Strategies for Developing Partnerships in the Management of Electronic Records
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Partnerships – Introduction
It has become a truism that the effective management of electronic records requires the archivist/records manager to form partnerships with various professions. My experience over eight years confirms that the “lone arranger” strategy will not have a chance of succeeding in the world of electronic records management. Working with electronic records demands more skills and knowledge than any one person will likely possess. Moreover, because automated system in the large functional areas like student and financial records are complex systems, archivists will require the assistance and cooperation of data and information managers to gain access to critical documentation and to gather information about how these systems manage records. In short, to be an effective manager of electronic records, archivists must reach out and form partnerships with a host of other professionals managing information over the life cycle.

There is no question that electronic records management requires that the archivist form and be part of a team. But who would be members of this team? During my NHPRC funded projects, my goal was to find professionals who I regarded as “natural” allies of the archivist. By natural, I mean those individuals whose job responsibilities include many of the same activities and objectives as the archivist/records manager; consequently, teaming-up with these individuals would be a natural, not a foreign or added responsibility. Experience would indicate that the most likely, most natural partners include representatives from those functional areas whose primary responsibilities are to manage and distribute information and data, and those who are concerned primarily with accountability and risk assessment and management. Within the former category, potential team members can be found within the systems analysis and design, information and data management, and the decision support or institutional research functions. Within the risk management function, our most natural allies include the internal audit and the legal functions.

Experience over eight years has not only aided me in identifying the most important partners, it has also assisted me in defining how these partnerships will work. I have concluded that one cannot succeed without developing a strategy that involves partnerships at two levels: at the planning and management level and at the day to day review level. At the planning level, archivists must align themselves with other professionals who have overall management of the institution’s data and information. At the day-to-day level, archivists must find some means of aligning their programs with professionals who routinely design and review data and information systems. Partnerships at both levels must exist if the archivist is going to have a positive, long-term impact on the management of the institution’s records.

For the remainder of this paper, I will examine in more detail how partnerships at the two levels have worked at IU, beginning with the day-to-day review of systems.
Partner – Internal Auditors

Of the various partners with whom I have worked, I have had most success with internal auditors. Why is internal audit such a useful partner for the archivist/records manager? The answer can be found first in the fact that the missions of the two professions share many points in common. To illustrate these similarities and some of the differences between the two professions, let us look at the mission of internal audit in more detail. The information I will be using comes directly from the stated goals, objectives and procedures outlined on IU Internal Audit web page.

IU Internal Audit’s overall mission is to perform “audits based on a systematic, risk/exposure methodology to provide an independent appraisal of University processes and controls.” More specifically, the goals are to “provide an independent appraisal of the University’s financial, operational and control activities…report on the adequacy of internal controls, the accuracy and propriety of transactions, the extent which assets are accounted for and safeguarded, and the level of compliance with institutional policies, government laws and regulations. Additionally, we will provide analyses, recommendations, counsel, and information concerning the activities reviewed.”

More specific objectives of the IU Internal Audit Department include the following:
* “Determine the accuracy and propriety of financial transactions
* Evaluate financial and operational procedures for adequacy of internal controls and provide advice and guidance on control aspects of new policies, systems, processes and procedures
* Verify the existence of University assets and ensure that proper safeguards are maintained to protect them from loss
* Determine the level of compliance with University policies and procedures, and state and federal laws and regulations
* Evaluate the accuracy, effectiveness and efficiency of the University’s electronic information and processing systems
* Determine the effectiveness and efficiency of organizations in accomplishing their mission.”

In regard to electronic applications, IU Internal Audits stated objectives are:
* “Assistance on evaluation of backup procedures and contingency planning
* Information and assistance in evaluating computer system controls
* Assistance with implementation of information systems
* Development of new systems or enhancement to current systems to promote the design of adequate internal controls prior to implementation and reduce the need for corrective measures at a later date.”

