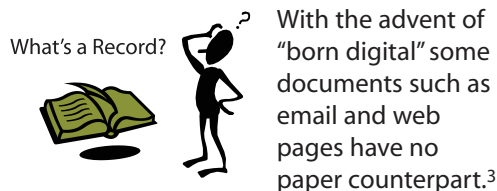
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### CIO Top Priorities All Touch Electronic Records Management



a necessary investment. It is often difficult to get anyone’s attention regarding this critical enterprise asset. Nevertheless, NASCIO believes it is both a resource and potential liability too important to neglect. As technology marches forward, records quickly become “unreachable” because the software that was used to create and store these records becomes outdated, obsolete, causing the business content of the record to virtually disappear.

The story has been related on a recent broadcast of Federal News Radio of the television performances of Fred Astaire that were discovered 20 years after they were created. However, they could not be viewed or broadcast because the underlying technology used to record and present these performances could not be reactivated. UCLA mounted a research initiative to *retro-engineer* technology to read the original tapes and copy the content to new media so the performances could be rebroadcast with today’s technology.<sup>2</sup> There is a good possibility this recovery may have to be repeated when the technology changes yet again.



Email has become such a standard of communication that many business decisions in government are “documented” only in

emails. However, these “records” may not be captured or properly managed as records because emails are often not part of a records management strategy. At the other extreme, government may be saving all emails – which is also not the right approach. With such volume, it is extremely difficult to find valuable knowledge assets when needed. Search and discovery becomes labor intensive, time-consuming and costly. And such a volume of emails actually constitutes a collection of many types of knowledge assets – each with their own value and related retention rules.

#### **So what is the state CIO going to do about this?**

NASCIO recommends the following calls to action on the part of the state CIO:

1. Partner actively with your electronic records management and digital preservation function to develop strategies for proactively managing records and digital archives.
2. Support an enterprise approach to electronic records management and preservation.
3. Require attention to electronic records management and preservation in capital investment proposals, and project plans.
4. Create an electronic records management and digital preservation domain under the Enterprise Architecture program to foster collaboration, shared decisions and common enterprise solutions.

This report is a first in a series from NASCIO that will explore the issues facing the state CIO.

## II. Relevancy of Electronic Records Management

The importance of electronic records management is often not understood – or it seems so overwhelming that people

can't deal with it. Nevertheless, our state CIOs and enterprise architects must understand and sustain the priority of managing electronic records and digital preservation as necessary for *managing enterprise knowledge assets, maintaining accountability and affording protection when faced with legal action.*

According to Dr. Timothy Sprehe, a well known expert in records management, records must be managed in order to enable the enterprise to do the following:<sup>4</sup>

1. Conduct its business in an orderly, efficient, and accountable manner
2. Deliver services consistently and equitably
3. Document its policies, decisions, and outcomes to stakeholders and regulators
4. Meet its legislative and regulatory requirements, including audits
5. Protect itself in litigation
6. Function in a financially and ethically accountable manner
7. Protect corporate interests as well as the rights of employees, clients, and other stakeholders
8. Provide continuity of operations in an emergency or disaster
9. Maintain its corporate and institutional memory

From this list by Dr. Sprehe, it is obvious that records management is an activity that is imbedded in the fabric of the enterprise. It is easily translated to government by changing the word "corporate" to enterprise, and adding the most important stakeholder – the citizen and taxpayer.

### III. Records Management Principles

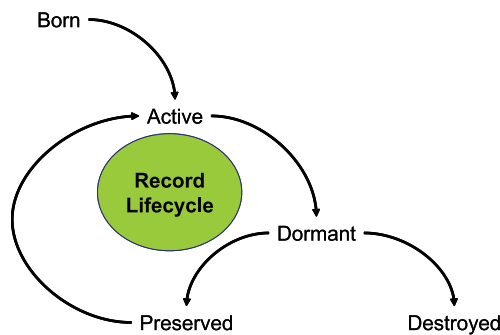
An interview of CIOs published by ARMA in 2004 presented recommendations to records managers and IT professionals.

Included was the following for IT professionals:<sup>5</sup>

*- Competent understanding of records management principles and requirements and an appreciation for the complexities of preserving and providing access to electronic records across multiple generations of technology and over time.*

And, records managers must understand business processes, project management, and information technology in order to proactively design records management discipline into the enterprise.

