

Electronic Public Record Legislation Based on ISO 9000 Standard for Continuous Improvement of Quality

Introduction

States in the United States of America are attempting to manage electronic public records. This is being done with some degree of urgency. There is considerable evidence that many electronic public records are in imminent danger of being lost or compromised. Many public electronic records may already be lost without any evidence of the records being lost.

Traditionally, states have managed through legislated regulations. Unfortunately, there is no proven method of managing electronic records in either the private or public sectors. Any legislation in the area of electronic public records would, by definition, be an experiment. With so much uncertainty, the likelihood of flawless success is low.

Basing electronic public records legislation on the continuous improvement technology of the ISO 9000 [<http://www.ISO.ch>] quality standard can remove the uncertainty from the experimental process. States can limit legislated requirements to simple proven actions, such as reporting the holding of electronic public records.

The actual management of the electronic public records would be left up to the record holders who would merely be required to report on the methods they used. The reports and the methods can be modeled on the reporting requirements of ISO 9000. It is not even necessary, initially, to require ISO 9000 certification of the electronic records holders. All that is necessary is that the description of electronic records management be written up in the format of an ISO 9000 plan for accreditation.

Over several years, a state can adjust its requirements in directions proven by the successful electronic records holders in the state (and in other states).

New legislation is not necessary. The basic legislation establishes the principal of continuous improvement managed by the state using ISO 9000 techniques. The tightening of requirements and movement to new standards is simply part of the administration of the legislated program of continuous improvement.

A. Consensus Building for Records Management with ISO 9000

ISO 9000 is a universal, worldwide quality standard that was originally developed to assure the quality of products after the internal borders were eliminated in the European Common Market. The text of ISO 9000 is remarkably brief, and ISO 9000 has worked remarkably well. ISO 9000 is designed to be used for services, such as a state provides, and for traditional manufacturing.

ISO 9000 is based on competition and the survival of the fittest, both in organizations and in standards. Under ISO 9000, each organization is expected to define what quality means to the organization, measure the quality, and undergo audits that certify that the specified quality has been met. It is the marketplace that determines whether or not the quality (and value) of the organization's products is sufficient for the organization to survive.

For a state records plan, ISO 9000 makes it easy to identify successful records management solution and to gradually move standards in the direction of procedures that have been proven successful in several organizations.

The drawback (and simultaneously the most important benefit) of ISO 9000 is that a state must wait to see what works in records management before requiring its application statewide. And, rather than a draconian instant legislative requirement, a gradually increasing level of encouragement is favored by the ISO 9000 methodology. The gradual introduction ensures that any unforeseen glitches can be detected and worked out before they affect the entire state. ISO 9000 encourages the leaders (among the holders of electronic public records) to try new things as specific techniques are promulgated. It is these leaders that are most successful at solving the problems of the glitches of the nascent. It is the masses, the followers, that are the least able to deal with new things, and the accompanying problems of new things. The ISO 9000 methodology wisely allow the majority of public record holders to continue with the simpler, well understood, old ways until the new techniques can be tested by the best test, time. The majority will prefer ISO 9000 because it is safe and non-threatening.

The front-runners are happy because they can do it their way, trumpeting their success with boundless enthusiasm. And, fortuitously, the front-runners are silent if their ISO 9000 methodology and audits document their failure. The early adopter minority likes ISO 9000

because it encourages their experimentation and is reasonable in its identification of failures.

Even better, ISO 9000 methodology works even if organizations do not go all the way through to certification. Even writing a plausible ISO 9000 plan is sufficient to align a less active organization with an overall ISO 9000 methodology in a state.

ISO 9000 failures can result in an organization having its ISO 9000 plan decertified. This is embarrassing, but does not remove an organization from the ISO 9000 sphere of influence. Decertification is merely the first step on the road to being recertified. Just writing a plan to become recertified renews the ISO 9000 rigors. And, by merely requiring that all organizations at least have a plan for ISO 9000 certification, all organizations can be kept within the ISO 9000 sphere of influence, with the (self selected) leaders being more tightly bound by full ISO 9000 quality certification.

