KEYNOTE ADDRESS
MODERN INFORMATION TECHNOLOGY AND THE FUTURE OF
RESEARCH IN GEORGIA: STRUCTURES AND STRICTURES

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When Professor Joe Trachtenberg asked me to
speak to your joint meeting, he suggested the topic
"Mining Georgia's History." The title conjured up
images of dark depths of dirt and sweat. I recalled
similar metaphors from graduate student days: hidden
treasures, rich veins of information, a treasure trove
of documents, nuggets buried in some dusty, dank
archives. A stooped keeper trudged dutifully between
remote stacks and research area, dragging box after
box from an ever-growing backlog of unprocessed files
to the impatient scholar waiting to dig, sift, and
sort through these unclaimed and previously unexamined
mounds. The careful researcher would eventually
discover and polish some previously unclaimed gems,
assay them, and produce a definitive book or article,
perhaps remembering on occasion to toss a grateful
footnote to his custodial colleague.
     To sustain this metaphor would be misleading.
The images and terms defining the work of today's
keepers of primary and published sources are far
different from the language of earlier extractive
industry. Today, the research vocabulary is flavored
with terms like data elements, databases, protocols,
standards, networks, platforms, links, geographic
information systems, and information architecture.
Archivists speak in tags--as well as in tongues--in a
new *lingua digita*. Rather than being buried in a
place, archival research materials and methods
increasingly take flight into space over fiber optic
lines.
     The future of research in Georgia will be shaped
by the state's information policy, which is yet to be
articulated. The issues comprising such a policy
involve ownership and access to information, and they
must be openly understood and debated. Who sells
public information and how is it priced? How do we
balance scrutiny of government with the need to
protect privacy and confidentiality? How do we
anticipate and avoid incompatibility of essential and
related information systems? How do we guard against
vendor-dependent equipment and software and at the
same time encourage public-private sector commerce?
How can we assure the long-term preservation of
records and information in a world of rapidly changing
technology? Perhaps most important, how do we design

and maintain an on-going, open process in which citizen and government stakeholders formulate their political and, in turn, fiscal responses to these issues?

Historians and political scientists have a vital stake in the outcome of these policy debates. If they remain isolated from the decisions being made by information managers--both corporate and government-- then the products and systems nourishing their research will be deficient. There will not be any treasure troves of electronic databases to sift through, no rich veins of digitized ore, no shining bits of information, only fool's gold.

The computer and related communications technologies have already radically altered the ways keepers of traditional research materials perceive their holdings, functions, processes, and relationships. The last decade saw many creative coalitions among archivists, librarians, records managers, museum curators, and management information systems specialists, some involving as well historians, political scientists, and those in other research communities. They discovered how extensively their professional lives and work were interrelated. Information keepers developed more efficient and imaginative ways to preserve and make their holdings available to their clientele. Rather than being the mules in the mines, (or sometimes the canaries), they began increasingly to see themselves as organizers of knowledge and brokers of information.

In the 1980s archivists argued that library descriptive standards for uniform books and periodicals would never work for unique original source materials. Eventually they convinced librarians to modify the Machine Readable Cataloging formats, called USMARC, used by librarians for books and serials. The new standard was called MARC-AMC for Machine Readable Cataloging for Archival and Manuscripts Control. Archivists agreed also to develop a data dictionary for standard functions and terms. This consensus on MARC-AMC was essential to the ability for the first time to share electronic information about archival collections.

A great leap forward came in 1984 when the Research Libraries Group (RLG), a consortium of major research libraries, adopted the MARC-AMC format for their national database called RLIN, the Research Libraries Information Network. Standardized data about original research materials could be linked with numerous other bibliographic and citation sources into one nationwide information utility. With federal grant support from the National Historical

Publications and Records Commission, descriptions of holdings in hundreds of institutions, converted to the MARC-AMC format, were loaded into the RLIN database. Today over one hundred repositories, including the National Archives and thirteen state and two municipal archives, have added records. The Georgia participants are Emory University, the Georgia Department of Archives and History, and the Georgia Historical Society in Savannah.

The RLIN database now holds more than a quarter-million records on individual archival collections. One can search on RLIN using subject terms, personal or corporate names, series titles, dates, form/genre terms, functions, local subject terms, text strings in narrative descriptions, related agency histories, or MARC-AMC field numbers called "tags." RLIN includes descriptions of visual and graphic materials, like prints, photographs, and maps, and soon will carry descriptions of three-dimensional artifacts and museum objects. RLIN is a growing and extremely sophisticated and flexible tool for locating essential descriptive information about original research sources--records about records, or, in the jargon of the trade, "metadata."