#### Life Cycle of an Electronic Record



*Remember – if you have it, you must produce it . . .*

In an interview with Julie Gable, Principal of Gable Consulting and Associate Executive Editor of the *Information Management Journal*, the *fundamental principles* of records management could be summarized as follows:<sup>6</sup>

The first principle is—*there is an information lifecycle.* A record is created, it is shared and distributed, eventually retired, and possibly reestablished as an active record yet again. Rules regarding retirement of a record may be mandated by legislation. For example, tax law may require that certain records be kept for a specified period based on fiscal requirements.

This leads to a second principle which presents the lawyer's perspective. *If you have it, you must produce it.* Even though a record falls under a records retention rule requiring destruction, if it is in hand at the time of related litigation, it must be presented. This liability exists starting at the time of *notice of potential litigation.*

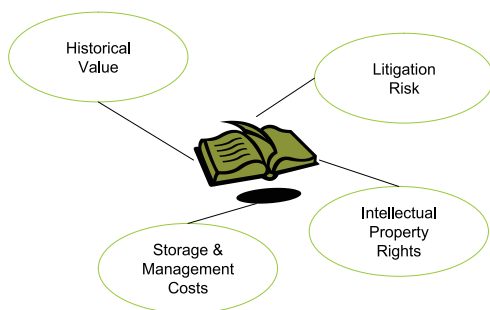
Some records must be kept based on fiscal requirements for a specified period of time – measured in years.

*Once a knowledge / information asset, i.e., in the form of a record, has been fully harvested, it should be destroyed.* What is most often ignored in state government is that information that has passed its records retention requirements can and should be destroyed – legally. Records retention rules are intended to demonstrate the point at which a record has no value for the enterprise. Therefore, it should be destroyed. If it isn't destroyed it may become a liability. Destruction of records according to predefined records retention rules contributes to the management of risk within the enterprise.

If that information is destroyed, then the enterprise is not vulnerable to broad requests for information. Remember – *if you have it, then you must produce it.* If that information is destroyed that action can avoid unnecessary litigation risk, can save on storage, and can save on maintenance costs for the state.

And here is where much debate begins. There is a collision of issues among making archived records available to government and the public, potential intellectual property rights, the cost of maintaining archived records and the sometime revenue generating services associated with responding to requests for historical records.

### Competing Priorities



In reality, the true value of a record is often not understood until long after it has been created. In other words, it isn't until a specific question or issue is being

researched that analysis reveals what data, and information is required and should be or *should have been* archived for future use. Currently, state archivists will categorize records as archival records if it is determined that such records have administrative, legal, fiscal, or historical value. Archival records have value in reconstructing epidemiological health links, litigation, entitlements, economic and correlation studies, to name a few. However, it can't always be known what will be of value or what questions will be asked at some future date.

The following is a list of practical uses of local government archival records in the state of New York.<sup>7</sup> In each of these cases, the use of archival records was not anticipated at the time such records were archived.

- Health care and land use records documenting utility rights-of-way are researched to determine a possible link between child leukemia and children living near high power lines.
- A letter of agreement located in a local planning department's files was used to validate an existing right-of-way between a senior citizen center and a local shopping mall. The developer threatened to close the access route, fearing litigation. The letter of agreement revealed that the original intent of the right-of way was to allow seniors to use the path.
- A suit was brought against several asphalt companies by the U.S. Attorney's office on behalf of a number of local governments. The suit charged that the companies were in collusion for bids on asphalt materials. Only local governments which had retained the necessary documentation had the right to take part in the action. Using bid proposals, contracts, and tonnage reports relating to street and parking lot resurfacing, a town demonstrated that right and received a settlement of over \$80,000.

Create an electronic records management and digital preservation domain under the Enterprise Architecture program to foster collaboration, shared decisions and common enterprise solutions.

- Using glass plate negatives and original drawings of sewer archways, a local agency developed a highly competitive grant application and received a multimillion dollar federal grant for reconstruction of their sewer archways.
- A residential neighborhood was interested in becoming part of the region's water district. Using the original maps of the district's borders, the citizens were able to show that the originally specified boundaries of the water district included their properties.
- Fifty year-old personnel records were used to verify that a former substitute teacher was entitled to social security benefits.

There is also the management of risk going forward. That is, the value of an archived record versus the potential liability. If records are managed under records retention guidelines and destroyed in compliance with those guidelines, it can greatly reduce the cost of responding to discovery requests.<sup>8</sup>

Often email is managed as a technology solution and the knowledge, and legal commitment inherent in email communications is secondary, or *not managed at all*. Email actually constitutes a variety of things *based on the content*. If that content includes information regarding agreements, services, commitments, opinions, etc. that content constitutes a *knowledge asset* of the enterprise and must therefore be subject to the records retention rules the enterprise has established based on its internal business operation rules, and regulation mandates. According to Ferris Research, 35% to 60% of today's business critical information is *stored in e-mail systems*.<sup>9</sup> Records management is about "control" of records. Couple this necessary management activity with the issues related to confidentiality, privacy, management of intellectual capital, and the proliferating and ubiquitous nature of email, and one can begin to grasp the incredible challenge for records managers.