With the impact of failures on the overall effort thus reduced, perhaps the greatest challenge for a state administrator is picking the 'most successful' procedures from the merely 'successful' procedures. These most successful procedures are the procedures that the front-runners are encouraged to test in their own ISO 9000 plans.

ISO 9000 is very friendly toward the inclusion of other standards and existing legislation. An organization merely includes the other standards and existing legislation in the organization's ISO 9000 plan, and adherence to the standards and existing legislation is automatically included in the quality control records kept by the organization and is automatically included in the periodic ISO 9000 quality audits.

To minimize the barrier to entry to the ISO 9000 methodology, the initial requirements in the proposed legislation (included below) are intentionally simple and easy for all parties to accomplish. The first action for institutions holding official public records is (only) to notify the administrator of the state library / archives / records center that the official public records are held. Even the form of the notification is not precisely defined. For the second required act, only a draft ISO 9000 plan is required. Again, the specification of this draft plan is not defined, and there is no requirement to actually submit the draft plan for certification. The overall ISO 9000 methodology depends on the fact that some early adopter organizations will complete the ISO 9000 process and their successful procedures can be used as feedback in the ISO

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9000 positive feedback loop. These slightly more precise definitions, proven by the early adopters, will be used to gently move the late-adopters to a slightly higher level of implementation in a slow (and safe) process of incremental improvement.

Because of its consensus building design, free market orientation, and focus on fostering only proven techniques, the ISO 9000 methodology is an easy sell with both public agencies and state legislators. Even when other, non-incremental, methodologies are proposed, if consensus is not reached, the ISO 9000 methodology represents a safe fallback position that can be substituted in the legislative process at any time, even at the last moment.

B. Legislation that Fosters Efforts to Reach Consensus on Maintaining Voluntary Continuous Improvement

An important area, requiring consensus, is the method of maintaining a voluntary environment of continuous improvement. Perhaps mandatory requirements should be voted on by the legislature.

The draft legislation (included below) is written to allow continuous improvement. Terms, such as notifying the administrator of the state library / archives / records center that an entity possesses the official copy of public records, records survey (which will grow into records inventory and retention schedule over time), draft ISO 9000 plan, ISO 9000 application, are intentionally not defined in the draft legislation so that the ISO 9000 continuous improvement process can be used to gradually make the definitions more precise, over time, only after the more precise definitions are proven through use in the early adopter organizations that specify the use of the more precise terms in their ISO 9000 application and whose use of the more precise terms is subsequently certified and audited. The subsequent audits, if passed would be a good indication that the more precise definition of the terms was workable in a real-world environment.

Tightening the definition of terms, without proof that the tighter definitions were workable in a real-world environment, would eliminate the benefits of the ISO 9000 continuous improvement methodology. Requirements without testing create high barriers to entry for the improvement process: good plans, that deserve a test, are trumped by transitory ideas of persons writing prescriptive legislation (often late at night). The unproven nature of the requirements makes it almost certain that at least some requirements will precipitate catastrophic failures in some areas.

C. Open Source Model for the ISO 9000 Plan

This ISO 9000 based plan follows the open-source, open-design, open-text, approach to public contracts. The content is free.

This plan is structured so there is no minimum level of expenditure by the state, below which no value can be derived. Nor will any value for funds expended, up to the time funding is reduced or eliminated, be lost, if the implementation budget is reduced or eliminated at any time.

D. The Use of ISO 9000 Itself Lowers Costs

ISO is a worldwide standard. The ISO 9000 continuous improvement technology is in use worldwide. ISO 9000 will lower costs because it is in use worldwide and development costs for ISO 9000 based records management are borne by organizations worldwide. Currently, several other public record holders are working on ISO 9000 plans.

The ISO 9000 solution is suitable for other states and other keepers of public records, worldwide. It will benefit from similar efforts at continuous improvement nationwide and worldwide which will reduce expenses for state taxpayers.

