MANAGING INTEGRATED RECORD SYSTEMS: A CONCEPTUAL FOUNDATION

by

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ABSTRACT

Organizational record systems have increased in complexity with the addition of another medium (electronic) to be managed. Moreover, the use of computer-based technology for making and keeping records engenders some confusion about the role of technology in determining the characteristics of record systems. Writings in the areas of organization theory, communication theory, archival science, diplomatics, and business management are analyzed in order to define and present the context, concepts and issues surrounding the creation, maintenance and administrative use of record systems. In light of this study, the thesis discusses the concepts of juridical system, organization, office information system, and the role of communication. It concludes that all these entities remain fundamentally unchanged by the use of modern technology. This thesis shows that while technology is a tool which helps human activity, it does not redefine the characteristics of the organization, its office system, the record system, or the records themselves. On the basis of this finding, the thesis suggests a conceptual approach and a set of definitions applicable to the practical management of integrated record systems in the organizational environment.

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Dedicated to

Beastie, Süket Muschka, and the memory of my father.

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INTRODUCTION

Effective management requires a fundamental understanding of that which is managed. Organization theory, communication theory, archival science and diplomatics provide us with the framework for understanding organizational record systems. The knowledge of these disciplines provides us with the foundation upon which to base the proper management of modern integrated record systems.

Archivists become familiar, at least implicitly, with the principles of organization while doing their work. However, to design, implement and maintain record systems that meet the needs of organizations, it is necessary that their understanding be explicit. To serve this purpose, it is useful to study some basic concepts of organization theory, in particular those related to the way in which people organize themselves and their activities. Organization theorists recognize three main schools of thought in their discipline: classical, human relations, and modern.[1] This thesis favours the

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[1]The Classical school, often viewed as the 'traditionalist' or 'universalist' school, is associated with structuralism. The primary assumption is that organizations are social constructs that are organized or structured in particular ways to serve mandated purposes. At the turn of the century Max Weber enunciated the basic principles of organization theory. The behaviourist movement, known as the Human Relations or Human Behaviour school, gained prominence after organizational research done in the late 1920s by a Harvard group led by E. Mayo (and known as the Harvard team). Based on psychology and social psychology, the primary assumption of this school of thought is that humans, their intra- and interpersonal relationships, and their behaviour, are the most significant factors in the management of organizations. Emerging in the 1960s, the structural-functionalist approach of the Modern or Social Systems school is based upon the work of Talcott Parsons and others. Grounded in sociology, the primary assumption is that organizations are systems, a set of interrelated and interdependent parts arranged in a manner that produces a unified whole, but the emphasis of this school is upon social relationships. [See Michael T. Matteson and John M. Ivancevich, editors, *Management and Organizational Behavior Classics*, Fifth Edition (Homewood, IL and

classical approach that describes the actual or formal structure of organizations because archival theory indicates that provenance as the creating entity, in a structural sense, determines the articulation of a fonds, its relations and meaning. It also prefers a level of analysis that focuses upon the organization as a whole.[2] This level of analysis is most useful to the work involved in managing integrated organizational record systems, because--as archival science posits--a well-designed records management system reflects the organization that it serves: for example, there needs to be a direct correspondence between the classification scheme that is the core of the records management programme and the organization's structure and way of working.

Organization theory is discussed in this thesis also in response to concerns expressed by several writers. One finds within the recent literature assumptions that organizations are structuring themselves and their work differently because of computer technology.[3] An examination of organization theory shows that the fundamentals are unchanged. However, some

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Boston, MA: Richard D. Irwin, Inc., 1993), particularly Harold Koontz, "The Management Theory Jungle," 27-43, and William G. Scott, "Organization Theory: An Overview and an Appraisal," 137-158.]

[2]A chart showing the levels of analysis used in organization theory is found on page 5 of Robert C. Ford, Barry R. Armandi, and Cherril P. Heaton, *Organization Theory: An Integrative Approach* (New York: Harper & Row, Publishers, 1988). The levels of analysis, from the general to the specific, are: System (general environment), Stakeholder (specific environment), Macro (organization), Meso (plant/division), Micro (department/shop), Group (work unit), and Individual (worker).

[3]For a list of sources promoting this point of view, see footnote 30, Chapter 1.

organizations are presently availing themselves of organizing methods that were previously less popular.

Coupled with that of organization theory, an understanding of communication theory clarifies conceptual problems surrounding the office information system. The process of communication, particularly written communication, serves to link the various structural components of the organization. However, the adoption and use of discipline specific terminology that defines the office information system with reference to technology, has led to confusion. The literature of communication theory, particularly, the theory of organizational communication, shows that the office information system is fundamentally a formal system of communication structured to serve organizational purposes irrespective of the technology used for the transmission of information.

Naturally, the concepts taken by organization and communication theory must be viewed and used in the context of archival science, that comprises all "the concepts, principles, and methodologies governing the treatment of archives."[4] It deals with the aggregations of archival documents. Archival science (theory, methodology and practice) provides us with the means for managing an organization's archives. The whole archives comes before its parts and must be managed accordingly. While the management of record systems must therefore proceed from the whole in which they

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[4]University of British Columbia, School of Library, Archival and Information Studies, *Select List of Archival Terminology*, 3.

belong, it is necessary to first understand them as parts, comprised themselves of a complex of elements.

Archival documents are the basic building blocks of a record system. Diplomatics is the study of the genesis or the being and becoming of documents. It provides an analysis of the way documents are created, transmitted and used. However, "[T]he first important contribution of diplomatics to archival work is its definitional component."[5] "The precision of diplomatic terminology gives communication between archivists and among the information professions a clarity which is lacking in much of the terminology currently in use."[6] Different understandings of terminology, particularly homonyms, cause persistent confusion and difficulties in communication among professionals (administrators, archivists/records managers, information professionals and technologists) concerned with record systems. Consistent definition of terms is also useful for the process of standardization that is required for effective integrated records management.

To identify records for the purpose of managing them, it is necessary to know what constitutes a record in principle. It is particularly critical with electronic documents to define and identify its essential (necessary and sufficient) elements. While it is not within the scope of this thesis to do so

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[5]Duranti, Luciana, "Diplomatics: New Uses for an Old Science (Part VI)," Archivaria 33 (Winter 1991-92): 7.

[6]Ibid., 8.

(because of its chosen level of analysis), it is, nevertheless, important to present a detailed analysis of individual records. Only then can it be ensured that computer programs and systems are designed to create, capture, save, and maintain records within the system. The framework used by computer systems designers and programmers does not ensure appropriate linkages are made or captured between the essential elements comprising archival documents. Furthermore, the relationships or links between and among documents do not necessarily exist within computer-based systems. An understanding of diplomatics and archival science provides the means for analysis and audit of such systems.

Originally developed in the 1600s as a science to verify the authenticity of documents, diplomatics provides a systematic method for verification that is particularly useful concerning electronic documents. Its theory and methodology can also inform records and/or archival management. Understanding diplomatics would allow archivists to assist organizations by ensuring the proper creation of documents, form design, and so forth. Archivists can identify documents, understand relationships for intellectual control of material to make it available for use, can advise on streamlining procedures, and develop methods for proper records management.

Both archival science and diplomatics consider context necessary to understand the meaning of documents, be they isolated or in aggregations. Both disciplines are necessary for managing modern record systems. While conventional records are individual documents that are physically

aggregated, electronic records by their nature are to be found individually within the system. The management of integrated record systems must be based upon the nature of archives as whole bodies and archival documents as autonomous entities. By using the whole of their disciplines' specific knowledge, archivists may provide a useful service to organizations, the creators of record systems.

The 'System'

The term system has various meanings.[7] The term is applicable to several related conceptual groupings including things, ideas or methods. A system may be an organized or connected group of objects, a set or assemblage of things connected, associated or interdependent, to form a complex unity. It is the whole scheme of created things subserving the same function or the organism in relation to its vital process or functions; the group, set or aggregate of things, natural or artificial, forming a connected or complex whole, a whole composed of parts in orderly arrangement according to some scheme or plan. An archives is an example of a system of things.

System also refers to the set of correlated principles, ideas or statements belonging to some department of knowledge or belief considered as an organized whole; a connected and regularly arranged scheme of the

[7]Unless otherwise indicated, all dictionary definitions used throughout the thesis were found in *Oxford English Dictionary,* 2nd Edition, J.A. Simpson and E.S.C. Weiner, preparers (Oxford: Clarendon Press, 1991), *Compact Edition of the Oxford English Dictionary,* Volume I (A-O) and Volume II (P-Z) (Glasgow, New York: Oxford University Press, 1971), or *Concise Oxford Dictionary of Current English*, Fifth Edition, H.W. Fowler and F.G. Fowler, editors (London: Oxford University Press, 1964).

whole of some subject; a comprehensive body of doctrine, conclusions, speculations or theses. Archival science is an example of a system of ideas, being the whole of the ideas and principles related to archives. The archival system of ideas might be seen as including also other disciplines that contribute to the understanding of archives and their purposes. Among them are diplomatics, organization and communication theory, or management studies.

A system also embodies the concept of an organized scheme or plan of action, especially one of a complex or comprehensive kind; an orderly or regular method of procedure; a formal, definite, or established scheme or method such as of classification or notation, the orderly arrangement or method; systematic form or order. This concept of system is generally applicable to a records programme, the objective of which is the management of record systems. It also applies to a classification scheme, the core component of an archival management system.

General systems theory provides a model for the analysis of the organization and its constituent parts as a system or a set of interrelated and interdependent parts arranged in a way that produces a unified whole. In "General Systems Theory: Applications for Organizations and Management," Kast and Rosenzweig observe that its popularity as a model for explaining our understanding of physical, biological and social entities arose in the 1960's; they also note how "others have suggested that the philosophical roots of general systems theory go back even further, at least to the German

philosopher Hegel (1770-1831)."[8] While they offer insightful cautions about applying the model to contrived social systems, for the purpose of this thesis these considerations are put aside.[9] In "Notes on the Theory of Organization," Luther Gulick also offers a caution when he comments:

> It is axiomatic that the whole is equal to the sum of its parts. But in dividing up any "whole" one must be certain that every part, including unseen elements and relationships, is accounted for. . . . Similarly, a piece of work to be done cannot be subdivided into the obvious component parts without great danger that the central design, the operating relationships, the imprisoned ideas, will be lost.[10]

With these warnings in mind, this thesis will analyze the system of ideas as it applies to the system of archival things for the purpose of gaining an explicit understanding of the knowledge necessary to provide a framework to guide the proper management of integrated record systems.

The structure of this thesis is based on a fundamental concept in systems thinking that presumes hierarchical relationships between systems. The concept posits that a "system is composed of subsystems of a lower order and is also part of a suprasystem. Thus, there is a hierarchy of the

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[8]Fremont E. Kast and James E. Rosenzweig, "General Systems Theory: Applications for Organizations and Management" in Matteson and Ivancevich, editors, *Management and Organizational Behavior Classics*, 73. On page 75 Kast and Rosenzweig outline the key concepts of general systems theory which include: (1) Subsystems or components, (2) Holism, Synergism, Organicism, and Gestalt, (3) Open Systems View, (4) Input-Transformation-Output Model, (5) System Boundaries, (6) Negative Entropy, (7) Steady State, Dynamic Equilibrium, and Homeostasis, (8) Feedback, and (9) Hierarchy.

[9]Ibid., 77-81.

[10]Luther Gulick, "Notes on the Theory of Organization," in Matteson and Ivancevich, editors, *Management and Organizational Behavior Classics*, 17.

components of the system."[11] Thus, within this thesis, the hierarchical arrangement of concepts is: (1) the juridical system, (2) the organization, and (3) the office information system. Further, the office information system comprises three subsystems (in order of importance to the organization): (1) the record system, (2) the documentation system, and (3) the library system. Although they are interrelated, interdependent parts of the whole, each system with its subsystems is examined as a separate entity.

Chapter 1 introduces the juridical system in which organizations come into being and exist. Its brief examination serves to identify the context to which an organization, the focus of this chapter, relates. An organization constitutes the whole entity examined, an entity, however, which consists of a system of relationships based upon the linkage of structures for the differentiation of labour and their coordinated reintegration to serve mandated purposes. Chapter 2 examines the office information system as a subsystem of the organization. Communication, the formal communication system, and written communication are discussed in terms of their relative importance for linking the parts of the organization and its activities. A discussion of two of the three components of the office information system, the library system and the documentation system, concludes this chapter. Due to its significance to the organization and to the focus of this thesis, the third component of the office information system, the record system, is examined separately in Chapter 3. Afterwards, a discussion of the role of technology is followed by a summary of recent approaches to the record system. Chapter 4 summarizes

[11]Kast and Rosenzweig, "General Systems Theory," 75.

the observations made and the conclusions reached throughout the preceding chapters. At its conclusion, applying the knowledge gained from the previous analysis, this thesis suggests an approach to managing the integrated record system that is based upon archival principles and methodology.

CHAPTER 1

THE ORGANIZATION

I. JURIDICAL SYSTEM

I.A. Definition and Purpose

A juridical system is a collectivity organizationally grounded in a system of rules ordering its members' relationships. Complex in nature, juridical systems include a social group and all the rules that are perceivably binding on human affairs, whether informal and based on mutual consent or formal and established and enforced by an institution: these rules are called "legal system."[1]

Within any given juridical system, a person is an entity having the capacity or potential to act legally. A juridical person is a group or a succession of human persons, or a collection of properties. Examples of juridical persons include bodies such as associations, committees, corporations, ethnic and religious groups, partnerships and states.[2] An agency, or any administrative body having the delegated authority to act

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[1]Luciana Duranti, "Diplomatics: New Uses for an Old Science (Part II)," Archivaria 29 (Winter 1989-90): 5.

[2]Luciana Duranti, "Diplomatics: New Uses for an Old Science (Part I)," Archivaria 28 (Summer 1989): 25, note 20.

competently as an agent of a higher body is also recognized as a juridical person. Thus, all organizations are juridical persons.

Most organizations are brought into being through formal means such as the statutes establishing government ministries or those authorizing the incorporation of private enterprises including companies, partnerships and societies. Normally, a statement of purpose and authority given to a body to administer a matter (e.g., articles of association, charter of incorporation, mandate) outlines the competence, or sphere of functional responsibility, of a given organization.

As juridical persons, organizations have defined rights and obligations. Their actions are governed by various statutes, regulations, policies, procedures and commonly accepted norms such as standard business practice. Organizations are obligated to account for their actions to society generally and interested parties particularly. Accountability for actions may be demanded formally or informally through social sanction or loss of sanction. A company's Board of Directors formally answers to its shareholders and to society through legislative and regulatory compliance. Elections, court challenges, and regulatory appeal procedures are devices through which democratic governments account to or are called to account by the citizenry, while records are the primary means by which evidence of activity is provided and, therefore, accountability is served.

As organizations operate within the context of a particular juridical system, the principles for structuring organizations and the methods of operating them reflect the societal juridical system. Certain practices, such as assigning competence for a matter to an office or officer, and delegating authority, are well established. Whatever the organizational structure, there is always one juridical person (organ, office or position) accountable for the whole operation, including those parts of it for which responsibility is assigned or delegated to subordinate persons. Accountability for actions is not only an externally-derived legal requirement for organizations, but also a basic requirement for their efficient and effective operation. Generally, an organization's internal rules governing actions are conveyed to those concerned by written communication in various forms such as policies, directives, procedural manuals, job descriptions and so forth. Less formal means include relaying information during conversations, behaviourally encouraging some practices while discouraging others, and training.

II. ORGANIZATIONS

II.A. Definition and Purpose

Organizations may be categorized as communal (informal)[3] or associative (formal). This study is concerned with associative organizations, that are also known as corporate bodies or formal institutions. An

[3]Examples include families, groups of friends, and the societies of which the former are components.

organization is an entity structured to accomplish a purpose common to the human beings comprising it.[4] Associative organizations are deliberately constructed to carry out continuously purposive activities of a specified kind.[5] As social constructs, organizations have three components: (1) a systematic structure (of relationships) devised by humans to serve as the framework for the organization, (2) the humans who are members of the organization, and (3) a common purpose or programme of activity to be accomplished. The primary purpose for which human beings form an organization is to provide a framework for dividing the labour necessary to accomplish their purpose and for coordinating their differentiated efforts. Ultimately, all functions and activities carried out by members of an organization are directed towards the attainment of a commonly defined mission, or goals and objectives or externally mandated purposes.

II.B. Structuring Organizations

Several commonly recognized organizing principles guide the methods by which humans organize themselves and their own work. However, a fundamental tenet of organization theory is that "[O]rganized human activity results from a logical division of labour and a system of coordination."[6]

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[4]Ford, et al, *Organization*, 3; Amitai Etzioni, *Modern Organizations* (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964), 3 (quoting Talcott Parsons); David H. Holt, *Management Principles and Practice* (Englewood Cliffs, New Jersey: Prentice Hall, 1993), 4-5; Stephen P. Robbins, *Management*, Fourth Edition (Englewood Cliffs, New Jersey, 1994), 3 and G-7; and Leslie W. Rue and Lloyd L. Byard, *Management: Theory and Application* (Homewood, Illinois: Richard D. Irwin, Inc.), 117.

[5]Max Weber, *The Theory of Social and Economic Organization*, A.M. Henderson and Talcott Parsons, translators (New York: The Free Press, 1964), 136-139 and 151-152.

[6]Holt, *Management*, 264.

These two components have led to the categorization of the major organizing methods into two types, differentiating and integrating. Differentiating methods are used primarily to break down or divide organizational functions, competences, and activities. Integrating methods are those used by organizations to coordinate functions, competences and activities or combine "the differentiated efforts of its members into a unified whole."[7] Some resulting structural elements, such as hierarchy, serve both differentiating and integrating purposes.

Differentiation is a way of organizing that consists of identifying differences between and among the elements being structured and grouping them accordingly. Vertical differentiation refers to the groupings at various organizational levels that comprise the up and down dimension of the organization. Commonly known as 'the hierarchy', vertical differentiations include the discrimination of organizational authority and its disbursement by delegation and decentralization. Horizontal differentiation is the distinction made between activities and the separation between units at the same organizational level. Horizontal differentiations of organizational activities are by specialization of labour, departmentalization, and distinction between line and staff positions.

Integration is a way of organizing that consists of coordinating or recombining the differentiated and fragmented activities and parts of the organization into the unified whole. Such integration is necessary to

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[7]Ford, et al, *Organization*, 211.

complete or achieve organizational purpose. The hierarchy of authority (used to distribute authority as a differentiating method) serves to reassemble it vertically upwards to its source again. Formalization, committees, and span of control are other methods used to coordinate organizational activities and members. Although it is not within the scope of this thesis to present the organizational elements resulting from the use of those methods, it is appropriate to mention as examples organization charts, which create static, two-dimensional images or snapshots of an organization's structure at a given point in time.

II.C. Differentiating Methods[8]

The primary methods of differentiating within organizations involve the specialization of activities and specialization of authority.

II.C.1. Specialization of Activity

Three means of organizing by specialization of activity are the specialization of labour, the departmentalization, and the distinction between line and staff positions.

II.C.1.i. Specialization of Labour: The division of labour (i.e., the expenditure of time and effort) is a method by which an organization's members temporarily divide their work efforts.[9] Specialization of labour is the way

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[8]For the purpose of organizing this discussion, I have borrowed heavily from an organization theory model used by Ford, Armandi and Heaton in their 1988 monograph, *Organization Theory: An Integrative Approach.*

organizations differentiate, divide or specialize functions (spheres of activities), activities (spheres of actions) and actions at an individual level. Organizations tend to separate work by attaching functions, or portions of them to persons. Based on the assumption that a human person becomes technically competent, or a specialist, by virtue of the skills developed by repeating activities, specialization of labour is associated with the assignment of competence or responsibility to a person. The number of different job titles, job descriptions, or occupations reflects the degree of specialization within a given organization.

II.C.1.ii. Departmentalization: "Departmentalization relies on specialization, which is the core determinant of organizational structure."[10] It is an organization-wide method of grouping the functions, activities and specialists (members) according to the division or specialization of labour. The organization is separated into horizontally differentiated primary and secondary subdivisions, activities are grouped to form logically defined units or departments, and members are assigned to them. Usually, forming departments is linked with assigning functional authority.[11]

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[9]See Emile Durkheim, *The Division of Labour in Society* (1893) and Adam Smith, *Inquiry into the Nature and Causes of the Wealth of Nations* (1776).

[10]Holt, *Management*, 298.

[11]Gary Dessler, *Organization Theory: Integrating Structure and Behavior* (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1980), 110; Ford, et al, *Organization*, 103; and Holt, *Management*, 298.

There is a variety of ways of determining groupings that form the basis for establishing departments. Departmentalizing by function involves grouping organizational members so that their activities contribute to only one organizational function (e.g., administration, distribution, manufacturing, marketing). Departments may also be based upon groups formed according to common but mutually exclusive criteria. Examples include grouping by (1) area/geography/territory, (2) customer/client, (3) date or time, (4) number, (5) person, (6) product or service. The serial phases of a production process or the machinery used at any given stage may also be used to determine logical groupings. Mass production industries provide the classic examples of the latter two methods of departmentalizing.

