Archival Strategies

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Editor's Note—Five years after the publication of *Archival Methods*, David Bearman invited three archival colleagues with international reputations as theorists and administrators to comment on and critique both the assertions in *Archival Methods* and the proposed solutions which he offered in a follow–up essay entitled *Archival Strategies*. The three, Eric Ketelaar (National Archivist of the Netherlands), Ann Pederson (Professor, University of New South Wales), and Ian Wilson (Archivist of Ontario), have clearly distinctive styles and positions which reflect a wide range of archival thinking. As a consequence, the session, which was held at the Annual Meeting of the Society of American Archivists in Indianapolis in 1994, was a lively exchange between the main author, the commentators, and the audience, who were drawn directly into the dialogue by Dr. Ketelaar, who waded into the audience with a handheld microphone and asked questions directly of individuals in attendance.

Abstract: In 1989, David Bearman published an essay entitled *Archival Methods*, in which he argued that traditional methods employed in archives for appraisal, description, preservation, and access to records would fail to meet already identified archival needs because the extent of known demands exceeded the capacity of the profession by more than an order of magnitude in each case. In response to a shortfall of this degree, he argued, the profession needed to invent new approaches or redefine its problems. In this paper, Bearman defines strategic approaches to achieving the archival mission given that assessment of our requirements and methods. He then reviews some efforts that have been made in archives worldwide in recent years to redefine archival methods along these lines. Finally, he suggests some radical strategies as yet untried that could also contribute, along with those being tested now, to a revolution in archival methods.

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Preface

IN 1989, I PUBLISHED an essay entitled *Archival Methods*,[1] in which I argued that traditional methods employed in archives for appraisal, description, preservation, and access to records would fail to meet already identified archival needs because the extent of known demands exceeded the capacity of the profession by more than an order of magnitude. In response to a shortfall of this degree, I argued that the profession needed to invent new approaches and/or redefine its problems. In this paper, I define strategic approaches to achieving the archival mission. I then review some of the efforts that have been made by archivists worldwide in recent years to redefine archival methods along these lines. Finally, I suggest some radical strategies, as yet untried, that could also contribute, along with those being tested now, to a revolution in archival methods.

The point of departure for this reassessment of archival strategies is my earlier critique of archival methods. Admittedly, that analysis was based on relatively slim evidence from the archival literature of the dimensions of the archival task and the effectiveness of existing methods, and, moreover, was limited to U.S. practice and problems. But what little evidence there was strongly suggested that our current methods were hopelessly unable to solve known problems, and my personal experience with archives elsewhere suggests that these problems are not confined to the United States.

Unfortunately, although the Society of American Archivists awarded *Archival Methods* a special commendation,[2] American archivists have paid little attention to

the message it carried.[3] Archivists in Canada and Australia have read and cited *Archival Methods* more often, and appear to be starting to take some of its conclusions to heart.[4] No one has directly disputed the

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[1]David Bearman, *Archival Methods*, Archives and Museum Informatics Technical Report, vol. 3, no. 1 (Spring 1989).

[2]"SAA Awards," *American Archivist* 54 (Winter 1991): 131.

[3]As far as I know, no review of the book has ever been published although it was included in reviews of the whole technical report series by Ann Pederson ["Do *Real* Archivists Need Archives and Museum Informatics?" *American Archivist* 53 (Fall 1990): 666-75] and by Lawrence McCrank ["Archival and Museum Informatics" *Special Collections* 4 (1990): 117-32]. Most references to *Archival Methods* in the past five years have been by archivists involved in management of electronic records; only very recently has recognition of its approach influenced writing about appraisal and description.

Articles citing *Archival Methods* that have appeared in the *American Archivist* include: Margaret Hedstrom, "Understanding Electronic Incunabula: A Framework for Research on Electronic Records," *American Archivist* 54 (Summer 1991): 334-54; Margaret Hedstrom, "Teaching Archivists about Electronic Records and Automated Techniques: A Needs Assessment," *American Archivist* 56 (Summer 1993): 424-33; Avra Michelson and Jeff Rothenberg, "Scholarly Communication and Information Technology: Exploring the Impact of Changes in the Research Process on Archives," *American Archivist* 55 (Spring 1992): 236-315; Frederick Stielow, "Archival Theory and the Preservation of Electronic Media: Opportunities and Standards Below the Cutting Edge," *American Archivist* 55 (Spring 1992): 332-42.

Faulty readings of parts of the text have led Gerry Ham, for example, to suggest that it "advocates" archival Darwinism, rather than that it points out that inadequate appraisal has a limited impact on the overall content of records that will still exist one hundred years from now. [F. Gerald Ham, *Selecting and Appraising Archives and Manuscripts* (Chicago: Society of American Archivists, 1993), 12-13].

[4]*Archival Methods* is cited with respect to electronic records in the following articles that appeared in *Archivaria*: Terry Cook, "Easy to Byte, Harder to Chew: The Second Generation of Electronic Records Archives," *Archivaria* 33 (Winter 1991-92): 202-16; Margaret Hedstrom, "Descriptive Practices for Electronic Records: Deciding What is Essential and Imagining What is Possible," *Archivaria* 36 (Autumn 1993): 53-63; David Wallace, "Metadata and Archival Management of Electronic Records: A Review," *Archivaria* 36 (Autumn 1993): 87-110.

Archivaria citations with respect to other matters include: Terry Cook, "The Concept of the Archival Fonds in the Post-Custodial Era: Theory, Problems and Solutions," *Archivaria* 35 (Spring 1993): 24-37; Terry

claim that our methods are out of sync with the problems by more than an order of magnitude. Although I had hoped to inspire critical studies, there has been no direct effort to disprove the proposition by demonstrating a more limited problem, or by proving our methods more effective than I had estimated. Indeed, the archival literature of the past five years has added little to our understanding of the extent of the archival task or the resource requirements of current methods.[5]

I. *Archival Methods*, Revisited

In the introduction to *Archival Methods*, I defined the purposes of that essay:

Simply stated, I will ask two basic questions about each major goal of the

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Cook, "Documentation Strategy," *Archivaria* 34 (Summer 1992): 181-91; Glen Isaac and Derek Reimer, "Right from the Start: Developing Predescriptive Standards at the British Columbia Archives and Records Service," *Archivaria* 35 (Spring 1993): 86-98; John McDonald, "Archives and Cooperation in the Information Age," *Archivaria* 35 (Spring 1993): 110-18; Helen Samuels, "Improving Our Disposition: Documentation Strategy," *Archivaria* 33 (Winter 1991-92): 125-40; Hugh A. Taylor, "Recycling the Past: The Archivist in the Age of Ecology," *Archivaria* 35 (Spring 1993): 203-13; Ruth Dyck Wilson, "A Conversion Experience in the United Church Archives," *Archivaria* 35 (Spring 1993): 130-43.

Archival Methods is cited in the following articles that appeared in Australia:

Frank Upward, "Institutionalizing the Archival Document: Some Theoretical Perspectives on Terry Eastwood's Challenge," in *Archival Documents: Providing Accountability Through Recordkeeping*, edited by Sue McKemmish and Frank Upward, Monash Occasional Papers in Librarianship, Recordkeeping and Bibliography 3 (Melbourne: Ancora Press, 1993) (ISSN 1036-2037), 41-54; Barbara Reed, "Electronic Records Management in Transition," *Archives and Manuscripts* 22 (May 1994): 164-71.

[5]Statistics being kept by archives are discussed in this paper largely because they purport to measure outcomes, but in fact count outputs. If the output counts were correlated with each other in any way, one might be able to answer some questions, but because of the way in which they have been collected and reported, questions about the scale of the enterprise and where it is conducted are left unanswered.

archival challenge and about our current assumptions and methods:

— Assuming our best methods· succeeded in every respect, to what extent would we meet the challenges we ourselves have identified?
— If our current methods will not achieve our aims, how can either our goals or our methods be redefined in order to be achievable?

These essays attempt to quantify, wherever possible, both the size of the archival task in modern America and the capabilities of the American archival profession given its current methods and resources.

Because of the nature of the problems which these essays treat, comparison of the magnitude of the tasks and the magnitude of our capabilities often reveal substantial discrepancies. In each chapter, I have found that the shortfall between documented needs and proven methods is greater than one order of magnitude (a factor of ten). . . Order of magnitude improvements of human methods (1000% for each order of magnitude) are unheard of without implementation of fundamentally new tactics, technologies or goals.

Therefore, when these essays discover time and again that archivists have themselves documented order of magnitude and greater discrepancies between our approaches and our aims, they call for a redefinition of the problems, the objectives, the methods or the technologies appropriate to the archival endeavor. In this respect these essays differ from most official studies and reports to the profession, which uncover such discrepancies, but too often simply call for greater resources.

I.a Selection and Appraisal

With respect to selection, *Archival Methods* concluded that appraisal ap-

proaches, based on the concept of value as contained in records, necessarily fail in part because the records must already have been created and must be maintained until the archivist's appearance on the scene. They also fail because they are people intensive. But most of all they fail because we cannot know from examining records what societal requirements would be satisfied by their retention or destruction. Appraisal approaches based on sampling fail for the same reasons. Therefore, the essay argues, we must replace selection based on content by selection based on business function and be guided by the principles of organizational risk management.

Functions exist independently of whether they create records or whether we have access to or custody of them. We can decide in the abstract whether a function generates records that need to be retained, and by studying the business process we can identify precisely where those records would arise.

Furthermore, *Archival Methods* argued that appraisal based on the concept of "documentation strategies" or collective agreements among groups of institutions as to how they will go about ensuring that a particular domain is collected between themselves, cannot solve appraisal problems. This is true, first, because they will eventually have to return to the appraisal of records, and second, but more fundamentally, because they have no meta-methodology for selecting the areas which need documentation strategies.[6]

In the end, all selection and appraisal based on trying to create a representative record will fail simply because it is being carried out by people living in the present.[7] Since bias will enter, it is necessary to accept that we are shaping the documentary record and be explicit about the rules by which conscious shaping of the record is operating.

I.b Retention and Preservation

Preservation of physical materials violates the laws of thermodynamics, and, as such, is impossible over the long term and expensive over the short term. Recognition of this stark reality is the basis for reforming our use of the term archival so that it eschews the concept of "permanent value" for the more flexible concept of "continuing value." Making the shift to "continuing value" is not simply rhetorical, but is an essential strategic step, because it opens up a host of new challenges and opportunities.

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[6] Since the publication of *Archival Methods*, these and other criticisms of documentation strategies have been partially addressed by Helen Samuels, "Improving Our Disposition." Some of the remaining problems are identified by Terry Cook in "Documentation Strategy," 185:

The central flaw in this traditional taxonomic approach to appraisal is that there are altogether too many records 'at the bottom' for archivists to appraise: more government records produced in France for the years 1945-1960 than in the previous four centuries combined; more case files for

a moderately-sized Canadian federal government programme since 1945 (immigration) than *all* archival records for *all* federal departments ever; more records for recent governors of Illinois than was *accumulated by their nineteenth-century* predecessors, by a multiple of seventy-five. To provide a specific, personal example, in addition to the one Pat Burden gave at Banff regarding the extraordinary record legacy of the recent National Energy Program, one archivist at the National Archives of Canada faces as one-third of her/his appraisal responsibility (among other duties) the single federal function of job creation and employment services. This function alone operates out of 1,004 offices, is manifested through more than fifty separate programmes, creates approximately 3,000,000 case files and 30,000 linear metres of records *annually* and maintains twenty-three national and 108 regional databases with an estimated 60,000 computer transactions *daily*.

