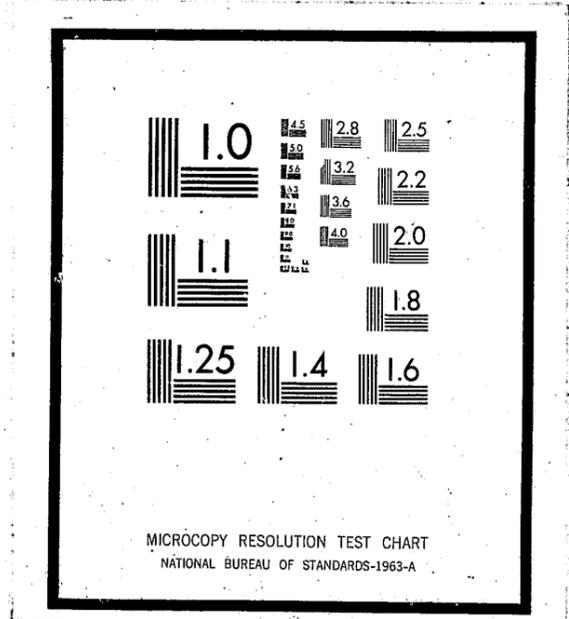


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STATISTICS DIVISION  
Report #3/73

MINISTRY OF THE SOLICITOR GENERAL  
October, 1973

*CANJUS Project -*

ORGANIZATION  
OF  
QUANTITATIVE APPROACHES  
TO THE  
CANADIAN CRIMINAL JUSTICE SYSTEM

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DISCLAIMER

The views expressed are those of the authors and do not necessarily represent those of the Ministry of the Solicitor General.

The purpose of this paper is to briefly describe the present efforts for information development and quantitative analysis of the Canadian Criminal Justice System. In addition, it develops a perspective and shows the inter-relationship of these different efforts.

Certain terms used in this paper have meanings which depend on the background of the reader. The basic terms and their meaning in this context follow.

Information means those pieces of intelligence which are generated by manipulating individual facts, transactions or numbers.

Data means individual items or numbers which represent one fact or transaction.

Information systems are sets of actions or activities which manipulate data to produce information.

Data base is the term used to describe the set of integratable data files produced by operating information systems.

Operating information systems produce information for one specialist function or sphere of interest and, usually, an ordered set of historical data relating to that function.

Statistics refer to published information relating to or derived from some information system.

Statistical studies normally refer to one-time developmental studies which at some later time may be integrated in an information system as a regular output.

Quantitative research or analysis is that research concerned with second level <sup>1/</sup> statistical analysis of a predefined data or information set.

Qualitative research is research in the areas of behavioural science, psychology, sociology and

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1/ Second level analysis involves information already processed and in a well-defined format; first level analysis involves more the study of information formats which should be used to assist management and second level statistical analysis.

other social sciences where the primary orientation is toward the structuring and first level analysis of problems or the intense study of a more narrow "data set" (case studies).