The methods presented above are used to establish permanent or continuing forms of structure but there are several temporary methods of differentiating workers and their activities. For example, *departmentalizing by project* brings together task groups within the organization's existing structure. The purpose of the task groups is to complete specific, one time projects with a defined beginning and end. Each group members are borrowed from their regular work units and assigned to the project, that operates as an autonomous entity under one project manager's authority. Generally, the task group varies in size and composition during the project. Big construction firms have used the project form since the turn of the century but this form of departmentalization is increasingly adopted by any organization needing to complete large-scale technologically complex projects.

The *matrix* is a variation of departmentalizing by project. It gets its name from its organization chart which looks like a grid. A dual chain of command and operation along both product and functional lines is characteristic of the matrix form of organization. Group members report to two bosses simultaneously. "The matrix retains the functional structure, so that employees with similar expertise are grouped together in administrative units, but they work on assignments within a product or process structure, so they focus their efforts on narrowly defined projects."[12]

II.C.1.iii. Line and Staff Distinctions: Distinguishing between line and staff positions is another (third) method of differentiating horizontally. Specialization of activities or differentiation of functions is the primary distinction made between line and staff positions. Line positions are directly engaged in the functions or activities that are necessary to accomplish the organization's primary purpose. Staff positions are engaged in functions or activities that are supportive, advisory or which contribute indirectly to the achievement of organizational purpose. Typically, the functions and activities attached to line positions are categorized as operational, while those attached to staff positions are categorized as administrative.

The determination of line and/or staff functions and thus, the positions to which they are attached, depends upon knowing an organization's primary

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[12]Holt, *Management*, 303. As well as dual chains of command and dual spheres of operation, matrices have dual accounting and control procedures. "Matrices within traditional forms of organization maintain separate accounting and records; one set of budgets and accounts relates to the matrix project, and the other relates to existing company operations." (Holt, *Management*, 307).

business. For instance, if the purpose of the organization is to make and sell widgets, all functions and activities that are necessary to manufacture, market, sell, and deliver the products are attached to line positions. All other functions and activities supporting operational functions, such as providing financial services, are attached to staff positions. However, if the primary purpose of the organization is to provide financial services, accounting functions would be assigned to line positions and staff positions according to the purpose served.

The line-staff distinction also involves a differentiation or specialization of the organization's authority. Line authority includes the right to take or demand action whereas staff authority is the right to advise. Line positions are competent to decide upon the kind and amount of authority delegated to staff positions. Sometimes line and staff positions have joint authority for decisions.

II.C.2. Specialization of Authority

In *The Theory of Social and Economic Organization*, Max Weber explains that authority is specialized and that there are three pure types of legitimate authority: rational, traditional and charismatic. This thesis is concerned with the basis of organizational authority, which is rational or legal. Through its elected representatives, organized society attributes rights and obligations to corporate bodies. This is the source of the authority of entrepreneurs, executives and managers to plan, organize and control organizations, members, and activities. The set of rights and obligations,

including the right to demand action and to make decisions within predetermined boundaries authorized by an organization, enables officers and members to discharge their responsibilities.[13] The receipt of 'formal' authority by the organization as a whole is then conferred by it to its parts.

There are some fundamental principles or assumptions associated with the rational or legal authority of organizations. Among them Weber stipulates that there must be:

> (1) A continuous organization of official functions bound by rules.
> (2) A specified sphere of competence. This involves (a) a sphere of obligations to perform functions which has been marked off as part of a systematic division of labour. (b) The provision of the incumbent with the necessary authority to carry out these functions. (c) That the necessary means of compulsion are clearly defined and their use is subject to definite conditions.[14]

Particular functions are assigned to different offices or positions that are responsible for those functions. The appropriate authority for fulfilling assigned responsibilities is allocated to positions, (that is, to juridical persons) not individuals. Underlying the principles of legal authority is the assumption that obedience is owed to the legally established impersonal order. In practice this means that organizational members are responsible for carrying out the functions of their positions and the duties assigned to them by superiors. However, legal authority "extends to the persons exercising the

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[13]Ford, et al, *Organization*, 214-215. For an analysis and discussion on the types of authority, the basis of legitimacy and legal authority with a bureaucratic administrative staff, see Weber, *Theory*, 324-341

[14]Weber, *Theory*, 330.

authority of office under it only by virtue of the formal legality of their commands and only within the scope of authority of the office."[15]

Formal organizational authority may be differentiated as full functional authority, concurrent authority, advisory authority and so forth. These are methods of determining or limiting degrees of authority, particularly that aspect concerned with decision-making. Full functional authority is the right to exercise judgment in decision-making and to take or to demand action autonomously within established boundaries. Concurrent authority is shared authority where one or more positions must agree on certain actions. Where this exists, generally, two (or more) signatures are required on documents for an action to occur. Advisory authority is limited to the right to advise those with functional authority.

II.C.2.i. Delegation of Authority: Delegation of authority occurs at the individual level. Some or all of the authority of a given position is distributed by entrusting it to a deputy or delegate, usually a subordinate. There are two aspects of delegation: assigning duties and granting authority. Logically implicit in the granting of authority is the assignment of duties. When duties and the appropriate authority to fulfil them (or to carry them out) are allocated, delegation has occurred. When some of a position's duties are given to others without also granting the accompanying authority, we are in front of an increase of specialization of labour, not of delegation. However, because, as delegation occurs, the ultimate authority rests with the 'higher'

[15]Ibid., 328.

position, the transferred authority may be withdrawn any time. Also, the receiver of delegated authority may not delegate authority further, because the delegation right rests with the office to which the authority was originally assigned.

II.C.2.ii. Decentralization of Authority: Decentralization occurs when delegation is practiced on an organization-wide basis. During the decentralization process, the executive level assigns much of the organizational authority (i.e., to make operating decisions, and to demand action and compliance) to lower organizational levels or subunits. Although decentralization and delegation are normally found together, their concurrence is not necessary, as managers in decentralized organizations may choose not to delegate decisions to subordinates.[16]

Centralization and decentralization of authority are discussed in relative terms. A centralized organization keeps its authority concentrated at the executive or upper levels. A decentralized organization adopts an organization-wide practice of dispersing authority downward and throughout the organization, thus giving subordinates increasing autonomy. As with delegation, the transferred authority may be reclaimed. Recentralization is the process by which the executive level exerts its right to the authority it previously dispersed.[17]

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[16]Ford, et al, *Organization*, 157, 176.

[17]Recentralization is on the increase because computer-based systems both necessitate and allow tighter control over the communication and work flow processes.

II.D. Integrating Methods

The main purpose of any integrating method is to coordinate functions, activities, and members throughout the organization. Methods combining the differentiated efforts of organizational units and members are the hierarchy of authority, the span of control, the committee, and formalization.

II.D.1. Hierarchy of Authority

Often known simply as the hierarchy, this method of organizing serves both differentiating and integrating purposes. Within 'administrative organs', as Weber names them, "[T]he organization of offices follows the principle of hierarchy; that is, each lower office is under the control and supervision of a higher one."[18] The hierarchy of authority is realized when authority is situated at different organizational levels. This series of levels, also known as the 'chain of command', allows those in executive level positions to secure the cooperation of members in lower levels in accomplishing organizational purpose.[19] A chain of command is the direct unbroken vertical line of authority between successive organizational levels and positions that links each level in the hierarchy. "It is the description of rank-ordered authority, and in a bureaucracy, there is a presumption that a subordinate will seek directions, communicate decisions, and take orders directly from an immediate superior."[20] The hierarchical authority of office is used by line

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[18]Weber, *Theory*, 331.

[19]Holt, *Management*, 307.

[20]Ibid., 270.

positions to integrate or recombine the separate efforts or activities of organizational units and members.

II.D.2. Span of Control

Span of control (span of management or span of supervision) refers to the number of subordinate positions directly supervised by one office. Organizational levels of hierarchy and span of control are directly related and are reflected on organization charts. Organizations with narrow spans of control have many organizational levels and comparatively few positions reporting to each office. This results in many levels of management in which little authority is delegated. These bodies are called tall organizations because their organization charts look tall. Flat organizations have wider spans of control with fewer organizational levels and many members reporting to each office.[21]

II.D.3. Committees

Committees (boards, councils, task forces, teams) are formal groupings that become part of the organizational structure.[22] Although they may serve organizational needs for either differentiation or integration, coordination is the primary purpose of most committees. "They are formed to integrate the efforts, concerns, and information of people who might not

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[21]Ford, et al, *Organization*, 301; Holt, *Management*, 270-271.

[22]The trend toward calling any grouping a team tends to obscure the fact that different methods of grouping serve different purposes. The *Concise Oxford Dictionary of Current English*, 1329, defines a team as two or more beasts of burden harnessed together; a set of players on one side in some games; or a set of persons working together.

otherwise communicate with each other and therefore might not be aware of what impact their actions could have on other organizational units."[23]

Committees, created by other groups or positions with the authority to constitute them, are formed when organizational members are called to join together for a time to achieve a defined purpose or fulfil a mandate. The mandate is a clear statement of purpose explaining the committee's role and scope. The juridical person(s) striking a committee has the ultimate responsibility for its activities and for disbanding the committee when its purpose is served. Therefore, committees are subject to specific reporting relationships and are directly accountable to their creator. Membership of committees comprises a predetermined number of specific organizational members that are appointed or voluntary. Unlike that of the project form, the composition of the committee is not necessarily based on specialization of the expertise needed to accomplish a goal. Committee members spend only part of their time doing the work assigned to the committee and the rest of their time performing their normal duties. The duration of their existence or life span determines whether committees are continuing (standing) or temporary.

II.D.4. Formalization

With respect to organizing, formalization is the process by which the organization's actions, communications, decisions, instructions, procedures,

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[23]Ford, et al, *Organization*, 266.

rules, standards and so forth are formalized in writing. The degree or extent of codification is observable in organizational records. Weber says:

> Administrative acts, decisions, and rules are formulated and recorded in writing, even in cases where oral discussion is the rule or is even mandatory. This applies at least to preliminary discussions of proposals, to final decisions, and to all sorts of orders and rules. The combination of written documents and a continuous organization of official functions constitutes the "office" which is the central focus of all types of modern corporate action.[24]

While the main purpose of formalization is to coordinate organizational activities, it also has other uses. Written policies and procedures informing members in advance on how to respond to routine situations and to make appropriate, predetermined responses may replace personal oversight. Organizational memory is also the result of formalization. "[M]uch of what is written down becomes the basis of precedents, policies, procedures and practices in the formal organizational literature, or less formally in the correspondence, memos, and reports in the organization's file cabinets."[25] The process of formalization also provides the means for an audit trail by which to establish accountability for actions.

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[24]Weber, *Theory*, 332.

[25]Ford, et al, *Organization*, 248.

III. CONCLUSION

The structuring of organizations is a dynamic process that is usually evolutionary in character. Conventional organizing principles and methods are applied formally, informally, intentionally, unintentionally, permanently or temporarily. A range or a continuum of choices exists for any given method. Different options are employed in various combinations. It is characteristic of organizations that the structural elements are interrelated and interdependent. The totality of the methods chosen defines the structural dimensions of an organization. No matter how simple or complex, each organization is unique despite the similarity of organizing principles and methods. This characteristic of uniqueness affects the whole organization, including the record system. Those characteristics that are attributed to the whole organization are attributable also to its components. As an organizational component, the record system is necessarily affected by the context in which it exists and, thus, each record system will also be unique to a given organization. Just as organizing principles and methods guide the structuring of organizations, so should universal archival principles and methods govern record systems. However, an effective record system is one that is unique to the particular organization it serves precisely because it is built according to archival principles and methods.

Weber proposed that the ideal organizational type is the true bureaucracy, a rational system of structuring complex organizations. A main feature of it is grouping activities and members or departmentalizing. The

functions and activities of these departments are carried out by means of routines achieved through consistent administrative policy and practice. Other characteristics of the bureaucratic form include rationally defined offices (with specific competences; accountability, responsibility), and a clear division of labour for functions and activities. There must also be an unambiguous, identifiable authority hierarchy and an impersonally regulated environment that include well-documented rules, policies and procedures.

While bureaucracies are the dominant form of organization, at the opposite end of the spectrum is an organizational form sometimes known as organic or 'adhocracy'.[26] In *Organization Theory: The Structure and Design of Organizations*, Steven Robbins defines an adhocracy as "[A]n organizational form characterized by high horizontal differentiation, low vertical differentiation, low formalization, and decentralization, which," he asserts, "provides great flexibility and responsiveness."[27] In contrast, Holt maintains that the difference between the two extremes of form, bureaucracy and organic organization or adhocracy, is simply one of degree of standardization.[28] However, the preferred methods of organizational structuring for the organic organization are temporary ones. These include the project form or the task force, the committee structure, the collegial

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[26]Adhocracy is a term popularized by Alvin Toffler in *Future Shock* (New York: Random House, 1979). The term 'organic' is most often used in the sociological literature.

[27]Stephen P. Robbins, *Organization Theory: The Structure and Design of Organizations* (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1983), 417.

[28]Holt, *Management*, 270.

structure, and the matrix.[29] Usually an adjunct to bureaucracy, the adhocracy is an atypical organizational form. It is found in a minority of industries such as high-technology, research and development oriented organizations, most of which eventually bureaucratize to survive.

In recent archival literature, concern is expressed that new organizational forms and ways of working are appearing that affect archival work.[30] Upon examination of organization theory, these concerns appear unfounded. A lack of historical perspective and knowledge of other disciplines makes recent trends seem unprecedented and/or unexplored. Some 'new' organizational forms are revivals of older or ancient methods of organizing. Others are simply variations available on a continuum of long standing approaches. Still others may be transmutations of organizational forms that originate in juridical systems other than our own. The probability of

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[29]Not mentioned here, several types of collegial authority are discussed in Weber, *Theory*, 392-407. Although it is used by some organizations (i.e., the British Prime Minister and Cabinet and within the bureaucratic structure of some universities), the collegial form has been out of favour in most modern organizations. According to Weber, the principle of collegiality deprives any type of authority of its monocratic character, which binds it to an individual position.

[30]Angelika Menne-Haritz, "The Impact of Convergence on the Life Cycle of Records," 122; Diana Sangway, "Information Policy and Practice," 189; and Kenneth Thibodeau, "Information Resources Management in Context," 195-198; all to be found in Cynthia Durance, compiler, *Management of Recorded Information: Converging Disciplines,* Proceedings of the International Council on Archives' Symposium on Current Records, National Archives of Canada, Ottawa, May 15-17, 1989 (Munchen: K.G. Saur, 1990); Richard E. Barry, "Getting It Right: Managing Organizations in a Runaway Electronic Age," 43, 98-100; Richard Kesner, "The Changing Face of Office Documentation: Electronic/Optical Information Technologies (IT)," 117-124; and Reinermann Heinrich, "Changes in Organization and Process of Work in Administrations," 106-111; all to be found in Angelika Menne-Haritz, editor, *Information Handling in Offices and Archives* (Munchen: K.G. Saur, 1993); and David Bearman, "Diplomatics, Weberian Bureaucracy, and the Management of Electronic Records in Europe and America," American Archivist 55-1 (Winter 1992): 168-180, particularly 169-170, 176.

the latter occurring will undoubtedly increase with the globalization trends we are currently experiencing. In these instances it would be beneficial to archivists to increase and expand their research efforts in their search for understanding and solutions. First, however, they need to understand thoroughly their own juridical system and organizations.

CHAPTER 2

THE OFFICE INFORMATION SYSTEM

I. OFFICE INFORMATION SYSTEM

Although there is general agreement that the purpose of the office information system is to support organizational functions, definitions and interpretations vary; differences in perspective are often predetermined by discipline or occupation.

In "'The Enormous File': The Evolution of the Modern Office in Early Twentieth-Century Canada," the historian Graham S. Lowe says that "[T]he office is the central nervous system of modern organizations, generating, transmitting, and storing vast quantities of information" to meet "its essential function of providing the information needed for managerial decision making."[1] Supporting his argument, Lowe quotes William H. Leffingwell, an early proponent of 'scientific' office management, who wrote:

> The office is that part of the enterprise devoted to the direction and coordination of its various activities. It is characterized by the gathering, classification, and preservation of all kinds of records; the analysis and utilization of these data in planning, executing, and determining the results of operation; the preparation, issuing, and preservation of instructions and

[1]Graham S. Lowe, "'The Enormous File': The Evolution of the Modern Office in the Early Twentieth-Century Canada," Archivaria 19 (Winter 1984-85): 137, 151.

> orders; and the composition, copying, and filing of written messages.[2]

This view reflects the assumptions made by many writers of the period. The term office information system, or any derivative of the same, is notably absent.

Today, many writers use the term 'information system' to refer only to that part of the office system mediated by specific technological innovations (computers, computer-like devices, telecommunications technology). Richard H. Irving and Christopher A. Higgins offer a definition of the office information system in their 1991 publication, *Office Information Systems: Management Issues and Methods*. In a way typical of North American writers on the subject, they define with reference to technology, rather than to the fundamental nature and characteristics of the entity in question. Thus, the office information system is seen as

> a seamless integration of telecommunications, data processing, and personal computing with manual business processes; which supports key business functions; and which improves effectiveness, efficiency, and quality of working life.[3]

Esa Auramäki and Mauri Leppänen, two Finns from the University of Jväsklä's Department of Computer Science, make the point that there is no common, generally agreed upon definition of an office information system. In a paper they gave at the "1988 IFIP WG 8.4 Working Conference on Office

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[2]Lowe, "The Enormous File," 138-139. The quotation is attributed to William H. Leffingwell, *Scientific Office Management* (Chicago, 1917), 3.

[3]Richard H Irving and Christopher A. Higgins, *Office Information Systems: Management Issues and Methods* (Chichester: John Wiley & Sons, 1991), 8.

Information Systems: The Design Process," the two presenters preface their discussion by saying that for them

> an *office (system)* is considered an administrative function which supports the main activities of the organization (e.g., the production of goods or services). To a large extent, the offices can be regarded as communication systems where the people perform linguistic acts, e.g. by informing, directing, committing etc. . . . through the information objects. Communication facilitates the coordination and control of the activities. The acts are governed by many kinds of rules, conventions, and norms. These state the boundaries for office work.[4]

Presenting a European point of view, Auramäki and Leppänen further elaborate their concepts in a discussion of computer-based office information systems:

> In an office system (OS), three kinds of information systems can be distinguished. An *office information system (OIS)* is a sub-system of the OS containing information objects, acts on information objects and contexts for the acts. The communication in the OIS can be formal or informal, performed through voice, text, gesture etc. A part of the OIS is a *structured office information system* (SOIS). The SOIS contains information objects, acts and contexts specified in a well-defined way. Further, some of the most structured part of the SOIS can be formalized and programmed. This part is here called the *computerized office information system* (COIS). The three information systems are connected with each other by a part-of relation.[5]

This is not the only model, or even the predominant one, employed by information professionals. The literature indicates that there are several

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[4]Esa Auramäki and Mauri Leppänen, "Exceptions and Office Information Systems" in Barbara Pernici and Alex A. Verrijn-Stuart, editors, *Office Information Systems: The Design Process*, Proceedings of the IFIP WG 8.4 Working Conference on Office Information Systems: The Design Process, Linz, Austria, 15-27 August, 1988 (Amsterdam: Elsevier Science Publishers B.V., 1989), 168.

[5]Auramäki and Leppänen, "Exceptions," 170.

schools of thought about information systems and many conceptual models are being developed currently. The information science discipline has not yet developed a commonly accepted information theory upon which to base methodology and practice.[6] These examples serve only to illustrate that there are different views about the office information system.

Classical organization theorists did not acknowledge the office information system as a separate entity from the 'office' system because they assumed that communication was a necessary and essential element of organized human activity. In *Organizations: Structure and Process*, Richard Hall says that "[O]rganizational structures . . . are designed to be or evolve into information-handling systems. The very establishment of an organizational structure is a signal that communications are supposed to follow a particular path."[7] Many organization theorists believe that communication, the sharing of information and the transmission of meaning, is the very essence of an organization.[8] While discussing organizational communication, several recent writers mention Chester Barnard, an early proponent of the systems approach within the bureaucratic structure, who once wrote that "the first executive function is to develop and maintain a system of communication."[9] Thus, because it is necessary for the functioning

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[6]The established work on communication theory would provide some relief from the confusion about information with which information professionals struggle.

[7]Richard Hall, *Organizations: Structure and Process* (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972), 270.

[8]Gary Dessler, *Organization Theory*, 89.

of an organization, the office information system serves as the authorized means by which organizational communication or the transmission of information occurs within the organization.