I believe most of my original critique is still valid and the approach fails to solve our fundamental appraisal problems.

[7] See, for example: Terry Cook, "Electronic Records, Paper Minds: The Revolution in Information Management and Archives in the Post-Custodial and Post-Modernist Era," *Archives and Manuscripts* 22 (November 1994): 300-328 and Brien Brothman, "The Limits of Limits: Derridean Deconstruction and the Archival Institution," *Archivaria* 36 (Autumn 1993): 205-20.

Since archives are principally in the business of preserving "recordness," they could be released from the impossibility of preserving physical records by transferring records into whatever medium is most cost effective at the time. If information is always transferred to a new format before the end of its format life (the period of time during which the format is widely used and supported), rather than being held for the medium life (the period of time that the medium holding the information can be kept from deteriorating), it will be substantially less expensive to maintain. This tactic is especially necessary in the realm of electronic records, where the challenge to archivists is to preserve the content, context, and functionality of records which can often only be preserved by being "re-presented," because new rendering software expects different representations of functional and structural meanings than were demanded by the old system.

The fundamental strategic lesson of records maintenance and preservation, however, is that archivists don't necessarily have to do it themselves. Just because we want to make sure that records of continuing value are cared for and are known to exist, doesn't mean that others can't do this for us as well as we can do it ourselves. Indeed, quite a number of agencies and departments within agencies have never liked turning their records over to the archives, and would be glad to care for their own records. Archivists could capitalize on this wariness if, instead of expending energy and funds on providing custodial care for records, they concentrated on providing standards for care and monitored records creators who were permitted to manage their own records.[8]

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[8]See David Bearman, "An Indefensible Bastion: Archives as Repositories in an Electronic Age," in *Archival Management of Electronic Records*, edited by David Bearman (Pittsburgh: Archives & Museum Informatics, 1991), 14-24.

I.c Arrangement and Description

The fundamental points made in *Archival Methods* regarding archival description are that description of records by means of arranging them and recording that arrangement to some desired depth or detail is too labor intensive, and that those doing traditional description must look at indirect evidence in records in order to document the business process. The object of archival documentation should be to document the contexts of records creation and use, not to describe records in their particularities. It follows that archival documentation does not need to be conducted entirely by archivists, because much of the information required to document the contexts of business transactions is made by others. Tactics for exploiting existing data, or structuring systems so that they will generate the data required for archival documentation, are among the recommendations of *Archival Methods*. If we can't afford to describe records by studying them and writing surrogates, we must find a way in which the records, or rather the transactions they represent, can be made to describe themselves.

A point which was touched on, but should have been emphasized more in the essays, was that the data needed for archival documentation should be dictated by the information requirements for managing an archival repository (archival application system functional requirements), or by the information necessary to ensure the existence of a record (functional requirements for recordkeeping), not simply by historical practices. If this principle guided our documentation, the process of documenting would be integral to that of managing the collections or ensuring the recordness of the records. Since both of these objectives are critical to organizations, recognition of them should ensure that the organization provides greater funding for and oversight

of documentation than has hitherto been the case.[9]

Finally, *Archival Methods*, like the "Power of the Principle of Provenance,"[10] argued that appropriate archival documentation would be integral to corporate functioning, and that creating such documentation and managing it would enhance the status of archivists within the organization. Traditionally, archivists have not viewed themselves as being responsible for maintaining a knowledge of current corporate functions and assignments, but, if they would assume responsibility for such knowledge, they alone would possess this information, and would be relied on for providing it.

I.d Access and Use

In *Archival Methods*, I argued that "most potential users of archives don't," and that "those who do use archives are not the users we prefer." I noted that this should not come as too great a surprise since "the criteria we use when considering whether to keep records...are disdainful of use." We avoid accessioning records that are being actively used, even when they are archival, and we discourage users through our reading room rules and hours, and limited finding tools.

I urged that we seek justification in use, and that we become indispensable to corporate functioning as the source of information pertaining to what the organization does, and as the locus of accountability. We should study our users to understand

how they approach archives, and develop information systems to meet them there. Only then can we justify the expense of archives and command greater resources in the future.

Ultimately, I argued in *Archival Methods* that "to claim a social role, to demand our share of resources, we point not to the needs of the indeterminate future and the nostalgia of the unappreciated past, but to the immediate requirements of today. These are the requirements for accountability, for applicable knowledge and for cultural connectivity." This presentist justification for archives does not of course replace their role in preserving the past, it merely provides a rationale for keeping these records that relates them to today's needs and interests.

I.e Recorded Memory and Cultural Continuity

At the end of *Archival Methods*, I examined the larger purposes of archives and located the cause of the failure of archivists to inspire support in their tendency to assume that their goals are universally understood and appreciated. I suggested that, in fact, archivists are practically alone in believing that records should be kept for their own sake and for their potential interest to some distant future. Specifically, I urged that "in redirecting ourselves to this effort we need to revisit our rhetoric, removing the unconvincing references to our role in preserving evidence for posterity and replacing them with our role in focusing and connecting the past and the present. Instead of envisioning ourselves as victims of an information explosion, we need to emphasize a vision of archives, libraries and museums joining to bring about an information implosion."

II. Strategic Thinking

Archival Methods is organized into chapters which deal with the traditional

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[9]Thomas Ruller, "Maintaining Long-Term Access to Electronic Records: The New York State Department of Health Vital Event Records Case Study No. 2" (February 1994) in *Partnerships for Electronic Recordkeeping: Final Report and Working Papers* (University of the State of New York, State Education Department, New York State Archives and Records Administration, February 1995).

[10]David Bearman and Richard H. Lytle, "The Power of the Principle of Provenance," *Archivaria* 21 (Winter 1985-86): 14-27.

means employed by archivists in each of the major business processes of archives: selection *and* appraisal, retention *and* preservation, arrangement *and* description, access *and* use. On reflection over the years since the essay was written, I have come to appreciate that a major barrier to strategic thinking by archivists is the way these methods are stated. What we really have been promoting is selection *by* appraisal, description *by* arrangement, preservation *by* retention, and use *by* access. In each case, the strategies we have adopted have shaped the way we understand the purposes of archives. In each case, these strategies are inappropriate to the goal and assure our failure.

Strategies are means to achieve goals. Strategic thinking begins with establishing appropriate goals and objectives. It then emphasizes the discovery, invention, or production of mechanisms to achieve the stated objectives. Powerful strategies operate as independently of our input and effort as possible, use the least resources possible (or even generate resources), and produce the largest number of desirable side benefits. Finding these kinds of strategies requires us to discard premises and, typically, engage in free-wheeling blue-skying. The purpose of strategic thinking is to identify ways to achieve end results that might not otherwise occur to us, because we tend to try to achieve our ends by means which we have employed in the past, whether or not these have been successful.

A profitable first step in thinking strategically is to imagine alternative futures. This usually helps us locate what we now see as barriers to the future we would like to bring about. Once these barriers have been identified, we can begin to determine why they exist or what would make them appear to have been overcome. Such imaginings are critical in the discovery of how to overcome barriers because it is rarely the case that direct assault will help us take

them down. Instead of dismantling barriers, the most strategic approach is often to go around them, redefining outcomes so that the barriers are no longer relevant, or make others feel that the barriers that existed are no longer barriers. In each case, no substantive change has taken place in the external conditions, but the way is prepared for success.

Because strategic thinking focuses on end results, it demands ''outcome'' oriented, rather than ''output'' oriented, success measures. For example, instead of measuring the number of cubic feet of accessions (an output of the accessioning process), we might measure the percentage of requests for records satisfied (which comes closer to reflecting the purpose of accessioning). Alternatively, we could measure the proportion of controlled materials to archives expenditures. The difference? We would be looking at outcomes which increase the amount of records being cared for, and favoring the outcomes in which the care is paid for out of someone else's budget.

Strategic thinking requires that we always ask how things would be different if we succeeded completely. Because our quotidian plans are obviously not going to fully succeed, we rarely ask this question. But if we do ask the question and find that the answer is that nothing fundamental will have changed, except that ''more of X'' will have been done, then we can be sure that the goal we have set is a futile one.

By thinking strategically, we want to bring about fundamental change. We are seeking to transform the existing situation, shift responsibility, change the underlying degree of risk, or restructure the variables and their interactions so that the present configuration becomes unimaginable. Therefore, strategic thinking needs to employ an understanding of broadly relevant societal mechanisms and levers in order to effect fundamental or systemic change, and

of institutional powers and influences that will effect local change.

Generally, we engage in strategic thinking because we want to cause change and lack the power to simply demand it, therefore we need to identify socio-economic and political mechanisms and levers. One way to identify such mechanisms or levers is to ask ourselves the general question, "what causes an organization to change?" A recent workshop I led identified the following mechanisms:[11]

- defining best practices,
- providing user models,
- articulating project guidelines,
- developing model agreements, model legislation and model Request-for-Proposals (RFPs), etc.
- formulating content standards, including minimum data categories,
- implementing registries and directory services,
- establishing quality standards,
- holding methods seminars,
- developing conversion and interchange toolsets,
- identifying common interfaces and layered architectures,
- conducting demonstrations,
- creating de facto standards,
- undertaking technology assessment,
- promoting technology transfer models, and
- defining Internet protocols and reference standards.

This somewhat random listing of levers assists us in envisioning ways of achieving our ends that we might not otherwise consider. It reminds us that the kind of organizational response we would expect from imposing external regulations (imposing a liability) could also be achieved by increasing costs or attracting bad press coverage (imposing different liabilities). It also implies that the same result could be achieved by demonstrating a proof of concept, providing a model, or demonstrating savings. By employing more exhaustive lists of social levers and mechanisms, we can structure a systematic review of opportunities for achieving goals.

One approach to being more systematic is to classify the kinds of levers and mechanisms according to the reason they work. I see two basic arenas in which mechanisms operate: internal and external. The internal mechanisms change our perceptions by demonstrating new models or providing new information. The external mechanisms change the conditions under which we live by creating new risks or developing new incentives.

Societal Mechanisms or Levers

External Mechanisms	costs
	bad press
	law suits
	models
	proofs of concept
Internal Mechanisms	standards and protocols
	demonstrated savings
	articulated problem or solution

Among the mechanisms (or drivers) that have been identified to cause change are four in particular that can be of advantage to archives. First, articulating models and demonstrating alternatives can give people a concrete idea of how things ought to look or could look if change occurred. As such, models can exert a powerful pull because the inability to envision a different situation can often be the only barrier to change. The types of working models that have been used by archivists to effect change include:

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[11]The workshop was held at Monash University in May 1994.

