

**Mississippi Department of Archives and History
Electronic Records Management Survey**

Report of Results

Patricia Galloway
Jenice Tate
David Miller

Purpose of the Survey

In 1997 the Archives and Library Division of the Department of Archives and History received a research grant from the National Historical Publications and Records Commission as part of its Electronic Records Initiative. The purpose of the grant is to research appropriate methods and technologies for guaranteeing long-term preservation of and access to governmental records in a state where budgets are low and automation is not yet far advanced. In planning the project, Division staff had worked closely with a small group of state agencies and had a preliminary feel for the kind of computing environment at issue, but before implementing any pilot projects it was necessary to obtain a less impressionistic view of the state of electronic records in Mississippi state government today.

The Questionnaire

Knowing how busy the average departmental Information Officer is, we attempted to devise an instrument that was relatively brief but that would gather the information we felt we needed to devise an electronic records program. Thus we laid the six-page questionnaire out as mostly a series of check-boxes with yes-no answers; only on the final page did we ask for discursive (and optional) answers.

We were interested in the following issues that affect the form and quantity of existing and future electronic records creation and retention within the agencies:

- ◆ Existing state of agency data retention/preservation policies
- ◆ Experiences with data migration
- ◆ Detailed information on actual data retention/preservation practices
- ◆ Existing and anticipated future technologies for the agency
- ◆ Software products now in use or anticipated in the agencies
- ◆ Agency network connectivity
- ◆ Agency email use

The resulting questionnaire is attached to this report.

Sample Selection

Using the Joint Legislative Budget Committee Recommendations for Fiscal Year 1998, which detailed FY 1996 actual legislative appropriations, all state agencies, boards, and commissions receiving a General Fund appropriation were included in the sample. Next, all

state agencies, boards, and commissions receiving a Special Fund appropriation of \$1 million or more were included in the sample. These lists were then combined into a “working list.”

From the working list, each agency, board, or commission was reviewed to determine if the entity was actually part of a larger state agency. For example, the Rice Promotion Board is part of the Department of Agriculture and Commerce. Except for the Mississippi Bureau of Narcotics, which receives a budget allocation line item without reference to the Department of Public Safety (of which it is actually a part), boards and commissions which are part of a larger state agency were not included in the sample.

Although state universities and community and junior colleges were eliminated from the sample, the University of Mississippi Medical Center was included, given their involvement in the Division of Records Management’s state agency program. Finally, the Office of the Lieutenant Governor was included in the survey, given that office’s involvement with the operation of the legislature.

Of 142 state agencies, boards, and commissions listed with the Office of the Secretary of State for inclusion in the *Mississippi Official and Statistical Register*, we distributed questionnaires to 63 (44.37%). The following state agencies, boards, and commissions were included in the sample:

1. Beauvoir Shrine
2. Board of Animal Health
3. Board of Community and Junior Colleges *
4. Board of Nursing
5. Board of Trustees of the State Institutions of Higher Learning
6. Coast Coliseum Commission *
7. Commission on Judicial Performance
8. Department of Agriculture and Commerce
9. Department of Banking and Consumer Finance
10. Department of Corrections
11. Department of Economic and Community Development
12. Department of Education
13. Department of Environmental Quality
14. Department of Finance and Administration
15. Department of Health
16. Department of Human Services
17. Department of Information Technology Services
18. Department of Marine Resources
19. Department of Mental Health
20. Department of Public Safety
21. Department of Rehabilitation Services
22. Department of Transportation
23. Department of Wildlife, Fisheries, and Parks
24. Educational Television Authority
25. Emergency Management Agency
26. Employment Security Commission
27. Grand Gulf Military Monument Commission
28. Insurance Department
29. Military Department
30. Mississippi Arts Commission
31. Mississippi Bureau of Narcotics
32. Mississippi Ethics Commission