In short, within the electronic environment, IU Internal Audit is most concerned with back-up procedures, physical security of computer resources, data security, and documentation (written procedures and instructions).
An example of the goals of a typical audit of an automated system would be the IU Internal Audits’ review of grade processing procedures and security of grades at the Office of the Registrar. The objectives of the review were 1) “to verify that grades were processed accurately, 2) to evaluate the system of internal controls for processing grade changes, and 3) to verify that student grades are adequately safeguarded from unauthorized access. The major objectives of the report were 1) to express an opinion as to the accuracy of information processed, the adequacy of internal controls and processing procedures, and the adequacy of student grade security, and 2) the discussion of audit findings and related recommendations.”

Turning to the audit methodology, IU Internal Audit “uses a technique to identify projects or activities that represent considerable risk or exposure to loss. We decide what factors to use in assessing risk, and then quantify the potential risk for each area. Projects considered to be high-risk receive priority in Internal Audit’s long range audit plan. However, not all audits are scheduled based on risk assessment results, some audits are performed to meet regulatory requirements.” The IU Internal Audit review process includes the following stages or sets of activities:

* Preliminary Review: Gather information about your processes. Review and evaluate the existing internal control structure and identify the fieldwork objectives.
* Preliminary Survey: Auditor gathers relevant information about the unit in order to obtain a general overview of operations. Talk with key personnel, review reports, files and other sources of information.
* Internal Control Review: Auditor will review the unit’s internal control structure, a process which is usually time consuming. This helps the auditor determine the areas of highest risk and design tests to be performed.
* Field Work: Concentrates on transaction testing and informal communications.

The IU Internal Audit review process concludes with “a written report containing an opinion on the degree of compliance with government regulations and University policies and procedures; the accuracy and propriety of financial transactions; the adequacy of safeguards for University assets; the efficiency of the unit in effecting its mission.” They will also provide “verbal and/or written recommendations for improving operations and preventing/detecting irregularities.”

From this examination of the goals and methodology of auditors, it is clear that there are numerous similarities or points of intersection between the missions and objectives of the archivist and auditor. Both professions are interested in creating systems that are accountable and secure and that are in compliance with laws, policies, and best practices. Both professions seek to create systems that produce accurate, reliable and authentic information and records. Both professions acknowledge the importance of risk assessment and the value of understanding business requirements.

However, one must also recognize the differences between the objectives and methodologies of the two professions. The audit process employs a methodology based on detailed sampling of certain transactions, while the objectives of the archives methodology is to achieve a broad, but less detailed analysis of all system functions. The
two professions also differ from one another in terms of the functions or issues they focus upon in their analysis of systems. For auditors, the primary concerns include data authenticity and accuracy, system security, adequate internal controls, documentation (written procedures and instructions), and backup procedures and contingency planning. The archives staff, on the other hand, tends to focus on recordkeeping issues, such as record identification and capture, record metadata, access, and long-term preservation.

It is important to recognize these differences and to factor them into the planning process. In fact, one can turn these differences into a positive aspect of the partnership. In any partnership, it is not only the similarities in mission that make it work effectively. Participants must also gain something valuable and unique from the collaboration. To be effective, the partnership must result in a win/win scenario. In the IU Archives/Internal Audit partnership, mutual benefits occurred in several ways. When combined these two methodologies resulted in a complimentary analysis, which provided each partner with new and valuable information. The auditors gained access to previously unavailable analyses of systems from a recordkeeping perspective, and the archivists gained detailed knowledge about system security, data accuracy and input procedures, and system documentation.