- model mission statements
- model legislation
- model functional requirements
- model facilities
- model specifications
- model RFPs
- model implementation guidelines

Sometimes models can be imbued with greater authority by having been adopted by the community. Such models may be referred to as standards, best practices, guidelines, or common methods. Standards tend to have considerable force but be narrowly focused. They may change the way in which organizations do a narrow task, but are unlikely to alter its fundamental orientation. Best practices are adopted by professionals to govern themselves; changes in best practices will tend to result in changes in the ways these professionals act within their organizations, but may not change the organizations much. Guidelines adopted by a community can be general models, and may, if followed, substantially alter the character of an organization. Common methods, while a much looser category of models, can be influential simply because finding out that others do something in a different way can be provocative. Finding out that a large number of organizations act differently from one's own, and act in a common way, can lead to change.

Because models can inspire change, one way to effect change is to develop models. By envisioning how things could be different, and defining the laws, specifications, standards, or practices that would shape such a different future, we can actually cause this future to come into being. Of course, the process isn't magical; it depends on dissemination and promotion of the alternative.

Demonstration of the opportunity for change can be seen in forms other than models. Sometimes the form is an implementation that works. Sometimes it is a "case study." Sometimes it can be a standard. The degree to which technological innovation, or demonstrated implementations, can change practice is largely determined by the degree to which their potential is believed. This is the reason why demonstrations, proofs of concept, and pilots can be so persuasive - people need to see technology in action and new methods demonstrated before they are ready to change. Nevertheless, many changes can be brought into play with less than full-working models; definitive problem statements and coherent definitions of steps towards a solution can often be sufficient to induce change.

Another fundamental means of effecting change is by changing the risks. When laws and regulations change, organizations and individuals generally alter their behavior in order to avoid penalties associated with non-compliance. Such changes can take place at a societal level, as when a nation adopts an international treaty, or at a local level, such as the adoption of a new company policy.

Archivists have considered changing risks over which they have direct control, but rarely have they explored ways to alter risk factors at a societal level. This essay examines such strategies, in part, because they force us to make our values clear. For example, archives are needed because our society requires documentary proof of many transactions. One way to dramatically reduce the demand on archives is to eliminate the risk to individuals not having such records. One way to increase organizational accountability is to place the burden for such recordkeeping on organizations. Imagine a simple shift in legal responsibility from the individual to the organization for proof of birth, property ownership, or driving permits. This kind of thinking will be necessary if we are to change the environment in which archives operate.

A third means of causing change is to alter the economic incentives, change the

benefits, or make something long-desired, but previously unachievable, technically possible. While archivists have traditionally tried to change economic incentives by lowering costs, obtaining grants, or sharing costs, economic incentives change when something is made more expensive as well as less expensive, when demand is increased as well as when new sources of support can be found, and when risks are increased as well as when benefits are shared. Frequently it is easier to influence the other side of an equation!

The fourth lever or mechanism to bring about change is information. Information is so often the missing ingredient, that many efforts to bring about change focus on newsletters, seminars, clearinghouses, and even voluntary self-listing services. When the need for a change is great, or the barriers are weak, it takes little more than knowledge of an alternative to overthrow the status quo. But when the barriers are higher, it is important that the information have very high credibility, usually derived from its source, which is why efforts to use information to foment change focus a great deal of attention on what might be deemed "infecting the influentials," or getting opinion leaders to change their positions through access to information and giving them the tools to pass the information along.

Finally, it is important to keep in mind that archival strategies produce archival outcomes: they are not necessarily strategies directed or conducted by archivists. Often the most effective way to achieve an end is to allow other people to do it, especially if they can adopt the objective as their own. It is also critical to remember that strategies without tactics to implement them are not of great value. In thinking about archival strategies, we need to think not only about how to redefine goals or measures, redefine the actors, and change degree of risk or reward, but also how to identify opportunities and develop methods that exploit them.

III. Archival Goals

When U.S. archivists are asked what the purpose of archives is, they inevitably reply by referring to the four categories of archival activity; that the purpose of archives is to select, describe, preserve, and provide access to records. But these categories themselves are reflections of methods rather than of a fundamental purpose.

Why *select*? Is it to get the most important records? the most interesting records? the most representative records? Why do *we* select? Couldn't we develop systems to select or establish criteria by which others select?

Why *preserve*? Is it to preserve material entities? Is it to preserve information? Is it to preserve accessibility? Why do *we* preserve? Couldn't we ensure the preservation of records without doing it ourselves, or create a powerful social awareness that requires preservation? Indeed, couldn't we make preservation of records less costly, in a business sense, than their destruction?

Why *describe*? Is it to know the content of records? To know the context of activity? Or to know the structure of information that constitutes the record? Why do *we* describe, rather than deploy intelligent search systems and convert records to ASCII? Why do we describe *records* and not functions?

Why do *we* provide access? Couldn't libraries provide access since they are in that business? Couldn't museums do it for us since they exhibit? Why would we want people to come to us rather than our sending records to them?

The reason these subsidiary questions arise, and are themselves unanswerable, except by reference to some fundamental purpose of archives, is that the "methods as justification" approach fails to answer the underlying ontological question. Even if we could begin to justify archives by reference to the methods of archivists (because these did actually express

fundamental human or cultural values), we would still need to refine our definition of methods in order to make them reasonable statements of goals. One way to escape the methodological constraints imposed by our means of expressing our methods is to restate them passively, so that archives exist to ensure the selection, control, preservation, and availability of records by whatever means possible. This would allow us to report basic shifts in strategy under traditional categories as in the previous section, but it cannot disguise for long the inadequacy of this expression of purpose.

American archivists seem so lost in this debate that it is no wonder the most recent introduction to archives published by the Society of American Archivists, James M. O'Toole's *Understanding Archives and Manuscripts*, makes no effort to give any answer to the purpose of archives. The closest O'Toole comes is in a section entitled "The Impulse to Save" which it states "frequently has a resolutely practical basis."[12]

Given this failure to establish a clear goal for the profession, it should not be surprising that we have difficulty articulating what we are about or why society should support our activity. Perhaps it is a reflection of American pragmatism that we have avoided discussions of fundamental purpose; if so it is an unfortunate consequence of what often is an admirable trait.

Canadian archivists have attended to formulation of goals more often, and have recently frequently expressed that the purpose of archives is the preservation of corporate memory. In many ways, I am attracted to the goal of preserving corporate memory because it does not suggest any specific method necessary for its realization. However, as a rallying cry for social

purpose, it is handicapped by being something that would not command general allegiance. In many respects, it is the sort of purpose only a colleague could love.

A formulation of the purposes of archives that has achieved predominance in Australia, and which I feel has broader appeal than corporate memory, is accountability. Accountability helps in pointing to a larger social purpose, which in a democratic society requires no further justification, and it sounds as if it might require specialized knowledge to achieve.

The most convincing recent justification for archives was presented by Sue McKemmish and Frank Upward to the Australian House of Representatives Standing Committee for Long Term Strategies, Inquiry into Australia as an Information Society. "Effective creation and management of the archival document to ensure its integrity and validity is a precondition," they argued, "for an information-rich society and underpins public accountability on the part of both government and non-government organizations, FOI and privacy legislation, protection of people's rights and entitlements..."[13] They went on to establish what it was that made an "archival document," explaining that "the record of a transaction is only properly useful for current and historical purposes when it has the qualities of completeness, accuracy and reliability."

Terry Eastwood suggested a similar justification when he urged us to advance "an understanding of the idea of archives as arsenals of democratic accountability and continuity into society and into its very corporate and social fabric."[14]

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[12]See James M. O'Toole, *Understanding Archives and Manuscripts* (Chicago: Society of American Archivists, 1990), 13.

[13]Sue McKemmish and Frank Upward, "The Archival Document: A Submission to the Inquiry into Australia as an Information Society," *Archives and Manuscripts* 19 (May 1991): 17-31.

[14]T.M. Eastwood, "Reflections on the Development of Archives in Canada and Australia," *Papers and Proceedings of the 7th Biennial Conference of the Australian Society of Archivists*, Hobart, 2-6 June

Accountability as a purpose of archives does, however, raise a new problem which lurks near the surface of all broadly stated social aims: it is far from evident that if the purpose one is pursuing is accountability, that archives are a necessary strategy for achieving it. If we fully embrace accountability as our purpose, we risk losing archives to another means to that end.

Because this risk seems endemic to any profession that attaches itself to a very broad social purpose, it is useful to look at how others handle it. If we justify the medical profession by reference to health or longevity of the population, it becomes one means among many to achieve that end. Some would argue (especially outside the developed world) that other means to that end such as sanitation, or even agricultural reforms and land redistribution, would go further towards accomplishing health or longevity of a population than would medicine. But, just as a surgeon might prefer to seek refuge in the justification of relieving pain, I suggest that archivists justify their activity as ensuring evidence.

The justification of archives as evidence required by people to establish their identities and fulfill their social obligations addresses fundamental human needs and rights. Archives are considered not only as a means to these ends but as the only means. Evidence is the source of social and legal identity and significance. When archives are understood as evidence, numerous problems that archivists have struggled with are resolved:

- The information managed by archivists is records. The methods used by librarians, systems administrators, and other information professionals may be similar, but the object of those methods is different.

- The necessary characteristics of archival records are those which ensure that they are trustworthy evidence. Deterioration of evidence comes about through loss of its evidentiality, not its physical destruction.

- The records that need to be retained are those which are evidence of important transactions. Archivists can only succeed by determining which transactions to document.

- Archivists need to ensure the creation and retention of evidence and provide for its use. Archivists do not need to do these things themselves, and indeed should be striving to have them taken care of by others.

Reformulation of our goals results in a focusing on different methods to achieve them. While subsequent sections of this paper will explore even more radical concepts, the initial reformulation of archival methods involves only a shift in focus, but it exposes some important oversights in traditional tactics.

III.a Create Evidence

If our objective is ensuring evidence, archivists have made a fundamental error by not concerning themselves with whether adequate records are being created in the first place.[15] Archivists have been taught that their business is to manage records, rather than to document human activities and business transactions, and have taken the politically convenient but intellectually indefensible stand that archives are concerned only with records that have been created. Electronic recordkeeping realities have exposed how hollow a program this is for ensuring evidence, but in doing so they have also revealed how conveniently archivists have supported unaccounted-for activity in organizations in the past.

1989 (Canberra, ASA: 1989) (ISBN 0947219021), 75-81.

[15]In an electronic era, *the* issue is that systems typically do not create records.

If ensuring creation of evidence is our first responsibility, then we need to know what constitutes evidence, how records can be designed to capture evidence, and how we will identify each record, as well as the comprehensive record. It should be clear that this objective cannot be met by surveying holdings, scheduling records that have been created, or approving disposals. Rather, we must imagine taking actions to create a corporate culture in which employees take the documentation of their activity seriously and plan systems that enforce the requirement to create evidence.

Fortunately, we can begin to think practically about this because such organizational cultures exist in financial management functions where auditors enforce it, in commercial laboratory science functions where patent attorneys and government regulators dictate the requirements, and in medical settings where the lives of patients may depend on it. Indeed, ensuring evidence is important everywhere that the careers of professionals hinge on accountability. If other organizations took their records creation processes as seriously as hospitals take creating patient records or utility companies take creating nuclear waste disposal records, they would make an equal investment in evidence and accountable recordkeeping systems. These outcomes will not be achieved by an archives devoted to surveying, scheduling, and disposing of records. What is reflected in these business arenas is risk sensitivity, which comes about because of an increase in risk. An archival strategy for evidence is to increase the risks associated with failure to create it.