In 1990, the Research Libraries Group introduced citations to articles, abstracts, and conference proceedings to the RLIN network and last year added four databases from University Microfilms for periodicals, newspapers, business journals, and dissertation abstracts. Several foreign, scientific and technological, and legal periodical abstract and indexing services soon will be online. A significant enhancement was last year's addition of document transmission capabilities, which offered high-quality scanned images over Internet to RLIN's institutional and individual subscribers.

The agreements and actions of the members of this ever-growing consortium are defining the future of research in North America and Europe. The publication *RLG in Perspective: Focusing Collaboration in the 1990s* summarizes the group's objectives:

-- to support cooperative solutions among research libraries, archives, museums, and related repositories;
-- to create an information delivery service capable of putting catalog, index, abstract, full-text, and image information directly into the hands of scholars and students;
-- to manage coordinated preservation projects;
-- to develop a local system serving archives, museums, and related repositories, linked to an

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increasingly comprehensive database;
An ambitious but attainable agenda.

In the February 1992 *Newsletter* of the
Organization of American Historians, Marilyn Pettit
wrote that: "The computer-enhanced research community
of the future is formidable. It includes network
access to primary sources in the United States and in
Europe; computer utility programs that will allow the
interchange and transfer of electronic information
between all types of computers and software; and
enhanced storage of images and information on optical
disks and CD-ROM. But computers do not manage
archives, and they do not perform research. Computers
cannot tell you what has not been collected and is not
accessible, such as colonial records retained,
uncataloged, in the custody of local government
officers. The 'MARC-AMC' format . . . is the fulcrum
with which archival repositories will be leveraged
into the information age, but who is going to pay for
the implementation of automation access? Who can pay?
Who will teach it, learn it, use it?"

The new electronic information delivery systems
are in some ways analogous to the nation's earlier
railroad transportation systems in their development.
Bibliographic utilities like RLIN or OCLC (Online
Computer Library Center) for books haul information as
their freight. These enterprising cooperatives
cultivate sources of supply, often with public grants,
and seek cargo easily converted for efficient handling
and switching between systems and research markets;
MARC is their standard gauge. Existing commercial
communications lines--fiber optic and satellite--are
capable of carrying ever greater traffic. So
entrepreneurs like RLIN first load information about
archival holdings, the bulkier descriptive tools to
guide researchers to collections and whet their
appetites for more. Soon they find ways to transport
bits of the original information itself, a refined ore
delivered to consumer researchers who will process,
assemble, and remarket it. One may still sift, sort,
and assay, but not get as dirty as in the mines.
Unfortunately, however, lost will be the rich original
textures and contexts that influence analysis,
intellect, and intuition. This loss is the Faustian
price researchers will pay for the convenience of
modern electronic communication.

These are some of the changes taking place
nationally in libraries and archives to develop
information systems in support of research. What
about Georgia? Where is the state and its agencies
and research institutions in developing an information
infrastructure? The answer is mixed. It is

progressing on some fronts, but failing overall to plan adequately, to integrate efforts, and to surrender parochial self-interest. The first obstacle is intellectual, to understand both the potential and limitations of modern information technology. A public forum is needed where user communities can express their respective information needs, identify the public policy issues, and explore ways to address them, and reach consensus on information standards and terms and be able to exchange data when needed. Needed are bridges to connect the many islands of information that dot the coast.

In short, Georgians must come to recognize that public information is a public resource--like air, water, and young people. Popular writers Alvin Toffler in *Powershift* and John Naisbit in *Megatrends 2000* describe the impact of information as a cultural, political, and economic resource. Georgia's leadership--political, corporate, scientific, and educational--is only starting to realize these inherent values. Progress will remain uneven until affected citizens and interests agree on the elements and successfully advocate the adoption of a comprehensive information policy and plan for Georgia. Only then will adequate and sustained fiscal support begin to trickle down to Georgia's research institutions and agencies, which are part of a larger but interdependent information environment.

In Georgia there exist a number of separate--and not always equal--information structures. Some are successfully linked together and to national information networks, but not yet into a comprehensive or cohesive infrastructure--or "info-structure." The Southeastern Library Network (SOLINET) is one cooperative of more than nine hundred member libraries. Most Georgia public, academic, and special libraries share in SOLINET's bibliographic and preservation services and are part of a network of more than fourteen thousand libraries worldwide that exchange standardized book and serial catalog information through the Online Computer Library Center called OCLC.

SOLINET provides the foundation for another, the Georgia Online Database, GOLD, which is essentially a union catalog for the serial holdings of Georgia member libraries. Most states have some group access computer, but Georgia has no central state library and only a loose network system. GOLD is a useful, decentralized, volunteer consortium. The Division of Public Library Services of the State Department of Education provides some administrative coordination for GOLD with help from Federal funds. Unfortunately,

the state in recent years has cut the division's staff by more than half. Nevertheless, GOLD's cooperative network listing of serials or periodicals has grown in three years from two hundred to more than fifty-two thousand unique titles.