To summarize, there are numerous benefits to be gained from an archives/audit partnership. The primary advantage for the archival program in this partnership is that it involves archives staff in the systematic, daily review of systems with a unit like internal audit, which has an institutional mandate and the authority to conduct these reviews. Working with audit is an effective strategy for inserting the archives/records management program into the mainstream process of designing, analyzing, and modifying electronic information systems. For internal audit, my experience would indicate that the most prized and unique contributions from their perspective is the archivists’ working knowledge of appraisal, of records management concepts and techniques, of records’ continuum and life cycle concepts, of the value of contextual data and of the need to create maintain evidence, and the knowledge of long-term preservation strategies. In short, audit benefits by gaining access to previously unavailable analyses of systems from a recordkeeping and life cycle perspective. Finally the University benefits from having its information systems much more thoroughly reviewed and analyzed, resulting in more accountable, compliant, and trustworthy systems.

**Partner - Information Managers**

Another valuable partner is the information manager. Who are these people, and how do their missions intersect with the archivist? To answer these questions, let us first address the question: What is information management? Information management is one of the components of Information Resource Management (IRM). IRM has been defined an “an umbrella concept which embraces a number of related yet discrete functions…Put very simply, information resource management is the totality of planned and directed activities within an organization which result in usable, accessible, timely, secure, integral, economical, and accurate information for that organization.” (Charles Dollar)

Information Management (IM) is one of the component parts of this set of activities, which also includes technology management, distributed management, functional
management, and strategic management. IM consists of the application of formal guidelines and tools to manage the institution’s information resources independent of specific technologies of information or data processing. Underlying principles of information management are that “1) information is a valuable organizational resource, and 2) information is a shared resource requiring cooperation of many to make it useful and accessible.” (Gerald Bernbom) The objectives of information management are to ensure that information and the data that comprise it are authentic, authoritative, accurate and complete, shared, intelligible, and secure. In defining information management, it is useful to compare it with database management. Database manager’s responsibilities focus on the more technical and operational aspects of managing data, including physical database design and operation. The information manager’s primary duties, on the other hand, are administrative and strategic and involve long term information planning. Whereas the primary orientation of database managers is data – data design, data security, data accuracy, etc., - the main concern of information managers is information, metadata, and the interaction between data systems.

It is not hard to identify the points of intersection between the goals and objectives of information managers and archivists/records managers. Both disciplines are concerned with managing meaningful aggregates of data – records or information – throughout parts or all of their life cycle. Both professions are concerned with creating and managing authentic, authoritative, accurate, and intelligible information or records. Both groups agree that some critical metadata be present with the content of the information or record. Both professions are concerned with maintaining access to records, and both are agree that systems that manage information or records be secure.

However, there are some significant differences between information managers and archivists. Most significantly, the two professions manage different types of digital objects, which have different sets of requirements. The primary goals of information managers are to create and manage systems that support day-to-day use of information and documents for ongoing business. The primary purposes of records managers are to create and manage systems that provide a secure repository for authentic and reliable business records. More specifically, managers of records tend to be more concerned than managers of information with 1) creating a more complete set of metadata, particularly contextual metadata and audit trails; 2) preserving inviolate, unchanging records of business transactions; 3) designing classification schemes so as better document and retrieve records; 4) developing records schedules designed to manage the retention and disposition of records; and 5) developing preservation strategies that will manage the conversion and migration of records with long-term value. In sum, records managers are more concerned than information managers about managing information or records over their entire life cycle. Information managers tend to be more focused on managing information primarily in the active use phase and are less concerned about developing management strategies that extend throughout the entire information or records continuum.
Partner - Decision Support Personnel
What is this function? Decision support is a set of people, procedures, and databases used to support decision-making activities and strategic planning. More specifically, the role of decision-support personnel is to: 1) Structure and focus information to meet the needs of decision makers. 2) Assist in establishing procedures for ensuring the quality of the data; 3) Understand and be able to articulate the needs of users; and 4) Become a focal point for information development and processing, particularly as it relates to a) “information integration – consistency, uniformity, and integration of operating data across the organization; b) information access – provide ability to directly access operational information to support decision-making; c) “information analysis/presentation – provision of end-user automated tools to facilitate the analysis and presentation of management information in a flexible and straightforward manner.” (Allan R. Frank and R. Schuyler Lesher)