33. Mississippi Fair Commission
34. Mississippi Forestry Commission
35. Mississippi Gaming Commission *
36. Mississippi Legislature (Legislative Budget Office) *
37. Mississippi Library Commission
38. Mississippi River Parkway Commission *
39. Mississippi Supreme Court
40. Mississippi Tax Commission *
41. Office of the Attorney General
42. Office of the Governor
43. Office of the Governor—Division of Medicaid
44. Office of the Lieutenant Governor *
45. Office of the Secretary of State
46. Office of the State Auditor
47. Oil and Gas Board *
48. Pat Harrison Waterway District
49. Pearl River Valley Water Supply District
50. PEER Committee
51. Personnel Board
52. Public Employees' Retirement System *
53. Public Service Commission
54. Soil and Water Conservation Commission
55. State Port Authority at Gulfport
56. State Treasury Department
57. Tennessee—Tombigbee Waterway Development
58. Tombigbee River Valley Water Management District
59. University of Mississippi Medical Center
60. Veterans' Affairs Board
61. Veterans' Home Purchase Board
62. Veterans' Memorial Stadium Commission
63. Workers' Compensation Commission

The questionnaires were distributed in February of 1997, and in June project staff followed up with telephone calls and partial redistribution to achieve responses from 54 of these 63 agencies, for a response rate of 86% (agencies not responding are marked above with an asterisk). This is an extraordinary response rate by any measure, and only one agency of significant size did not respond; most nonresponse came from agencies with relatively small staffs, but since most agencies in Mississippi state government are so classified, we felt that the responses were representative enough that we could proceed with planning on the basis of the data thus gathered.

Results of the survey

Because the survey was addressed in the first instance to agency heads, with the advice that they seek the counsel of their equivalent of Chief Information Officer, in fact the surveys were indeed usually filled out by the latter individual if such a position existed in the agency. Therefore one would not expect to hear that these individuals are dissatisfied with their records retention practices in terms of what is needed for the ongoing business of the agency, and in fact that was the case; we can recall electronic records expert Luciana Duranti's dictum

that whatever is actually needed by the agency is in fact kept by definition. The patterns that we did see indicated rather clearly that the focus of these agency executives is firmly on the present, again as one would expect: It is a truism that computing practice in government tends to be conservatively based on proven technology, while staffing practices and comparatively low pay levels mean that government computing staffs tend to be strongest in skills not viewed as cutting-edge. The sudden emergence of the "Year 2000 problem" and the failure of computing staffs to address it until now is another symptom of this systemic focus on the present, which seems simply to be a feature of our government bureaucracy as presently constituted. These principles should be borne in mind in considering the discussion that follows.

Agency infrastructure

We looked at agencies grouped according to the Personnel Board's classification by size into small (fewer than 250 employees), moderate (250-1000 employees), and large (more than 1000 employees). We found that of 44 "small" agencies in the sample, 36 (82%) responded; of 8 "moderate" agencies 7 (87%) responded; and all 11 "large" agencies responded to the questionnaire. In reflecting upon the answer to the question we asked about whether an agency had a centralized MIS/DP division, however, it seemed that for the purposes of judging computing activity, there should probably be a subdivision of the "small" category: agencies that we know to be very small (fewer than 50 staff members) tended to lack *any* particular MIS/DP structure, while somewhat larger ones at least identified a modest MIS office. All moderate-sized agencies indicated that they had a centralized office. Nine of eleven large agencies identified a single centralized office; the two that did not are agencies that have more than one significant focus of computing--a phenomenon that might be more in evidence in large agencies if their operations were analyzed in more detail.

Policies

Our first consideration was to find out what policies agencies had in place that would support the preservation of electronic records. The notable disparity between the occurrence of existing policies for the management of paper records (65% of respondents) and for electronic ones (9% of respondents) clearly has two causes: the relative novelty of considering electronic records to be the bona fide record of activity in an agency, and the failure up to now of the Department of Archives and History to raise awareness about the importance of preserving these records (this latter responsibility is suggested by the 41% "don't know" figure). It is natural for an agency to be most concerned with its ability to function in a day-to-day manner, and the need to be able to do so is reflected in the existence of disaster recovery policies in 44% of agencies (in fact this figure might be considered rather low). But the habit of considering electronic records as not central to an agency's functioning is only too apparent in the existence of policies regarding email access in 48% of agencies--which might reflect a concern to restrict employee playtime or agency legal exposure--yet only 22% of agencies actually retain any of the email they are so concerned about.

