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THE USE OF ELECTRONIC DATA PROCESSING IN CORRECTIONS AND LAW ENFORCEMENT

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THE USE OF ELECTRONIC DATA PROCESSING IN CORRECTIONS AND LAW ENFORCEMENT

by

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THE USE OF ELECTRONIC DATA PROCESSING IN CORRECTIONS AND LAW ENFORCEMENT

I. INTRODUCTION

The use of electronic data processing in the fields of corrections and law enforcement is rapidly expanding. This paper will attempt to review the reasons, methods, accomplishments and goals of such activity. Suggestions will be made concerning appropriate applications and problem areas will be discussed.

II. BACKGROUND

The demands being placed upon the system for the administration of justice by an ever-increasing and dynamic population are self-evident. Crime, commitment and recidivism rates are increasing in spite of modern investigation and treatment methods. A major obstacle in improving the success rates results from the inability to effectively use a mounting accumulation of research, statistical data and case history or incidental information.

No absolute answer has been reached, nor may ever be reached, as to the ideal investigative, rehabilitative or preventative measures. The techniques currently used, however, for investigation, analysis, information processing and decision making lack sophistication when considering the potential possible. There is mounting evidence, however, that a new approach to the study, adjudication and treatment of such deviant behavior is needed. One possible new technique involves an increased use of integrated electronic data processing...directed towards rapid, accurate information retrieval, better case management, more effective decisions and thus an improved success rate for cases handled. In addition, this tool will permit more effective use of the research, statistical and case history data in building a sounder theoretical base.

Although an increased interest has been shown in the use of EDP by the correctional and law enforcement community, at present punched card routines provide the primary level of sophistication. Such use is also generally restricted to administrative matters. Progress has been made in the past several years in the refinement of data processing techniques that far exceeds the expectations of researchers and users. However, such techniques have not been fully applied to the system for the administration of justice for the following reasons:

(1) Economic: Piecemeal research and application often results from limited funds and small project size. Moreover, those doing the research often have other duties to divert their attention.

(2) Lack of knowledge: A lack of awareness of the capabilities and proper use of the computing sciences resulting from inadequate access to computer analysts and system designers for consultation and collaboration.

(3) Resistance: The failure of those in the correctional field to investigate thoroughly the possibilities of modern data processing and analysis techniques beyond administrative usage also may hinge on a lack of confidence in the appropriateness of electronic computers processing information concerning behavioral matters. Final decision on treatment selection and case management must obviously be made by the professional staff and hearing officials. The intent of the suggested automation is not to replace the correctional worker or the individual approach, but to extend treatment capabilities by filtering and coordinating the large amounts of information available for consideration.

III. COMPUTER APPLICATIONS CURRENTLY BEING UNDERTAKEN

Before we move on to a consideration of specific ways that EDP could be utilized in corrections and law enforcement, let us consider examples of activity in these and related fields. Digital computer systems are installed, or under study, at a growing number of metropolitan police departments including Chicago, St. Louis and Los Angeles. A committee has been established by the California Peace Officers Association to develop a set of uniform standards and specifications for a state wide EDP system for use by law enforcement personnel. The state of New York has undertaken a study to develop an integrated selective information processing system to serve the network of agencies responsible for law enforcement and the administration of justice. The Los Angeles Superior Court system has established a special committee to investigate the feasibility of using EDP and other scientific aids to carry out the work of the court. The Administrative Offices of the California Courts are undertaking a similar study. The Administrative Offices of the U. S. Courts and the California Department of Corrections are considering the possible use of EDP for administrative and analysis purposes.

Administrators, practitioners and researchers in most scientific fields are becoming increasingly aware of the potential uses of computing technology. The fields of corrections and law enforcement, with their constant social and financial pressure, should make haste in looking to such techniques for more effective and efficient operation.

IV. POTENTIAL USES OF EDP IN CORRECTIONS

Any investigation of the applicability of automated methods to correctional information processing problems must be prefaced by two key questions:

(1) Does an information processing requirement exist that can be better handled through automated techniques?

(2) Is the computer application under consideration feasible from a technological, economic and psychological standpoint?