The state of Michigan has made available an online course for training government employees on records retention rules and guidelines for managing email, as well as electronic records and electronic files.<sup>10</sup>

What has been proposed by archivists is the imbedding of records management rules in email systems so that what truly constitutes a "record" is properly managed automatically – i.e., file, made available, archived, and finally destroyed according to records retention rules. That is – *remove human action from the process*. The human action is inconsistent at best. However, consistency can be achieved in managing email "records" if the aforementioned activities are somehow automated. This requires that the system for managing email be intelligent, leveraging artificial intelligence and expert system technology to detect content that constitutes *information value assets*. This same approach is required for managing web site content.



#### IV. Summary

In this introductory research brief the basic principles of records management have been presented along with some of the most current issues related to ubiquitous nature of records management.

Records can be an asset or a liability. A record can change in its value and effect over time. It is clearly necessary for the CIO to become aware of the issues related to records management. Understanding the basic principles of records management is necessary in order to effectively manage the knowledge assets of the enterprise.

#### Calls to Action for the state CIO

1. Embrace the principles of electronic records management.
2. Understand electronic records management and digital preservation as disciplines for managing knowledge assets of the enterprise.

3. Become familiar with the economic, organizational, and technological issues related to electronic records management and digital preservation. Bring this thinking into the culture of the CIO office and IT operations.
4. Lead the establishment of the necessary relationships and project planning delivery processes to ensure electronic record retention rules are automated as much as possible. Avoid reliance on administrative controls to implement records management retention rules.
5. Create an electronic records management and digital preservation domain under the Enterprise Architecture program to foster collaboration, shared decisions and common enterprise solutions.

In future reports on this topic, the following areas of records management will be explored:

- Born Digital
- Off Shoring
- The Economics of Digital Preservation
- The Legalities of Digital Preservation
- Organizational Issues of Records Management Digital Preservation

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## Appendix B: Resources

### NASCIO

[www.nascio.org](http://www.nascio.org)

### Department of Justice, Office of Justice Programs

Global Privacy and Information Quality Working Group

[http://www.it.ojp.gov/topic.jsp?topic\\_id=55](http://www.it.ojp.gov/topic.jsp?topic_id=55)

### Center for Technology in Government

Preserving State Government Digital Information: A Baseline Report

[http://www.ctg.albany.edu/publications/reports/digital\\_preservation\\_baseline](http://www.ctg.albany.edu/publications/reports/digital_preservation_baseline)

### Records Management / Digital Preservation Related Web sites

Library of Congress / Digital Preservation

<http://www.digitalpreservation.gov>

The National Archives

<http://www.archives.gov/>

Knowledge Management World

<http://www.kmworld.com/>

Council of State Archivists

<http://www.statearchivists.org/>

National Association of Government Archives and Records Administrators

<http://www.nagara.org/>

Association of Records Managers and Administrators

<http://www.arma.org/>

The Society of American Archivists

<http://www.archivists.org/>

Digital Preservation Coalition

<http://www.dpconline.org/graphics/whatsnew/>

Tutorial on Digital Preservation Management, Cornell University

[http://www.library.cornell.edu/iris/tutorial/dpm/eng\\_index.html](http://www.library.cornell.edu/iris/tutorial/dpm/eng_index.html)

Online Course – email Retention Guidelines – State of Michigan

[http://www.michigan.gov/documents/hal/mhc\\_rm\\_email\\_class\\_175020\\_7.pdf](http://www.michigan.gov/documents/hal/mhc_rm_email_class_175020_7.pdf)

Articles by Dr. Timothy Sprehe  
Sprehe Information Management Associates, Inc.

<http://www.jtsprehe.com/newpage6.htm>

NECCC Best Practices for eDiscovery

[www.ec3.org/Downloads/2004/Effectively\\_Man\\_Discovery\\_of\\_EI\\_Records.pdf](http://www.ec3.org/Downloads/2004/Effectively_Man_Discovery_of_EI_Records.pdf)

### eDiscovery 2004 eC3

[http://www.ec3.org/Downloads/2004/Effectively\\_Man\\_Discovery\\_of\\_EI\\_Records.pdf](http://www.ec3.org/Downloads/2004/Effectively_Man_Discovery_of_EI_Records.pdf)

### The San Diego Supercomputer Center

The San Diego Supercomputer Center (SDSC) enables international science and engineering discoveries through advances in computational science and high performance computing. Continuing this legacy into the era of cyberinfrastructure, SDSC is a strategic resource to science, industry and academia, offering leadership in the areas of data management, grid computing, bioinformatics, geoinformatics, high-end computing as well as other science and engineering disciplines.