Proposed Draft Legislation

Internet Access to Public Records and Protection of Public Records in the State

1. This law shall go into effect when signed into law. There will be a 1 year planning period after which the reporting and posting requirements take effect. During this time the administrator of the state library / archives / records center will create plans and mechanisms for reporting and posting to take place.
2. The term record includes both electronic and hard copy records. Hard copy records include paper, microform and similar analog record formats.
3. All submissions under this law shall be in electronic format.
4. References to public records include both open public records and secret public records. Where provisions apply differently to secret public records, the provisions for secret public records are explicitly stated.
5. After being established and approved by the administrator of the library / archives /

records center center, the URL for an electronic record cannot be changed except by an act of the state legislature. Each electronic record shall have a metadata record that is viewed before viewing the electronic record. Secret electronic public records are included in this requirement. The URL for secret electronic public records must be reserved and the metadata record and the metadata records must be available on an intranet, using address locators identical to the reserved URL (for record series and record), for inspection by the administrator of the library / archives / records center center.

6. To maintain continuous incremental process improvement in support of the intent of this law, a revised State Records Plan, including definitions of terms and procedures under this law, shall be posted to the Internet by the administrator of the library / archives / records center center, at the end of each two year period, on January 1.
7. It is illegal to possess the official copy of public records in the state, without notifying the administrator of the library / archives / records center within 15 days.
8. All organizations possessing official copies of public records must provide an electronic copy of a complete records inventory on May 1, and November 1 of each year. Each inventory shall identify each change from the previously submitted inventory. The inventory must be current at a date after the last submission of a records inventory.
9. A records retention schedule must be submitted on May 1, and on November 1, of each year. The retention schedule must cover all records listed in the previously submitted records survey.
10. All organizations holding public records shall advance in their process of becoming ISO 9000 and ISO 14000 certified, and at a minimum update their draft ISO 9000 and ISO 14000 plan on the January 1st following the posting of a revised records plan.
11. All organizations holding hard copy public records will advance in their process of making creating an electronic copy of all of the hard copy public records held by the organization. A record of this advance shall be submitted with each revision of the retention schedule for the organization. The state shall provide permanent storage for all submitted electronic public records and for all submitted hard copy state public

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records for which an electronic copy has been submitted.

12. All functions within the administrator of the state library / archives / records center office in support of this law shall be submitted for ISO 9000 and 14000 certification or recertification once in each calendar year. All documents in support of this function shall be electronic public records.

13. Funds in the amount of \$750,000.00 per year will be provided to support organizations that hold public records to become ISO 9000 and ISO 14000 certified. This certification effort will be managed by the administrator of the state library / archives / records center center.

E. Predictability Built into the Draft Legislation

The initial requirements written into the model law (above) are designed to be very certain, proven, and safe to minimize research costs and to ensure predictable results when first implemented, while providing a solid and stable foundation to build on.

F. A Continuous Improvement Loop

This law is written on the model of a computer programming loop and a process control feedback loop. It is initialized with the passage of the law and continues forever based on using feedback for continuous process improvement. This law is written so that it does not have to be rewritten. The technique is to use continuous feedback to improve the definitions for the procedures that embody the intent of the law. The law is also written to be brief: with economy, clarity, and longevity.

G. Continuous Improvement Sequence Embodied in the Draft Legislation

1. Find out which organizations have public records in the state. (Registration)
2. Find out what records the organizations have. (Records Inventory)
3. Find out what the organizations are planning to do with the records. (Records Retention Schedule)
4. Create the first increment of a State Public Records Plan.
5. Ask the organizations to structure their plans for their public records. (ISO 9000 and ISO 14000)

6. Review the progress of all organizations that hold public records. (ISO 9000 and ISO 14000 audits)

7. Create the next increment of a State Public Records Plan.

8. Repeat the last two steps.

Modification to the text of the law, without considering the process control loop structure, may invalidate the continuous improvement function.

H. Global Rules Within the Draft Legislation

1. All submissions show the changes that were made since the last submission.
2. All submissions are done electronically via the Internet.
3. All public records, electronic and hard copy, are managed through their retention schedules under this legislation.
4. Indexing and metadata improvements, along with the XML (eXtensible Markup Language) are part of the continuous improvement and need not be explicitly stated in the legislation.
5. The first organization to seek ISO 9000 certification is the office maintaining the system set up by the legislation

I. Avoiding Legislating the Use of Uncertain Technology

Requiring specific actions of organizations holding public records should not be done except when there is considerable proof that the outcome of the specific actions can be very accurately predicted.