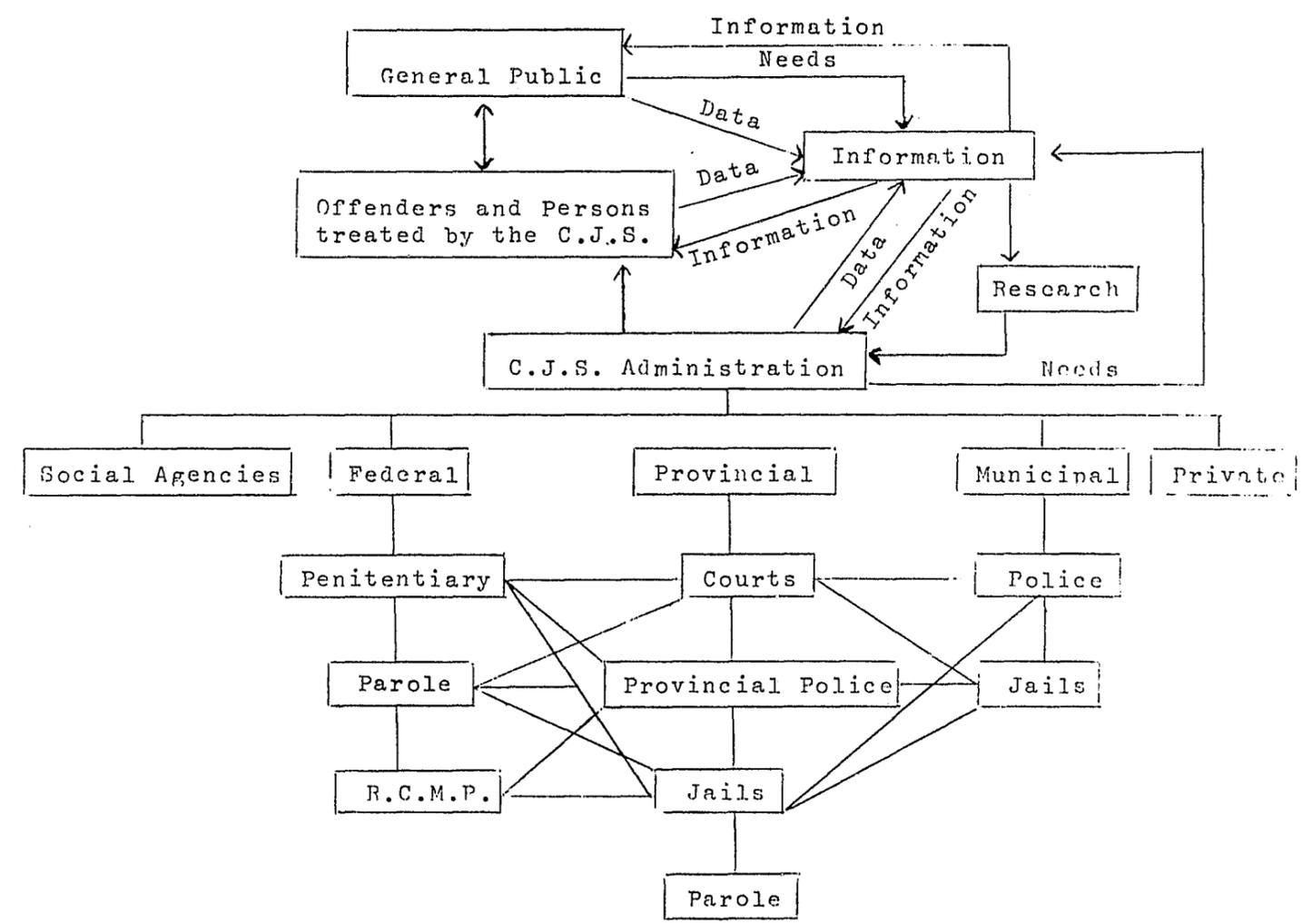
The criminal justice system in Canada has three interdependent parts (see Figure 1). The first of these is the offenders and persons treated by the C.J.S. and the second is the administration of Criminal Justice. The third part is policy formation and analysis such as in the Law Reform Commission, Justice, or the Ministry Secretariat. Any information must satisfy not only the needs of administrators of the criminal justice system, but also the needs of research, institutes and public groups which are interested in the system and its administration.

These three entities supply data on crime, criminal acts, offenders and the administration of the system as well as having needs for information.

The administration of the criminal justice system is divided between federal, provincial, municipal, private and social service agencies and these are further divided into specialized units including, at the federal

FIGURE 1

BASIC SYSTEM DESCRIPTION



level, the Secretariat of the S.G., C.P.S., N.P.S., R.C.M.P. and Justice; at the provincial level, the courts, police, parole services and jails; and at the municipal level, the police, probation service and jails. There are many interactions between the various administrative agencies, not only in terms of the flows of offenders and accused within the criminal justice processes but also in the administration of the system.

The following sections describe the relation between modelling and the derivation and use of information. After describing the several groups involved in one or all of these activities their inter-relationships will be described. Finally, their progress to date and the way in which future relationships between the groups might be improved is discussed.

II INFORMATION AND MODELLING RELATIONSHIPS

It is necessary to define a relationship between data, information, statistics and modelling and the ways in which they relate to different types of research.