	Currently in effect	Under consideration	Don't know
Agency-wide Records Management Program for Paper Records	35 (65%)	4 (07%)	15 (28%)
Agency-wide Electronic Records Management Policy	5 (09%)	27 (59%)	22 (41%)
Computer "Appropriate Use" Policy	17 (31%)	17 (31%)	20 (37%)
Disaster Recovery of Electronic Data	24 (44%)	15 (28%)	15 (28%)
Access to Electronic Mail (email) Communications	26 (48%)	12 (22%)	16 (29%)
Retention of Electronic Mail (email) Communications	12 (22%)	13 (24%)	29 (54%)

We were concerned also to discover the importance of electronic records to the agency as a whole, so we asked about the rank of those involved in the setting of policies, reasoning that if executives were involved, then the agency was concerned about electronic records.

	Information Management Policies	Internet Policies	Email Policies
Agency Head	29 (54%)	27 (50%)	21 (39%)
Upper Management	32 (59%)	29 (54%)	27 (50%)
Data Processing Director	33 (61%)	30 (55%)	28 (52%)
Data Processing Staff	14 (26%)	20 (37%)	21 (39%)
Non-DP Program Manager(s)	8 (15%)	9 (17%)	7 (13%)
Non-DP Staff	4 (07%)	2 (04%)	1 (02%)
Non-DP Administrative Staff	14 (26%)	12 (22%)	5 (09%)
Non-agency staff (Specify): (See Attached)	1 (02%)	2 (04%)	1 (02%)
Other (Specify): (See Attached)	4 (07%)	4 (07%)	1 (02%)

The results indicated that agency heads and upper management staff are involved in policy-making about half the time for information management as a whole, Internet policies, and email policies. Data processing directors and staff are involved as a rule more often, as would be expected. What was unexpected, and perhaps reflective of an increased concern for serving "internal customers," was a consistent pattern of involvement by non-DP program managers and administrative staff. The fact that, as already discussed, only 68% of reporting agencies (37) indicated that their data processing was directed by a central MIS office, while the remainder (17)--usually the smaller agencies--did not, certainly reflect the decentralized nature of routine computing activities with the dominance of PCs as common office equipment. These results suggest that computing is more familiar in offices and therefore information management is seen as important in most agencies, not a matter limited to the rarefied environment of the classic technological "glass-house," even if electronic records management is not yet perceived as a significant issue. Which suggests in turn that MDAH should address electronic records issues with agency heads and upper management in the context of existing interest in information management.

Current and planned computer use

To find out what kinds of electronic records were being produced, we first asked agencies how they kept track of automated systems. Of responding agencies, 44% (24) said that an inventory is maintained by a central MIS/DP office, 14% (7) said that a list was maintained by someone other than a central authority, but at 41% of agencies (22) there was said to be no inventory at all. These figures are do not neatly reflect agency size. Of the 37 agencies that have centralized MIS/DP, 14 of those (38%) do not keep an inventory of applications, while of the 17 agencies that do not have a centralized MIS/DP office, 7 (41%) do in fact maintain such a list. Although agencies with centralized MIS/DP offices tend to be larger than those without, and their task of maintaining a list would accordingly probably be more complicated, it is clear that all agencies need to pay greater attention to knowing what computer applications they have that may be generating official records. It should be noted that only three agencies attached inventories of applications to their responses.

We asked agencies to tell us as well as they could what kinds of computing applications they are using. We were interested first in the routine, well-understood applications and the frequency of their use, since these applications are going to be responsible for the bulk of electronic record creation. The following table lists these applications in order of their current popularity.