I.A. Definition and Purpose

In the context of organization theory, an office information system, when seen as a subsystem of the office system described in the previous chapter, is the whole of the processes, procedures and by-products that provide the information necessary to bureaucratic administration. According to Weber, "[B]ureaucratic administration means fundamentally the exercise of control on the basis of knowledge."[10] The office information system is thus the means by which those that need it, gain the knowledge necessary to perform their functions within an organization and exercise the required control. It necessarily includes the whole communication process and all the procedures established to accomplish the communication.

The purpose of the office information system is to support the conduct of affairs necessary to accomplish the organization's mandated mission or purpose and to meet the needs of accountability. It accomplishes this purpose by (1) facilitating communications throughout the organization, (2)

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[9]Stewart L. Tubbs and Sylvia Moss, *Human Communication* (New York: McGraw-Hill, Inc., 1994), 355, credit Chester I. Barnard, *The Functions of the Executive* (Cambridge, MA: Harvard University Press, 1938), 82. R. Wayne Pace and Don F. Faules, *Organizational Communication*, Third Edition (Englewood Cliffs, New Jersey: Prentice Hall, 1994) use a similar quotation and credit the same monograph without a page reference. Joseph A. DeVito, *Human Communication: The Basic Course*, Sixth Edition (New York: HarperCollins College Publishers, 1994) lists Barnard's monograph in the bibliography.

[10]Weber, *Theory*, 339.

enabling the provision of information needed in the decision-making process, (3) supporting the conduct of activities, (4) providing members with evidence of those activities, and, in so doing, (5) supporting organizational and individual accountability, and (6) continuing organizational memory.

For a greater understanding of the office information system it is useful to examine the concepts associated with the term 'office information system'. The term 'office' embodies several related concepts. In everyday use, 'office' commonly denotes a place or a particular environment in which the work of a public or private organization is transacted, and includes the members of the organization. The Western juridical system also recognizes an 'office' as a juridical person or as an entity capable of acting legally. According to this interpretation, an office is an established position of trust, authority or service to which a succession of human persons is appointed under constituted authority. In this case, the assignment of competence for an area of functional responsibility is implied. Therefore, the term also embodies the idea of duty or that which is required or expected. Duties are the activities that the individual is required to perform by virtue of membership in the organization. There is a presumption of responsibility to do one's duties and to account for the performance of the activities involved in their discharge. If personified, the term 'office' denotes the office holder(s) or office holders as a body. There exists an implied assumption that certain rights and obligations fall upon the office holder(s). Rights include those to exercise the authority that accompanies the position. Obligations encompass the duty assigned, attaching or falling to one's station, position or employment.

'Information' was defined as 'intelligence given' by Samuel B. Johnson.[11] Intelligence refers to an understanding, while given means shared or communicated. Trevor Livelton provides an elaboration of the terms in this often used definition:

> "Intelligence" refers to a message, something that makes sense -- not gibberish, but something with an intellectual form capable of being shared by others. Intelligence "given" is intelligence conveyed, communicated -- not necessarily with conscious intent, but none the less shared; both telephone conversations and shards unearthed in archeological digs provide "information."[12]

Providing or receiving information is an essential activity of every office, and consists of the voluntary or involuntary actions of communicating knowledge concerning some particular fact, subject, event or activity. To be used, information need not be recorded, only communicated. However, to meet organizational needs, it is necessary to record or document action-related information. The fact of its recording is a characteristic that distinguishes information from a document; therefore, "[I]nformation that is not affixed to a medium is not a document."[13] In an organization, documents generated in the course of an activity, that is, archival documents, are by-products of procedures.

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[11]Samuel Johnson, *A Dictionary of the English Language . . .* (London: W. Stratham, 1755).

[12]Trevor Livelton, "Public Records: A Study in Archival Theory," Master of Archival Studies Thesis, University of British Columbia, 1991, 34.

[13]Luciana Duranti, "Diplomatics: New Uses for an Old Science (Part IV)," Archivaria 31 (Winter 1990-91): 10.

In the context of the office information system, 'system' refers to the whole organized scheme of processes, procedures, actions and by-products the purpose of which is communication.

II. COMMUNICATION

II.A. Definition and Purpose

In *Organizational Communication*, Pace and Faules report that there are at least 126 different published definitions of the term 'communication'.[14] The proliferation of definitions not only suggests the complexity of the topic, but also signals a lack of common or universal perspective. Generally, dictionaries tend to define the term 'communication' as information given or the act or process of imparting or transmitting information. Sometimes the terms 'interchange' or 'intercourse' are used when defining communication. Both terms allude to an assumption that communication takes place between two (or more) humans and that the two-way process involves a response.[15] Reflecting its Greek root, the term embodies an implicit assumption that information is shared or made common. Similarly defined in law, the term includes "an act of or system of transmitting information" that is "ordinarily considered to be a deliberate interchange of thoughts or opinions between

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[14]Pace and Faules, *Organizational Communication*, 17. Reference is made to a list of 126 published definitions given in Frank E.X. Dance and Carl E. Larson, *The Functions of Human Communication: A Theoretical Approach* (New York: Holt, Rinehart & Winston, 1976).

[15]*Concise Oxford Dictionary*, 244; and *Oxford English Dictionary*, Volume III, 578.

two or more persons," as distinguished from spontaneous, instinctively provoked, or involuntary communication.[16]

In an organizational context, the "system of transmitting information," or the office information system, is used generally to connect or link the system of interrelated offices (and relative competences, functions, etc.) and facilitate the communication necessary for conducting affairs. The specific purpose of a given communication would depend upon the particular act, circumstances or event. The deliberateness of communication is suggested by the organizational practice of establishing procedures to govern it.

II.B. Communication Process

The definition of 'communication' describes it as a process. A process is a series of activities carried out to set oneself to work and go on towards each formal step of a procedure.[17] Essentially, the communication process is the act of making and transmitting information or a message with the expectation that it will be received. The components necessary for the process of communication to occur are a sender, a message (or content), a means of transmission, an intended receiver, and the actions of transmitting and receiving.

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[16]Henry Campbell Black, *Black's Law Dictionary: Definitions of the Terms and Phrases of American and English Jurisprudence, Ancient and Modern*, Sixth Edition (St. Paul, MN.: West Publishing Co., 1990), 279.

[17]U.B.C., SLAIS, *Select List of Archival Terminology*, 15; and Duranti, "Diplomatics (Part II)," 13.

In the literature on communication theory, a commonly used model of the human communication process is described as universal.[18] This two-way communication model has seven parts identified as follows: (1) the sender or source, (2) the encoding, (3) the message, (4) the channel,[19] (5) the receiver, (6) the decoding, and (7) the feedback.

The model actually describes interpersonal communication between two humans and presumes that an interchange or response occurs. However, communication takes place in many configurations other than interpersonal. For instance, communication may occur on a one to one, one to many, or many to one basis, with or without a response being issued by the receiver. However, the two-way communication model is the most commonly used explanation of the communication process, and it is used here for purposes of discussion. Also, while most of the surveyed literature acknowledges that communication may be written, its focus is on non-verbal and oral communication. Because of the significance of written communication to organizations, examples used to elaborate or illustrate a point in the following discussion will refer to written communication as represented by documents.

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[18]DeVito, *Human Communication*, 10; Ford, et al, *Organization*, 324-325; Holt, *Management*, 511; Stephen P. Robbins, *Management*, Fourth Edition (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1994), 528; and Tubbs and Moss, *Human Communication*, 8-15.

[19]Hereafter, the term channel will be replaced by the term transmission for reasons given in the elaboration of the concept.

II.B.1. Sender

The sender is a juridical or human person who initiates the action. It is assumed that this person has a purpose or reason for communicating or transmitting information.

II.B.2. Encoding

Encoding is the action of converting an idea, thought or message into symbols or a symbolic form or code (gestures, graphic image, numbers, text, words) that will be meaningful to the receiver. The intellectual codification of ideas is intrinsic to oral and written communication (documents). 'Intellectual' refers to the required exercise of intellect, the faculty of knowing and reasoning or understanding. 'Codification' refers to the application of a code to the expression of the ideas. Generally, a 'code' is a set of rules on any subject or a system of signals. An 'idea' is a notion conceived by the mind, an immediate object of thought or mental perception. The intellectual codification of ideas is observable in the configuration (form, shape, pattern, type) of the information. It may be images, tables, text, or any combination of these.

II.B.3. Message

The message, a set of symbols designed to transfer meaning from the sender to the receiver, is the by-product of the encoding process. For documents, the message is the content.

II.B.4. Transmission

No author writing on the theory of communication, organization, or management refers to this part of the communication process as transmission. The term used is 'channel', defined as medium of transmission or that through which the message travels.[20] For example, Joseph DeVito says "[T]he communication channel is the medium through which the message passes."[21] In his discussion of the term 'channel', Holt elaborates:

> It carries the message. It may be a sound wave, a touch, or a written note. Although the channel has a simple function--carrying the message from the source to the receiver--it has been given much attention in studies of communication.[22]

In this context, the term channel, carrier or medium, properly refers to only one aspect of transmission, its form. The other aspects of transmission are status and method. For clarification, it is useful to discuss the concepts involved.

'Medium' is a term based on the concept of intermediate and includes any intervening substance through which impressions are conveyed to the senses or any substance considered with regard to its properties as a vehicle of light or sound. The medium through which oral communication is

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[20]*Concise Oxford Dictionary,* 199, defines channel as a "[N]atural or artificial bed of running water; piece of water, wider than strait, joining two larger pieces, usually seas; tubular passage for liquid; course in which anything moves, direction, line; medium, agency; narrow band of frequencies sufficiently wide for transmission; groove, flute; rolled iron bar or beam flanged to form a channel on one side; broad thick plank projecting horizontally from ship's side abreast of mast to broaden base for shrouds."

[21]DeVito, *Human Communication*, 12.

[22]Holt, *Management*, 325.

conveyed is sound. Materials through which written communications may be conveyed are various and include clay, paper, papyrus, parchment, film, magnetic material (tapes, discs, plates), metal, plastic, wood, and combinations of any of these. Medium is the carrier or physical support of a document. The term 'multi-media' refers to each and all media in or on which documents appear.

To transmit means to broadcast, communicate, convey, dispatch, disseminate, pass on, relay, send, transfer or transport. Transmission serves to communicate oral and written messages. The transmission of a message may be non-verbal, verbal, or written. Regarding the transmission of written documents, status, form and method of transmission are important. Diplomatics provides the means for making the distinction between and among each of them.[23]

II.B.4.i. Form of transmission relates to the medium in which a document is received by the receiver. With respect to electronic transmission, for instance, the form of transmission refers to the physical final product of that operation and is magnetic. Generally, the form of transmission of most conventional documents is paper.

II.B.4.ii. Method of transmission refers to the way in which a document is delivered, the means of delivery. Although delivery may be through heat,

[23]Duranti, "Diplomatics (Part VI)," 8-9.

sound, light, or electricity, more commonly used means are hand, courier or regular mail, broadcast, fax, and electronic mail.

II.B.4.iii. Status of transmission describes the degree of completion of a document when it is communicated, either by filing it for later retrieval, or by delivering it. The status of transmission of a document may be draft, original or copy.

II.B.5. Receiver

Receiver refers to the juridical or human person who receives a document. Generally, the receiver is the person for whom the communication is intended, the addressee. The term 'receiver' implies that the process of receiving or receipt occurs. However, communication can occur over time. For example, registries are made for the purpose of communication, although not an immediate one. Moreover, this type of communication has a general, as opposed to defined, receiver.

II.B.6. Decoding

Decoding refers to the intellectual process of translating the message so that its ideas and/or meanings are understood and thus received. In other words, the symbols are interpreted. "We refer to the act of receiving messages,--for example, listening or reading--as decoding. By translating sound waves or words on paper into ideas you take them out of the code they are in, hence decoding."[24]

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[24]DeVito, *Human Communication*, 11.

II.B.7. Feedback

Feedback is the reversal of the communication process by the receiver who responds to the sender. Holt explains that "[T]he last step in the communication process is really the first step in a new communication sequence" and that its inclusion in the model is intended to highlight "the importance of what happens to a message after it is sent."[25]

For communication to occur it is not essential that acknowledgement be made, or feedback occur. When a report is written and distributed, a response directed to the source is not necessarily generated, although communication would take place when the receiver reads the document. Feedback is, however, a normal or common occurrence during organizational communication. Often, it is expected or is part of one's duty to respond to communication that is initiated for organizational purposes. The establishment of procedures for organizational communication generally indicates when routine responses are required.

II.C. Methods of Communicating

The methods of communication are non-verbal, verbal, and written.

II.C.1. Non-Verbal

Non-verbal communication does not employ or include words. Examples of non-verbal communication include gestures, facial expressions and other body language, graphical images, and various sounds such as

[25]Holt, *Management*, 325.

those emitted by bells, horns and sirens. Unless non-verbal communication is recorded for official purposes, this method of communication is of little relevance to the organization.

II.C.2. Verbal

Verbal means consisting of, composed of, manifested in, or pertaining to words.[26] Therefore, it includes both oral and written communication, and is so recognized in law. The term is commonly used to refer to spoken words (as in 'verbal agreement' or 'verbal evidence') and is thus confused with 'oral'. Verbal also refers specifically to a document "written, but not signed, or not executed with the formalities required for a deed or prescribed by statute in particular cases."[27]

II.C.2.i Oral means uttered, communicated, or transacted by mouth in spoken words; not written.[28] Oral communication may include conversations, meetings, and speeches. By its nature, oral communication is ephemeral, short-lived or transitory unless it is recorded. Therefore, within the organizational context, oral communication is considered informal and, therefore, unofficial. Normally, if oral communication is required for official purposes, procedures are established to record it (on audiotape, video tape or film with recording capability) or to write a transcription of it (minutes of meetings, notations of telephone calls and conversations).

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[26]*Oxford English Dictionary*, Volume XIX, 528.

[27]*Black's Law Dictionary*, 1558.

[28]*Oxford English Dictionary*, Volume X, 885; and *Black's Law Dictionary*, 1095.

II.C.2.ii. Written refers to that which is committed to writing and thus preserved.[29] In law a written instrument is "[S]omething reduced to writing as a means of evidence, and as the means of giving formal expression to some act or contract."[30] Diplomatics offers a contextually specific set of concepts with respect to written instruments or documents and writing. Duranti elaborates:

> What is a *document*? The term traditionally refers to a multiplicity of sources of evidence. Thus, we need to specify that diplomatics studies *the written document*, that is, evidence which is produced on a medium (paper, magnetic tape, disc, plate, etc.) by means of a writing instrument (pen, pencil, typing machine, printer, etc.) or of an apparatus for fixing data, images and/or voices. The attribute "written" is not used in diplomatics in its meaning of an act *per se* (drawn, scored, traced, or inscribed), but rather in the meaning that refers to the purpose and intellectual result of the action of writing; that is, to the expression of ideas in a form which is both objectified (documentary) and syntactic (governed by rules of arrangement).[31]

Documents serve the needs of formalization, the organizational structural component discussed in Chapter 1, by which organizational communications and actions are written. By nature the memory provided in documents is more reliable than that of the human mind.

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[29]*Oxford English Dictionary*, Volume XX, 628.

[30]*Black's Law Dictionary*, 1612.

[31]Duranti, "Diplomatics (Part I)," 15.

II.D. Organizational Communication

Often organizational communication is defined as human communication that occurs within the context of an organization.[32] The study of organizational communication is primarily concerned with the nature of information conveyed (made, sent, and received) within the organization's formal (the network of interdependent, official relationships) and informal (the 'grapevine') structural components.[33] While most authors make the distinction between formal and informal organizational communication, some, such as Pace and Faules, consider organizational communication to be concerned only with the formal or official systems used to transmit information throughout the organization.[34] In "Organization Theory: An Overview and an Appraisal," William Scott states his belief that the aforementioned ways of describing or analysing organizational communication overlook it "as a mechanism which links the segments of the system together."[35] He further comments:

> One aspect of modern organization theory is study of the communication network in the system. Communication is viewed as the method by which action is evoked from the parts of the system. Communication acts not only as stimuli resulting in action but also as a control and coordination mechanism linking the decision centers in the system into a

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[32]DeVito, *Human Communication*; Ford, et al, *Organization*; and Tubbs and Moss, *Human Communication*.

[33]DeVito, *Human Communication,* 325; Ford, et al, *Organization*, 320; and Tubbs and Moss, *Human Communication*, 17.

[34]Pace and Faules, *Organizational Communication*, 21.

[35]William G. Scott, "Organization Theory: An Overview and an Appraisal" in Matteson and Ivancevich, editors, *Management and Organizational Behavior Classics*, 148.

> synchronized pattern. Deutsch points out that organizations are composed of parts which communicate with each other, receive messages from the outside world, and store information. Taken together, these communication functions of the parts comprise a configuration representing the total system.[36]

More simply said by Ford, et al, communication "is the glue that holds organizations together."[37] Communication may be categorized as either external (to and from) or internal to an organization.

II.D.1. External Communication

Organizations exist within the greater context of the society and/or juridical system of which they are a part. Because of this interrelationship, organizations interact with other juridical and human persons. Thus, in the normal course of conducting its affairs, an organization may direct communication to outside agents (organizations, individuals) and receive communication from them. Telecommunications technology has facilitated a dramatic increase in external communication, which is differentiated further as informal (unofficial) and formal (official). The distinction between formal and informal is discussed in the next section within the context of internal communication. In the context of external communiction, the communication is to and from the organization and may be between and among organizational members and non-members.

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[36]Ibid. In footnote 40 on page 157, Scott credits ideas in this paragraph to Karl W. Deutsch, "On Communication Models in the Social Sciences," Public Opinion Quarterly 16 (1952): 356-380.

[37]Ford, et al, *Organization*, 319.

II.D.2. Internal Communication

Internal organizational communication refers to all verbal (oral and written) communication that occurs within the context of the organization. Internal communication is differentiated further as informal and formal.

II.D.2.i. Informal communication is oriented not to the organization but to individual humans who happen to be members of an organization, irrespective of their juridical role. In the strictest sense, then, it is not organizational communication, but it does occur within the context of the organization. Informal communication is the unsanctioned, interpersonal communication that occurs between and among organizational members.[38] It originates with social relationships (co-workers, friendships, special interest groups) and permits members to satisfy their need for social interaction.[39]

Commonly known as the 'grapevine', the structure by which informal communication is transmitted is unofficial, may start and end anywhere, and flows in any direction or pattern. While it may be used sometimes by management for social reasons, the 'grapevine' is never used for official or business purposes.[40] Due to its nature, informal communication does not

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[38]DeVito, *Human Communication*, 325; and Robbins, *Management*, 601.

[39]Holt, *Management*, 517; and Robbins, *Management*, 601.

[40]Holt, *Management*, 517. For example, if a corporation is about to officially announce a major layoff, management may start a rumour about the possibility in order to soften the blow. When the official announcement is made, the action is expected. This strategy was used by the Canadian Federal Minister of Finance, Paul Martin, with regard to his February, 1995 budget. By the time it was announced that 45,000 federal civil servants would lose their jobs, it was not a surprise.

meet organizational needs, particularly those for accuracy, completeness and reliability.[41] Thus, informal communication is not part of the office information system. However, informal communication cannot be ignored, particularly by management, because it, too, may affect the completion of organizational activities. Increasingly, this interpersonal communication is being written and transmitted via the electronic mail system. Therefore, it becomes a records management concern requiring executive level policy decision.

II.D.2.ii. Formal: Organizations are deliberately structured to carry out predetermined purposes and, therefore, the formal aspects of communication are most important to it. Formal organizational communications are those that are officially authorized and generated during the conduct of affairs. They follow reporting relationships that are predetermined by organizational structure and are governed by procedures.[42] As David Holt comments, "[E]very firm prescribes who reports to whom and what forms these communications will take."[43] Pace and Faules elaborate that while "the structure of an organization is flexible and may change in response to internal, as well as external, environmental forces . . . [R]elations among positions, nevertheless, change officially only by declaration of organizational officials."[44] This interrelated system of offices (hence, official) and reporting

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[41]Ford, et al, *Organization*, 320.

[42]DeVito, *Human Communication*, 325; Ford, et al, *Organization*, 320; Holt, *Management*, 515; Pace and Faules, *Organizational Communication*, 21; Robbins, *Management*, 598; and Tubbs and Moss, *Human Communication*, 353.

[43]Holt, *Management*, 515. In this context 'firm' is synonomous with 'organization'.

[44] Pace and Faules, *Organizational Communication*, 21.

relationships through which formal organizational communication is conducted, is synonymous with the office information system.

Historically, the modern office underwent major changes around the turn of the century when systems-based managerial philosophy and practices were introduced into the office environment.[45] With the proclaimed purpose of increasing efficiency and effectiveness while gaining control of growing organizations, "[T]he ideology of systematic management demanded increasing written communication to provide consistency, exactness, and documentation."[46] Concurrently, organizations developed procedures for making, sharing, and keeping documents. Ford, et al, Yates and others observe that oral communication becomes an inefficient way of administering organizations as they grow. "[S]ystems of communication must be designed to ensure that organization members get the information they need to make decisions consistent with organizational goals."[47] Under the impetus of systematic management, "internal communication came to serve as a mechanism for managerial coordination and control of organizations."[48]

The office information system is necessary also to preserve authority and accountability. It provides a means by which the executive level receives

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[45]JoAnne Yates, *Control Through Communication: The Rise of System in American Management* (Baltimore: The John Hopkins University Press, 1989), xv.