Currently, there is no widespread use, management, or control of electronic public records. Therefore there are no proven techniques for the use, management, or control of electronic public records. Therefore, the results of mandating any procedures would be uncertain at best.

By encouraging experimentation by all holders of electronic public records in the state, with incentives to properly protect and make electronic public available, the maximum number of desirable techniques should be developed. The administrator of the state library / archives / records center can then review the results and gradually shift incentives towards the use of techniques that have been proven in daily use. In the competitive model for systems development, it is not necessary that every holder of public records develop a

perfect system, it is only necessary that a small number of organizations develop techniques that are, at least, better than the techniques of their peers. These better techniques can be identified and promulgated by the administrator of the state library / archives / records center. Over time, better and better techniques will be developed, on a competitive basis, and the spread of these techniques will be encouraged by the administrator of the state library / archives / records center.

Everyone would like to solve all problems quickly. Some things take time. In the case of public electronic records, because there are no proven solutions, the best that can be done is to move quickly along the path of development and the continuous review of the operation of the developed systems to find the best solution. These best solutions will not be perfect, but will form the basis to the next increment in the improvement process.

It is important to move quickly. Not all organizations that hold public records will move quickly. But, some organizations will move quickly. These fast moving organizations will provide the test beds for improved procedures. Not all of the quickly implemented procedures will work well. Of all organizations that attempt rapid improvement there will likely be a few that are outstanding. It is these outstanding implementations that will be identified by the administrator of the state library / archives / records center for the next round of improvements. By pacing the improvement in the protection and access for public records to the fastest moving organizations, the maximum speed of improvement can be achieved.

J. ISO 9000 and ISO 14000 General Background

ISO 9000 is a family of quality standards that was developed to foster the increase in quality of goods and services provided by all types of organizations. ISO 9000 is very simple and has been extremely successful in very wide implementations worldwide. The US Food and Drug Administration (FDA) has rewritten many of its standards in the ISO 9000 format. The major US auto manufactures have rewritten their internal and supplier quality standards in the ISO 9000 format.

ISO 9000 requires a series of steps to foster continuous quality improvement. The steps are ipso facto simple and straightforward. First an organization writes down what constitutes quality for the goods or services that the organization provides. Then the organization writes down how the quality of its goods or services can be measured. Then the measurement plan is audited and certified by an outside ISO 9000 auditing organization. The

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organization then operates under the quality plan and measures the quality of its goods and services continuously, applying corrections to maintain quality. Finally, at periodic intervals, the records kept to maintain quality are audited by an outside ISO 9000 auditing organization. If the records do not show that the plan is being followed, the organization loses its ISO 9000 certification.

ISO 14000 is modeled on ISO 9000 and provides a means of ascertaining an organization's minimization of the effect of the organization's operations on the environment. While the care of public records does not greatly impact the environment in general, no aspect of any organization should be carried out without regard for the environment. An awareness of ISO 14000 will not greatly increase costs and is an important part of good citizenship for all private enterprises and public activities.

K. Avoiding Complexity

The use of the ISO 9000 is intended to avoid attempting to legislate instant solutions to the complexity of document format conversion and migration, metadata management, and the complexity of document management system design. While this proposal avoids instant solutions to the complexity, the complexity of electronic public records is real. Archive Builders submitted a paper, in October of 2000, at the annual meeting of the Association of Records Managers and Administrators that details some of this complexity. The paper, entitled "Permanent Digital Records and the PDF (Portable Document Format) Format", is available at [<http://www.ArchiveBuilders.com>] under whitepapers.

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Note to Editors

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Steve Gilheany, BA in Computer Science, MBA, MLS Specialization in Information Science, CDIA (Certified Document Imaging System Architect), AIIM Maser, and AIIM Laureate, of Information Technologies, CRM (Certified Records Manager, ARMA) has twenty years experience in document imaging and is a Sr. Systems Engineer at Archive Builders.

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