III.b Identify Evidence

Appraisal, selection, and disposal are means to an end rather than a statement of purpose. In practice, it is all too clear that they do not result in retention of evidence of the most significant transactions because

records of these transactions too rarely come up for archival review.

What we have actually been doing is scheduling records to assure that nothing valuable is thrown away, but this is not at all equivalent to assuring that everything valuable is kept. Instead, these methods reduce the overall quantity of documentation; presumably we have felt that if the chaff was separated from the wheat it would be easier to identify what was truly important. The effect, however, is to direct most records management and archival energy into controlling the destruction of the 99 percent of records which are of only temporary value, rather than into identifying the 1 percent we want, and making efforts to secure them. Identifying important transactions and determining the period of time for which their records must be kept will reverse the proportion of effort going into analysis of records we don't need.

Appraisal, which is the method we have employed to select or identify records, is bankrupt. Not only is it hopeless to try to sort out the cascade of "values" that can be found in records and to develop a formula by which these are applied to records,[16] it wastes resources and rarely even encounters the evidence of those business functions which we most want to document. As Richard Brown has noted recently, archivists lack "a corpus of archival knowledge adequate to appraise and acquire records with a clarity of purpose and in an intellectually valid manner."[17] He calls for a "records acquisition

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[16]This approach can be seen in Frank Boles and Julia Marks Young, "Exploring the Black Box: The Appraisal of University Administrative Records," *American Archivist* 48 (Spring 1985): 121-40 and in Frank Boles in association with Julia Marks Young, *Archival Appraisal* (New York: Neal Schuman Publishers, 1991).

[17]Richard Brown, "Records Acquisition Strategy and its Theoretical Foundation: The Case for a Concept of Archival Hermeneutics," *Archivaria* 33 (Winter 1991-92): 35.

strategy'' which identifies what to acquire, in place of ''documentation strategies,'' which identify which repositories will collect what. Unfortunately the ''records acquisition strategy'' will also fail if, as I argued in *Archival Methods*, we still don't know if we want a representative record, a comprehensive record, or a consciously shaped record.

In a recent commentary on a paper by Ann Picot on the retention of records from a large, electronic driver registration system in New South Wales, I suggested that perhaps the only record of this system that should be kept is the description of the system and its controls, the audit reports of its operation, and any exception reports required to document ways in which it failed.[18] Otherwise, we can know that the system provided licenses to everyone who drove, and that it performed as intended, which, together with documentation of driving tests, completely documents the governmental function of licensing drivers. This is similar to Terry Cook's assertion in a recent RAMP study that what is archival in large series of case files are those files that show a departure from the stated methods and policies of the business process, since those procedures are documented as part of the archival record.[19] Cook's assertion is that, if experience of the clients conforms to that being planned and otherwise documented by the agency, no additional record would be needed. Quite often it seems we can ensure evidence without keeping any of the records of the transactions themselves, because an acceptable record of intention and procedure exists elsewhere. An archival strategy is to identify the unique contribution made by records of particular transactions to the available evidence, and incorporate this upfront in system design.

III.c Document Activity

Documentation is a secondary purpose of archives; it serves the primary function of ensuring evidence in three ways. First, documentation must be adequate to ensure that records are evidence. They must contain the content, structure, and context associated with transactions out of which they arose. When content, structure, and context information is retained as evidence, it must be kept in a sufficiently granular and systems-independent fashion to allow the reconstruction and authoritative identification of the record. Granularity permits us to relate information in one source to information in another source in a concrete way. A record of who had access to a particular series of files at any time is of no value in reconstructing evidence if we cannot demonstrate what records were present in the files at that time and which were missing at a specific later time. In computer based systems a record of views in effect at a given time must be correlated with knowledge of the state of the database at that time in order to provide evidence of what might have been a record. Unfortunately, as *Archival Methods* explains, our current description practices focus on capturing content of records, and on describing existing arrangement and highly general context, when what we need is highly specific metadata about transaction contexts which would provide us with what we need to know about content and structure (including, but not limited to, arrangement).

Secondly, documentation must ensure that information collected in the course of conducting archives business transactions supports the administrative operations of the archives and its parent organization. If knowledge obtained in conjunction with business process analysis could support

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[18]Anne Picot, ''Electronic Record Systems in the Roads & Traffic Authority, NSW,'' *Archives and Manuscripts* 22 (May 1994): 52-66.

[19]Terry Cook, *The Archival Appraisal of Records Containing Personal Information: A RAMP Study with Guidelines* (Paris: UNESCO, 1991).

planning for space requirements for future records holdings, or identify tasks which exploit information brought in from outside the organization, it could be used to define data structures that will prove usable for administrative control. The analysis of internal information flows could support a new strategy for information management within archives and in the parent organization.[20]

Finally, documentation serves use. The documentation which it is necessary for archivists to obtain will incorporate pointers and links necessary to retrieve the evidence from the variety of intellectual perspectives known to meet user needs. Unfortunately, archivists know little about the needs of their users or the intellectual perspectives which must be considered in order to exploit evidence. Clearly, one feature of the new use environment is the necessity for representing the transactional provenance of the records, and the characteristics of the recordkeeping systems that supported use of the records during their active life. An archival strategy for documentation is to automatically capture metadata required to ensure evidence, to manage programs, and to support use after analysis of functional requirements for recordkeeping, business process, and user needs.

III.d Maintain Evidence

Archival goals certainly encompass making sure that evidence survives to be used. How best to achieve this objective is a matter of great dispute. It seems obvious that we must place less emphasis on media preservation and greater reliance on the preservation of the information which

makes the record evidence, if only because so large a proportion of contemporary records are being created on transient media. Once devotion to the original medium is reduced, and preservation becomes equated with measures to ensure the continuity of evidential value, it is easier to adopt tactics that allow for the realization of the financial value of recorded artifacts without compromising the availability of evidence.

Transferring records to new formats brings with it a benefit that should not be allowed to pass unnoticed, nor once noticed be allowed to become incidental. Old media and formats are considered desirable by antiquarians; a market-value could be realized by replacing the originals with copies that can be more easily preserved and selling the original formats. The archival literature refers to such materials as records having "intrinsic value," although it would be more accurate to acknowledge that the value was "extrinsic" and market-related. Hence, records that would cost dearly to preserve are the same records that can earn income if sold.

At the same time, archival goals need to be very specific that the mere retention and even perfect preservation of data does not ensure that evidence will be usable. Maintenance must encompass developing methods to ensure that content, structure, and context are not lost or confused over time, so that we will end up with evidence.

The desired outcome of maintenance must not confuse physical custody with adequate control, nor assume that custody in archives will satisfy requirements for preservation. Records might well be better maintained in the control of others. Why not take advantage of the reluctance of others to give up custody of their records to establish audit controls over *how* they maintain custody of records, and focus our efforts on extending intellectual controls?

Imagine the effort involved in preserving the only copy of an important record such as the Declaration of Independence. Is this

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[20]The Archival Information Systems Architecture Project, funded by the National Historical Publications and Records Commission in the early 1990s, tried to achieve consensus on what the business processes and information flows in an archives would typically be, but in the end the differences prevented achieving a consensus guideline.

effort undertaken to satisfy an archival objective? Granted, the original has symbolic value, but what evidence is lost if tens of thousands of copies of the Declaration of Independence are in wide circulation and there is no chance that the destruction of any one of them will have a significant impact on the availability of evidence of this critical transaction? Is copying records a preservation strategy that is potentially more robust than preserving unique originals?

In short, re-examining archival maintenance goals involves asking ourselves what the relationship is between preserving records and preserving evidence. If we want to maintain evidence, could we invest in creating forces that press for its maintenance, or which enforce maintenance requirements? An archival strategy for preservation is to make maintaining evidence less costly than the alternatives.

III.e Enable Use

By adopting the goal of ensuring evidence for its continuing value, archivists can resolve a large number of conundrums concerning use that have beset the profession. For example, archivists have struggled with the question of whether records that are never consulted are less worthy of retention than those which are consulted frequently. When the focus is on records as an end in themselves, the only reasonable answer is that use has no bearing on value. However, when the focus is on evidence it is clear that the need for evidence of particular transactions lessens over time, and that it is not unreasonable to retain series of records that are being used and dispose of those which are not after the period of time for which they are statutorily required has expired.

The only plausible answer to whether we want to increase use of records is "yes," but, when the focus turns to evidence, it is reasonable to think that perhaps the society ought to make evidence less, rather than more, necessary. If so, an archival strategy might be to reduce the need for evidence, thereby making it easier to archive what is needed.

But perhaps the goal is to increase use. Tim Ericson argued recently that:

> The *goal* is *use*. We need continually to remind ourselves of this fact. Identification, acquisition, description and all the rest are simply the means we use to achieve this goal. They are tools. We may employ all these tools skillfully; but if, after we brilliantly and meticulously appraise, arrange, describe and conserve records, nobody comes to use them, then we have wasted our time.[21]

If this were so, we should distribute copies of records everywhere we can, so that many secondary points of access are available to users. On the other hand, if the goal is to increase users of our services, as recently proposed by Barbara Craig, we would continue to make access available only through archives.[22]

Frankly, neither goal strikes me as powerful, and both recommended approaches contribute to increasing the distance between our capabilities and our means, rather than reducing them as called for in *Archival Methods*. The focus on evidence, however, does help us to see some approaches with added value; for example, if we want to make evidence more readily available, we should provide it where it is needed. Land use records should be accessible where building permits are issued, or be made available over networks and by fax-back. An archival strategy for enabling

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[21]Timothy L. Ericson, "'Preoccupied with Our Own Gardens': Outreach and Archivists," *Archivaria* 31 (Winter 1990-91): 117 (emphasis in original).

[22]Barbara Craig, "What Are the Clients? Who Are the Products? The Future of Archival Public Services in Perspective," *Archivaria* 31 (Winter 1990-91): 135-41.

use is to give records to those who need to use them.

III.f Measure Success

A reformulation of archival goals should result in a reformulation of measures of success. In researching *Archival Methods*, I found a dearth of concrete information on the resources required to conduct traditional archival activities, and about archival outcomes. The few numbers I was able to find reported on outputs of archival methods such as number of feet of accessions and number of research visitors. But what we really want to measure is our ability to achieve our goals, so we need to develop means to assess how well archival records serve as a source of evidence required by citizens, and how often our primary patron, the organization itself, is able to establish precedent or satisfy internal requirements for historical understanding by reference to records.

Defining outcome measures is a critical component of strategic planning and goal setting. Considering success factors is yet another way of escaping from traditional modes of thought and identifying the fundamental purposes of archives. For example, we could ask ourselves whether an increase in numbers of citations to records in policy reports is an outcome that is desirable, and whether it measures use of evidence. Should we perhaps measure success by the severity of sentences imposed on those convicted of destroying evidence or other crimes against records? If so, should archival strategies include lobbying for more stringent laws or filing friend-of-court briefs?

However we measure it, we need to reflect our re-invention of archival goals in assessments of our success. We particularly need to establish baseline data with which to assess the viability of our new strategies and outcome measures that avoid the pitfalls associated with "output" measures of

the past. This is necessary not only because we need the data to make good policy choices, but because we need, as a profession, to share an understanding of what constitutes success. In one meeting recently, I encountered both archivists who were attempting to succeed by reducing user visits (demonstrating the ability to satisfy users through remote access and satellite facilities) and archivists trying to increase user visits. I met archivists who were proud of how much material they acquired, as well as others who were proud of how much material they avoided acquiring, by destruction or negotiation.