[46]Ibid., 22.

[47]Ford, et al, *Organization*, 320. See also Yates, *Control*, 2.

[48]Ibid., 319. See also Robbins, *Management*, 598; and Yates, *Control*, xv.

an account of organizational activities and, therefore, the means through which the executive may meet its own responsibilities for the whole organization.

> "Going through channels" lets the boss know what is happening at subordinate levels and makes it reasonable for the boss to be held accountable for the actions of subordinates . . . having the organization's main communication channels contained within the hierarchy structure ensures that sufficient information accompanies "the buck."[49]

Secondarily, if managed effectively, the office information system is intended to be used to differentiate the important from the unimportant by controlling the amount and kind of information received by decision-makers. It is

> designed to make certain that only enough information goes to the specific decision makers who need it. Every organization is overloaded with information. Using the formal channels expressed in the organization chart to screen out the irrelevant reduces that information to a workable quantity.[50]

This process is described in the next section and later in a discussion of the components of the office information system.

II.E. Transmission, Flow or the Linking Function of Communication

In reality, communication does not flow. However, the term 'flow' is commonly used to discuss the transmission of information.[51] Within the

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[49]Ford, et al, *Organization*, 320.

[50]Ibid.

[51]*Concise Oxford Dictionary*, 467. The term flow refers to the movement of a liquid or it is used as an adjective to describe the movement of non-liquid material and means 'undulate'.

office information system, the transmission of written information follows predetermined, structured patterns. Lines of communication generally reflect the organizational structure and provide much information about the relationships between and among the administrative units and offices. Internally, communication flows in many patterns or combinations of patterns. Most well known are the traditional directions identified with the hierarchical structure of organizations and partially represented by organization charts: (1) vertical (both up and down), and (2) horizontal or lateral within and between organizational units. The office information system spans organizational levels and operates multidirectionally as well. As Robbins notes, communication follows either "the authority chain of command or that [pattern which] is necessary to do a job."[52] Usually, the required articulation of official information will be made using a variety of documentary forms (contracts, correspondence, manuals, memoranda, minutes, newsletters), media (paper, film, magnetic material) and methods of transmission (conventional, electronic and voice mail).

II.E.1. Downward Communication[53]

Those invested with authority within the organization need to disseminate information to other members. Downward communication is transmitted from higher or superior levels in the organizational hierarchy to lower or subordinate levels. Written communication is initiated by the

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[52]Robbins, *Management*, 598.

[53]Ford, et al, *Organization*, 320; Holt, *Management*, 515; Robbins, M*anagement*, 598-599; Tubbs & Moss, *Human Communication*, 361; and Yates, *Control*, 66-77.

organizational executive, a superior department, organizational unit or position and is addressed and transmitted to a subordinate department, organizational unit or position.

The purposes of downward communication are: (1) to inform, (2) to provide direction or give instructions, (3) to coordinate and control functions and activities, and (4) to evaluate organizational operations and administration including members' performance of duties, functions and activities. Examples of information that is distributed downward throughout the organization are statements of organizational purpose, decisions, policies, procedures, rules, work methods, and so forth. Superiors create job descriptions, assign work, define schedules, point out problems that need attention and control tasks for which they are responsible. Information about job expectations, performance requirements, and objectives that are set for departments, organizational units and members are relayed downward also.

II.E.2. Upward Communication

To perform their own functions and activities, those with organizational authority need to receive information from other organizational members. Upward communication is transmitted from lower or subordinate levels in the organizational hierarchy to higher or superior levels. Written communications are initiated by a subordinate department, organizational unit or position and are addressed and transmitted to a superior department, organizational unit or position.

The purpose of most upward communication is (1) to provide organizational management with information needed for evaluation and decision-making, and (2) to provide those with the ultimate responsibility (executive-level management) with the means of ensuring accountability requirements can be met.[54]

Generally, upward communication is in the form of reports designed to keep authority positions or management informed or advised. Usually reports are created by summarizing the contents of records or action-related documents.[55] Often the content and format of reports are predetermined and they must be submitted to specific departments, organizational units or positions at routine intervals (daily, weekly, monthly, annually). They may also be submitted at periodic or intermittent occasions (as requested or needed). Examples include reports on administrative and operational activities (problems, production; progress), finances (assets and liabilities, budget, cash flow), statistics (sales, warranty claims), surveys (market, employee attitude) and responses to management inquiries.

Upward communication may also include requests from subordinates to superiors that actions be undertaken, clarifications be made, decisions be reviewed, or other information be provided by a superior to a subordinate. Again, the purpose of subordinate-initiated documents is to facilitate the work

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[54]Tubbs & Moss, *Human Communication,* 369; and Robbins, *Management*, 599.

[55]Yates, *Control*, 77-94, provides an analysis of documents created in upward reporting.

necessary to meet organizational objectives. Examples include making or soliciting suggestions related to productivity or conditions of work.

II.E.3. Horizontal Communication

Horizontal communication refers to the lateral transmission or exchange of documents within the organizational structure. It may occur between and/or among any horizontally equivalent members (peer to peer) at the departmental, organizational unit, or position level. Usually, the communication occurs within the same level and within the same unit, although not necessarily. As Ford, et al, remind us "[H]orizontal communication can also occur between people at similar levels but in different areas, sections or departments."[56]

The usual purposes of horizontal communication are (1) to facilitate the coordination and integration of organizational activities, and (2) to share information that is necessary for the conduct of affairs.[57] Task forces or committees comprising representatives from line and staff positions in several functional areas are examples of the coordinating function of horizontal communication.[58]

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[56]Ford, et al, *Organization*, 320.

[57]Holt, *Management,* 516; and Tubbs and Moss, *Human Communication*, 372-373.

[58]Holt, *Management*, 516-517; and Tubbs and Moss *Human Comunication*, 373-375.

II.E.4. Diagonal Communication

Diagonal communication, also known as a 'bridge', "cuts across functions and levels in an organization."[59] It occurs when a member in a subordinate position in one department or organizational unit by-passes her/his own superior to communicate with a higher position in another department or organizational unit. Thus, the transmission of the communication embodies both lateral and vertical directions. An example provided by Robbins is that of "a supervisor in the credit department [who] communicates directly with a regional marketing manager, who is not only in a different department but also at a higher level in the organization."[60] The process may be in the opposite direction as well.

While diagonally transmitted communication departs from the traditional, hierarchical 'chain of command', an organization may approve this flow of communication for its own purposes. Generally this pattern of communication is believed to increase the efficiency and the effectiveness of a routine process or procedure. Besides expediting action, diagonal communication "prevents others from being used merely as conduits between senders and receivers."[61]

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[59]Robbins, *Management,* 599.

[60]Ibid.

[61]Ibid.

II.E.5. Patterns or Networks of Communication

There are several other patterns of communication that are commonly known as 'networks'. Models of these patterns have been examined or developed to expand on the two-person model described earlier.[62] Most studies of communication networks have occurred in laboratories, and the artificial settings and small groups used limit the application of the results. Despite this, there is some acceptance of the validity of the patterns identified.

The patterns of communication are based upon combinations of the vertical and horizontal dimensions of organizations and other structural groupings such as project groups and committees. Because there are limited ways to describe the office information system, they are mentioned as examples of communication flows represented by the organizationally-structured relationships. An organizational analysis would show whether any of these combinations occur within a given organization. Five common networks so described are the 'chain', 'Y', 'wheel', 'circle' and 'all-channel'.[63]

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[62]Ford, et al, *Organization*, 325.

[63]Ibid., 325-326; and Robbins, *Management,* 599-600. Both monographs include diagrams of the patterns of communication. The descriptions of each pattern are drawn from Robbins, *Management*, 560. Ford, et al, refer to the 'chain' in the text on page 325 and credit Figure 13.3 on page 326 as follows: "Four network types and their communications characteristics. (Source: Philip V. Lewis, *Organizational Communication: The Essence of Effective Management* [New York: John Wiley & Sons, 1986], 51, as adapted from Alex Bavelas and Dermot Barrett, "An Experimental Approach to Organizational Communication," *Personnel* 27 [March 1951], pp. 370-371. Used by permission.)"

II.E.5.i. The 'Chain' represents a multi-level vertical hierarchy or the traditional 'chain of command' in which communications can move only upward or downward. This type of network would be found in direct-line authority relations with no deviations. A subordinate position would be authorized to communicate only with its direct supervisory position.

II.E.5.ii. The 'Y' represents two subordinates reporting to a supervisor, with two levels of authority above the superior position. This, in effect, represents a four level hierarchy.

II.E.5.iii. The 'Wheel' normally represents four subordinate positions that do not officially interact with each other but which each report to the same superior position. All communications are directed through the superior position.

II.E.5.iv. The 'Circle' represents positions interacting with adjoining positions but no further. It represents a three level hierarchy in which there is vertical communication between superiors and subordinates and lateral communication only at the lowest level.

II.E.5.v. The 'All-Channel' pattern represents positions that communicate with four other positions. It is assumed to be the least structured and restrictive because all positions have equal authority under the circumstances. This pattern is illustrated by the task group or committee in which no position formally or informally assumes a superior position.

II.F. Components of the Office Information System

Among the purposes served by the office information system is to allow for the identification and segregation and control of documents that are essential to the accomplishment of organizational purposes from those that are not. It is thus necessary to examine the components of the office information system, which may be divided into (1) the library system, (2) the documentation system, and (3) the record system. Traditionally, each of these subsystems of the office information system could be identified by referring to their physical characteristics or location. While this was never an intellectually satisfactory method, the use of computer systems within the office environment makes it also impractical. Therefore, the nature, function and purposes of each system need to be conceptually identified.

II.F.1. Library System

The library system may be defined as the whole of the processes, procedures, and by-products of the activity of searching sources of information. The components of the library system are: (1) the context for the action of searching, including its purpose, (2) the persons carrying out such activity, (3) the processes of searching, and (4) the by-products of the searching activity.

Within the organizational context, the purpose of the library system is to provide support to members by ensuring that individuals have information available to assist in the performance of their functions and activities. However, because it serves to support the conduct of mandated functions

and activities, but is not a means for and the residue of it, a library system (including reference material) is not at the core of bureaucratic administration. Typically, the reference process is informal and not regulated. Its by-products do not constitute evidence of organizational activity, and are not directly relevant to the organizational purpose. The ever-increasing volume of reference material, the concern of organizational members about its physical availability, and its uncontrolled pervasiveness creates information management concerns. It is necessary to identify reference material in a way that it may be segregated easily from the other two sub-systems of the office information system.

To begin the identification process one must understand the concepts involved in the idea of using written communication for reference. Reference is: (1) the act or instance of referring, act of looking up (as in passage), consulting or applying to another person or source for information, (2) the referring of a matter for decision or settlement of question given to an authority, (3) an allusion, mention, or direction (as in citation giving page) to some source of information, book, etc., where information may be found, (4) use or recourse for purposes of information, and (5) to be used not for continuous reading but to consult on occasion, (as in reference library).[64]

Most reference material, particularly library material, is autonomous, self-sufficient and reaches its own purposes by itself. An item is never linked to any other item other than by a connection that is analogical (e.g., books on

[64]*Concise Oxford Dictionary*, 1040; and *Oxford English Dictionary*, Volume XIII, 463.

the same subject, by the same author, etc.). By nature, reference material is meant to be purposefully collected, not naturally accumulated. Reference materials are not intended to be unique--they are meant to be published, disseminated, and exist in multiple copies. For this reason, most reference material is commercial in nature, meant for the market. Reference material created within the organization for its own purposes, however, is used primarily to support organizational activities, even if it is often also available for sale.

While the purpose for using it is common to all, reference material, the source, method of transmission, and form of material varies. Reference material may be generated internally or externally to the organization, and be systematically acquired, occasionally solicited, or unsolicited. It includes grey literature, narrative documents, traditional library and other materials that are normally published once or occasionally.[65] Examples are books, catalogues, price lists, research and other reports, standards, studies, surveys, and service manuals provided with specific products. Reference material also includes conventionally distributed serial publications (newspapers, magazines, journals), films, radio and television broadcasts, and software that is collected but is not intended for use in the conduct of affairs. Now much reference material is available through computer-based distribution

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[65]A detailed description of grey literature is to be found in David N. Wood, "Management of Grey Literature" in Durance, compiler, *Management of Recorded Information*, 61-68. For an explanation of narrative documents, see Duranti, "Diplomatics (Part II), 9.

systems. These include commercial, on-line databases (bibliographic, image) and internally-generated databases.[66]

The library system may be further differentiated into unofficial (informal) and official (formal).

II.F.1.i. The Unofficial Library System includes all actions of consultation of sources and the reference material used within the organizational context without following a prescribed procedure, or not according to express requirements. It is used to assist in the completion of work-related tasks by keeping those responsible for them informed, educated and trained. The process is usually self-directed by the individual organizational member. Included in the system are personal materials brought to work voluntarily or

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[66]"A database is a collection of data stored on a computer storage medium, such as a disk, that can be used for more than one purpose. For example, a firm that maintains a database containing information on its employees will be able to use the same data for payroll, personnel, and other purposes." (Michael Covington and Douglas Downing, *Dictionary of Computer Terms*, Third Edition (Hauppague, New York: Barron's Educational Series, Inc., 1992), 92-93.)

There are approximately five types of databases available. These are categorized as flat file, hierarchical, network, relational and hypermedia models.

(1) The flat file database does not use relations in its structure. It may be compared to cards in a file box.

(2) The hierarchical database model uses the nest relations familiar to those who use the common tree-like structure or chain configuration for organizing computer 'files' within directories.

(3) The network database model uses associative relations to link independent entities and their particular nesting relationships together as units.

(4) The relational database is structured by using the entity concept and is made up of independent tables. The relationships are formed by providing keys within each table that can link the tables or data elements within them to each other, to other tables, to data elements within other tables, etc., for different purposes.

(5) The hypermedia database model is the most dynamic and does not contain a structure as exists with the previously described types of databases. The links are either "hot" (automatic within applications) or "warm" (user defined), but both are invisible and fleeting.

delivered to an individual's place of employment. Other examples include personal notes, photographs of social activities and so forth. The unofficial library system, just like the informal organizational communication system, does not directly serve organizational purpose.

II.F.1.ii. The Official Library System is that which is authorized by the organization to provide support for operational and administrative functions and activities. It may range from the occasional purchase of reference material that is made available on an ad hoc basis to the establishment and support of a proper library, housed in a specific location, professionally staffed and operated. Reference material that may be authorized by organizations include the externally-generated library material, manuals (reference, service and technical), newspapers and other periodicals, and commercial on-line databases. Another example of reference material would be the teaching aids and student materials provided by contract training specialists hired by the organization for employee education and training.

II.F.2. Documentation System

The documentation system may be defined as the processes, procedures and by-products of accumulating and generating documentation during practical activity that ultimately is aimed towards organizational purpose. The components of the documentation system are similar to those of the library and the record system: (1) the context for the action of documentation, including its purpose, (2) the persons acting in the context or

documenting, (3) the processes of documentation, and (4) the by-products of the procedures of documentation.

A Glossary for Archivists, Manuscript Curators and Records Managers, published by the Society of American Archivists, defines documentation within two contexts as follows:

> 1. In archival usage, the creation or acquisition of documents to provide evidence of the creator, an event, or an activity. 2. In electronic records, an organized series of descriptive documents explaining the operating system and software necessary to use and maintain a file[67] and the arrangement, content, and coding of the data which it contains.[68]

Due to the circumstances of their creation, the documents resulting from the procedure of documention qualify as archival documents; that is, they are made and received by the organization in the course of practical activity and preserved for its own purposes. While documentation provides evidence of the organization and how it functions, it nevertheless is not action-related. In other words, documentation is not the means for or residue of transactional activity and, therefore, does not provide evidence of actions and transactions. Its importance relates to the contextual information it provides about the

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[67]Lewis J. Bellardo and Lynn Lady Bellardo, *A Glossary for Archivists, Manuscript Curators and Records Managers*, Archival Fundamental Series (Chicago: Society of American Archivists, 1992); hereinafter cited as SAA *Glossary*. In this context the SAA *Glossary* is referring to the third definition of file given on page 14 as: "In *data processing*, two or more *records* of identical layout treated as a unit. The unit is larger than a *record* but smaller than a data system, and is also known as a data set or file set." The definition of record in this context is provided on page 28 as: "In *data processing*, a grouping of interrelated data elements forming the basic unit of a file," as defined above. This is an example of the terminological confusion existing among disciplines.

[68]SAA *Glossary*, 12.

organization (creator), its functions and activities. Documentation is, therefore, unique to a given organization.

The purpose of an organizational documentation system is to provide direct and indirect support for operational and administrative functions and activities. It does this by providing guidance, information, and instruction about the accomplishment of a given organizational activity. While it may be used to support activity directly (application systems software), documentation tends to support activity indirectly because it is used primarily for reference purposes.

The types of documents comprising organizational documentation are numerous and include inventories, personnel telephone lists, part numbers and other reference materials such as the still and animated images of conventional photographs, computer-generated and stored images and videos. As examples, the content of these images may be buildings, employees, equipment, events, manufacturing processes, and products. Reports, studies, surveys and other information that is useful or related to the performance of organizational functions and activities are used for reference, too. Also included in documentation are duplicates or multiple copies of original documents (created for other purposes) that are circulated, distributed and filed for reference purposes. Organizationally sponsored announcements posted on bulletin boards and distributed newsletters could fall into this category as well. Documentation also includes classification schemes, retention and disposition schedules, instructions for filing

documents, retrieval systems for both the reference material and the record system (filing lists, indices, thesauri, etc.).

Of concern to modern organizations is a particular type of documentation that results from using databases containing aggregated or disaggregated data and information. To be useful, computer-resident databases require database management systems or programs.[69] Generally, a database management system is used to "merely call[s] up stored information and present[s] it to the user unchanged."[70] The equivalent non-automated activity occurs when humans search several sources or different reference material for information. When seen in this way, databases, separate from the database management systems used to manage them, qualify as reference material identifiable within the library system. However, whenever the presented data, information or documentation is accumulated, manipulated and/or used during an organizational activity for organizational purposes, the documentation resulting from the activity qualifies as archival. For elaboration, the geographical information system (GIS) and the observational database are used as examples.

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[69]*Dictionary of Computer Terms*, 93-94, explains: "Database management is the task of storing data in a database and retrieving information from those data. There are three aspects of database management: entering data, modifying or updating data, and presenting output reports. . . . The main purpose of a database management system is to make it possible to obtain meaningful information from the data contained in the database." The database management system qualifies as system documentation. See pages 72-73 of this thesis.

[70]Ibid., 125.

Geographical information systems are automated mapping and drawing systems that are

> increasing[ly] use[d] in organizations which are not necessarily geographically oriented organizations, such as mapping and surveying groups, as well as in the cooperative use and management of data from a variety of organizations, both public and private.[71]

In an appropriately-entitled article, "What is This Thing Called GIS?," Gary North says

> A GIS is a computer hardware and software system used to collect, inventory, manage, manipulate, analyze, and display spatially referenced digital data sets.[72]

In reality, a geographical information system is a multi-provenancial documentation system that is organized on the basis of geography. A GIS is compiled from individual data and information included in the record systems of the contributing agencies. Each GIS is unique in the way it is assembled, organized, and interrelates the information contained within it. That particular part of the GIS consisting of the information contributed by each juridical person is authentic to the originator itself because it was created and/or accumulated purposefully while conducting its own affairs. Often the multiple creators of a GIS will offer the use of its system and the information it contains, commercially or otherwise. A GIS, or parts thereof, thus become available for inclusion within the office information system of any given organization that avails itself of the services offered.

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[71]Katharine Gavrel, *Conceptual Problems Posed by Electronic Records: A RAMP Study* (Paris: UNESCO, 1990), 23.

[72]Gary W. North, "What is This Thing Called GIS?" Portolan 1/89 [1989]: 9.

Observational databases are compiled when computerized systems (hardware and software) automatically register that which they observe, not activities. The circumstances of their creation is such that they are made by automated processes; that is, they are not created by juridical persons involved in purposeful practical activities. The images resulting from the recording process are intended for dissemination (as final products), however, they may or may not be used by a given organization.

If data and information (textual or image) contained in a geographical information system or an observational database are simply accessed (on-line) by an organization and used for reference purposes only, then the products of GIS and observational databases both rightfully belong in the (conceptual) library system. If, however, a juridical person receives data and information from a GIS or observational database, configures, organizes or otherwise manipulates it, saves it to a medium in a readable and intelligible form, and uses it for its own purposes in support of an organizational activity, the information thus enters the organization's documentation system. Despite the original intent governing the compilation of the GIS or observational database, the documentation thus created is unique to that organization. Furthermore, if information originally from a GIS or observational database is included in a record that is itself evidence of an action or transaction, (the text and/or image contributes to the intellectual configuration of the record), the information thus enters the organization's record system. These examples demonstrate that the correct assignment of

a document to the library, documentation, and/or record system, depends upon knowing the circumstances of its creation and the context of its use.