PeachNet is the Regents' communications network which, by high-speed phone lines and satellite, links thirty-two (soon to be forty-five) University System units to each other and to the rest of the world through Internet. PeachNet offers a number of academic and administrative computer services, including E-mail, and access to library catalogs and databases. PeachNet's potential is great indeed, especially if it can grow outside the University System membership and serve other Georgia research institutions.

No formal ties bind SOLINET, GOLD, and PeachNet members, but several of the larger institutions meet regularly through the Library Directors' Council of the University Center in Georgia. This consortium includes the heads of academic libraries at the four-year colleges and universities in the Atlanta-Athens area and affiliate members the Atlanta-Fulton Public Library System, the Division of Public Library Services, the Georgia Department of Archives and History, and the Jimmy Carter Presidential Library. These research library members participate formally in a number of bibliographic and preservation activities to enhance their services and avoid duplicating resources. The University Center structure provides an on-going forum for representatives from federal, state, local, public, and private institutions to discuss their respective needs and perspectives and to find ways to cooperate in projects and activities, despite our different missions or budget authorities.

The impediments to collaboration are greater among state and local government entities than in the library and archives community. Size, diversity, geography, and traditions of autonomy all work against their communication and collaboration. However, when mid-level program administrators and their public clients do have a chance to get together across jurisdictional lines, they often find that they can agree on common goals. The experience of the State Mapping and Land Records Modernization Advisory Board illustrates the value of a formal consultation process.

Established by the General Assembly and appointed in 1988 by Governor Joe Frank Harris, the twenty-one member State Mapping Advisory Board was charged to study and advise government on issues associated with developing modern mapping techniques,

better land records management, and a computer-based, integratable geographic information system, or GIS. Over eighty percent of all local government records contain land-based information elements. These records are capable of being linked electronically--if the need to do so is first recognized and if data standards can be agreed to and used. Unfortunately, agencies rarely talk with one another before designing and employing their records systems. Recently, two state agency representatives described their respective land-based information systems for the board. One agency regulates the use of wetlands and the other builds highways through those same wetlands. The members discovered that they each managed significant databases of information that vitally affected the other's program, that they used the same third-party computer center, and, because neither had first consulted with the other, that their systems were incompatible and could not share crucial environmental data.

The State Mapping Advisory Board is a model of the sort of working public forum that must be encouraged and employed more widely in other areas. It has successfully raised its members' sensitivity to the need for shared standards and a statewide land information policy. At their direction, the Department of Community Affairs staff produced a data dictionary of land use terms and developed the technical competence to help local governments plan and carry out systematic mapping and land information activities. Despite its significant successes, however, the State Mapping Advisory Board's recommendations have not been funded. The State of Georgia has no coordinated land information policy or the ability to assist local officials with their state-mandated planning efforts.

Several agencies hold pieces of the State information policy, but the Department of Administrative Services (DOAS) is key. DOAS operates the state's mainframe computer center, maintains its telecommunications lines, assesses technology, and provides electronic data processing consultation and programming to agencies and local governments--that is, to those who can pay for these services. DOAS staffs the Electronic Data Processing Review committee, established in 1972 to analyze and approve agency computer plans and purchases. DOAS is a monopoly established in a main-frame computer era, and its leadership, procedures, and revenue sources are being challenged by cheaper and more powerful local computing options--mini- and micro-computers, electronic bulletin boards, and networks like

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PeachNet.

The State is adapting to the new computing environment, but still must justify earlier investments in staff and equipment, and it must raise revenue. Selling information it holds is one way. The General Assembly two years ago established the GeorgiaNet Authority, to market state databases, like drivers' records and files, to interested consumers, such as auto insurance companies. GeorgiaNet has enhanced the state's revenue by several million dollars in its short existence, and pending legislation if passed will add additional information to GeorgiaNet's sales portfolio.

DOAS mainframes serve as hosts to a growing number of statewide information networks. In a recent agreement with the Office of the Secretary of State, DOAS coordinated the acquisition and installation of personal computer terminals in every Georgia courthouse. The computers are linked by electronic mail over DOAS lines and provide Clerks of Superior Court access to the Secretary of State's corporate charter files. Unfortunately, the Georgia Department of Archives and History was not linked to the courts' system, although as a division of the Secretary of State's Office, it assists the courts with their records management and stores thousands of reels of their security microfilm. Ironically, the state's mainframe computer center, like the microfilm, is housed in the basement of the Archives Building. The links were not possible without appropriated funds to pay DOAS for the necessary computer connections.