Whatever we measure, it must be related to what we want to achieve. And we ought to have professional consensus on what we are trying to achieve.

IV. Reinventing Archives - Possible Strategies

Strategic approaches to archives together with reformulated goals make it possible to imagine new tactics and new methods. Together, these constitute the basis for what has been called "re-inventing" archives.[23] In those cases in which we can't simply declare our original objective to have been met and move on, we need to develop tactics.

As mentioned earlier, a favorite way of arriving at such tactics is through a group mental voyage, often called "blue-skying." I like the idea of imagining how to get from here to there without doing it ourselves. This forces us to ask why someone else shouldn't do it, or how the world could be structured so that they would want to do it, or even need to do it. We can also ask what would cause the outcome we seek

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[23]David Bearman and Margaret Hedstrom, "Re-inventing Archives for Electronic Records: Alternative Service Delivery Options," in *Electronic Records Management Program Strategies*, edited by Margaret Hedstrom (Pittsburgh: Archives & Museum Informatics, 1993), 82-98.

to happen automatically, or how the alternative could be made impossible. Often this involves asking first how we could substantially increase the risk to others of not doing what we want them to do.

A variety of discoveries about our current methods are made whenever these exercises are conducted. First, it becomes obvious that archivists don't know very precisely what they want to achieve, unless previous exercises around measures of success have pushed our thinking forward. Secondly, we find that archivists seem to do many things that are not essential, and often spend a lot of energy on approaches, such as issuing regulations, that have little discernible effect on outcomes. For example, record retention regulations seem to increase our paper processing, but do little to enhance consciousness of employees about record-keeping requirements. Third, we find that in order to be effective, archivists need to intervene up front, at the first point in time that the problem of records creation can be addressed. Often, this involves establishing a framework for transactions and their evidence before any records are created.

The tactics we want to refine should leverage resources wherever possible. They should exploit the interest of others in doing our work and increase the benefits to them, and they should increase the risks to those who don't adopt archivally-sound systems. The objective is to get others to adopt our goals and to see our problems as theirs. In this way, we can not only co-opt their resources but take advantage of their creativity and technical capabilities, as they independently invent solutions. One tactic which can be used is to spread the word about the best solutions developed by others. This gives them a boost and furthers our aims. Often, because our clients believe in the implementability of solutions developed by each other more than those we are advocating, celebrating best practices of others supports rapid adoption of new approaches.

Because we believe that fundamental change is necessary, we must be willing, also, to explore fundamental, structural and long-term causes, and consider the creation of socio-economic mechanisms that can drive change over time. Instead of finding a worthy project, getting a grant, and completing a product, we need to invent new architectures, invest in risky collaborative ventures, and adopt guerrilla methods. It is not enough to eke resources out of our current budgets; we need to permanently "perturb existing funding streams"[24] (get beyond "zero sum" games).

Even the most concerted efforts will fail if they are directly blunted by countervailing trends or linked with ongoing forces that turn out not to be heading in the desired direction. On the other hand, the minor perturbations we create will be amplified if we can join the new forces we are trying to release to the underlying trends. Hence it is critical to our tactics that we correctly analyze basic trends and exploit inertia. External forces can create strong pressures to act in a given way if reinforced with significant liabilities or opportunities, so many of our best tactics will aim to increase benefits or risks.

The following brief descriptions of new ways of thinking about our mission are not fully developed proposals, but the results of blue-skying the goal of evidence. They contain germs of ideas which I believe could help archivists realize their objectives better, but they need to be refined and implemented with attention to local circumstances and sensibilities. Not all these tactics will be suited to any given situation, and some may be options only in the longer term, when attitudes have changed substantially as a result of successful implementation of some of the other tactics.

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[24]I owe the marvelous formulation "perturb existing funding streams" to Stuart Lynn from whom I first heard it at the Getty Imaging Initiative meeting in the spring of 1994.

Specific tactics that are being tested now are the focus of section V of this paper, and my recommendations for the most strategic steps archivists can take immediately are discussed in section VI.

IV.a Tactics to Enhance Creation of Evidence

IV.a.1 Increase Risks of Not Having Evidence

Records management helps to manage risks, so it is unusual to think of how archivists and records managers could increase risks in order to achieve our objectives. But it is also natural. If risks increase, then organizations are more likely to invest in records management and archives to reduce those risks. This is why I have often proposed that archivists and records managers should make a concerted effort to find individuals and groups willing to sue their employers. Both the presence and absence of records are risks in such suits; if good cases can be found, and won, the industry as a whole will feel the effects. (Granted, it may be necessary to engage in such activity after hours, especially when one's own employer is to be the defendant.)

IV.a.2 Promote Best Practices for Record Creation

Another way to significantly increase the risk to organizations and individuals who fail to create documentation of their activities is to introduce codes of best practices which have adequate minimal requirements for recordkeeping. We can begin by working to establish such new standards within professional guidelines for best practices. If the American Hospital Association or the American Medical Association determines that certain classes of records should be kept to document patient care, only a foolhardy doctor or hospital would fail to heed the guideline. Similarly, when professional boards of auditors establish standards for management reviews of accountability, the

effect is not only on the auditors who perform their function according to the new standards of practice, but on all those subject to their audits, who, after an initial citation for poor practice and a warning, are unlikely to fail to document their activities in the future.

We can also establish stronger in-house standards and implement systems in such a way that failure to create records would become a willful avoidance, requiring an explanation. Building on the "Functional Requirement for Evidence in Recordkeeping" documented by the University of Pittsburgh electronic records study team, we could create systems designs, implementations, and standards that would enforce the creation of evidence of all transactions.[25] We could assist organizations in adopting personnel policies that enforce accountability, and seriously punish offenders. We could also study the correlation between good record-making practices and insurance or investment risks, and publicize positive results to put pressure on organizations from their insurers and stakeholders.

IV.b Tactics to Support Identification of Evidence

IV.b.1 Retain Fewer Records

One fundamental change which is likely to be brought about by the re-invention of archives is that fewer records will be retained in the future. Retention will likely be more proactive, more directed towards saving specific records for concrete reasons, rather than saving all records of a certain class simply because some important records might be among them.

The strategies proposed by Terry Cook and others for selection of case files would

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[25]David Bearman, *Electronic Evidence: Strategies for Managing Records in Contemporary Organizations* (Pittsburgh: Archives & Museum Informatics, 1994): Appendix, 294-304.

dramatically reduce the size of very large series by retaining only those cases in which the experience of the client was at variance with the procedures or views of the institution, as reflected in policies and procedures, and in its own promotional literature.[26] Another approach to the selection of records extends the concepts developed in the FBI appraisal project and the familiar "fat file" theory to the sampling of records series.[27] The mechanism would involve selecting records based on exceptions and appeals to normal business transactions on the grounds that the methods of everyday transactions are documented in policy and procedure, making it unnecessary to document them with examples (to say nothing of complete record sets).

IV.b.2 Select Transactions, not Records

Archival Methods found that our current method for selecting records by requiring records creators to describe them and submit schedules for them, subsequently examining the record series, and then, ultimately, appraising them, is too labor intensive to permit us to select more than a small fraction of the records created. A variety of different mechanisms have been proposed.

I have long argued that we need to appraise business functions, deciding before any records are created at all, what documentation it is desirable to create and retain for a given function.[28] One advantage of this model, recognized in its adoption by the Dutch government's PIVOT project,[29]

is that it enables us to develop general models for record retention in different business functional areas, and to spend our energies on developing strong rationales for such determinations, preferably based on information and authorities that are taken seriously by practitioners in those areas. It also gives us the opportunity to then try to influence law, regulation, and professional best practices in those areas, to ensure that the outcome we want for records is incorporated into guidelines that govern practices within those functional arenas.

IV.b.3 Have Others do the Selecting

The National Archives of Canada has proposed negotiated outcomes as a mechanism for achieving what it now calls "planned disposition."[30] Employing this approach, the archives focuses its energies on very high-level agreements between the archivist and agency heads as to desired outcomes. The archives can then focus its efforts on monitoring outcomes, and documenting emerging approaches and promising tactics that are being employed by the agencies.

A new report by the National Research Council makes similar recommendations with respect to the entire corpus of federally funded scientific research and observational data.[31] It advocates the establishment of data management plans up-front in scientific research endeavors, the introduction of data managers in the day-to-day control of records, and the establishment of what is in effect a scientific community peer review and distributed repository for the long-term preservation of data.

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[26]Cook, *The Archival Appraisal of Records Containing Personal Information.*

[27]Terry Cook, "'Many Are Called but Few Are Chosen': Appraisal Guidelines for Sampling and Selecting Case Files," *Archivaria* 32 (Summer 1991): 25-50.

[28]David Bearman, "Documenting Documentation," *Archivaria* 34 (Summer 1992): 33-49.

[29]State Archives of the Netherlands, *PIVOT: A New Turn to Appraisal Policy* (The Hague: Rijkarchiefdienst, 1991).

[30]Eldon Frost, "A Weak Link in the Chain: Records Scheduling as a Source of Archival Acquisition," *Archivaria* 33 (Winter 1991-92): 78-86.

[31]See National Research Council, *Preserving Scientific Data on Our Physical Universe: A New Strategy for Archiving the Nation's Scientific Information Resources* (Washington, D.C.: National Academy Press, 1995).

IV.b.4 Select Automatically Based on Metadata

Finally, several computer-based approaches to selection of records have been proposed. The first, and in many ways most desirable, approach derives from the fact that all records are communicated, and therefore we can define standards for the headers of envelopes or packets moved by communications protocols that would result in the automatic execution of filing and retention rules.[32] Reason to pursue this approach can be found in the directives of the U.S. Court of Appeals in the case of *Armstrong v. the Executive Office of the President*.[33] The technical foundations for the tactics are embodied within object-oriented Application Program Interfaces and User Interfaces, and in the concept of encapsulated data objects. This strategy was advanced by a National Institute of Standards report to the U.S. National Archives in 1989. Unfortunately, the report was misunderstood and rejected by NARA, which has carried this misunderstanding forward in collaboration with the Department of Defense re-engineering of records management and "Legacy Data" program.[34]

IV.b.5 Don't Select - Keep it All

Another approach that has been seriously discussed is to keep everything, spending our energy on making access more efficient rather than on the selection of records, on the grounds that our real reasons for selecting were simply that it was perceived to be cheaper, both from the perspective of the custodian and of the end user, to cull unimportant records. The economics of records retention and the technologies for use of records may soon obviate any advantage selection had in saving money.

IV.b.6 Let Public Interests Select and Care for Evidence

Given the large number of interest groups in the United States, we can imagine a dramatically different tactic that could be more effective than retention regulations at the national level. It would involve promulgation of the simple requirement that agencies provide ninety-day notice in the *Federal Register* for the destruction of any records and, during that period, permit viewing of such records by representatives of the public concerned about their destruction. This would invite public comment, which would define the evidential value of these records much better than the current agency retention request-based system can. It would also provide the government with an alternative venue for the records, and even ensure the preservation, somewhere, of evidence that the National Archives judged unsuited for retention with public funds. In this way, records that NARA deemed unnecessary for evidence of federal agency activity could be requested by other repositories which could be allowed to keep them for their subject content.