Specific, Separate Applications	Currently Using	Considering	NA
Word Processing	53 (98%)	1 (02%)	0 (00%)
Accounting/Financial Management	42 (78%)	3 (06%)	9 (17%)
Desktop Publishing	33 (61%)	2 (04%)	18 (33%)
Graphics	31 (57%)	0 (00%)	22 (41%)
Statistical Analysis	21 (39%)	1 (02%)	32 (59%)
Scheduling	20 (37%)	4 (07%)	30 (56%)
Personnel Administration	16 (30%)	7 (13%)	31 (57%)
Strategic Planning	10 (19%)	0 (00%)	44 (81%)
Library Management Programs	9 (17%)	3 (05%)	42 (78%)
Other	3 (05%)		

Databases are among the largest traditional repositories of electronic data (although not perhaps of records), and we were concerned to discover what kinds of enabling technologies were being used to support them in the agencies. The following tables list in order of popularity both the commercial products most frequently used and the third-generation programming languages. The numbers suggest that the abandonment of third-generation programming languages can be expected in the foreseeable future, but the leading position of COBOL in the list of languages reflects the tenacity of legacy databases and a significant local teaching tradition.

Commercial Product	Currently Using	Considering	NA
dbase, Foxbase, etc.	35 (65%)	1 (02%)	18 (33%)
Other	18 (33%)	0 (00%)	
ADABAS	12 (22%)	0 (00%)	42 (78%)
Microsoft SQL	8 (15%)	2 (04%)	44 (81%)
Oracle	4 (07%)	5 (09%)	45 (83%)
Informix	3 (05%)	1 (02%)	50 (93%)

Third-generation language	Currently Using	Considering	NA
COBOL	20 (37%)	0 (00%)	34 (63%)
Other	13 (24%)	0 (00%)	
C	9 (17%)	0 (00%)	45 (83%)
Pascal	2 (04%)	0 (00%)	52 (96%)
FORTRAN	1 (02%)	0 (00%)	53 (98%)

The kinds of electronic records created are dependent upon the technologies being used in the creating agencies, so we were concerned to learn what kinds of data-structuring technologies were being used within agencies. The following table lists the technologies queried in the questionnaire in the order of their current popularity.

Technology	Currently using	Considering	NA
Electronic Mail (Email)	44 (81%)	4 (07%)	6 (11%)
Internet	40 (74%)	9 (17%)	5 (09%)
World Wide Web (WWW) Home Page	27 (50%)	15 (28%)	12 (22%)
Multi-Media	16 (30%)	6 (11%)	31 (57%)
Optical Character Recognition	15 (28%)	6 (11%)	33 (61%)
Geographic Information Systems (GIS)	11 (20%)	3 (05%)	40 (74%)
Internal Web Postings	11 (20%)	12 (22%)	31 (57%)
Object Oriented Programming	11 (20%)	10 (19%)	33 (61%)
Textbases (e.g., Folio VIEWS)	11 (20%)	1 (02%)	42 (78%)
Digital Imaging	10 (19%)	14 (26%)	29 (54%)

Intranet	8 (15%)	14 (26%)	32 (59%)
USENET Groups	7 (13%)	2 (04%)	45 (83%)
Electronic Document Interchange (EDI)	6 (11%)	9 (17%)	39 (72%)
Collaboration Systems (e.g., Lotus Notes, Collabra)	4 (07%)	5 (09%)	45 (83%)
Discussion Groups	4 (07%)	2 (04%)	47 (87%)
Document Management Systems (e.g., workflow)	4 (07%)	10 (19%)	40 (74%)
COLD Storage	1 (02%)	3 (05%)	49 (91%)
Other	1 (02%)		
Artificial Intelligence (AI)	0 (00%)	0 (00%)	53 (98%)

These results must be disappointing for anyone who has hopes that state governments are benefitting by timely technology uptake, because they clearly indicate that many new technologies that should be introducing efficiencies are simply not understood or for some other reason (most likely feasible staffing and funding) are not being used. From the archival point of view, however, this may be something of an advantage, since the more exotic of these technologies represent equally knotty problems of long-term preservation as records, chiefly because they create complex data structures whose status as records is not yet well-understood.