If the information system is electronic in all or some of its parts, documentation includes system documentation and user documentation. Documentation related to the computer system may be further divided into system documentation and user documentation.

II.F.2.i. System Documentation: While the creation and maintenance of documentation are important generally, it is particularly necessary with electronic documents over which it is impossible to have physical control in the traditional sense. Computer system dependency extends to the documentation needed to understand the operation of any given system. To operate so it can serve a useful purpose, computer hardware needs instructions which are provided by software. The set of programs or instructions that tell the equipment what to do is classified into operating systems software and applications software. Without the operating system, the computer cannot recognize input from devices such as the keyboard or act upon commands initiated by the user. Applications software provides a set of instructions that allows people to use the computer as a tool to solve particular applied problems. Types of applications software include database, spreadsheet, word processing and utility programs. Sets of instructions include database management systems that provide information on the operation of linking data to applications and to documents.

Access to the electronic record is dependent upon the availability of accurate and complete documentation. Margaret Hedstrom explains in *Archives & Manuscripts: Machine-Readable Records* that "[D]ocumentation is an essential component of an automated records system and a key source of information about the records of an automated system."[73] Both systems documentation and program documentation are required to provide the knowledge needed to access documents. To be readable/accessible one needs at the very minimum a record layout that shows the location of items in a machine readable file and a code book.[74] Meta data, or "[D]ata describing data and data systems; that is, the structure of databases, their characteristics, locale, and usage" must be created and maintained.[75] Without documentation the data in electronic records is unusable and unintelligible. Unfortunately, as Lisa Weber laments, "it is all too common for documentation not to exist."[76] Other important sets of instructions include the application of various technical standards (International Resource Dictionary Standard, Standard Query Language, telecommunications) that are embedded within programs.

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[73]Margaret L. Hedstrom, *Archives & Manuscripts: Machine-Readable Records* (Chicago: Society of American Archivists, 1984), 21.

[74]Ibid.

[75]SAA *Glossary*, 22.

[76]Lisa B. Weber, *Electronic Records Issues: A Report to the Commission,* Commission Reports and Papers No. 4, March, 1990, National Historical Publications and Records Commission (Washington, D.C.: National Archives and Records Administration, 1990), 3.

II.F.2.ii. User Documentation instructs users of computers on the methods of carrying out their activities using operating and application programs. The instructions may be created and transmitted by traditional methods and forms. Typically these are conventional instruction manuals on paper. Often instructions are available within the computer system via on-line tutorials, help screens and pull-down menus. These sets of instructions are necessary to provide the contextual information or procedures used for the creation of electronic documents.

II.F.3. Record System

The third component of the office information system, is another subsystem identifiable as the record system. It will be examined in the next chapter.

CHAPTER 3

THE RECORD SYSTEM

I. RECORD SYSTEM

The terms 'record system' and 'recordkeeping system' appear in the archival literature frequently, but until recently there have been few attempts to define them. Before 1993-1994, none of the standard sources, such as discipline related dictionaries, glossaries, articles, or monographs, mentioned the terms. The 1993 edition of the Australian publication, *Keeping Archives,* defines a recordkeeping system as "[T]he principles, methods and processes devised for capturing, arranging and maintaining the records of an agency or person."[1] This text also defines the term 'record creation' but not 'record system'.

Historically, North American archivists have focussed upon archival documents after their usefulness to creators ceases. For the past fifty years the overarching framework governing the management of them has been based upon the concept of 'life cycle' and upon whom was responsible for the documents at each stage of it. The framework presents an ordered checklist of actions performed on the documents while in the care of two groups, that

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[1]Judith Ellis, editor, *Keeping Archives*, Second Edition (Port Melbourne, Australia: D.W. Thorpe in association with the Australian Society of Archivists, Inc., 1993), Glossary, 477.

is, (1) the originating office and/or records manager, and, upon transfer of custodial responsibility, (2) the archival institution and/or the archivist. Furthermore, while in the care of the former group, archival documents were called records, but while in the care of the latter group, they were called archives. A further distinction was made between organizational documents (records) and documents of individuals (manuscripts). In the United States this dichotomy arose from the writings of T.R. Schellenberg.[2] The segregation of archival documents into categories that are not based upon the nature of the material perpetuated artificial distinctions of competences and methods. However, concern over the fate of electronic records has led to increased consideration of archives as a whole of documents sharing the same circumstances of creation, independently of the phase of their life cycle and of the nature of their creator. The term commonly used for this whole is becoming 'record system' as gradually the term record is replacing that of archival document.

I.A. Definition and Purpose

The record system is a component or subsystem of the office information system. However, given its complexity and relative autonomy, the record system constitutes a whole by itself. A record system may be defined as the whole of the procedures and by-products of recordmaking and recordkeeping. There are two necessary conditions for a record system to exist. First, there must be records, that is, written by-products of

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[2]For an analysis of the conceptual and historical basis of the dichotomy, see Livelton, "Public Records: A Study in Archival Theory."

administrative and operational actions; second, there must be the procedurally controlled activities of making (creating) and keeping (maintaining) records.

Recordmaking refers to record creation. Record creation is the act of making or bringing into existence and/or receiving or accumulating records. A record is considered 'made' when it is finished, that is, its "compilation in its intended form is concluded, and the record is set aside for transmission (over time or over space), reference and use, or subsequent action." A record is considered 'received' when its transmission is concluded and "it reaches the intended addressee and is set aside for transmission, reference and use, or subsequent action."[3] Recordkeeping refers to record maintenance; it presumes the creation of a record and the implied decision to keep it. Record maintenance is the whole of the actions taken to care for records, including but not limited to organize and make them available for use, to protect their integrity or essential characteristics, and to ensure their security and proper preservation.

Thus, a record system is made up of the following components: (1) the legal, organizational, and administrative context for acting, (2) the persons acting in those contexts, (3) the procedures for acting, incorporating those for records creation and maintenance, and (4) the residues of activity, that is, records.

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[3]Luciana Duranti and Terry Eastwood, "The Preservation of the Integrity of Electronic Records," A Project funded by the Social Sciences and Humanities Research Council of Canada. Drafts of Hypotheses' templates.

The purpose of a record system is to provide the means for routinely creating and maintaining those records necessary for the proper and effective conduct of affairs. In our juridical system, to serve accountability purposes is one way of 'properly conducting affairs'; the means for satisfying accountability are records. The primary usefulness of archival documents or records is their capacity to carry out actions and to provide evidence of them. Their significance relates to the fact that they are the necessary means for the purposeful administrative activity (actions and transactions) of which they provide evidence. Records also convey the knowledge needed for performing functions and activities specified in the organization's mandate. As precedents, they provide a means of reviewing and auditing decisions and aid in current and future decision-making. They provide the means for organizational self-education or learning from past mistakes, as they maintain continuing organizational memory and ensure that the individual memory is available to the organization.

I.B. Organizational Accountability

Organizational accountability, the other purpose of a record system, is the obligation of organizations to account for their actions. To account, organizations need procedures that are controlled, routine and reliable to generate records that are authentic, complete and trustworthy. Organizational accountability may be differentiated into administrative and legal accountability.

I.B.1. Administrative Accountability

Administrative accountability pertains to the proper execution or management of organizational affairs, be they private (business) or public (government). The concepts of competence and responsibility are implicit to the understanding of accountability. "Competence is the authority and capacity of accomplishing an act," or the area of responsibility within a function. "Responsibility is the obligation to answer for an act."[4]

Sometimes administrative accountability is further differentiated into fiscal, operational and historical. Fiscal accountability refers to the legal and/or fiduciary responsibility to account for money. Operational accountability relates to the requirement to discharge properly duties arising from mandated organizational functions and purpose. Historical accountability arises from the need for continuing organizational survival.

Proper management of organizations requires proper management of organizational records. Accountability for the operation of an organization and, by extension, the record system necessary to support the organization's primary functions, rests with the executive level management or administrators. Jane Parkinson reminds us that

> the degree of accountability of the office depends on the degree of responsibility, so that senior officials are in fact under a greater and longer-term obligation to account for their

[4]Duranti, "Diplomatics: New Uses for an Old Science (Part III)," Archivaria 30 (Summer 1990): 8-9.

> actions than those lower in the hierarchy, and treatment of their records ought to reflect this.[5]

Senior administrators must account not only for their own actions but also for those functions and activities delegated to subordinate positions. When delegation of any function or activity occurs, the responsibility for the means and evidence of accountability, that is, the creation and maintenance of necessary records, is presumed to be delegated also. While the duty of delegates to account and the concurrent responsibility for records are usually implied in practice, this implication must be made explicit or it will not be taken care of properly. Still, despite the obligation of each organizational position to account for actions, the ultimate obligation to account rests with those positions responsible for the whole organization, the executive ones.

I.B.2. Legal Accountability

Legal accountability is the formalized obligation to account to those who originally delegated rights and obligations to organizations, the citizenry. Legal accountability commonly is satisfied by complying with legislated rules and regulations, including those requiring the proper creation and maintenance of specific records.

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[5]Jane Parkinson, "Accountability in Archival Science," Master of Archival Studies Thesis, University of British Columbia, 1993; 51.

II. COMPONENTS OF AN INTEGRATED RECORD SYSTEM

Integrated refers to being combined into a united and undivided whole. The term also refers to "uniting into one system several constituents previously regarded as separate."[6] As previously mentioned, in the past, the constituent parts of the record system, recordmaking and recordkeeping, were viewed and treated as separate entities. Traditional management practices were developed which supported and perpetuated the segregation. In reality, the parts of the record system are intertwined, interconnected, and governed by relationships. However, while understanding this unity, it is nevertheless necessary to separate conceptually the parts of an integrated record system for purposes of analysis.

II.A. Context

Chapters 1 and 2 discussed the legal, organizational and administrative context for acting. The legal context is that of the juridical system within which an organization operates. The organizational context is the whole of the organization, including how it structures itself to accomplish its mandated purpose. The administrative context for acting is constituted by the way in which an organization conducts its affairs or executes its activities through its structures of authority (offices, competence) and functions.

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[6]*Oxford English Dictionary*, Volume VII, 1065.

II.B. Persons

A necessary condition for acting within a given context is the existence of persons with the capacity to act. As discussed in Chapter 1, persons are physical or juridical entities that the juridical system recognizes as having the capacity to act, that is, to generate consequences based on their will. An organization, its departments, organizational units, offices, and positions with the capacity and authority to act are juridical persons.

An organization, acting within its capacity and authority, is the creator of its record system. Through the process of delegation, an organization disseminates its rights and obligations to act, including those to create and maintain its records, to its organizational units and positions. Specific to the record system, and more particularly to records, the persons with the capacity to act are differentiated into: (1) author, (2) addressee, (3) writer, (4) countersigner, and (5) witness. The concurrence of the former three persons is necessary for the existence of a record, while involvement of the latter two persons in the creation of a record is optional.[7]

II.B.1. Author

Author refers to the "person(s) competent for the creation of the document, which is issued by him or his command, or in his name." While it is not necessarily the case, the author of a record usually coincides with the person who does the action referred to by or put into being by the record, or of which the record is the outcome. The author of such records tends to be

[7]Duranti, "Diplomatics (Part III)," 5, 13.

the person competent both to act and to document the action. However, "[S]ometimes the person competent to document an act is different from the author of the act itself." For example, a lawyer may author the last will and testament of a person, but the testator is competent for the actions of which the document speaks.

II.B.2. Addressee

Addressee refers to the "person(s) to whom the document is directed" or for whom it is intended. The existence of an addressee implies the author's intent to transmit the record or communicate its content. However, the addressee is not necessarily the person to whom a record is transmitted, delivered, or by whom it is received. With respect to an action and its documentation, the addressee of a record may or may not coincide with the addressee of the action put into existence or referred to by the record.

II.B.3. Writer

Writer refers to the originator or the "person(s) responsible for the tenor and articulation of the writing" or the intellectual form of the record. The author of a record may also be the writer, or the writer may be a delegate or representative of the author(s). However, because they are not usually competent persons with the appropriate authority, secretaries, clerks, or scribes can not be the writers of the documents they compile.

With electronic documents, the originator, the person from whose address the document is transmitted, might be a further person different from both writer and author.

II.B.4. Countersigner

While the presence of the countersigner is not necessary for the existence of a record, its involvement may be required by procedure or form. Countersigner is the person(s) who "has the special function of validating the physical and intellectual form of the document and of guaranteeing that the document was created according to the established procedures and signed by the appropriate person." For instance, the countersigner of a by-law would be the city clerk who signs it. The countersigner is only responsible for validating that the record presents all of the elements required for its effectiveness, not for its content or articulation.

II.B.5. Witness

Witness refers to the person(s) who signs a record "to confer solemnity on a document, or to authenticate the signature of the author, . . . or to validate the content of the document, or its compilation, or to affirm that an act for which both oral and written form are required, such as an oath, took place in his presence." Again, while the presence of the witness(es) is not necessary for the existence of a record, their involvement may be required by procedure or form.[8]

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[8]All statements in quotations in sections II.B.1 through II.B.5 are from Duranti, "Diplomatics (Part II)," 5-8.

II.C. Procedures

Procedures for acting, incorporating those for records creation and maintenance, constitute the next component of the record system. They may be differentiated into: (1) 'conventional' procedures and (2) automated system procedures. While 'conventional' and automated system procedures are fundamentally the same, the distinction is made here only to highlight the existence of particular procedures which are operational within computer systems and to which attention must be paid with respect to electronic records.

II.C.1. 'Conventional'

A procedure is a way of proceeding or mode of conducting business or legal action. Governed by a body of written or unwritten rules, a procedure comprises the formal sequence of steps, stages or phases undertaken to carry out an activity (actions and transactions).[9] Simply for the purpose of identifying the procedures involved in the record system, they are separated here into those for record creation and those for record maintenance.

II.C.1.i. Creation Procedures govern "the formation of the record and/or its participation in the act."[10] Records are the by-products of the creation procedures which generate them.

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[9]Duranti, "Diplomatics (Part II)," 13, "Diplomatics (Part IV)," 11, and U.B.C., SLAIS, *Select List of Archival Terminology*, 15.

[10]Duranti and Eastwood, "Preservation of Integrity."

II.C.1.ii. Maintenance Procedures comprise the whole of those procedures governing the actions undertaken to care for the records resulting from the creation procedure. As maintenance includes all the functions and activities necessary for recordkeeping (identification, arrangement, classification, disposition, custody, preservation, storage, and so forth), there would be specific procedures to serve each purpose.

II.C.2. Automated System

Within the context of computer systems, a procedure is "a miniature program that is part of a main program. The procedure is executed when the main program calls for it."[11] The *Dictionary of Computer Terms* further explains the two primary advantages to using procedures when writing programs:

1. Often there will be a set of instructions that must be executed at more than one place in a program or in several different programs. Defining those instructions as a procedure saves work and memory space. . . . [A given] procedure can be included in any program where you need to [do 'X'].

2. A large program is easier to understand if it consists of procedures. Each procedure should have a well-understood purpose."[12]

Programming is "the process of writing instructions for a computer to carry out," or a program.[13]

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[11]*Dictionary of Computer Terms*, 265-266.

[12]Ibid.

[13]Ibid., 267.

Remembering the definition of a procedure, the similarity between an automated system procedure and any other one becomes more apparent. The purpose of any procedure is to provide guidance or instruction about the steps necessary to complete an activity. Similarly, the purpose of automated system procedures is to instruct a computer program on the steps necessary to complete an automated activity. Automated activities are designed to facilitate human activity. Also, like other procedures, automated system procedures are developed by humans or persons with the competence to do so, like programmers.

The significance of automated system procedures has to do with their necessary and specific involvement in the generation of electronic records, beyond those administrative procedures that normally guide or control the creation and maintenance of records. Examples of procedures that operate automatically within computer systems are those whose purpose is to link data in a database to a record or which automatically format a record according to a specified template.

II.C.3. Phases of a Procedure

Each integrated procedure forms a closed, logical system with an ideal structure.[14] There are six possible phases to a procedure: (1) initiative, (2) inquiry, (3) consultation, (4) deliberation, (5) deliberation control, and (6) execution. The number and type of formal phases comprising any given procedure vary. However, there are three necessary phases for each

[14]Duranti, "Diplomatics (Part IV)," 14-19.

procedure generating documents: initiative, deliberation and execution. The records created in or resulting from each phase are different because "the activities involved in carrying out each phase of a procedure vary according to the purpose of the procedure."[15]

II.C.3.i. Initiative phase refers to "those acts, written and/or oral, which start the mechanism of the procedure."

II.C.3.ii. Inquiry phase refers to the acts which aim to collect information needed for the evaluation stage of the decision-making process.

II.C.3.iii. Consultation phase refers to the acts which aim to collect "opinions and advice after all the relevant data have been assembled."

II.C.3.iv. Deliberation phase refers to the final stage of the decision-making process, the act of deciding.

II.C.3.v. Deliberation Control phase refers to the control exercised on the form and substance of the decision by a physical or juridical person not involved in the action. "Sometimes, some form of control is necessary to insure the effectiveness of the deliberation and its enforceability."

[15]Ibid., 19.

II.C.3.vi. Execution phase refers to the acts "which give formal character to the transaction (i.e., validation, communication, notification, publication)."[16]

II.C.4. Conditions Required for Accountability

Irrespective of the number and type of phases involved in a given procedure, to meet the needs of accountability, any procedure must be controlled, reliable and applied routinely. For accountability purposes, these conditions must apply to all procedures including those operating automatically within the computer system.

II.C.4.i. Controlled refers to being carried out under strict rules or "in conditions such as to preclude error or deception." To control means to check (by comparison and test the accuracy of), to verify, or to call to account and, therefore, to regulate. Control also refers to the exercise of restraint or direction upon the free action of, or to exercise authority over, command.[17]

II.C.4.ii. Reliability refers to the quality or state of being reliable. Reliable means that which may be relied upon, in which reliance or confidence may be put; trustworthy, safe, sure.[18] A reliable procedure, then, is one that can be confidently trusted because it has the "required phases, each with its own purpose, and that is controlled in each of its phases."[19]

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[16]All statements in quotations in sections II.C.3.i. through II.C.3.vi. are from Duranti, "Diplomatics (Part IV)," 14-15.

[17]*Oxford English Dictionary*, Volume III, 853.

[18]*Oxford English Dictionary*, Volume XIII, 562.

II.C.4.iii. Routine refers to the regular course of procedure or the mechanical unvarying performance of certain acts or discharge of duties, done by rule or according to a set form.[20] Specific to computer systems, a routine is a set of instructions (that may be part of a longer, self-contained program) "which performs a specific task and is stored so that it may be executed many times."[21] Generally, a 'routine' or automated system procedure qualifies as a routine procedure.

II.D. Records

The final component of the record system to be examined is the by-product of procedures, that is, records. Typically, attempts to define records have done so by identifying characteristics, elements, form and/or medium.[22] For a proper definition of records and a discussion of them we must turn to both archival science, which deals with their aggregation, and diplomatics, which deals with the individual record.

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[19]Duranti and Eastwood, "Preservation of Integrity."

[20]*Concise Oxford Dictionary*, 1091; and *Oxford English Dictionary*, Volume XIV, 172.

[21]*Oxford English Dictionary*, Volume XIV, 172.

[22]As examples: (1)"'record' includes any correspondence, memorandum, book, plan, map, drawing, diagram, pictorial or graphic work, photograph, film microform, sound recording, videotape, machine readable record, and any other documentary material, regardless of physical form or characteristics and any copy thereof." (Canada, *National Archives of Canada Act*, R.S., 1987, c. 1, s. 2.); and (2)"'record' includes books, documents, maps, drawings, photographs, letters, vouchers, papers and any other thing on which information is recorded or stored by graphic, electronic, mechanical or other means, but does not include a computer program or any other mechanism that produces records." (British Columbia, *Freedom of Information and Protection of Privacy Act*, S.B.C. 1993, c. 46, s. 1).

Archival science defines archives as "the whole of the documents made and received by a juridical or physical person or organization in the conduct of affairs, and preserved."[23] Archives are comprised of archival documents. Archival documents are documents "created or received by a physical or juridical person in the course of a practical activity."[24] An extrapolation from the plural (archival documents) provides a definition of the singular. Hilary Jenkinson does this when he defines an archival document as

> A document which may be said to belong to the class of Archives is one which was *drawn up or used in the course of an administrative or executive transaction (whether public or private) of which itself formed a part; and subsequently preserved in their own custody for their own information by the person or persons responsible for that transaction and their legitimate successors.*[25]

There is a fundamental similarity between Jenkinson's definition and that by which Shellenberg defines records. Schellenberg writes that records are

> [A]ll books, papers, maps, photographs, or other documentary materials, regardless of physical form or characteristics, made or received by any public or private institution in pursuance of its legal obligations or in connection with the transaction of its proper business and preserved or appropriate for preservation by that institution or its legitimate successor as evidence of its functions, policies, decisions, procedures, operations, or other

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[23]U.B.C., SLAIS, *Select List of Archival Terminology*, 3.