Prior to an investigation of what computer technology has to offer, it is first necessary to demonstrate a need for improvement in present correctional data processing systems. Although there are some correctional workers who feel that the present manual data processing methods are adequate, there are many who feel that the current system does not satisfy present day and near-future user requirements. This dissatisfaction is paradoxical in view of the large expenditures of time, money and effort made by correctional agencies to compile data on crime and the various programs developed for its treatment. This data continues to be hard to use and even more difficult to analyze. With all the time spent in manually recording, processing, storing and transmitting such data, it is unfortunate that this information frequently is not available for making effective administrative or treatment decisions.

Case history files now bulge with client reports, summaries and clinical information. The correctional worker under pressure of high case loads does not have enough time to quickly extract information to aid a treatment decision. One of the major findings of Vinter and Janowitz (1) in a study of several youth correctional institutions is that the professional staff had far more information about their clients than they were able to use. Decisions concerning program changes and client management were being made constantly but the massive information files rarely had any effect on these decisions. In another study (2) (3), an experienced and highly competent correctional worker was provided with complete case history and clinical information but was still less effective in predicting parole performance than an automated method based on one year of research.

Among the most serious weaknesses of many correctional data processing systems is that the manual collection and processing of information consumes a great portion of the correctional worker's time. The staffs of correctional, parole and probation agencies are often so busy collecting, compiling and filing case histories that they have little time left for their clients.

Redundancy in information gathering is another problem that exists because various agencies require and utilize large amounts of identical data. When cases pass from agency to agency, large quantities of information are often duplicated and passed along. Thus the files in each agency will frequently repeat those in every other, in many aspects, with considerable outlay of time, energy and funds involved in the information gathering and duplication process.

If it is determined that an improved data processing system is needed in corrections, what are the basic requirements for such a system? An investigation of present correctional systems will lead to the possible application of automation techniques to at least four basic information needs:

(1) Individual Case Management

There is little doubt that automation of the processes of gathering, recording, storing, transmitting and summarizing client data could relieve the correctional worker of many of his routine data processing tasks and allow him to give more attention and time to the individuals with whom he is working. The major requirements anticipated in such automation are:

a. Information requirements: A determination must be made as to what information should be collected. The information requirements of the user will determine the nature of the data processing system.

b. Input specifications: Standardization of data and forms on which it is used.

c. Output specifications: Determination of useful levels of summaries required for specific purposes (Parole Board, superintendent, classification committee, etc.).

d. Processing specifications: (1) Development of techniques to convert non-numerical information to a form amenable to computer usage. (2) Investigation of appropriate automatic information storage and retrieval methods.

(2) Treatment Decisions

Another possible step in the automation of correctional data processing systems might be the development of computer-aided treatment recommendations. Many of the large military command/control systems now in existence not only process, analyze and display information for command decisions, but on request may make recommendations based on the programmed logical processing and interpretation of data. The diversity of disciplines, approaches and studies in the field of corrections often results in confusion as to what is the optimal treatment approach for a given individual. Such decisions (e.g., selecting an institution, predicting probability of parole success, etc.) are essentially a "theory of games" problem. An EDP system could be used to help determine the best strategy, calculating the mathematical probability of success or failure for each possible

course of treatment and conceivably might make recommendations for combinations of treatment which might otherwise not have occurred to the worker. Such a system could provide a more comprehensive method of analysis and a more objective base for correctional treatment decision-making. Initial steps have already been taken, as evidenced by a study (4) which attempts to use mathematical probability of success and failure on parole to assist the worker in predicting parole outcome. Another study (5) determining the effectiveness of particular treatment programs for specific types of client represents an attempt to provide workers with an empirical basis for treatment decisions.

(3) Research

Although few correctional studies have been made utilizing large, high capacity computers to process and analyze the data, there is a growing awareness among researchers that more information is needed about what modern computer technology can do to assist their programs. Several attempts to investigate present day data analysis capabilities have resulted in the use of more sophisticated techniques than those provided by frequency counts and bi-variate analysis. The use of multi-variate techniques in the California base expectancy studies (4) marks an important step in the development of a more comprehensive analysis of complex and interrelated data.

The development of specialized analysis techniques for the diverse types of data that characterize many correctional studies could prove of great benefit to correctional researchers. The mathematical statistics which may be used in developing analytical procedures will probably not be new. The contribution will be in selecting the best method for the research project, adapting the method to the problem and preparation of computer techniques to automate the task. A hypothesis-seeking analysis procedure for case history data may have to be developed because of the large number of pre-institutional, institutional and post-institutional variables. The ultimate goal would be an automated sub-routines library of computer programs designed specifically for correctional research. Many such programs already exist and are heavily relied upon in other scientific fields. It is essential that the field of corrections make an effort to pioneer the development of data processing techniques that apply to and expand the correctional body of knowledge.