Awareness of records management issues

Because we knew that there is nothing like disastrous data loss to put electronic records management on an agency's agenda, we asked agencies if they had yet had any experience with migrating from one computing environment to another--hardware or software. Of agencies responding, 83% (45) had had experience with an old hardware--new hardware transition; most of the agencies that had not had such an experience were small ones, suggesting that those that have so far escaped this trauma have only recently adopted computing technology. Of those that had made such a transition, 62% rated their experience successful, and 35% "average," while only one agency said the transition had been unsuccessful. Only 41 agencies went on to rate their experience of data loss, but 31 of them (69%) said that data loss "did not occur" during hardware transition, and 9 said that it had been less than expected.

Similar software migrations showed a slightly different pattern. Of responding agencies, 80% (43) said they had made software migrations, and again only one agency said the experience had been unsuccessful, while "very successful" and "average" responses were about evenly split. Again, too, a relatively high proportion of agencies claimed that data loss did not occur (65%) and 28% found that data loss was "less than expected." Three agencies had a bad experience of data loss in a software transition.

We were especially interested in learning about agencies' current practices in electronic records retention and in their electronic records holdings. Existing holdings, presently in agency custody, are mostly relatively recent:

Creation date		
1960s	1	(02%)
1970s	2	(04%)
1980-85	12	(22%)
1985-95	39	(72%)
Don't know	8	(15%)

Those few early records that now exist clearly call for immediate action in case they are still readable. Presumably agencies that at one time had early records have destroyed them or converted them to paper, as is suggested by the response of agencies about their current storage site for records covered by retention policies:

	Individual workstations	Central data storage	Hard copy
Word processing documents	20 (37%)	25 (46%)	16 (30%)
Database files	11 (20%)	34 (63%)	7 (13%)
Other machine readable files	9 (17%)	18 (33%)	4 (07%)
Electronic mail messages	10 (19%)	12 (22%)	5 (09%)

The records that survive do so because of these retention policies, but policies where they exist are based not on records management principles but on data processing best practices, which are focused upon the support of day-to-day operations and the avoidance of legal exposure, apparently still largely unaffected by the new private sector thinking about data warehousing and data-as-capital. Routine backup practices reflect data processing best practices to some degree, with personal computers and laptops apparently virtually ignored:

	How				Disk	Storage		Medium		Location	
	Daily	Weekly	Often Monthly	Never		Magnetic tape	Optical disk	On-site	Off-site		
Mainframes	14	5	5	0	3	17	0	7	14		
Minicomputers	17	10	3	0	5	18	1	15	14		
LAN Servers	36	10	0	0	3	38	2	34	22		
Personal Computers	7	3	9	9	13	8	0	19	4		
Laptops	5	0	2	10	5	3	0	9	2		

The monitoring of retention practices mirrors that of other policies, with 23 agencies (43%) depending upon a central MIS/DP office, 8 (15%) trusting to program areas to do their own monitoring, and 21 agencies (39%) doing no monitoring at all of electronic records retention practices. Again, most of those saying they are doing no monitoring turn out to be small agencies with little computer use and a habit of filing such records in hard copy.

Retention beyond current usage is all over the map:

	Mainframe	Minicomputer	LAN server	PC	Laptop
All electronic records are retained indefinitely	8 (15%)	7 (13%)	13 (24%)	4 (07%)	1 (02%)
Purge at the request of the program director	7 (13%)	9 (17%)	7 (13%)	5 (09%)	3 (05%)
Purge when storage needs require it	1 (02%)	2 (04%)	10 (19%)	13 (24%)	11 (20%)
Some records are regularly purged, some are not	5 (09%)	2 (04%)	3 (05%)	4 (07%)	2 (04%)
No consistent method or policy	3 (05%)	2 (04%)	4 (07%)	15 (28%)	14 (26%)
NA	27 (50%)	30 (56%)	15 (28%)	12 (22%)	22 (41%)

The centralized order of former days, where everything was taken care of by standard procedures at the central mainframe, has clearly gone; 50% of agencies don't even use a mainframe computer, and 56% do not use minicomputers either. On smaller computers, even LAN servers, erasure of electronic records is driven by "storage needs," not archival requirements. This is of particular concern, because 39 agencies (72% of respondents) reported that they were operating local area networks dependent on such servers. In the case of PCs and laptops, no consistent policy is used, apparently leaving retention of electronic records to the users.