In principle, we can take the same approach to public records which do have evidential value. It is imaginable that agreements for alternative custody could generate resources for the government, in addition to alleviating it of the responsibility of maintaining certain records. By providing the government with a lever to review the methods of other repositories, it could upgrade archival programs elsewhere. Once we recognize that records are

[32]David Bearman, "Managing Electronic Mail," *Archives and Manuscripts* 22 (Spring 1994): 28-50. See also, David Bearman, "Towards a Reference Model for Business Acceptable Communications," and "Virtual Archives," in *University of Pittsburgh Recordkeeping Functional Requirements Project: Reports and Working Papers—Progress Report Two*, edited by Richard Cox (Pittsburgh: School of Library and Information Science, University of Pittsburgh, 1995), 197-233, 172-96.

[33]See David Bearman, "The Implications of *Armstrong v. Executive [Office] of the President* for the Archival Management of Electronic Records," *American Archivist* 56 (Fall 1993): 674-89.

[34]Department of Defense, "Records Management Functional Process Improvement (FPI) TO-BE Report," January 14, 1994. This is an earlier unpublished report in an ongoing project.

retained for their continuing value rather than permanently, we can see how government archives can be the hub of a system which preserves government-created records where they are most useful for a period negotiated at the time of their acquisition.

Another option would be to employ distributed directory systems to support a kind of archives placement service, or market in fonds, that would enable those interested in maintaining records to "bid" on acquiring them. For public records, requirements could be placed on winning bidders to report the holdings to a Government Information Locator Service, and to maintain standards of care.

IV.c Documenting Evidence

IV.c.1 Document Transactions

I have recommended that archives should not describe records, but, rather, document records-creating activity.[35] We can then rely on importation of externally created information regarding provenance and capture of administrative data through use of internal control systems, rather than creating this data ourselves in traditional description processes. Sometimes, the information needed about provenance is relatively easy to capture from a single existing source, already in machine-readable form, such as the *Federal Register*. At other times, the archives must spend substantial energy developing mechanisms, such as vocabularies and mark-up categories, to bring the data needed for documentation of the context of creation of records into archival control systems. Once there, it should be easy to establish systems control so that all uses of records are documented.

IV.c.2 Implement Self-Documenting Systems

Even if the records were to remain the focus of description, archivists need not do the describing. Mechanisms for getting descriptions of records include having records themselves described by others and described automatically. The Government Information Locator Service concept is an example of how the energies of others, directed towards record description for a purpose other than documenting records, could be employed to meet requirements for accountability and access.[36]

Meanwhile, changes in technology that are reflected in distributed access through communications protocols to local directories also should cause us to reconsider the degree of investments in data value standards.[37] We have found, through years of trying, that our investments in authority files do not necessarily lead to homogenization of data.[38] We expose the negative impact that revising source documentation to reflect new concepts and terminology has on historical records every time we alter a library catalog heading to reflect our current usage. Such revisions often obscure the subtle differences reflected in the original usage within the referenced document.

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[36]For more information about how GILS is used to describe records, see: David Bearman, "Requirements for Accommodating Information Systems and Records Management Needs within the proposals for a Government Information Locator Service (GILS) and its Z39.50 Application," in *The Government Information Locator Service (GILS): Expanding Research and Development on the ANSI/NISO Z39.50 Information Retrieval Standard, Final Report*, William E. Moen and Charles R. McClure, Principal Investigators (Syracuse, N.Y.: Syracuse University, September 7, 1994).

[37]For more information about data value standards, see: *The Government Information Locator Service (GILS): Expanding Research and Development on the ANSI/NISO Z39.50 Information Retrieval Standard, Final Report*, William E. Moen and Charles R. McClure, Principal Investigators.

[38]See David Bearman, "Authority Control Issues and Prospects," *American Archivist* 52 (Summer 1989): 286-99.

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[35]Bearman, "Documenting Documentation."

And there are reasons to believe that linking mechanisms for connecting files could, with minimal artificial intelligence or natural language processing on the user end, result in much better retrieval.[39]

IV.c.3 Let Users Describe Records

We definitely need to take advantage of the fact that many of our users know more about the records they are inspecting than we will ever know. We should adopt systems design principles that enable us to capture the knowledge users bring by incorporating their descriptions into our databases. Under resource pressure, many archivists have allowed at least some researchers to use records that have not been processed; perhaps it is time to consider whether such a practice could be regularized.

IV.d Maintaining Evidence

IV.d.1 Preserve Recordness, not Records

In *Archival Methods*, it was found that acquiring custody over records, with the attendant demand for storage space, intervention to preserve the records, and physical retrieval was not only a major drain on staff and financial resources but also led to archivists being perceived as custodians and housekeepers, with the low status associated with those tasks. Alternative means of preserving records that are substantially less costly to the archives and raised the status and profile of archivists are required.

IV.d.2 Dispose of Holdings

If we preserve recordness, what shall we do with records? Archivists find any suggestion that they could dispose of current holdings very threatening (and they darkly suggest it may be unethical), but, the re-

ality is that we cannot continue to maintain all the records in our custody and perform our more important role of preserving evidence.

One solution to the problem is selling records to those who want them most—the users who ask to see them. Of our current holdings, the older the records, generally the greater the investment required for their care. At the same time, the older the records, the greater the value associated with them by the market. Because there is a technological potential to preserve evidence without retaining custody over the original artifacts that contain the information (through imaging and documentation), archives could sell the originals whose care requires greater investment, and use the money to convert even more evidence. If the archives establishes a regular program to deliver evidence requested by researchers to them from the stacks via imaging, then the most often-requested records will automatically be imaged and available for sale to users. The requested records will be preserved inexpensively and will be available to others including remote researchers. If users don't want to purchase the records, there is no need to reshelve them, which, at least, saves staff effort.

IV.d.3 Leave Records with Records Creators

From the perspective of most archives users, the most dramatic thing archives could do to underline their new approach to their functions would be to not acquire records. The problem with acquiring records is that they, in turn, require care. Since the purpose of acquiring records is to be able to ensure their preservation and make them available for use, a strategy for maintaining records that does not require archives to keep them would be a significant and beneficial methodological innovation. The simplest approach discussed in *Archival Methods* would be to have someone else keep records instead of the archives.

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[39]For more information about linking mechanisms for connecting files, see David Bearman, "Thesaurally Mediated Retrieval," *Visual Resources* 10 (1995): 295-307.

The fact that many electronic records are being created in both hardware- and software-dependent environments means that their "recordness" cannot be easily represented in a hardware- and software-independent knowledge representation. Rather than lose their recordness, archivists will want to adopt as a principle that such records should be migrated, within the creating agencies and between systems under the control of the record creators, so as to preserve the greatest possible functional meaningfulness over time.

While there is no parallel technological rationale for leaving paper records with the agencies that created them, there are strong administrative and fiscal reasons for considering such policies. Central archival institutions have very limited budgets that do not grow with the expansion of the program budgets of agencies. By building long-term evidence management requirements into agency programs, additional funds can be acquired for archival control, additional personnel can be recruited, and the problem can be moved closer to where the solution must be found.

In order to prevent the acquisition of records that should be cared for by others, archivists could make transfer of records to the archives an event that occurs as the exception rather than the rule. The general method of caring for archival records would include identification at their creation to a database available to the archives and the agencies. Agencies would maintain records in their original format, or in an evidentially equivalent format, as long as the agencies were responsible for the function being documented. Agencies that went out of existence or transferred functions to another agency would send records to that other agency or the archives.

IV.d.4 Make Records Less Necessary

When we accept that records are kept as evidence for the period of their continuing value, it becomes reasonable to develop disposal or deaccessioning policies that take advantage of diminished need for retention. By working to effect legislation regarding evidence, archivists could make records less necessary (imagine the heresy!).

IV.d.5 Reformatting Records to Reduce Storage Requirement

If we must keep records, we could use reformatting technology (such as Computer Output Microform (COM) and Computer Output to Laser Disk (COLD) systems) more aggressively, which would reduce life-cycle costs and risks. In this way, we could also create virtual archives, copy records so as to reduce the risk of losing any given copy, and make the records more accessible. The costs of reformatting could be partially offset by using the reformatting process as the way records are received from records creators or delivered to users.

IV.e Provide Access to Evidence

IV.e.1 Provide Information about Records-Creating Contexts

Few potential users recognize archives as a source for records or know when they need evidence rather than just information. The methods we use for providing access to those who do come to archives to look for evidence are ineffective and costly to the users and to us. We have not found ways to benefit from the knowledge users bring to the archives, or to link archival and non-archival information sources effectively.

Clearly we need to imagine ways for potential users of records to know about their existence. How can we ensure that anyone coming into contact with a business function of our organization will be made aware of the records which document that activity? How can we link functions and their documentation so that users will know where to find records they contributed to, created, or encountered in their dealings with government and other organizations? How can the archives become a

value-added information provider about evidential sources of information?

We need to promote archives as sources of information on organizational functions, as much as of records. Fundamental shifts should take place on many levels, beginning with archives becoming indispensable to our institutions as sources of corporate memory. The focus on organizational analysis and process modeling implied in our new methods of appraisal, and the emphasis on metadata and control documentation inherent in our new descriptive practices, mean that we will be a rich source of information on the organization and its functions. This will tend to elevate our importance within the organization, giving users (including users who, in the past, had no contact with us) reasons to exploit the archives on a regular basis.

IV.e.2 Deliver Records Remotely

Ultimately, we want to deliver the records themselves, not just surrogates for them, pointers to them, or metadata documenting them. Archivists should consider establishing fax-back services and ftp sites to deliver documents electronically on demand. Some archives are already supporting Mosaic sites on the Internet, which make full-texts of records available to users. These network options could be expanded.

In addition, archivists should consider making more waves regarding evidence which they have or know about. When archivists come across significant records of public interest, they could publicize them or, even more exciting, leak them to the press.

IV.e.3 Attract New Users by Studying Uses

Adopting new principles relating to access will, in turn, help us to change the profile of our users. It may lead us to alter our preferences for types of users we don't typically see much of. Among our basic principles is that we need to study users, and their specific interactions with us and

our information systems. We need to know what they ask, how they formulate their questions, and what they believe constitutes an answer or we can't design systems and approaches to access that will work for them.[40]

IV.e.4 Promote Secondary and Tertiary Uses

Today, virtually all users come to the archives repository to conduct research or receive copies of records in response to a written inquiry to the repository. If we want to multiply uses, we need to find ways to promote secondary and tertiary users - those who never come to archives themselves, but receive archival evidence from other institutions (libraries, the Internet, the media, brokers). In order to do this, our records need to be listed in the local catalogs and finding aids of other institutions. Establishing online information systems about archival holdings that are accessible from a wide range of sources would serve users and increase uses. It could be accompanied by an inter-institutional lending program which would take advantage of the infrequency with which archival materials are used. This would be accomplished by leaving the records wherever they were last requested until the next request, halving the amount of trans-shipment of materials.