(4) Administration

We are all aware of the advances which have been made by government agencies in servicing large numbers of individual accounts and in providing detailed statistical presentations for administrative use through utilization of modern data processing equipment. Unfortunately such facilities have not been available for use by correctional agencies until recently. Yet there are few accounts more badly in need of "servicing" and evaluation than those of offenders.

A few of the management benefits which can be reasonably expected from an integrated correctional data processing system:

a. Improved projections of trends in institution populations, probation and parole caseloads, offense categories, etc.

b. Improved capability for optimizing the deployment of personnel and resources within institutions and agencies.

c. Better budgetary control and increased efficiency in the preparation of new budgetary estimates, more effective monitoring of expenditures against current allotments and better inventory estimates and controls.

d. Increased capability to retrieve and transmit information rapidly at the request of management or external agencies.

Because such voluminous data are stored and accessible, appropriate techniques could be provided to permit detailed trend analysis (e.g., repetitive offender analysis, efficacy of treatment programs).

Now let us turn to the second question concerning feasibility. The state-of-the art computer applications in related fields supports the conclusion that the major obstacle in the development of correctional and law enforcement data processing systems will not be technological in nature.

Certain political and social barriers will have to be overcome, such as jurisdictional responsibilities and appropriateness of involving computers in a casework environment. The fear that centralized data processing will not provide the information to the user when and where he wants it will also have to be removed. Each agency has a need for

information which is often considered peculiar to that organization and the staff may feel uncertain of their ability to obtain this information from a centralized operation.

The single greatest obstacle may prove to be economic in nature. Correctional agencies have historically not had a high priority listing on government budgets. When inadequate funds exist for basic operations, it is difficult to talk about model systems to administrators. However, the need for information to adequately assist in treatment decisions and in program and facility planning grows more acute each day. The initial expense of developing and maintaining such a system will not be small. However, a comparison of the initial expense of such a system against the benefits provided by better information for administrative and treatment decisions, increased research analysis capabilities and more time available for client treatment may more than justify the expenditure.

V. POTENTIAL USES OF EDP IN LAW ENFORCEMENT

Consideration of potential uses of electronic data processing in law enforcement involves essentially the same questions posed above in relation to the field of corrections, i.e.

(1) Does an information processing requirement exist that can be better handled through automated techniques?

(2) Is the computer application feasible from a technological, economic and psychological standpoint?

There is no doubt that manual methods of information collection, dissemination and use are inadequate in light of the ever increasing information processing requirement of law enforcement agencies. Incident reports, identification data and stolen property files alone are of such growing magnitude that appropriate analysis or use of the information available is impossible.

In a paper on law enforcement information processing systems, (6) Isaacs discusses the role of such a requirement in police activities. He groups the information processing functions of a typical police department into three organizational units: A Communications Center, a Records and Identification Center and an Information Analysis Center. He describes the individual unit responsibilities as follows:

(1) Communications Center: This section receives and processes messages from the public, patrol units or other agencies requesting service and transmits instructions to the field units. Relevant information on wants, warrants, stolen vehicles, etc., is also disseminated.

(2) Records and Identification Center: This unit (or units) provides the storage and retrieval facility for all information collected and recorded. It provides outputs upon request to users in the department and other agencies. It also performs such services as correlating stolen property records with pawnshop reports.

(3) Information Analysis Center: This provides for the collection and development of statistical data on types of crime, their rates and distribution. The data are employed to measure the magnitude of the crime problem, alter deployment of forces periodically and measure the effectiveness of police operations with respect to crime prevention and suppression, apprehension of criminals and recovery of property. This unit may also maintain investigative aids such as the modus operandi system.

None of the above units in a large police agency can adequately meet their individual responsibilities by a manual system of information handling. Moreover, the coordination of effort between such organizations and related agencies is impeded by a multiplicity of methods for data collection, storage and use. Obviously, the information processing demands being placed on a modern law enforcement agency are overwhelming and optimum return is not being obtained from effort expended. A police agency must be a dynamic entity adaptable to a changing environment. It must also be constantly searching for new ways to improve techniques for fulfilling agency obligations. The potential uses of electronic data processing appear equally as imperative for law enforcement needs as for the field of corrections.