While these last figures raise significant concerns, perhaps the most widespread "invisible" records are being created through email. 45 of the 54 agencies reporting (83%) said

that at least a few of their employees have access to email, and 29 of them said that more than 85% of their employees had such access, yet only 22 had provided for any retention of email, and in 10 cases it remained on the individual workstations, which as we have seen is likely to be the least regulated environment.

Conclusions

Several points will have become obvious from this report of survey results. Treatment of electronic records, where they receive explicit treatment, is clearly still very much dependent upon the needs and practices of data processing professionals in meeting the day-to-day operating needs of the agencies, and for these needs they are probably adequate. There is, however, little or no explicit application of records management principles to the resultant electronic records, and their existence is accordingly in peril until this issue has been addressed. Data processing in Mississippi state government is now about thirty years old, and the mainframe tape library has long since overflowed to the Records Center, where unreadable tapes are stacked in a small room, their magnetic bits quietly bleeding away.

But the mainframe is no longer the whole story and the problem has grown much bigger as decentralization has become the order of the day; no longer is the creation of electronic records limited to the users of the major mainframe systems. The penetration of state government by personal computers as all-purpose office machines, their subsequent networking, and the emergence of client-server computer systems is fast changing the computing environment in state government. This is especially true in the smaller agencies, where it is now far more cost-effective to purchase cheap PCs to do most work, and the recency of uptake in smaller agencies is reflected in the answers we received to this questionnaire. Many of these recent adopters are still creating and filing paper copies of their work, but even more don't know what to do with it. To quote one respondent: "We are OK for centralized solutions. It is distributed environments and word processing documents on individual desktops we need help on."

Comments from agency respondents were in general very revealing. Many are very much aware of the looming necessity of developing policies for electronic records management, if only to deal with legal exposure; but without guidance from Archives and History, agencies with some kind of professional body or external legal requirement to provide retention standards have already moved to adopt them, while those without are much at a loss. Apart from specific legal requirements and professional best practices, there is clearly no overall standard, and 25 agencies (46% of respondents) explicitly remarked that they would welcome the leadership of Archives and History in these matters. It is especially significant that the Department of Information Technology Services, on which many other agencies depend for retention of their mainframe-hosted records, indicated that guidelines from Archives and History on retention are needed and that the offsite storage of electronic records that Archives and History provides is also necessary for maintaining data security (15 responding agencies presently use the MDAH Records Center for passive temporary or permanent storage of electronic records, and 16 more said that they would like to do so in future).

The overall message of the questionnaire's results is straightforward: electronic records management is an emerging issue that many agencies would like to address and deal with, as their cooperation in returning the questionnaire made clear. Although agencies do not generally seek the involvement of the Department of Archives and History with the day-to-day issues of handling electronic records, they expect the Department to take an active role in working with them to provide methodologies and guidelines to help them cope with their own electronic records in the short term. Some agencies are thinking farther ahead: three asked specifically

that Archives provide storage of and access to their noncurrent records. But most agencies are not thinking in electronic terms yet. They are primarily concerned with meeting legal requirements for retention and destruction, and have not dealt with electronic records in this context long enough to be aware of the need to intervene *in advance* of implementation in order to guarantee access after records become noncurrent. Their generally positive experiences so far with migrating data—probably centralized data kept in a limited number of software systems—have not sensitized them to the problems that can be encountered over a span of more than a few years in the retention of inactive data.

The need for the Department of Archives and History to provide leadership in the formulation of guidelines for the management of electronic records is clear and present, and respondents to the survey were not reticent in asking us to do so. The questionnaire revealed several areas where the need for aid is especially felt (almost everything other than centralized mainframe databases, about which most agencies still feel secure). At the same time it made obvious agencies' lack of awareness of the problematic nature of long-term retention of electronic records; many reflect the attitude that once electronic records are not needed for daily operations, they cease to be a problem. Several agencies suggested that the Department offer seminars and workshops, probably similar to those offered for paper records, and this avenue should be used for raising consciousness throughout state government.

The staff of the Electronic Records Initiative would like to thank the many staff members from responding agencies who helped with answering these questionnaires and responding to our follow-up questions.