[24]Duranti, "Diplomatics (Part I)," 15; and U.B.C., SLAIS, *Select List of Archival Terminology*, 3.

[25]Hilary Jenkinson, *A Manual of Archive Administration*, Second Edition. (London: Percy Lund, Humphries & Co., Ltd., 1965), 11. (Jenkinson's emphasis.) The first edition of Jenkinson's *Manual* was published by Clarendon Press in Oxford, 1922.

activities or because of the informational value of the data contained therein.[26]

Again, extrapolating from the plural provides a definition of the singular. Jenkinson's definition of an archival document and Schellenberg's definition of records are essentially the same. Therefore, the terms archival document(s) and record(s) may thus be used interchangeably. If, then, archival documents and records are synonymous, the definition of a record may be more simply stated as a document made and received by a physical or juridical person as a means and residue of its activity, and preserved.

Embedded within both definitions is the concept that archival documents/records represent "a manifestation of will aimed at a juridical consequence," and the idea that there are three fundamental requisites that are necessary for the existence of a record, that is, (1) the circumstance of the writing, (2) the juridical nature of the fact communicated, and (3) the form of the compilation.[27]

II.D.1. Categories of Records

Records may be categorized according to their relationship with the acts of which they are a part or "the purpose served by their written form."[28] Thus, the categorization of records is "determined by the nature of the

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[26]T.R. Schellenberg, *Modern Archives: Principles and Techniques* (Chicago: The University of Chicago Press, 1956), 16.

[27]Duranti, "Diplomatics (Part I)," 16. Also on this page is a discussion of the necessary components of a record: (1) medium, (2) content, and (3) form, both physical and intellectual.

[28]Duranti, "Diplomatics (Part II)," 7.

activities generating them as qualified by will and purposes."[29] Four categories into which records may be differentiated are: (1) dispositive, (2) probative, (3) supporting, and (4) narrative.

II.D.1.i. Dispositive refers to those records whose purpose is "to put into existence an act" or that substantiate the act from which they result. Their written form is required by the juridical system. Examples of dispositive documents are contracts and wills.

II.D.1.ii. Probative refers to those records whose purpose is to "produce evidence of an act which came into existence and was complete before being manifested in writing" or that provide a posteriori evidence of completed acts. Their written form is required by the juridical system. Examples of probative documents are certificates (e.g., academic degrees, birth, death, marriage), registers and receipts.

II.D.1.iii. Supporting refers to those records that are "written evidence of an activity which does not result in a juridical act, but is itself juridically relevant" or that provide written support for an oral activity. Their written form is not required by the juridical system. Examples include lecture, research, speech or teaching notes and transcriptions of telephone conversations.

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[29]Ibid., 10.

II.D.1.iv. Narrative refers to those records generated in the course of non-juridical activities. Narrative records are those whose written form is optional.[30]

II.D.2. Conditions Required for Accountability

To serve accountability and ensure integrity, each record, and the aggregation of them, must meet the conditions of completeness, reliability and authenticity.

II.D.2.i. Completeness refers to the state or quality of being complete. Complete means having all its parts or elements; comprising the full number or amount; being perfect in nature or quality; without defect. Of action or events in time, to be complete means finished, ended, or concluded. Of an action, state or quality, to be complete means realized in its full extent; entire, thorough.[31]

To be complete, a record must embody all the elements it is supposed to contain according to the administrative and legal system in which it is created. Only a complete record may be an effective record, that is, a record that can achieve its purposes within the appropriate administrative-legal context. Completeness and effectiveness are provided by form.

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[30]All statements in quotations in sections II.D.1.i. through II.D.1.iv. are from Duranti, "Diplomatics (Part II)," 7-9.

[31]*Oxford English Dictionary*, Volume III, 611.

II.D.2.ii. Reliability was defined under the conditions required for procedures to serve accountability. It applies to individual records and their aggregation as well. A reliable record is one that is trustworthy or whose content you can trust. "Specifically, trustworthiness is conferred to a record by its degree of completeness and the degree of control on its creation procedure and/or its author's reliability."[32] An author's reliability refers to the "competence of the author to issue the specific document and/or the degree to which an author can be trusted."[33]

To be considered reliable, those records whose written form is required by the juridical system (dispositive, probative), "need to be complete according to expressed rules." For those records whose written form is not required by the juridical system (supporting, narrative), reliability can only be assessed on the grounds of their completeness, their authors' reliability, and their context of use (i.e., the circumstances in which the records are actually used, including the reasons for such use), as showed by their relationships with other records in the aggregations in which they belong.[34]

II.D.2.iii. Authenticity

With regard to records, authenticity relates to the "reality of rights or truthfulness of facts represented in them." Historically, to meet the need to

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[32]Duranti and Eastwood, "Preservation of Integrity."

[33]Ibid. Also see Duranti, "Diplomatics (Part II)," 11-12, for a discussion of bureaucratic methods of assessing the record as a fact and ensuring the reliability of authors.

[34]Ibid.

determine the authenticity of records, the inclusion and presence of particular elements within a record became required by the juridical system. So, authenticity refers to the presence in a record of "all the elements which are designed to provide it with authenticity."[35] Examples of formally required elements might be stamps, special signs, seals. Such required elements do not relate to the truthfulness of the information or content of a record.

Authenticity is related to provenance and is "conferred to a record by its mode, form and/or state of transmission, and/or manner of preservation and custody." An authentic record is one whose provenance you can believe or whose genuiness can be established.[36]

III. THE ROLE OF TECHNOLOGY

The evolution of record systems in the context of office information systems is a process affected by many interrelated factors, one of which is the introduction of technological innovations into the office environment. Technology is the science of the practical or industrial arts and its by-products are tools that support the work of humans.[37] The essential components of the office information system exist independently of and despite the technological tools used to conduct the organization's affairs.

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[35]Duranti, "Diplomatics (Part I)," 17.

[36]Duranti and Eastwood, "Preservation of Integrity."

[37]*Concise Oxford Dictionary*, 1330; and *Oxford English Dictionary*, Volume VII, 795.

Although required to perform activities, the different tools used over time do not define the fundamental characteristics or the nature of the office information system and its components, nor even the organization of which the office information system is a part. Referring to technology and organizational analysis, Hall says, "It [technology] cannot be given a primary position in the analysis, however, since technology is in interaction with organizational structure, group structure, individual factors and so on."[38]

New tools do contribute to changes in the way work is accomplished and organized, however. In *Control Through Communication*, JoAnne Yates analyzes changes in the North American office from the mid-1800s to 1920. Yates points out that "several technological innovations were important as facilitators, enablers, and encouragers of formal information flow within the firm."[39] Among these were several that assisted in various organizational activities such as creation, transmission, duplication, organization and storage of documents. Well-known examples include the first electronic 'information' or transmission systems, the telegraph (1844) and the telephone (1876). Both technological developments enhanced communication capabilities within and outside organizations. More importantly, they signalled a change in method and form of information transmission that was neglected until the development and use of computers forced consideration of the transformations that had occurred. Eventually, the output of telegraphic signals was transferred to paper and handled according to its medium within

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[38]Hall, *Organizations*, 33.

[39]Yates, *Control*, 22.

the office filing system. With telephone usage originally, there was no output to medium so procedures requiring that written notes of conversations be made and filed became common. Increasingly, in modern organizations, telephonic transmission of voice is recorded on a magnetic medium.

The laborious process of creating documents by handwriting was facilitated by the typewriter, introduced into the office environment in the late 1870s. Duplicating technologies such as carbon paper, offset printing, and photocopying eased the reproduction of originals or creation of copies. The development of inexpensive wood-based papers, improved aniline dye inks, and mechanical press copiers produced clearer, more enduring copies that, being facsimiles, were very accurate. Arrangement and storage systems, such as the now standard vertical filing system in file cabinets, also contributed to changing methods of organizing documents as related documents could be grouped together inside folders. New procedures for handling and consulting documents followed. Each technological development contributed to the increase of the volume of documents created, copied and kept.

This trend continues with the latest technological developments found in offices. The use of computers and related devices initiated changes similar in scope and impact to those caused by the industrial developments of the previous century. The computer, commonly viewed as one tool, in reality is a system that can be used to assist in the performance of many functions and activities. Some actions that were previously executed as individual,

separate acts may now be accomplished simultaneously. For instance, one may 'save' a document, file it, distribute copies of it to a specified group of members, and print it at the 'same time'. The various technologies are no longer separated. All are included within the electronic computer-based system. Of course, this leads to changes in the way people in the organization work.

Computers are now used to hold information the way books, tables or catalogues do. They allow people to access information on-line through databases instead of going to the shelves or the files. Electronic mail is becoming a substitute of oral communication in person or via the telephone, and of conventional mail. The same computer system may be used to create documents in any state of transmission. Without leaving one's work station one may, with a few keystrokes, create, copy, file, store, access and retrieve, transmit or 'mail' messages and documents locally, within the building or around the world. Electronic documents are created by technological processes that differ from those used to create traditional ones, even if the administrative procedures and processes used for generating them are the same. Information may now be processed and manipulated independently of its carrier, and its creation, maintenance and storage are computer-system dependent.

Furthermore, the development of artificial intelligence systems means that decision-making, which was previously only done by humans, can now be accomplished without human intervention. This might bring our juridical

system to recognize some computer-based applications as persons, capable of acting legally. The ramifications of this development are far-reaching.

The capability of computers to perform invisibly multiple actions that were done previously with a variety of action-specific tools helps to confuse us. The collapsing of activities and of the time required to do them, the processability of information independently of a carrier, the erosion of the effects of geographical separation, and so forth require us to consciously rethink traditional approaches to records management. The loss of physicality of records means that we can no longer depend on the traditional methods based on medium. As should have been the case previously, we must establish intellectual control on record systems. This presumes an understanding of the whole record system and its constituent parts. In order to gain such understanding it is important to remember that technological systems, be they electronic or manual, are tools to assist in doing work. Technology must be studied in terms of its practical applications.

IV. APPROACHES TO THE RECORD SYSTEM

For more than a decade, but particularly in the past five years, the issues and problems raised by the use of complex technology generally, and electronic records specifically, have been discussed in the archival literature. Increasingly, new research is being undertaken by archivists in their search for answers. Several approaches to the record system are identifiable.

However, as the process is evolutionary in nature, some approaches are clearcut, others are murky, while still others involve various combinations of any and all of those approaches available to date. For simplicity, the main approaches may be roughly categorized according to their origin in the field of: (1) traditional records management, (2) information systems, (3) archival science, (4) diplomatics, and (5) organizational theory.

In reality, the traditional records management approach is still the most common in North America, although it is being supported by increasingly fewer archivists. The traditional 'life cycle' framework, management methods, and practices, which continue to support the dichotomy between records and archives, are favoured. Perpetuating the fragmentation of the record system, this approach also involves the maintenance of parallel systems for managing records based upon their medium, rather than their nature. Generally, there are one (or more) system(s) for managing traditional records (e.g., paper-based, sound and visual recordings) and another system for managing electronic records.

However, traditional practice has tended to ignore altogether or exclude records originated or maintained in a computer-based environment, particularly those transmitted via the electronic mail system. Some supporters of the traditional records management approach still hope to discover technological solutions to intellectual problems. An example of the solely technology-based approach typical of traditional records management practice is represented by the 1992 publication of William Saffady, *Managing*

Electronic Records. However, an earlier report published in 1990 by the United Nations Advisory Committee for the Co-ordination of Information Systems (ACCIS), *Management of Electronic Records: Issues and Guidelines*, did provide a critical analysis of the traditional approach while still supporting the use of the 'life cycle' concept.

A second approach is that of the 'information system' school of thought. Historically, this approach was developed by those archivists who have worked with electronic records since the first and second generation computer systems. While they, too, originally attempted to discover solutions within the framework of the technology, their position has tended to evolve towards a more even-handed 'information system' approach, combined with a consideration and understanding of records management and archival theory. Examples of the 'information system' approach may be found in the writings of Harold Naugler, Margaret Hedstrom, John McDonald, and Charles Dollar.[40] Their concerns have ranged from the development of techniques for

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[40]See Margaret Hedstom's now classic *Archives & Manuscripts: Machine-Readable Records*. More recent writings by Hedstrom include "Understanding Electronic Incunabula: A Framework for Research on Electronic Records," American Archivist 54-3 (Summer 1991): 334-354; and "Descriptive Practices for Electronic Records: Deciding What is Essential and Imagining What is Possible," Archivaria 36 (Autumn 1993): 53-63. See also, Harold Naugler, *The Archival Appraisal of Machine-Readable Records: A RAMP Study with Guidelines* (Paris: UNESCO, 1984); John McDonald, "The Information Resource Dictionary System (IRDS) and The National Archives of Canada," Paper presented to the Society of American Archivists, St. Louis Missouri, October, 1989; McDonald, "Archives and Cooperation in the Information Age," Archivaria 35 (Spring 1993): 110-118; Charles Dollar, "Appraising Machine-Readable Records," in Maygene F. Daniels and Timothy Walch, editors, *A Modern Archives Reader: Basic Readings on Archival Theory and Practice* (Washington, DC: National Archives and Records Service, 1984); Dollar, *Electronic Records Management and Archives in International Organizations: A RAMP Study with Guidelines* (Paris: UNESCO, 1986); and Dollar, *Archival Theory and Information Technologies: The Impact of Information Technologies on Archival Principles and Methods*, Informatics and Diplomatics Series #1, Oddo Bucci, editor (Macerata, Italy: University of Macerata, 1992).

appraising 'machine-readable' records to promoting and developing standards applicable to computer systems.[41]

While continuing to promote standards and increased research, more recent efforts have been aimed at developing automated office information and records management systems. To this end, in a joint initiative, the National Archives of Canada and the Department of Communications have undertaken two projects. The earlier of the two is known as the FOREMOST Project (Formal Records Management for Office Systems Technologies). The stated purpose of the final report of the FOREMOST Project was:

> to define the functional requirements for a type of application software that will manage multi-media records effectively in a typical automated office system.[42]

Ongoing since 1991, the second research and development project builds upon the first and is known as the IMOSA Project (Information Management and Office Systems Advancement). John McDonald was the Director of Phase I which comprised a "multi-disciplinary team of users, information managers, archivists, information systems specialists, and researchers."[43]

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[41]See various publications prepared for the National Archives of Canada, Government Records Branch, including: "Data and Document Interchange Standards and the National Archives" (March 1987), "The Application of ODA/ODIF Standards" (March, 1988), "Application Portability" (December, 1988), and "Situation Report on the Information Resource Dictionary System (IRDS)" (March, 1989).

[42]National Archives of Canada, Government Records Branch, *Managing Information in Office Automation Systems: Final Report on the FOREMOST Project* (Ottawa: National Archives of Canada, 1990), 4.

[43]National Archives of Canada, Government Records Branch and Department of Communications, *The IMOSA Project: Information Management and Office Systems Advancement--Phase 1 Report* (Ottawa: National Archives of Canada and Department of Communications, 1991), vii.

A more recent ongoing project has been undertaken by the United States Department of Defense, which established a 'Records Management Task Force' in September, 1994. The task force is grounded in the 'information science' approach, and favours traditional records management practices as opposed to those governed by archival principles. Yet, the multi-disciplinary team recognizes the unity of the record system. Its first report, "Managing Information as Records 2003," is dated January, 1995, and states that the project's aims are to:

> (1) develop standard retention schedules,
>
> (2) "migrate toward" a standard classification scheme,
>
> (3) develop standard functional and automated systems requirements for managing records in an electronic environment,
>
> (4) incorporate records management requirements into Automated Information Systems, and
>
> (5) develop standard requirements for voice and electronic mail records.[44]

Similar work is underway at the United Nations World Bank where the traditional records management approach may be overtaken by one grounded in archival science and diplomatics.[45]

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[44]United States, Department of Defense Records Management Task Force, "Managing Information As Records 2003: Report 1--January 1995" (Washington, D.C.: Naval Computer and Telecommunications Station, 1995), 1-1.

[45]Tony Gregson, "The Application of Diplomatics to Electronic Document Management," Paper prepared for the Annual Meeting of the Association of Canadian Archivists, Draft (November 29, 1993).

Among those discussing electronic records, there has been a continuing debate about the role of archival science. Some archivists favour revisiting the principles of archival science. A general resurgence of interest in archival science accompanied the 1983 translation and publication of Michel Duchein's 1977 article, "Theoretical Principles and Practical Problems of *Respect des fonds* in Archival Science."[46] Representative of the renewed support and reconsideration of archival science are the writings of Glenda Acland, Catherine Bailey, and Barbara Craig.[47] The second edition of the popular Australian monograph, *Keeping Archives*, is also firmly grounded in archival science.

On the other side of the debate are writers such as Katharine Gavrel and David Bearman. Gavrel, in a RAMP Study, *Conceptual Problems Posed by Electronic Records*, in which she voices the suggestion that "[A]rchival principles must be examined" and "if required, revised to incorporate new types of information" and the changing nature of the organization.[48] Bearman, who generally takes the combined 'information system'/'traditional

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[46]Michel Duchein, "Theoretical Principles and Practical Problems of *Respect des fonds* in Archival Science," Archivaria 16 (Summer 1983): 64-82.

[47]Glenda Acland, "Archivist--Keeper, Undertaker or Author: the Challenge for Traditional Archival Theory and Practice" in Barbara Reed and David Roberts, editors, *Keeping Data: Papers from a Workshop on Appraising Computer-Based Records* (Sydney: Australian Council of Archives and Australian Society of Archivists, 1991); Catherine Bailey, "Archival Theory and Machine-Readable Records: Some Problems and Issues," Master of Archival Studies Thesis, University of British Columbia, 1988; Bailey, "Archival Theory and Electronic Records," Archivaria 29 (Winter 1989-90): 180-196; and Barbara Craig, "Looking at Archives from a Bird's Eye View: Flights of Fancy, Recreation, or Re-Creation," Archivaria 36 (Autumn 1993): 194-197.

[48]Gavrel, *Conceptual Problems*, 45.

records management' approach, seems also to believe that archival principles and practices need to be reexamined.[49]

There is no doubt that archival science alone does not provide all the answers. The nature of the electronic records generated within the computer system is such that their individuality is maintained besides their collectivity. So, additional knowledge must be combined with that of archival science. This means that, to provide a framework for understanding the record in general, and the electronic record in particular, we need to gain knowledge of diplomatics.

European archivists, who are educated in both archival science and diplomatics, may have been applying this approach to the record system all along. It is difficult to judge whether this is true or not, because very few writings on the topic of electronic records by Europeans appear in the English-language archival literature. The recent exceptions include articles by Angelika Menne-Haritz and Peter Sigmond.[50] However, this gap in the literature has been addressed by Luciana Duranti's article in English, "Diplomatics: New Uses for an Old Science," which was published in six

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[49]As an example, see David Bearman, "An Indefensible Bastion: Archives as Repositories in the Electronic Age," in David Bearman, editor, *Archival Management of Electronic Records*, Technical Report #13 (Pittsburgh, PA: Archives and Museums Informatics, 1991), 14-24.

[50]Menne-Haritz, "The Impact of Convergence on the Life Cycle of Records" in Durance, compiler, *Management of Recorded Information*, 121-130; "Introduction" in Menne-Haritz, editor, *Information Handling*, 9-26; "Appraisal or Selection: Can a Content Oriented Appraisal be Harmonized with the Principle of Provenance?" Paper presented at the International Conference on Archival Theory and the Principle of Provenance, Montreal, 2-3 September 1993; and Peter J. Sigmond, "Form, Function and Archival Value," Archivaria 33 (Winter 1991-92): 141-147.

parts over a period from 1989-1992.[51] Since then, in her article, "Weaving Provenancial and Documentary Relations," Heather MacNeil has suggested an approach to the record system that employs both archival and diplomatic principles.[52] Currently, Duranti and Terry Eastwood are undertaking a research project funded by the Social Sciences and Humanities Research Council of Canada. Their work on "The Preservation of the Integrity of Electronic Records" rests upon a foundation that includes both archival and diplomatic theory and views the record system as an integrated whole.

Finally, there is a growing trend among some archivists to examine the literature of other disciplines in their search for insights into the electronic record dilemma. Without a good grounding in the basic concepts and schools of thought within any discipline, this practice may prove to be a double-edged sword: on the one hand, the injection of fresh new ideas within archival knowledge may prove fruitful; on the other hand, it may prove to be fraught with problems. For example, most recently, a borrowed approach identifiable as the 'organizational culture' approach, based on one specific part of organization theory, has surfaced in writings about the record system. Two recent examples are David Bearman's article, "Record-Keeping Systems," and the recently released "Research Reports" of the Pittsburgh Recordkeeping Functional Requirements Project, funded by the National

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[51]For the complete citation see the Select Bibliography following this thesis. Duranti, who was educated and trained in Italy, is multi-lingual.