This fiscal process is one of the horns of the State's information policy dilemma. Rich agencies get the best systems and services while the poor ones-- like the Archives--cannot participate, even when they have valuable information products or services to share. Successful agencies are in the federal funding pipeline, or they collect fees for services, or they have organized political clout to influence the appropriation process. Georgia's government entities operate in a fragmented, short-term, annual cash and credit economy. The state has no long-term information plan.

The Archives developed a comprehensive, personal computer based inventory system to describe the location and status of every agency's records in its custody, something like electronic accounting for bank depositors. The system is fully operational on personal computers at the Archives, which wants to provide state agencies direct access to data about their records on deposit. DOAS blessed the system and told the Archives that they could install it on their

network, connecting all state agencies, who would then pay DOAS for using the system. The Archives offered to give the program and data away, but _first_ had to find $44,000 to pay DOAS to study installation requirements. Such are the fiscal and procedural impediments to an efficient state information order!

There is hope, however. Governor Zell Miller's Commission on Effectiveness and Economy in Government, the Williams Commission, last year extensively investigated state agencies and their management. The Commission's report issued in December identified one hundred thirty issues and included more than four hundred recommendations. One of the thirteen major management improvement recommendations was "that Georgia establish a Chief Information Officer position to lead and coordinate the state's data processing and telecommunications functions." The CIO would report direct to the Governor and be advised by a commission comprised of the Governor, appointed agency heads and constitutional officers, and representatives from state archives, state libraries, the legislature, judiciary, local government, and the private sector. This important recommendation is a victim of the current budget crisis, but it must have a chance to be considered and implemented.

The State Archives is not generally seen as a major player in the electronic records revolution, despite having in its statutory mandate the broad, inclusive definition of records "regardless of physical form." Since Governor Richard Russell's reorganization of state government in the 1930s, the Archives has been part of the Office of Secretary of State, Georgia's constitutional filing office. Since Governor Jimmy Carter's reorganization of the early 1970s, the Archives has administered the state's records management program, serving as staff to the State Records Committee, which the Secretary of State chairs. The State Records Committee reviews and approves agency and local government records retention and disposition schedules, official plans defining the life of a record series. This useful legal review process, however, is limited to paper and microfilm record formats, and does not address the new electronic media.

The records and information world was vastly different in the 1970s when the State Records Committee and the Electronic Data Processing Review Committee were created. The former dealt with large volumes of fairly inactive paper files and microfilm, and the latter with new mainframe computer applications. Records and information systems are much more complex today and often blend paper, film,

and computer; the formats are also at once more voluminous, more fragile, and more sensitive. The two divided authorities over records and information management, however, do not effectively coordinate decisions about securing and using mixed media or interrelated records systems.

Archival interests are in timely and efficient disposition, but focus especially on long term-retention. Archivists work to assure that records and the information they contain will endure for an adequate period of time, and in a format that makes them both secure and accessible to agencies and citizens whose interests and rights are represented. Scholarly research needs are a major consideration, but legal interests are most prominent in the assessments and constitute the foundation of "historical" value in public records.

Today's records and information environment and technology make it essential that traditional uses and values are considered when complex, computer-based records systems are designed or before they become operational. Archivists have experience working with many different users. They know how records are consulted and frequently for purposes not anticipated by creating offices. Archival experience and perspectives need to be a part, along with many others, in planning any records system. Georgia's fragmented information structures and practices, however, often keep archivists from being early participants and representing the interests of the many researchers eventually served.

There are signs of growing public awareness and concern. In 1990 Secretary of State Max Cleland appointed a group of citizen, business, academic, and government leaders to examine all divisions of his office and to recommend changes to take the office into the twenty-first century. The *Vision 2000* task force articulated the Archives mission: it "serves as the state records and information manager and as the custodian of information of enduring value, regardless of physical format." And "as trustee of the state's heritage, the Archives preserves, promotes, and makes available the state's recorded cultural and historical sources." An ambitious mission statement, especially for such a small program, now forty percent smaller than a decade ago. The *Vision 2000* recommendations included a call for new legislation to clarify the mission and operation of the State Records Committee and the Archives and to establish new mechanisms to allow broader representation from users and clients. Secretary of State Cleland plans to appoint a special panel to address the concerns of the *Vision 2000*

report, to hear from interested groups and individuals, and to develop a legislative package to implement the recommendations.

Help is needed in this effort, especially from Georgia's historians and political scientists. The future of research in Georgia depends on the quality of the records and information that survive and on the strength of those structures and systems that secure and convey those research resources to scholars, to students, and to the public. The future of research in Georgia will be shaped ultimately by the larger records and information policy issues facing Georgians as citizens in an information society. How those issues are debated and resolved in the public square of democracy will shape that future. All are stakeholders in the outcome.