The mission of SDSC is to extend the reach of scientific accomplishments by providing tools such as high-performance hardware technologies, integrative software technologies and deep inter-disciplinary expertise, to the community.

<http://www.sdsc.edu/>

### The Fedora Project

Fedora is a general purpose repository system developed jointly by Cornell University Information Science and the University of Virginia Library. The Fedora Project is devoted to the goal of providing open-source repository software and related services to serve as the foundation for many types of information management systems. The Fedora software is available under the terms of the Educational Community License 1.0 (ECL).

The Fedora Project is based on previous research at Cornell University Computer Science that was funded by DARPA and the National Science Foundation.

The Fedora Project is currently supported by generous grants from the Andrew W. Mellon Foundation.

<http://www.fedora.info/about/>

**Reports**

Federal Enterprise Architecture (FEA)  
Records Management Profile, version 1.0  
[http://www.archives.gov/records-mgmt/  
policy/rm-profile.html](http://www.archives.gov/records-mgmt/policy/rm-profile.html)

## Appendix C: Endnotes

<sup>1</sup> NASCIO Video *Government At Risk: Protecting Your IT Infrastructure* March 2007, available at <http://www.nascio.org/publications/>

<sup>2</sup> Federal News Radio, "Trends in Technology," Records Management – Interview with Christopher Dorobek and Timothy Sprehe. August 28, 2006, Retrieved on September 21, 2006, from <http://www.federalnewsradio.com/index.php?nid=277&sid=895215>

<sup>3</sup> See <http://www.digitalpreservation.gov> for more information regarding "born digital."

<sup>4</sup> See Sprehe, J.T., "Enterprise Records Management: Strategies and Solutions," September 2002, Retrieved on September 21, 2006, from <http://www.jtsprehe.com/newpage6.htm>, secondary source: [http://www.hummingbird.com/alt\\_content/binary/pdf/collateral/wp/rmstrategies.pdf](http://www.hummingbird.com/alt_content/binary/pdf/collateral/wp/rmstrategies.pdf)

<sup>5</sup> See Swartz, N., "From the Mouths of CIOs," Information Management Journal. Lenexa: Sep/Oct 2004. Vol. 38, Iss. 5; pg. 30, retrieved September 13, 2006 from <http://proquest.umi.com.ezproxy.jocolibrary.org/pqdweb?RQT=318&pmid=23201>

<sup>6</sup> Interview of Julie Gable, Principal, Gable Associates LLC, see contact information under *Contributors*. Also see article "What CIOs Should Know About Records," by Julie Gable, March 23, 2005, Searchcio.com, retrieved on October 30, 2006, from [http://searchcio.techtarget.com/originalContent/0,289142,sid19\\_gci1070614,00.html](http://searchcio.techtarget.com/originalContent/0,289142,sid19_gci1070614,00.html)

<sup>7</sup> Bartowski, G., "Fundamentals of Managing Local Government Archival Records," Local Government Records Technical Information Series No. 40, Government Records Services, New York State Archives, State Education Department, retrieved on October 10, 2006, from [http://www.archives.nysed.gov/a/nysaservices/ns\\_mhr\\_pub40.shtml](http://www.archives.nysed.gov/a/nysaservices/ns_mhr_pub40.shtml)

<sup>8</sup> See Gable, J., March 23, 2005, "What CIOs Should Know About Records," Retrieved September 7, 2006 from [http://searchcio.techtarget.com/originalContent/0,289142,sid19\\_gci1070614,00.html](http://searchcio.techtarget.com/originalContent/0,289142,sid19_gci1070614,00.html)

<sup>9</sup> See presentation by Debbie Gearhart, CRM, Director of Records Management Services, State of Michigan, retrieved on October 31, 2006, from [http://media.govtech.net/Events/2005Events/2005Michigan/12\\_1030\\_InformationLifeCycleManagement\\_GEARHART.ppt](http://media.govtech.net/Events/2005Events/2005Michigan/12_1030_InformationLifeCycleManagement_GEARHART.ppt)

<sup>10</sup> See Michigan Department of History, Arts, and Libraries. Online course at [http://www.michigan.gov/documents/hal/mhc\\_rm\\_email\\_class\\_175020\\_7.pdf](http://www.michigan.gov/documents/hal/mhc_rm_email_class_175020_7.pdf)

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