[52]Heather MacNeil, "Weaving Provenancial and Documentary Relations," Archivaria 34 (Summer 1992): 192-198. See also, MacNeil, "Archival Theory and Practice: Between Two Paradigms," Archivaria 37 (Spring 1994): 6-20.

Historical Publications and Records Commission.[53] Three particular papers, contained within a section of the latter entitled "Unpublished Papers: Organizational Culture and Other Dimensions" and authored by Duff, Thomas and Wallace, are of specific concern.[54] At issue is their attempt to link the nature and characteristics of record systems to the organizational culture in which they function. In fact, organizational record systems are not within the realm of organizational culture. Within the organizational context, the record system is part of the formally-structured system of organizing relationships, whereas 'culture', which generally delineates social groups in society, accompanies humans into organizations. The study of 'organizational culture' rightfully belongs with the study of other informal dimensions of organizations. Informal communication or the 'grapevine,' which also has nothing to do with the record system, is an example of an organization's informal aspects. Perhaps, some explanation of the concepts and their origins would be useful.

The cultural approach to the analysis of organizations originates with social anthropology, of which cultural anthropology is a branch.[55] Cultural

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[53]David Bearman, "Record-Keeping Systems," Archivaria 36 (Autumn 1993): 16-36; and University of Pittsburgh, School of Library and Information Science. "Research Reports." [Pittsburgh, Philadelphia: University of Pittsburgh Electronic Records Project, 1994].

[54]David Wallace, "Satisfying Recordkeeping Functional Requirements: The Organizational Culture Variable," February 1994; Wendy Duff and David Wallace, "Organizational Culture," and David Thomas, "Business Functions: Toward a Methodology," February 1994, all to be found in University of Pittsburgh, School of Library and Information Science. "Research Reports."

[55]John P. Kotter and James L. Heskett, *Corporate Culture and Performance* (New York: The Free Press, 1992), 3; Debra L. Nelson and James Campbell Quick, *Organizational Behavior: Foundations, Realities, and Challenges* (St. Paul, MN: West Publishing Company, 1994), 488; and Pace and Faules, *Organizational Communication*, 62.

anthropology is predominantly concerned with the study of the civilization, as opposed to the physical, aspects of the evolution of humans.

"The concept of cultures in organizations was alluded to as early as the Hawthorne Studies, which described work group culture."[56] Some credit the increasing popularity of the cultural approach to organizations throughout the 1970s and 1980s with the increase in global market competition which has exposed North Americans to other cultures, particularly Asian ones.[57] In any event, it has been adopted by psychologists, sociologists and other academics allied with the Human Relations School and those 'members' of the Social Systems School who also favour behaviourism. Behaviourism is a "theory and method of psychological investigation based on the study and analysis of behaviour.[58] It attempts to explain human behaviour, both individually and in social groups. Behaviour is the *manner* of conducting oneself in the external relations of life; and includes such elements as bearing, demeanour, deportment, and manners."[59] Thus, behaviour is related to and influenced by one's cultural education and training.

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[56]Nelson and Quick, *Organizational Behavior*, 488.

[57]Ford, et al, *Organization,* 453-455; Nelson and Quick, *Organizational Behavior*, 488; and Pace and Faules, *Organizational Communication*, 61. Ford, et al, and Nelson and Quick credit Thomas J. Peters and Robert H. Waterman, Jr., *In Search of Excellence: Lessons from America's Best-Run Companies* (New York: Harper & Row, 1982) with the general popularization of the concept. Peters and Waterman "conclude that people--customers and employees--are the key to excellence in the successful companies." (Ford, et al, *Organization*, 455).

[58]*Oxford English Dictionary,* Volume II, 74. Also see footnote 1 in Introduction of this thesis.

[59]Ibid., 73.

Discussing the concepts of organizational culture, Pace and Faules note that there are more than 250 different definitions of the term 'culture'.[60] Despite this, there is a general consensus that culture is the totality of the constantly changing, learned customs, folkways, habits, laws, language, mores, myths, norms, rituals and symbols that are socially transmitted from generation to generation.[61] The term 'culture' is a descriptive one that refers to behaviour patterns, beliefs, and shared values "that tend to persist over time even when the group membership changes."[62] Within society at large, it includes those attitudes, behaviours, perceptions, and ways of thinking that determine ethnic, national, political, racial, regional, religious, rural, and socio-economic differences. Within organizations, it is "a pattern of basic assumptions that are considered valid and that are taught to new members as the way to perceive, think and feel in the organization."[63] A group of authors quoted by Ford, et al, defines organizational culture as:

> the shared philosophies, ideologies, values, assumptions, beliefs, expectations, attitudes, and norms that knit a community together. All of these interrelated psychological qualities reveal a group's agreement, implicit or explicit, on

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[60]Pace and Faules, *Organizational Communication*, 62. The full statement is: "According to Sackman, Kroeber and Kluckhohn list more than 250 different definitions." Credit is given to Sonia A. Sackman, *Cultural Knowledge in Organizations* (Newbury Park, Calif.: Sage Publications, Inc., 1991).

[61]Ford, et al, *Organization*, 455; Holt, *Management*, 322-323; Kotter and Heskett, *Corporate Culture*, 3-5; Nelson and Quick, *Organizational Behavior*, 488-495; Robbins, *Organization*, 71, 86; and Tubbs and Moss, *Human Communication*, 420-423.

[62]Kotter and Heskett, *Corporate Culture*, 4.

[63]Nelson and Quick, *Organizational Behavior*, 488. Also see Kotter and Heskett, *Corporate Culture,* 4; and Robbins, *Organization,* 71.

how to approach decisions and problems: "the way things are done around here"[64]

Kotter and Heskett state that when "[C]onceptualized in this way, culture in a business enterprise is not the same as a firm's 'strategy' or 'structure,' although these terms (and others such as 'vision' or 'mission') are sometimes used almost interchangeably."[65] Pace and Faules are much more critical in their analysis of the cultural approach. They say that the term 'culture' is a marketable buzz word used by academics and other consultants from the "subjective schools of thought for the interpretive perspective[s] includ[ing] hermeneutics, ethnomethodology, phenomenology, and symbolic interactionism."[66]

In any event, the organizational culture approach to organizational analysis bears no relationship to the organizational record system. The former provides a framework for understanding how humans, their belief systems, and their resulting behaviour affects their intra-, inter-personal and social relationships as individuals and groups operating within the organization. Characteristically, the organizational culture approach deals with the primarily unconscious, informal, and unregulated aspects of behaviour, which by itself is ephemeral and has no juridical consequences. While behaviour is juridically irrelevant, it may influence the juridically relevant

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[64]Quoted in Ford, et al, *Organization*, 455 and credited to Ralph H. Kilmann, Mary J. Saxton, and Roy Sherpa, *Gaining Control of the Corporate Culture* (San Francisco: Jossey-Bass, 1985), 5.

[65]Kotter and Heskett, *Corporate Culture*, 4.

[66]Pace and Faules, *Organizational Communication*, 60, and also 59-61.

actions of an individual or group within a given environment. On the other hand, the record system reflects the formal aspects of an organization. It is part of the deliberately and officially structured organizational communication system that is intended to serve organizational purposes. Governed by rules, regulations, and procedures, the record system is concerned with documenting (and preserving) organizational actions that have juridical consequences in the conduct of affairs and accountability. While an organization's culture is not useful for understanding the record system, nevertheless, it might provide insights to those who must explain the record system to others. For instance, consideration of 'the way we do things around here' or an organization's culture might be taken into account by those who would devise effective records management training programmes for the members of a given organization.

CHAPTER 4

CONCLUSION

I. SUMMARY

An organization is an entity formally structured to serve mandated purposes. In the Western world juridical system, organizations are recognized as juridical persons capable of acting legally and to which society allocates defined rights and obligations for which accountability is required. While the purpose of each organization and the particular way it is organized may differ, the available methods for structuring organizations to accomplish necessary functions and activities remain fundamentally the same.

Organizing methods used to structure organizations are based upon the principles of differentiation and integration. Differentiating methods divide members' labour by specialization of activity and specialization of authority. To complete the accomplishment of its purpose, it is necessary to recombine or coordinate members' fragmented efforts through a system of integrating methods. In total, the combined application of available organizing methods determines an organization's structure. Two major features are characteristic of the bureaucratic organization that predominates in our juridical system. First, there is a hierarchical authority system of offices to which relative competences for functions and activities are delegated. Second, there is a

system of departmentalizing or logically grouping members, functions and activities. Also, characteristic of organizations is the fact that their parts are interrelated, interdependent and unique to any given organization. Thus, as a component of the 'office system', an organization's office information system is integral, interrelated, and interconnected to the whole.

An examination of organizational communication theory and an analysis of the terms 'office', 'information', and 'system', lead to the conclusion that the office information system is an organization's formal or official communication system. Organizational communication occurs to and from the organization and internally to it. Internally, the transmission of official communication follows formal organizational structures generally represented on the traditional organization chart (downward, upward, horizontal). Other patterns or networks for transmitting information are authorized by the organization because they contribute to the efficiency and effectiveness of accomplishing activities.

Organizational communication is based upon the universal communication process, which is independent of the technology that may or may not be used during the process itself. Formal written communication is necessary for bureaucratic administration, serves organizational purposes and is, therefore, important to it. Authorized official communication links an organization's interrelated parts, serves to evoke action, and is a mechanism of control and coordination. The office information system, including its written by-products, supports the conduct of affairs and accountability. It

serves this purpose by facilitating communication throughout the organization, enabling the provision of information needed in the decision-making process and for the performance of functions and activities, and providing evidence of those activities.

There are three identifiable subsystems forming parts of the office information system; they are the library system, the documentation system, and the record system. Each of the three subsystems comprises components that generally may be described as: (1) the context for the activity, including its purpose, (2) the persons acting in the context, (3) the processes of the acting, and (4) the by-products of the activity and/or the procedures governing it. While the interrelated components making up the library, documentation and record systems are similar, the particular activities, purposes served, and circumstances of creation of their by-products vary. In one way or another, all three systems serve to provide support for the conduct of organizational affairs.

The library system, including reference material, helps to inform, educate and train organizational members. Due to the circumstances of its creation, reference material, which is used to search for information, is autonomous, self-sufficient, and reaches its own purposes by itself. Generally, it is created by outside agencies as a final product intended for distribution. Organizations deliberately acquire or collect reference material to use it solely for reference. Reference material that is not created during

the conduct of an organization's affairs does not constitute evidence of its activities.

The documentation system, including documentation, generally serves its purpose by providing support, guidance, information, and instructions for accomplishing organizational activities. Due to the circumstances of its creation, documentation is archival in nature. Its importance arises from the evidence that documentation provides about organizational context, that is, of the way in which the organization works. The documentation system also contributes to the establishment and implementation of controlled procedures routinely applied and other forms of standardization that are necessary to ensure the integrity and reliability of the record system.

Documentation may be categorized as conventional and computer-system. While most conventional documentation exists separately from action-related records, this has never been the case for all documentation. Traditionally, documentation includes the information that takes part in the organization's activities without being their by-product and evidence. Usually generated independently of administrative processes and procedures, computer system documentation, unfortunately, is not always available, although it is required for electronic records to be useful. It is not feasible to separate the sets of instructions or application programs used to create electronic documents from the records themselves, because both are necessary for access, retrieval, readability, and to impart meaning.

Therefore, measures must be taken to ensure the existence, appropriate linkage, maintenance and retention of documentation.

A record system, the whole of the procedures and by-broducts of recordmaking and recordkeeping, provides the means for the routine creation, maintenance and preservation of records. It specifically serves organizational needs for the proper conduct of operational and administrative affairs, administrative-legal accountability, and for historical memory. Within the Western juridical systems, records have the capacity to create, modify or extinguish situations that have juridical consequences and to provide evidence of them. As the necessary means for and residue of purposeful activity, records reveal the context and circumstances of their creation. Other purposes served by records are to convey knowledge needed for performing functions and activities specified in the organization's mandate, to provide a means for reviewing and auditing decisions, and to aid in current and future decision-making. They are useful precedents for organizational self-education or learning from past mistakes, for continuing organizational memory, and for ensuring that the individual memory is available to the organization.

Created by organizations to serve their own needs and particular way of working, the core of record systems are records. Records are created when persons with the capacity to act or to generate consequences based on their will carry out actions and transactions according to procedures. The records resulting from creation procedures may be categorized based on the

circumstances of their creation as dispositive, probative, supporting and narrative. Maintenance procedures govern all the actions undertaken to care for the records resulting from the creation procedures.

The analysis of the library, documentation and record systems, including their respective by-products, leads to the observation that the nature of reference material is different from that of archival documents, the by-products of the documentation and record systems. The fact that the by-products of both the documentation system and the record system are archival in nature provides an integrating link, bond or relationship between the two systems that is not shared with the library system. Further, an examination of the definitions of 'archival document' and 'record' shows that the two terms are synonymous. Befitting its nature, the combined documentation and record systems correctly would be called an archival system; however, in keeping with the current trend, here it is called the integrated record system or, more simply, the record system. It is intended for the term(s) to meet the following purposes: (1) to reflect the interrelatedness and interdependency of the two conceptual systems from which archival documents arise, and (2) to emphasize that maintaining the integrity of the whole requires the inclusion of all accumulated archival documents whatever the form, medium, or technology used in their creation and maintenance. Clarifying the distinctions between the office information system's three subsytems allows one to make the first decision regarding the management of the integrated record system.

As a matter of typical practice, reference material, which serves no other purpose than that of reference, is included among an organization's records. For the purposes of appropriate management, a logical approach would suggest that the reference material should be segregated and managed separately from the archival documents. Library discipline specialists developed appropriate methods for managing reference material based on library principles. At the core of a library management plan would be a classification scheme that controls the arrangement of the material according to its own nature, that is, based upon analogical relationships that allow the material to be grouped according to subject, author and/or title.

Once the reference material is segregated, what should remain is the whole of the organization's accumulated archival documents, an archives. An archives reflects the nature of the creator, including its relative functions, competences and activities. It originates with particular characteristics determined by the context, including purpose, and the circumstances of its creation. The characteristics of an archives and its parts, the archival documents, are: (1) impartiality, (2) authenticity, (3) naturalness, (4) interrelationships, and (5) uniqueness.[1] Because of these characteristics, archival documents have a unique place within the whole of the activities of

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[1]S. Muller, J.A. Feith, and R. Fruin, *Manual for the Arrangement and Description of Archives* (New York: The H.W. Wilson Company, 1940), [first published in 1898]; Jenkinson, *A Manual of Archive Administration;* and Schellenberg, *Modern Archives: Principles and Techniques* are the traditional sources for implicit and explicit discussions of the characteristics of archival documents and the conditions necessary for their preservation. A more accessible and concise discussion is to be found in a recent article by Luciana Duranti, "The Concept of Appraisal and Archival Theory," American Archivist 57-2 (Spring 1994), particularly pages 334-337.

the organization, have a usefulness relative to the actions in which they participate, and bring with themselves specific consequences for their users. That is, since their inception, archival documents are naturally parts of a system.

Applying the knowledge gained by the whole of the foregoing exercise, this thesis will now suggest a manner of managing the integrated record system and records for the benefit of the creating organization and other users. So far, neither traditional records management methods nor information system management methods have successfully met these needs. Historically, methods based upon archival science and diplomatics are usually not used for managing current records. However, because they are based upon the circumstances of creation and the nature of the resulting documents, archival and diplomatic principles and methods ought to be the best ones available to guide practice. Nevertheless, the first goal of any approach must be to manage the record system as a whole to respect and protect its integrity and thus ensure the existence, maintenance and preservation of the necessary characteristics that make records useful as evidence for whatever purpose. Only in this way will records management serve organizational needs.

II. MANAGEMENT OF AN INTEGRATED RECORD SYSTEM

II.A. Centralized Administrative Control by Executive

The first recommendation regarding the management of the integrated record system is that the organization's executive management exercise centralized administrative control. Management and managers are duty-bound to account for the actions of the whole organization, including their own and those delegated to subordinate positions. The authority and responsibility for the management of an organization extend to the management of the record system that is necessary to support the organization's primary functions.

An organization needs a record system that is managed considering administrative requirements and with close coordination with the relevant business operations. While an organization could muddle through when record systems were primarily paper-based, this is no longer true where technological change is a driving force. Angelika Menne-Haritz writes that

> the implementation of the new technologies raises a need for many strategically vital decisions which can only be taken at top level, e.g., concerning legal stipulations, spheres of work responsibility, norms, policy matters, etc.[2]

While it is increasingly clear that records are not created, maintained and preserved properly any more, it "is not clear that [executives] appreciate how the infusion of modern information technology into today's organizations threatens continued accommodation of [these] top management objectives"

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[2]Menne-Haritz, "Introduction," Menne-Haritz, editor, *Information Handling*, 16.

including "managerial accountability and evidence thereof, operational continuity and institutional history."[3] It often happens in North America that management abdicates, delegates or otherwise relinquishes control of record systems to others over time. Therefore, to regain control, it may be necessary for the executive to reclaim centralized decision-making authority and to assign or reassign the appropriate decentralized responsibility for records and their management. In any event, the complexity of the modern record system and its management suggests that it would be prudent for the executive to establish an organizational records management programme and assign appropriate responsibility for it. In larger organizations this would entail the establishment of an authorized records management office and records management officers.

II.B. Records Management Programme

Records management is an administrative function within the organization, the purpose of which is to control all aspects of recordmaking and the manner of recordkeeping, including the custody and preservation of accumulated records. A records management programme formally recognizes the importance of the record system to the organization and provides an umbrella under which to gather all the activities involved in its management. A pamphlet published by the Archives Authority of New South Wales defines a records management programme as

[3]Richard E. Barry, "Getting it Right: Managing Organizations in a Runaway Electronic Age," in Menne-Haritz, editor, *Information Handling*, 37.

> a complex of objectives, policies, priorities, strategic and operational plans, task assignments, steps to be taken, resources to be employed, performance measures and other elements necessary to achieve a major organizational outcome.[4]

For any organization, the desired outcome is to be able to guarantee the existence of the necessary conditions that ensure its records meet the administrative-legal requirements for evidence (accountability) and are available for immediate and continuing use. An initial condition that must be met is the existence of controlled, routine and reliable procedures for the generation of authentic, complete and reliable records.

Most traditional methods based on the 'life cycle' of records, and the 'records continuum' approach suggested as its replacement by Jay Atherton a decade ago, are applied after the creation and immediate use of records.[5] However, among the many issues to be considered, there are two in particular which force the recognition that the focus of any records management programme should always have been the point of records creation or before. The first issue relates to computer technology while the second one relates to administrative and legislated needs.

Computer-based processes and procedures by which electronic records are created, independent of those that are strictly administrative,

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[4]New South Wales Archives Authority, Records Management Office, *Records and Recordkeeping: Introducing New Concepts* (Sydney: Archives Authority of New South Wales, 1994), 5.

[5]Jay Atherton, "From Life Cycle to Continuum: Some Thoughts on the Records Management-Archives Relationship," Archivaria 21 (Winter 1985-86): 43-51.

differ from those used to create conventional records and do not provide the normal guarantees. Computer system capability is such that it allows individual and multiple creators/authors to work separately and jointly on a single document. The activity may occur at the same or different times and at the same or different geographical/physical locations. The computer system also 'permits' persons and individuals to create, file, send, receive, access and retrieve individual and multiple copies of documents at the 'same time' using one or more keystrokes. Thus, several processes and procedures can be and are undertaken simultaneously or contemporaneously within the computer-based system. The collapsing of the time and number of steps needed to perform activities and the removal of geographical considerations point out that the previously identified conceptual and physical phases as applied to records and upon which traditional records management activities are based do not exist. Experience with the contemporaneous nature of records creation and receipt within the computer-based system suggests that unless a system of control is in place at the outset, records will be lost. Therefore, to be effective, any approach devised for records management must be planned beforehand, be in place, and be applicable at the initiative phase of the records creation procedure.

An existing system of control is also required for the resolution of the second issue, that of access and retrieval. Always a matter of administrative concern, the need for immediate and continual access to records, has been highlighted by recent legislative trends. Access is the "[R]ight, opportunity or

means of finding, using, or approaching documents and/or information."[6] Implicit in the term is the concept of accessibility, admission or passage. Accessibility, which presupposes the availability of records for consultations, can be determined by such factors as legal authorization, proximity or availability of records to users, usable formats, and the existence of finding aids.[7]

Operational, administrative, and legislative requirements obligate organizations to provide access to records for organizational and other purposes. It has always been understood that organizational members need access to records to do their jobs, but, increasingly, the value of records to all users is being recognized. In many parts of Europe and the English-speaking world 'freedom of information' or access legislation now grants access to current records to users other than creators. Often such laws stipulate specific deadlines and consequences for failure to produce requested records on time. In some jurisdictions, legislated access rights extend to some records which were considered 'private' previously.[8] Conversely, organizations may also need to ensure the confidentiality of certain of their records for business and other purposes. Confidentiality is the "quality of secrecy attaching to certain information and/or documents, that thereby

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[6]SAA *Glossary*, 1.