It can be observed that the requirements of a law enforcement information processing system are more straightforward than much of that involved in corrections (e.g.: the matching of a pawn ticket with a stolen item vs. the selection of a treatment decision), but the two areas have many similar goals and problems. Essentially, the same requirements exist for any law enforcement data processing system as were specified in the earlier discussion of the field of corrections...with appropriate adaptation, of course.

The operational needs of the law enforcement agency (i.e. initial incident and related investigation, follow up investigation, management of resources and statutory reporting requirements) will gain the most immediate benefit that EDP can offer. However, later improvements in all phases of enforcement responsibility (including crime prevention) should result from the additional information available, refined analysis techniques and a better base for decision making at all levels.

In view of the law enforcement need for an effective real time communications system, the design and ultimate installation of an electronic data processing system may be more readily feasible in the field of law enforcement than corrections. For example, apprehending kidnappers requires more immediate communication facilities than rehabilitating an offender.

The same political and economic barriers facing a correctional system will still confront the installation of any electronic data processing techniques in a law enforcement agency. However, the incidence of crime is so great that public acceptance may be more readily forthcoming for the law enforcement field.

VI. A PROPOSED SYSTEM

Having now reviewed the general needs and possibilities in the correctional and law enforcement field, let us now examine a proposed system under consideration by the state of New York (7). A six month (May, 1963 - November, 1963) study was made to determine the technical feasibility, potential significance and preliminary design of an electronic data processing system to provide support for the 1157 local and state agencies concerned with the administration of criminal justice. The study resulted in the following:

(1) Desired capabilities were determined that reflect the needs described above.

(2) A system data base was recommended.

(3) Three types of messages to be utilized by the system were: data update messages, request messages and system output messages.

(4) Seven primary functions were outlined for the system (i.e. identification of persons, establishing a relationship between known persons and open cases, identification of groups, providing data on persons registered with the system, providing data on groups, property identification and research.

(5) A review of system modules, minimum equipment components, computer programs and personnel requirements was completed.

Conclusions drawn from the study concerning contributions to the administration of justice provided by the system were:

1. New Capabilities

   a. Identification of suspects: For known criminals, a comprehensive search of personal data and modus operandi for identification purposes would be provided to a degree impossible without the use of electronic data processing.

   b. Solution of Outstanding Open Cases: A more complete way to store information on unsolved crimes is provided as well as a method for more effective and complete search of data stored in an attempt to associate previous incidents with those of an immediate nature.

c. Retrieval of Intelligence documents: Automatic abstracting, indexing and retrieval of textual intelligence information is provided that would permit not only a more ready method of using such information, but the capacity for a greater amount of data than manual systems could handle.

d. Pattern analysis of data: A capability for more comprehensive analysis is included that would assist in evaluating new trends in crime, testing new approaches to the administration of criminal justice and discovering patterns of structure and activity of criminal organizations.

2. Improvement in Existing Capabilities

The assembling and retrievability of the body of information on a scale not previously known in the administration of criminal justice would provide a tremendous increase in the ability to perform research on crime and criminals. The procedures of centralized fingerprint analysis and search, criminal record maintenance, stolen property identification, warrant and wanted notice processing and name searching would be performed with greater scope, accuracy and efficiency.

3. Elimination of Duplication

Installation of the proposed system would substantially reduce present unavoidable duplication of effort by many agencies on identification data, case history files and want or warrant information.

4. Increased sharing of Information

Proper functioning of the system would insure systematic and comprehensive movement of information among all appropriate agencies on a sound need-to-know basis, without compromising the sensitive nature of the information.

On the basis of the data base and system capabilities established, a preliminary design for an intelligence and identification system has been developed that can be built with a minimum of new research and developmental costs. All equipment recommended is currently available and all software programs are within the state of the art. The authors of the study conclude that the system can be readily produced and that it is completely feasible from a technological point of view.

VII. SUMMARY

The demands upon law enforcement and correctional agencies increase daily. Current techniques seem to barely stem the tide of criminal acts and recidivism rates remain too high despite expanded rehabilitative programs. Improvements in detection, apprehension, adjudication and treatment of offenders is imperative. The mass of information available and necessary for meaningful handling of cases is not being effectively used and a new approach appears necessary.

The trend towards automation of information processing in other fields also grows more pronounced each day. Preliminary investigation has shown that electronic data processing can be effectively applied to corrections and law enforcement. These fields should not delay an exploration of what modern computer technology has to offer.

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