In short, the role of individuals involved in decision support is to “decide what data should be made accessible to management, where the data should reside for easy access, and what tools must be made available to people who manipulate the data and transform it into useful and presentable information.” (Allan R. Frank and R. Schuyler Lesher)

Where are these people found? At IUB Decision Support Services is an area or team within University Information Systems (UIS), which is a division within University Information Technology Services. UIS develops, implements, and manages the enterprise information systems that support the University's core business processes. These systems include student, financial, human resources, procurement, facilities, research administration, instructional, library and other systems. The Decision Support Services (DSS) Team designs, develops and supports a consolidated environment for storage and facilitated retrieval of institutional data. Users and information systems developers work with the DSS Team in the development and maintenance of two main service tools: 1) the Data Warehouse: A repository for institutional data that has been modeled for decision support and that may be transformed into reports; and 2) the IU Information Environment (the IUIE): A centrally maintained web-based decision support application that provides a register of report objects that associate descriptive and security access information with institutional data.

Again, there are many similarities between the goals of archivists and decision support personnel. Both are focused on understanding the research needs of users, with providing ready access to information or records, and with creating and maintaining accurate, reliable, and authentic information or records. However, there are also significant differences in the mission and methodology of the two professions. Data warehouses and decision support environments are not recordkeeping systems, and the managers of these systems do not routinely capture records; they are more concerned about transforming data into information. In addition, decision support personnel, like information managers, are not primarily concerned with managing information over the entire life cycle; they are much more focused on managing the active and present use of their data. Consequently, the major contributions archivists can make to a partnership with decision
support personnel are the skills and knowledge of managing digital objects, specifically records, over the entire life cycle.

**Partner - System Analysts**
System analysts translate business needs and requirements into system design requirements. The “primary role of the systems analyst is to study the problems and needs of an organization in order to determine how people, methods, and information technology can best be combined to bring about improvements in the organization.” (Williams, B., Sawyer, S., & Hutchinson, S.) The products of this activity may be improved business processes, better information systems, or new and improved computer applications.

The primary similarity between system analysts and archivists is that both professions regard an understanding of business processes as critical to the design of an information or recordkeeping system. However, like information managers and decision support personnel, system analysts differ significantly from archivists in that they do not design systems for recordkeeping, and they are not as concerned as archivists about developing system requirements for managing digital objects over the entire cycle. As with all our partners, recordkeeping and management over the life cycle are the major contributions archivists make to any information management partnership.

**Enterprise-wide Partnerships**
As indicated earlier in this paper, I believe any partnership strategy for managing records must include occur at two levels: at the planning and management level and at the day to day review level. I would now like to describe a model or structure for an institution-wide program that we have implemented at IU, and follow this up with an analysis of the strengths and weaknesses of this model. The model we have implemented at Indiana University includes three components: Committee on Institutional Data and Information, Committee of Data and Information Stewards, and an Assistant Director, Data and Information Management. Information on these units is taken directly from their web sites.

**Committee on Institutional Data and Information:** The composition of this Committee is senior University officials, typically at the level of dean or director. The primary responsibilities are to establish overall policy and guidelines for management of data and information, and regularly review the performance of the overall information management function. More specifically, the responsibilities include:

**Establish general policies governing access to institutional information**

**Make the final determination on requested access rights to institutional data**

**Review regularly the performance of the entire information management effort**

**Issue guidelines on the responsibilities of users in accessing and using the university’s institutional data.**

**Committee of Data and Information Stewards** is composed of 1) Individuals who have planning, policy and operational responsibilities for the management and use of institutional data; and 2) Information specialists who develop and use management
information systems and decision support systems. The functional areas represented in the Committee are alumni relations, development, personnel management, financial management, library and archives, physical facilities, purchasing, and student management. The general responsibilities of the Data Stewards are to recommend policies and establish procedures and guidelines for the university-wide management of institutional data and information. Specific areas of concern include data and information quality, integrity of data, documentation, access and security, and the archival requirements of data and information.