[7]Ibid.

[8]As an example, see the British Columbia *Freedom of Information and Protection of Privacy Act*, S.B.C. 1993, c. 46. Schedule 2 lists over 215 agencies, boards and commissions, and Schedule 3 lists 33 self-governing bodies of professions or occupations covered by the Act.

requires protection, usually taking the form of restricted access."[9] Further, access legislation generally is accompanied by integrated or separate protection of privacy legislation. Privacy refers to the "right of an individual to be secure from unauthorized disclosure of information about oneself that is contained in documents/archives."[10] Like confidentiality, protection of privacy involves a restriction of access.

For organizations to meet all users needs for access, confidentiality and protection of privacy, access to all records must be rigidly controlled. With regard to the computer environment, this requirement means that there must be an authorized system of passwords and encryption (to replace handwritten signatures) in place. Also, for security, the computer system itself must be protected from unauthorized access. It is a simple matter to maintain the security of conventional records through traditional means such as the use of locked cabinets, alarmed storage areas, and a records room controlled by personnel. It is, however, much more difficult to maintain the security of records generated within computers that are connected to the rest of the world via telecommunications technology.

Controlled access presumes a way of retrieving records. To meet both their own day to day requirements and those that are legislated, organizations need an easy-to-use system of retrieval that is accurate, efficient, and timely. If conventional records are disorganized or filed incorrectly, although it is

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[9]SAA *Glossary*, 8.

[10]Ibid., 27.

time-consuming, they may often be located through a process of elimination based upon possibilities and probabilities. However, because electronic records are invisible, untouchable, organized by a computer-determined chronology, and allocated randomly according to space availability within an unseen storage area, they may be impossible to retrieve.

A solution to both the outlined technological and administrative problems is for a secure access and retrieval system encompassing all records to be devised in advance. The access and retrieval system cannot be developed in isolation though. Any records-related systems and specific operational plans for controlling records and their management would best serve organizational purposes if they were developed as part of a records management programme governed by clearly stated programme objectives.

II.B.1. Objectives

While the primary goal of records management is to serve organizational needs, an effective approach would meet the following four objectives: (1) to be applied organization-wide, (2) to be controlled by policies and procedures, (3) to be integrated through coordination, and (4) to be standardized.

II.B.1.i. Organization-wide: The need for proper records management extends throughout the whole organization, not just part of it. Therefore, a global approach must provide a comprehensive, overarching and organization-wide method of control. The records management programme

would embrace all organizational levels, departments, organizational units, and positions, no matter their placement within the organizational hierarchy, permanence or temporariness of organizational units, or their geographical or physical location.

II.B.1.ii. Integration and Coordination: Organizational structuring is based upon the premise that an organization is an integrated whole and that the coordination of all its parts and activities is necessary to complete its mandated purpose. It follows that, as an interrelated, interdependent organizational subsystem, the record system requires the coordinated management of its integrated whole for control. In practice, this means that all records made and received by the organization must be included in a holistic management plan. Also, management methods must be based upon the nature of the system and its by-products, not upon any arbitrary distinctions made for the sake of convenience. For example, methods developed on the basis of content, medium, physical location, frequency of use, or 'type' of user are not acceptable.

In most large organizations with established programmes, information professionals, information and records managers and archivists, all of whom are needed to manage properly the integrated record system, are separated administratively and answer through different chains of command.[11] Besides engendering parallel records management practices that contribute to the

[11]United Nations, Advisory Committee for the Co-ordination of Information Systems (ACCIS), *Management of Electronic Records: Issues and Guidelines* (New York: United Nations Advisory Committee for the Coordination of Information Systems, 1990), 18.

disintegration of the record system, administrative separation further exacerbates communication difficulties experienced between and among the professionals of different disciplines.[12] It might be worthwhile to consider assigning those with the major responsibilities for records management to the same administrative group, or at the minimum, ensuring communication between and among them. This strategy would serve an integrating purpose by facilitating the coordination of efforts that ought to be aimed at the same organizational purpose.

The recent trend by which information professionals are developing 'automated information management systems' to control the information within the electronic environment is an example where coordination among professionals would be useful for integration purposes.[13] First, the focus of attention needs to be redirected from the information or content of electronic documents to the context and evidential capacity of the records themselves. For this to occur, those with knowledge of archival science and diplomatics must communicate the requirements and conditions to be met for the management of the record system as an integrated whole. Thus, in practice, any 'automated management system' would encompass all organizational records within its sphere, including conventional ones. Conversely, a

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[12]For examples of discussions regarding this issue see Bailey's M.A.S. thesis and/or its condensation presented in Archivaria 29, "*Archival Theory and Machine-Readable Records*, and Ronald E.F. Weissman, "Virtual Documents on an Electronic Desktop: Hypermedia, Emerging Computing Environments and the Future of Information Management", in Durance, *Management of Recorded Information*, specifically page 38.

[13]These systems are variously known as 'office information systems', 'information management systems', 'electronic document management systems', and so forth.

'conventional', manual, or non-automated system of control would include electronic records within its scope.

II.B.1.iii. Policies and Procedures: A records management programme must be deliberately controlled by appropriately authorized written policies and procedures. Comprehensive, cohesive records management policies that communicate organizational intent would provide guidelines that ensure consistency over time when making records management decisions. As David Holt points out, "[P]olicies are also instruments of delegation that alert subordinates to their obligations."[14] So, for clarity, policy ought to reinforce the requirement that all organizational members always follow records management procedures accurately. Of course, for effectiveness, there also must be a way of monitoring compliance and consequences for failure to comply.

Procedures serve an integrative purpose by tying all the parts of the record system together. Formal, controlled procedures must exist to regulate recordmaking and recordkeeping. As with relevant policies, to meet the conditions for accountability, procedures governing all records-related activities must be officially established, written, disseminated, implemented, and adhered to consistently and routinely throughout the organization. While it is generally necessary to have procedures in place for the generation of records, it is particularly crucial that those made and received within the electronic environment are controlled administratively. In fact, the ability to

[14]Holt, *Management,* 177.

process and manipulate information independently of its carrier may be convenient but it has negative ramifications that must be accounted for regarding records creation. There are two specific aspects to be considered; the first relates to the inclusion and linking of necessary record elements, and the second relates to affixing the record to a medium.

Diplomatics provides an understanding of the necessary and sufficient elements for a complete and effective record and of the conditions to be met for its integrity.[15] Given the appropriate knowledge, it is possible to design computer programs that would provide the necessary guarantees. For instance, normally when the written form is required by the juridical system, as it is for dispositive and probative documents, specific elements of intellectual form are necessary. Examples of elements that might be required include the chronological and topical date, superscription, inscription, disposition and attestation. Ideally, well-designed computer applications programs would recognize that when certain elements or combinations of them appear together, they belong to a given type of record, and it would then automatically apply routine procedures to link the record elements. As well, the system would recognize the absence of required elements, such as the originator, superscription or attestation, and prompt for their inclusion before the remainder of the procedure may go forward. Because it is a necessary condition that for a complete record to exist it must be attached to a medium, the computer system would also incorporate procedures that

[15]See Duranti's series of articles, "Diplomatics: New Uses for An Old Science," particularly Part V in Archivaria 32 (Summer 1991): 6-24.

ensure creation by affixing the record to a medium automatically or by prompting the creator to 'save' it.

Besides those for creation, formal administrative procedures also would prescribe explicit, specific, and detailed instructions to control the execution of all activities related to the care of records no matter who carries them out. Maintenance activities include those for identification, classification, filing, access and retrieval, storing, disposition, transfer, preservation, conservation and custody of the records. Documentation of procedures could be in either (or both) traditional documentary forms such as conventional manuals or incorporated into the computer system as part of an automated management system with on-line tutorials, help screens, pull-down menus, prompts and so forth.

II.B.1.iv. Standardization and Standards: Standardization is one aspect of the organizational structural element of formalization. It serves an integrating purpose but is also a commonly used method for ensuring efficiency and economy. The organization-wide adoption and application of internal and external standards are critical to the successful management of an integrated record system.[16] A commitment to standardization and the regular application of standards contributes to the consistency that defines routineness; its lack contributes to a loss of control.

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[16]For a discussion about the various standards potentially useful for electronic records management see Hamza Kandur, "Management of Electronic Records," Ph.D. Dissertation, University of London, 1992, 70-98; and United Nations Advisory Committee for the Co-ordination of Information Systems (ACCIS), *Management of Electronic Records*, 71-86.

Yet again, although standardization is important generally, it is particularly critical for the computer-based environment in which the integrity of the record, including the contextual information that needs maintaining over time, is at risk. As an example, the interdependency of hardware, operating systems and application software means that records generated on one system cannot be accessed and retrieved on a non-compatible system. Such a situation not only makes work difficult but threatens accountability. Standardization of computer-system components, including the controlled use of specific application programs, is one way to reduce problems with backward and forward compatibility for technology and the migration of records between systems. In any event, standardization and providing for any other contingencies related to records requires advance planning.

III. A RECORDS MANAGEMENT PLAN

III.A. Definition and Purpose

As part of the records management programme, there needs to be a specific operational plan devised for the organization, control and care of accumulated records. Generally, a plan is a formalized or organized method according to which something is to be done, to carry out some action, or way of proceeding. The term plan also refers to a design or scheme according to which a thing or parts of a thing are, or are to be arranged; a type of structure, viewed as designed and arranged beforehand; or a diagram, table or programme indicating the relations of some set of objects, or the time,

places, etc., of some intended action or proceeding such as the disposition of parts.[17] This dictionary definition outlines the desirable elements of a records management plan.

A well designed plan would serve several organizational purposes simultaneously, not the least of which is centralized (executive) administrative control of archival documents including responsibility and accountability for them. It would provide an overview of the organization's structure, functions, activities and documentary residue at a given point in time, reflect the interrelatedness of all these elements, and provide a framework for the audit and review of administrative functions and activities. When governed by policies and controlled procedures that are followed routinely, the plan would provide a legal basis on which the integrity, authenticity, impartiality, and completeness of organizational records may be established. A centralized system of intellectual control would facilitate decentralized physical control while serving as a scheme for identification and filing that is easy to use. Such a scheme would serve as an effective retrieval device that is also able to aid the management of the organization's documentary residue, including the routine retention and disposition of its records.[18]

In other words, at the minimum, a records management plan that serves organizational purposes should provide the means for the following:

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[17]*Oxford English Dictionary,* Volume XI, 958.

[18]British Columbia Archives and Records Service, *Administrative Records Classification System*, 1993 Edition (Victoria: Crown Publications, 1993), 4.

(1) centralized intellectual and decentralized physical control, (2) segregation of records destined to long-term retention from the others, (3) efficient access and retrieval, (4) routine elimination of temporary documents, and (5) auditing and monitoring the record system and its operation. The main components of the proposed approach to the records management plan are: (1) the official assignment of responsibility for records, (2) a classification system incorporating assigned offices of primary responsibility, and (3) a retention and disposal plan integrated with the classification scheme.

III.B. Official Assignment of Responsibility

The assignment of responsibility for records is necessary to preserve their interrelatedness, impartiality and innocence. Management needs to explicitly delegate accountability for records, otherwise any records management plan would be ineffective. There are two aspects to this exercise of organizational authority: (1) the identification of an office of primary responsibility, and (2) the assignment of individual responsibility.

III.B.1. Office of Primary Responsibility

The first exercise of organizational authority involves the assignment of competence. It entails identifying and designating departments or organizational units responsible and accountable for specific classes of records. While the accountability for records should be non-transferable, for administrative purposes, responsibility for duties may be assigned. This process of delegation must be repeated for each horizontal organizational level.

A designated office of primary responsibility would have intellectual and physical control of any records that it makes and receives. Secondarily, because it also serves as a means of differentiation that allows for the separation or segregation of record series, the appropriate identification of the office of primary responsibility is particularly important when records are duplicated among offices. An office of primary responsibility must be designated for each series of archival documents created by the organization. For example, when temporary working units (committees, projects, mixed groups of internal and external agents, external consultants and contractors) are formed, they should be assigned to an organizational unit that is an office of primary responsibility. Records originated by the temporary units would be entrusted to the permanent office of primary responsibility which would serve as office of record.

III.B.2. Individual Responsibility

The second aspect of exercising organizational authority involves assigning individual responsibility for records. Actions and transactions necessary to meet organizational purposes are carried out by every person occupying a position. The duty to make and keep records that is attached to positions must be made clear and explicit to individuals. Those persons responsible for the creation and receipt of the records would also be responsible for maintaining them, for their correct identification, the assignment of the appropriate classification codes, filing, and other activities necessary for their care.

III.C. Classification System

At the core of an integrated records management plan would be a classification system. In *Modern Archives: Principles and Techniques*, Schellenberg suggests that, although they are not common, it is not possible to control properly the record system or manage records without classification systems.[19] He says that "[C]lassification is basic to the effective management of current records. All other developments in a program designed to control records depend upon classification."[20] Thus, activities related to maintaining records, including their separation from other types of documentary material, their arrangement, access and retrieval for reference and use, selection for retention and disposition, and vital records management would be dependent upon classification.[21]

A classification system is a method of intellectual control that recognizes relationships between and among documents and that allows for their logical and systematic arrangement into categories using numbers, letters or a combination of numbers and letters for identification.[22] Appropriately identified records are assigned to categories which are devised

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[19]Schellenberg, *Modern Archives*, 25.

[20]Ibid., 52.

[21]Vital records are those that are essential to re-establish or continue an organization in the event of a disaster. They comprise the records necessary to re-create the organization's legal and financial status, and to determine the rights and obligations of employees, customers, stockholders, and citizens. (SAA *Glossary*, 37.)

[22]British Columbia Archives and Records Service, *Administrative Records Classification System*, 6-7; Betty R. Ricks and Kay F. Gow, *Information Resource Management: A Records Systems Approach*, Second Edition (Cincinnati, Ohio: South-Western Publishing Co., 1988), 119-120.

"according to logically structured conventions, methods and procedural rules represented in a classification plan" or scheme.[23] Identification refers to the process of distinguishing, establishing or recognizing the identity of records so that their association, connection, and/or relationships are maintained.

To serve its needs, an organization's classification system would be devised according to its particular circumstances and way of working. An understanding of the theory of organizations, including organizing principles, leads to the conclusion that an effective way of organizing records would be according to a structural-functional classification system.

Before organizing the records themselves, there must be an overarching framework representing or duplicating the administrative structure that is responsible for the functions and activities generating the records. To mirror the hierarchical nature of an organization, its classification scheme would be hierarchical as well. As a framework, its arrangement would reflect an organization's own structural elements, including the delegation of authority, assignment of competent offices (including offices of primary responsibility for records), functions and activities. This would be represented by the assignment of organizational units into sub-groups, with as many subdivisions (and levels) as is necessary to reflect the organizational units responsible for competences, functions and activities.

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[23]SAA *Glossary*, 7.

In theory and practice, most organizations recognize the distinction between operational activities and administrative activities. Operational or substantive activities are those relating to the purpose for which the organization exists. Administrative, facilitative or housekeeping activities supporting operations are common to all organizations and relate to their internal management.

III.C.1. Coding for Identification

It is necessary to develop a reference or identification code which intellectually represents the arrangement according to the structure of the classification system. The reference code provides information about the context of the records and serves for access and retrieval. Assigned permanently to each group of records, the reference code would accompany the unit forever. In other words, the intellectual order should not be linked to the physical order; a separate location code would be devised for physical control. As has been the normal situation in North America, if there is no classification system governing the intellectual order of the records, then it is necessary to maintain a physical order. Setting up a classification system and devising separate intellectual reference and location codes not only frees an organization from having to keep its records physically arranged, but also avoids the need to change codes every time they are moved. These practices contribute to the improved utilization of space, simplify conservation, and increase efficiency. An explanation of the codes, a description of the records identified by them, and any changes must be documented and cross-referenced.

III.D. Integrated Retention and Disposition Schedule

Proper control of archival documents requires an officially authorized records schedule or timetable governing the retention of records from the creation date to the disposition date and documenting the rationale for decisions. The primary purpose of scheduling records for retention and disposition is to reduce their accumulated volume, after immediate organizational needs have been served, to only those that are necessary to provide evidence of the organization's conduct of affairs. Therefore, decisions about periods for the retention of records and their appropriate disposition must be based on researched administrative and legal requirements. Selection decisions cannot be based upon frequency of use or typologies devised on the basis of inappropriate subjective (appraisal) considerations. Disposition may be by destruction, transfer of custodianship, or removal from the control of the organization. The retention and disposal plan would logically be integrated with the classification scheme for the fully integrated management of records.

III.E. Preservation and Custody

The decision to keep records presumes accepting the responsibility for their preservation. Preservation is the whole of the activities for keeping from injury or destruction and maintaining the state of things, including the retention of characteristic qualities or condition. Implicit in the definition of the term is the presumption that whatever is being preserved, in this case records, will be stored properly. Wherever the physical location of records, there must be a secure and natural place of custody and preservation,

including records storage equipment and supplies, with controlled environmental conditions. Occasionally it might be necessary to apply conservation measures to records to protect them against damage or deterioration, stabilize, or otherwise treat damaged or deteriorated documents. Other than basic and emergency techniques, this work is best conducted by the appropriate professionals.

Again, the existence of controlled procedures is necessary for preserving both the integrity of the individual record and their accumulated whole. While the conditions for preserving conventional records are well-known, consistent care still needs to be exercised. For instance, the practice of transferring records on paper to another medium, such as microfilm, ought to be done according to existing standards for making preservation copies. As might be expected, electronic records require particular attention. Among the many required activities would be the implementation of routine procedures for making master and back-up copies of the records in the system. In conjunction with a system of regular recopying and/or migration, consideration must be given also to the backward and forward compatibility for the technology chosen for preservation purposes.

Underlying the preceding discussion about the management of an organization's records is the assumption that the organization has custody of them. Custody refers to the "responsibility for the care of documents based on their physical possession" but it "does not always include legal ownership

or the right to control access to records."[24] For example, an organization may retain legal custody of its records but transfer physical custody of all or a portion of them to a commercial record centre or an archival institution (both of which would be responsible for their physical care).

An organization must be able to guarantee unbroken custody over time to establish the authenticity of its records. Today, custody problems arise with the following practices: (1) contracting out, (2) organizational projects conducted jointly with others, (3) members removing files, documents, disks, and so forth from the place of business, (4) the increasing practice of telecommuting, and (5) the aforementioned transfer of records to a record centre, archival institution, or other legitimate successor. For control, regulated procedures governing custody must be in place for all organizational records. Controlled procedures would necessarily cover the internal transfer of records to and from divisions, departments, organizational units and individuals within the same office, building or between different organizational facilities, including its own record centre. The procedures would extend also to the transfer of records to an external agency, such as a commercial record centre, archival institution, or other legitimate successor. When records are transferred, particularly if a transfer of legal rights and obligations is involved, it is necessary to ensure that the appropriate documentation (i.e., agreements and contracts, accession registers, finding aids) is made and received.

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[24]SAA Glossary, 9.

III.F. Documentation

Documentation must be created for the whole records management programme and for each specific operational plan it encompasses. For example, to preserve the meaning of the records, to exercise control, and to provide access, it is necessary to document the classification system. Included among the required documentation would be policies, procedures, a system of finding aids (filing lists, indices with the authority control and thesauri used in their construction), records inventories, accurate reference and location codes, registration, transfer authorizations, and so forth. The rationale and specifics of plans for vital records management, business resumption and disaster recovery are other examples. Any changes must be recorded and cross-referenced as part of the ongoing documentation procedure.

Besides proper documentation to provide guidance, information and instruction relating to its activities, the records management programme and its various plans need further support. This may be provided by the education and training of members and the consistent monitoring and correction after implementation to ensure the programme continually serves the purposes for which it is designed.

IV. CONCLUSION

Near the beginning of the century Sir Hilary Jenkinson observed that "[A]ll the troubles we have seen attending modern Archive-making come back to a single thing, absence of control."[25] Jenkinson suggested that we apply the following criteria to the management of modern archives:

> [T]he golden rule for the Administrator, so far as concerns his papers, must be to have them always in such a state of completeness and order that, supposing himself and his staff to be by some accident obliterated, a successor totally ignorant of the work of the office would be able to take it up and carry it on with the least possible inconvenience and delay simply on the strength of a study of the Office Files.[26]

Adherence to the Administrator's Golden Rule would mean devising a method of managing the integrated record system and the accumulated documentary residue in such a way that it would not only allow an imaginary successor to carry on the work with ease, but also relieve the present state of chaos and permit current organizational members to do the same. To accomplish this goal, it is, however, first necessary to recognize the existence of a problem. In this situation it is incumbent upon those with the knowledge, archivists and records managers, to advise those with the need to know, the organization's executive level management, on the proper relations between the organization, the office information system, and the record system.

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[25]Jenkinson, *Manual*, 170.

[26]Ibid., 153.

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