V. Reinventing Archives—Practices

Archives are changing in many ways, some of which appear to conform to these strategic directions, or are explicit efforts to re-invent programs and methods. While I am not aware of all the changes, and many are doubtless underway that have not

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[40]David Bearman, ''User Presentation Language,'' *Archives and Museum Informatics* 3, no. 4 (1989): 3-7; Jane Sledge and Mary Case, ''Looking for Mr. Rococo: Getty Art History Information Program Point-of-View Workshop,'' *Archives and Museum Informatics: Cultural Heritage Informatics Quarterly* 9, no. 1 (1995): 124-29.

been reported, it is useful to examine the types of changes that are being implemented and assess how well they might satisfy the strategic rethinking of archives.

Perhaps the greatest shift in archival thinking being translated into action is in the area of selection of records. Traditionally, this function has been fraught with contradiction: archivists have tried to control it but the real power lay with records creators or the agencies. The shift in thinking reflects the reality that agencies are responsible for records creation and retention because they are accountable, and that they are therefore held accountable through agreements that specify how they will implement archival control. It also involves moving from the appraisal of records, which can only take place after records are created, to the appraisal of business functions, which takes place before records are created and focuses on the need for accountability at the level of business transactions.

V.a Create Evidence

V.a.1 Negotiating Local Responsibility

At the National Archives of Canada, a diagnosis of the failures of records management throughout the national government and a reassessment of the responsibility for government information holdings, led, in the early 1990s, to a re-invention of methods of selection of records and the abolition of records scheduling.[41] In place of bottom-up scheduling of record series, the NAC decided to try top-down negotiations with agencies to identify outcomes that the archives and agency could both agree would be satisfied by agency records management. These outcomes are nowhere near as specific as records schedules, but unlike schedules they operate across the agency. Importantly,

they give the archives and the agency an opportunity to focus on records of the greatest policy significance, rather than, as tends to be the case with schedules, the greatest volume records or the most routine processes. While it is too early to report an overall success, the archives is enthusiastic about early results of this approach.

V.a.2 Promoting Good Local Practices

The New York State Archives and Records Administration (NYSARA) has been exploring ways to "re-invent" some major processes with a grant from the National Historical Publications and Records Commission.[42] One of the first things they examined were the regulations they issue, in an attempt to determine how well those regulations are adhered to and what effect adherence has on agencies. It is quite possible that, following this review, many regulations will be withdrawn, since they do not demonstrably contribute to outcomes desired by the archives. The second major departure follows from the first: rather than assume that the best information on how to satisfy recordkeeping requirements comes from the archives, the archives is looking at how the agencies are managing their records, in order to identify good practices. When they find practices in the agencies that promote good recordkeeping, the archives staff intends, by publicizing their approach, to simultaneously reward the agency and exploit the value of such examples to influence others.

V.a.3 Appraising Business Functions, not Records

In the Netherlands, the archives, together with the Ministry of Home Affairs, also turned to agency practices in order to study how Dutch government administrators and their colleagues abroad were managing

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[41]See Frost, "A Weak Link in the Chain."

[42]*Building Partnerships for Electronic Recordkeeping: Final Report and Working Papers* (University of the State of New York, State Education Department, New York State Archives and Records Administration, February 1995).

electronic records.[43] They developed what they view as an "innovative general strategy for records management in electronic information environments," which involves business systems analysis and functionally-based appraisal, in place of appraisal based on records surveying and assessment of already created records. The effect is to identify in advance the records that will be needed as evidence and define plans for their management.

V.b Document Transactions

V.b.1 Embedding Transaction Metadata in Forms

In principle, the most strategically important re-invention of archives would relieve the archives from the need to describe records, and would create records that carried their own contextual documentation and the structural information necessary for their consistent rendering. Self-documenting records would, in principle, be system-independent. This would allow their creators to access them in conjunction with on-going business, and future users could retrieve them based on function and the content of the transactions they represent.

The World Bank began to explore ways of implementing such new documentation practices in concert with document management more than five years ago. Using an existing Business Systems Planning (BSP) analysis of the organization, the records management program was able to identify the business transactions engaged in by bank staff.[44] Because the formalized communications mechanisms already in place at the World Bank dictate each activity in the project life-cycle reports with de-

fined forms of records, the communications process already has strong links between the form of a record, its content, the transactional source of creation, and the retention. The information technology staff realized that this meta-documentation associated with paper-based records could, with appropriate attention to system design, become associated with electronic records in a document management system. Based on this, they have specified the requirements for a document management system, to be implemented at the World Bank over the next several years, in which the transactional provenance of records and other metadata required for their description is associated with the documents stored in corporate file space.[45]

V.b.2 Having Records Creators Describe Records

The United States Government and several of its states have launched Information Locator Systems (or Information Locator Services), which are intended to document the existence of public records so that members of the public can identify the information made and stored by the government for purposes of exercising their privacy and freedom of information rights, and for acquiring publicly distributable data. For nearly five years, Kentucky has made such information, or records series descriptions, available to its citizens through the public libraries.[46] More recently, the New York State Archives and Records Administration and the New York State Library began a cooperative venture to bring such information about informa-

[43]T.K. Bikson and E.J. Frinking, *Preserving the Present: Toward Viable Electronic Records* (The Hague: Sdu Publishers, 1993).

[44]See Richard E. Barry, "Addressing Electronic Records Management in the World Bank," in *Electronic Management Program Strategies*, edited by Margaret Hedstrom, 19-29.

[45]Clive Smith, Paper delivered at the Australian Society of Archivists Annual Conference, Townsville, Queensland, May 1994.

[46]See Charles Robb, "Kentucky Department for Libraries & Archives - Public Records Division Electronic Program Overview," in *Electronic Record Management Program Strategies*, edited by Margaret Hedstrom, 63-67.

tion to the public.[47] The U.S. Government has taken the most dramatic step since the advent of the Clinton Administration by requiring most government information that is distributed in print to be made available in electronic form, and designing and testing a distributed information systems application based on the Z39.50 (ISO10161/ 10162) and Wide Area Information Server (WAIS) protocols as the technical foundation for the Government Information Locator Service (GILS). The U.S. Office of Management and Budget, which is responsible for establishing the framework for GILS, seems poised to assign a major function for GILS with respect to the National Archives and Records Administration, which has (to say the least) not taken a proactive stance in envisioning how GILS could be employed in records documentation.[48] As a consequence of the OMB action, NARA will probably need to define ways in which the declaration of data to GILS would serve for records scheduling and appraisal. The more important step will be to have metadata required by GILS and other information locator services documented in records, so that the provenancial meaning and evidential significance of records can be found on them.

When the Department of Archives and History of the State of Alabama was formed at the turn of the century it was charged with a variety of education, publication, museum, and documentation missions, including the annual publication of a register of state government and state statistics. Although this function was allowed to die, the need for a repository of infor-

mation regarding what the state government does and how it performs its functions did not. In light of the impending implementation of a National Information Infrastructure, the state archives has proposed a networked database of state functions with GILS-like features. Similar efforts have recently been funded by the state legislature in Minnesota, and the movement is likely to become nationwide as public access to government information over the networks becomes an issue elsewhere.

V.b.3 Imposing Functional Requirements for Recordkeeping

Such steps were also required by the U.S. Court of Appeals decision in *Armstrong v. the Executive Office of the President*, which found that printouts of electronic mail were not adequate records of the meaning of electronic transactions, because they failed to account for the evidential data associated with transmissions.[49] In its recent guidelines on electronic mail systems, the National Archives and Records Administration proposed draft regulations on agencies that would require the association of provenancial metadata with electronic mail messages whether these were retained in paper or electronic formats.[50]

In research undertaken at the University of Pittsburgh in the past several years, "functional requirements for recordkeeping" have been defined which can be translated into formal specifications for recordkeeping systems. It turns out that these specifications are satisfied by concrete metadata acquired and maintained by systems and assigned to or linked with rec-

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[47]Margaret Hedstrom, "Progress Report on Building Partnerships and the Government Information Locator" (Paper delivered at a conference of the Vermont State Archives, National Historical Publications and Records Commission funded project, September 1994).

[48]Office of Management and Budget, *Government Information Locator Service*, Bulletin 95-01 (Washington, D.C.: 1995).

[49]See Bearman, "Managing Electronic Mail," "Towards a Reference Model of Business Acceptable Communications," and "Virtual Archives."

[50]National Archives and Records Administration, "Electronic Mail Systems: Notice of Proposed Rulemaking," 59 *Federal Register* 57 (March 24, 1994): 13906-10.

ords. This metadata specification for evidential records provides a target that can be employed to satisfy end-to-end documentation requirements. It also obviates the need for surveying, inventorying, describing, cataloging, indexing or capturing specialized data for an end-user access facility. Archivists can usefully play the role of dictating the metadata requirements but they don't need to engage in these other documentation tasks.

V.c Maintain Evidence

V.c.1 Having Others Keep Records

In 1992, the Australian Archives announced to its government that the introduction of electronic records required new records management and archival methods, and that it was developing plans for the retention of records by records-creating agencies.[51] In light of the tremendous costs associated with mirroring the technological capabilities of active agency recordkeeping systems, and the proprietary and software-dependent character of most applications data, the archives concluded that the most efficient way that records could be kept over time would be for agencies to maintain custody and responsibility for record migration.[52]

The National Archives of Canada and the U.S. National Archives have developed agreements with government agencies that create and use huge quantities of observational scientific data to maintain their own historical records. Because observations take place at a fixed time and cannot be replicated, observation-based sciences are major users of archival data. However, the size of the data sets created by such agencies in the late twentieth century (each day, gigabytes are being captured from mete-

orological observation satellites) completely dwarfs the records holdings of the rest of the government in its entirety and the data is virtually meaningless, except in the software-dependent interpretation environments in which it is used. Such interagency agreements, first developed with respect to observational science data, could become much more common in electronic records in general, making the archives the arbiter of the functional specifications for the management of such records. In the summer of 1994, a National Research Council study of scientific data archiving commissioned by NARA urged NARA to adopt a distributed strategy for management control, and for custody over federally funded scientific datasets.[53]

Oddly, the National Archives and Records Administration, in spite of its limited resources, has been extremely reluctant to accept the existence of archival repositories (such as the Smithsonian Institution, West Point, the national research laboratories, etc.) that operate out of agency budgets.[54] Whereas it could exert central control over such programs, determine both the training and appointment of archivists through a federal archivists certification program and the suitability of repositories through an accreditation program, NARA prefers to have physical custody.

V.d Promote Use

V.d.1 Locating Archives as a Service in the Electronic Mall

There are, however, some encouraging innovations that go part-way towards providing access to more people at a lower cost. The Information Locator Services dis-

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[51]Dagman Parer and Keith Parrott, "Management Practices in the Electronic Records Environment," *Archives and Manuscripts* 22 (1994): 106-22.

[52]David Bearman, "An Indefensible Bastion."

[53]National Research Council, *Preserving Scientific Data*.

[54]David Bearman, "The National Archives and Records Service: Policy Choices for the Next Five Years," *For the Record* (December 1981); NARA Task Force on Affiliate Archives, *Final Report* (April 1994).

cussed earlier are examples of redefinitions of the ways in which archives can make knowledge of records available to new audiences, and to reach greater numbers of people than through reading rooms. In addition, since an information locator can be implemented with an order-taking and -fulfillment function, it is possible to deliver the actual records, end-to-end, using such facilities.