More specifically, the responsibilities of the Committee of Data Stewards are to:
**Actively promote and help implement a university-wide view of institutional data, including the integration of data among campuses.**
**Establish standards and procedures to insure the integrity, accuracy and completeness of institutional data.**
**Determine responsibilities for data capture and maintenance to insure data quality and consistency.**
**Determine the official source and authoritative version or storage location for institutional data.**
**Provide the intellectual content of a data dictionary so that all data users may know what data are available, what the data mean, and how to access the data.**
**Establish standards and procedures to insure the security of institutional data.**
**Promote the accurate interpretation and responsible use of institutional data.**
**Classify data according to the Policy on Access to Institutional Data.**
**Consult with users on the use and interpretation of institutional data.**
**Establish standards and procedures for appraising or determining the value of data.**
**Establish standards and procedures for the appropriate storage and preservation of data.**
**Promote sharing, use and integration of institutional data across business units.**

The Director of Data and Information Management provides leadership for the data and information management activities. Responsibilities of this position are to direct the functional areas of system analysis and the modeling of systems, information access, and chair the Committee of Data and Information Stewards and function as this group’s liaison to the Committee on Institutional Data and Information.

What are the advantages of this management structure? The primary advantages are articulated in the goals and objectives of each of the committees, and include most prominently those goals devoted to establishing standards, developing policies and procedures, promoting sharing and integration, and generally providing leadership at an enterprise-wide level for the management of the institution’s intellectual resources. The real question is, has it lived up to these expectations? My response would be, on the whole, that it has not. Why has this system not yet lived up to expectations? I would point to five primary problems:
1) Lack of Time: All the data stewards have full-time jobs managing data and information resources in their own particular functional areas, and it has proven very
difficult for most of them to find time for projects related to the management of digital resources at the enterprise-wide level.

2) Lack of Motivation or Commitment from Data Stewards: For many of the data stewards, it was difficult to be particularly committed or motivated to solve information problems at the institution-wide level. Most are very focused on managing their own data systems, and only become truly involved on issues that related directly to the management of their own data.

3) Lack of Motivation or Commitment from IT Administration: Data and information management has never been a priority for University IT. As with most university technology units, many more resources at IU are committed to managing active data and information than is committed to managing systems over the entire life cycle. Consequently, the budget for the activities of the data stewards is relatively small, which of course limits the options available for solving the various information management problems the Committee encounters. A perfect case in point is the lack for support for an enterprise-wide document management system. IT administrators recognize the need, but are not willing to provide the financial support to solve the problem.

4) Data stewards who are more concerned with managing data than information or records – Time and again, I have experienced the problem of trying to move the agenda of the Committee away from issues related to individual data elements and their management to the challenges of managing digital objects like records or information. Again, this is a problem related to the orientation and training of most of the Committee members. Most of them began as managers of databases and other repositories, and despite the fact that they later moved into middle management positions, they never lost their focus on data.

5) Not enough leadership from the director of data and information management – To make this system work, the director has to assume an active role in developing and coordinating projects, mobilizing support for initiatives, and generally being an advocate for information management. Unfortunately, the IU Director of Information and Data Management has never had the support or resources to provide this level of leadership.

With all this said and all the weaknesses taken into account, I still believe it is a management structure that has great potential, and can provide an excellent mechanism for the enterprise-wide management of digital resources. The Data Stewards Committee can provide the expertise and resources to implement projects, create policies and identify areas that need attention. The Committee on Institutional Data can provide the authority to get policies and procedures approved at the highest levels, and can identify critical information management needs to be addressed. Finally, the Office of the Director of Data and Information Management can provide the leadership, direction, resources and energy to make the whole system work effectively. Ideally, with the proper support and leadership, this structure can provide an effective mechanism for managing institutional digital resources at the enterprise level.