Another use of the Internet in providing access to archival information is being explored by a few institutions, including the State Archives of Oregon whose experience in this area has recently been described.[55] Using the World Wide Web Mosaic software facility, archives can put images of records and finding tools that provide access to their holdings online. A less elegant solution being implemented throughout the U.S. government, is to put records online using the Gopher software facility, which lacks the windowing and visual fidelity, but provides text when that is all that is required.

V.d.2 Studying User Needs

One of the points made about access in *Archival Methods* was that we know virtually nothing of the nature of or needs of our audience. Several years ago, I undertook a study of "user presentation language" in archives in order to get a better idea of the kinds of questions our users asked. Since then, studies of reference activity at the National Archives reading rooms[56] and an on-going study of the ways in which average Americans might want to

use the National Archives,[57] have begun to answer some questions about requirements for access to U.S. government records. Clearly, further efforts are needed by archivists to understand the uses of archives before trying to make them more available to users.

V.d.3 Positioning Archives as the Entree to All Other Information

An important aspect in increasing the use of archives is that archives be a part of the vocabulary of the general public, and that the experience of referring to archival records be as familiar as that of using a library. Some steps in this direction can be taken by archivists within institutions. For example, several years ago Bell Laboratories implemented an organization-wide office system whose main menu included a selection for "archives." Staff with whom I spoke checked the status of the archives on an almost daily basis! Why? Because the archives had arranged for all company bulletins, ranging from organizational changes and product announcement to appearances by the CEO and schedules for staff picnics, to appear in the "archives" partition of the corporate files. More traditional archival records could also be found there, but the habit of consulting the archives whenever one needed to know about anything that had happened or had been announced was instilled first.

V.e Educate Archivists

In North America, we have not bothered to educate archivists in their profession until the last few years. It is still not possible to obtain a degree in archives administration in the United States, and has become possible in Canada only in the last decade. A major strategic departure has begun in advancing the cause of archival studies and

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[55]Dan Cantrall, "From MARC to MOSAIC: Progressing Towards Data Interchangeability at the Oregon State Archives," *Archives and Museum Informatics: Cultural Heritage Informatics Quarterly* 8 (Spring 1994): 4-12.

[56]Paul Conway, *Partners in Research - Improving Access to the Nation's Archive. User Studies at the National Archives and Records Administration* (Pittsburgh: Archives & Museum Informatics, 1994).

[57]Peter Hirtle, "NARA Electronic Access Study Completed," *NAGARA Clearinghouse* 11 (no. 1): 1, 7.

raising the standards for individual archivists through accreditation programs. It should go without saying that a profession without a specialized knowledge-base is an impossible contradiction in terms, and that the field must invest in the education of the next generation of archivists. In spite of this, archivists are still arguing about whether any special knowledge is required to be an archivist, in part because the role of custodian is so deeply identified with archivists that some find it unimaginable that knowledge other than how to shelve records could be required. The rejection of that view in graduate archival training programs growing up in Canada and the United States, and those which are well-established in Australia is heartening.

VI. Reinventing Archives - Opportunities

Many archivists have come to realize that fundamental changes in their modus operandi are required, along with redefinitions of goals and objectives and new ways of measuring success, if they are to overcome the unbreachable disparity between their goals and their methods. Not all the innovations discussed in the previous section were imagined in *Archival Methods*, and it is even possible that none of the specific programs mentioned here were directly influenced by it, but the strategies and tactics we are beginning to witness in innovative programs reflect the challenges those essays addressed. What remains is to continue to implement these innovations, while looking systematically at what more needs to be revolutionized in the near future. We have a long way to go before our methods are sufficient to achieve the objectives we have set or to overcome the problems we have identified.

This future will require that we be responsive to new technology, and willing to reconceptualize archives. Most importantly, I believe, it demands archival appropriation of a number of social roles with which archivists are not currently comfortable. The most important transition will take place in what we do, because no amount of ideology can replace the reality of new modes of behavior and new patterns of resource expenditure. I believe we need to:

- Regulate records maintenance in place of accessioning them into our repository,
- Plan systems in place of surveying records,
- Ensure records creation in place of appraisal,
- Analyze business processes in place of describing records,
- Reformat and sell paper records in place of conserving them,
- Build value-added metadata systems in place of providing reference services, and
- Raise the risks in losing evidence in place of promoting the value of archives to society.

The common denominator of these new activities is that they involve systems analysis, systems management, and systems implementation. They place archivists outside of the records-handling arena, and they rigorously insist on the production and control of evidence over activities determined by the material nature of records. Finally, these activities irrevocably separate archivists from custodial tasks, and place them securely in the business of making management decisions about risks.

Here are a few specific new strategies which I believe are not yet being explored adequately in operational programs with which I am familiar:

VI.a Become the Authority on Corporate Functions and Activities

It seems likely, from the anecdotal evidence we have to date, that organizations

in the economic sphere are in the beginnings of the greatest transformation since the bureaucratic firm replaced the family company in the mid-19th century. A few years from now, the typical organization could be a shell of staff functions (management, counsel, auditors, investment advisors), with only a single, focused line function permanently attached to the organization. These organizations, often called a virtual organization or virtual enterprise, would enter into contracts and strategic alliances with other organizations. Unfortunately, we lack much information on the prevalence of virtual organizations today, but the technological trend towards distributed enterprise certainly supports this model of how companies might work. Organizations that become virtual, and even traditional organizations that simply become more nimble, are in greater need of evidence of their history than organizations that can depend on longevity of staff and consistency of functions. Such organizations are going to greatly value the professionals who can answer questions about prior activities (note: answering questions is not the same as providing records because it involves analysis!). If archivists can situate themselves in a position to be able to answer questions about corporate activity that took place yesterday, they can answer questions about activity from last year. The reorientation is that archives are not old records, but vital evidence.

VI.b Align with Record-based, not Information-based, Professions

While evidence might not be the social purpose the person in the street will embrace, it certainly has broad support from other professions. One of the real failings of archivists in the past few years has been their inability to link their goals with the needs of lawyers, auditors, and senior managers for evidence. Instead, we have focused on the superficial similarity of our methods with those of the information professionals - librarians, information resource managers, systems developers and administrators - from whom we need to be distinguished because they are concerned with reusable data content rather than with evidence. While evidence may also contain information that can be reused, it cannot be modified without losing its property as evidence.

It is fortunate for archivists that lawyers, auditors, risk managers, and quality control specialists, who have a special need for evidence, are among the professionals who have the greatest power and prestige within organizations. Their professions all have standing professional bodies which define "best practices," and these best practice guidelines in turn require the creation and maintenance of evidence (or documentation). Other specialized professionals within organizations also belong to self-regulating bodies in many functional arenas (e.g., patient care, manufacturing, brokerage), and have adopted such codes of practice for the organizations in their domain.

What this means is that we, as archivists, don't need to invent our significance, but merely to locate the warrant for it in the authoritative literature of other fields and professions. We don't need to convince other professions of the value of evidence, only to remind them of how the need for evidence and accountability informs the best practice guidelines of their own fields.

A major strategic endeavor of the archival profession should be to join with professional associations in virtually every field; to co-write a pamphlet, training curriculum, or examination questions for certification or licensing exams, which highlights the recordkeeping responsibilities of the other profession. Studies of the "literary warrant" for archives, as extended by the most authoritative sources in other fields, would do wonders in boosting our ability to make a convincing case to

others that their own best practices require them to satisfy our requirements.

By being clear about what it is we consider to be essential—functional requirements for recordkeeping—we could invest time and effort to locate, within the authoritative literature and among the opinion leaders in other professions, expressions of requirements that are identical to our own. At the University of Pittsburgh, researchers working on the functional requirements for recordkeeping have undertaken such a search for "literary warrant" for the functional requirements of recordkeeping in the most important writings of other professions—law, auditing, science, management. Once these arguments are identified, we believe it will be easier to make the case for the functional requirement for recordkeeping in each of the important corporate settings where the case needs to be won.

VI.c Lead the Value-Added Re-Engineering of Business Processes

If archivists could study archival processes to determine which information is required to run archives and records management services effectively, they could incorporate capabilities to capture this information into recordkeeping systems, too. With such information, they could define information systems in which the data required for specific functions reports itself to those functions and is enabled, by the transaction that takes place there, to engage in the next activity in which it is required. This kind of process-driven, object-oriented, workflow environment was demonstrated to archivists by the prototype of AMIS, developed by RLG in 1993.

If, additionally, archivists could document business processes, as they must do to exploit the power of appraising transactions, they would be able to enhance the value of records as evidence by designing and implementing systems that use meta-

data in a self-documenting way. They could position themselves within organizations as the people who know what the organization is charged with doing, and where and how these functions are performed. Taking the lead in business process re-engineering and in the introduction of object-oriented and process-driven records management within organizations would enhance the prestige of archivists, and demonstrate to organizations the relationship between evidence and transactions. It would also help differentiate archivists from other information professionals whose concern is with reusability and timeliness of data items. Archivists need not become technology experts to implement such an approach—they simply have to understand how technology should work, and employ appropriate expertise to bring it about.

VI.d Manage Risk

Engaging in serious efforts to identify risk will not only assist us in better performing our roles as records managers and archivists, it will win us respect within the organization. When necessary, we should not be adverse to increasing the risks associated with poor recordkeeping practices until the organization starts paying attention! But generally, the issues are staring us in the face and we only need to make the case.

For example, think of the risk posed by secrecy, classification of records, and privacy issues to the creation and maintenance (to say nothing of subsequent use) of accountable documentation. If archivists, particularly in government, were to think strategically, they would be active in the effort to reduce reliance on closed records, and to change attitudes towards privacy of records.

Consider the risks being courted in organizations that use electronic mail as an informal means of communication but

don't impose strict etiquette and expectation of public release of this information. Because the record which is created is written and kept, views that would not be expressed in other documents are likely to find their way into the record, with dangerous implications.

Consider the position of organizations that are taking the same passive approach towards controlling the creation of electronic records that they have long taken towards paper, and, in twenty years will find themselves in the position of having no way to document what has happened in this decade. These organizations require a heuristic, developed by archivists, to be applied to their recordkeeping functions. This will allow them to assess the degree of risk they are accepting in each business function, so that rational decisions can be made about implementing the functional requirements for recordkeeping.

VI.e Ride the Communications Revolution

The information age, in which data has been valuable in controlling organizations and people, is giving way to virtual social sphere, in which action takes place through communication and is represented as a communication. In the next several decades, those who understand how to act in this new environment will succeed in governing, in making profits, in enhancing the quality of life, and in expanding opportunities for social interaction. But they will do so only because evidence of their actions persists, for reference by themselves and others. The virtual space in which these actions exist will function only if there are records and those records satisfy the functional requirements for recordkeeping.

The virtual society, and its virtual social institutions, require the virtual transactions that comprise them to be as "real" and provable as are the records of our current social environment. Archivists who realize the immense significance of the social role they will be assigned, and who articulate the goals, develop the strategies, employ the mechanisms, and exploit the techniques of the communications-based society of the twenty–first century, will command a position of respect. If archivists do not assume this role, the transition to a communications-based society will be quite painful. And some other profession will inherit responsibility for ensuring evidence.