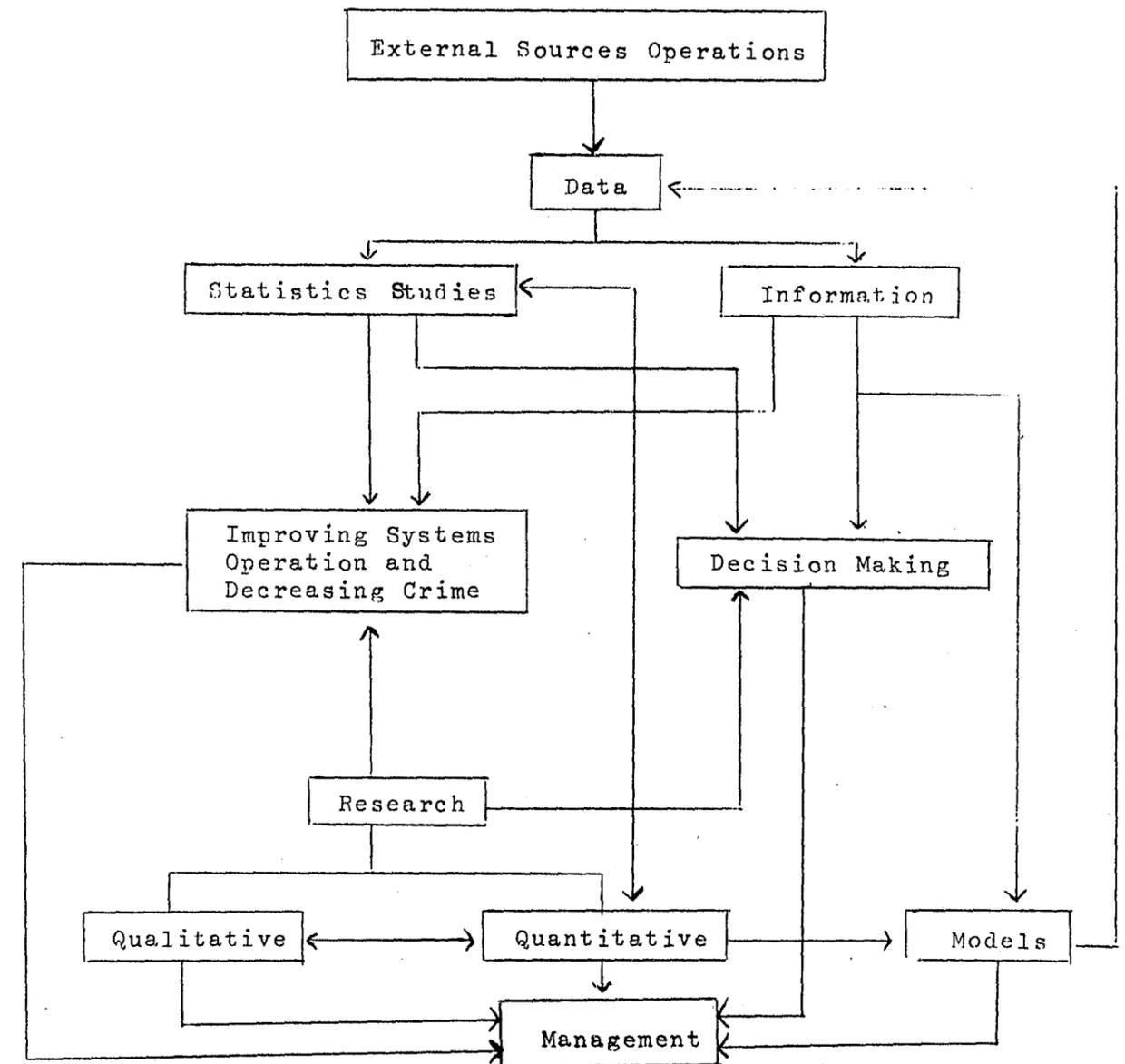
The only way in which one can derive accurate statistics and/or information about the system is to use basic data generated by the system.

It is intended to differentiate between information and statistical studies by assuming that the statistical studies deal with one-time developmental analyses of the control of crime and that information of information systems deal with improving the decision-making in the administration of the criminal justice system. The two are interrelated in many cases (see Figure 2).

Management information systems deal with and are dependent on three phases of information utilization:

1. The manipulation of data produced by one or more operating information systems in order to produce integrated historical information concerning one or more specialized function.

FIGURE 2



2. Forecasting systems which use data from one or more operating information systems to produce estimates of an expected situation at specific points in the future.
3. Input from mathematical models which use data from any of the previously described systems, though usually from forecasts, to provide the ability to evaluate alternatives without the expenditure of large resources.

These interdependencies are exhibited in Figure 2. A Management Information System then is a set of activities which produce integratable historical information, forecasts and the probable results of specified courses of action. The system is dependent on a data base containing facts which can be inter-related. The production of these facts is, in turn, dependent on operating systems which reflect the operations of the organization, its financial structures and its personnel. It is also necessary to consider the external environment such as the systems of criminal justice and the responsibilities of the provinces, the municipalities and private agencies. There are at least three agencies involved in

the production of information at a federal level; the M.I.S. Division of the S.C., R.C.M.P. and Statistics Canada. The prime users of existing M.I.S. information systems are the S.G. and his agencies and for S.C., the general public. Information relating directly to the activities of the S.G. may not<sup>2/</sup> require collaboration with S.C. although the authors recommend this collaboration as a more efficient use of resources.

Any research initiative related to crime and its control can be quantitative, qualitative or both. Quantitative research results in the definition and description of models which use certain data on the criminal justice system or crime. The information which can be derived from the data determines the kinds of models which can be built for further study. This interdependence is shown in Figure 2.

Given these basic inter-relationships of data, research, models, and information, the quantitative descriptions of the criminal justice system are divided into two parts. These are:

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2/ See memo from David Matas to B.C. Hofley, March 16, 1973.

1. the information system itself; this includes the data collection, aggregation, manipulation and feedback of the information to the managers and operators of the criminal justice system;
2. the development and up-dating of the information system. This is the largest component in determining and maintaining the management information required and in assuring its production.

This basic organization of research, modelling, information and statistics serves as a basis to discuss the interaction of the many groups involved.

III INTER-RELATIONSHIPS BETWEEN GROUPS

The groups and research efforts involved in quantitative descriptions of the criminal justice system are: <sup>3/</sup>

1. The Mohr Committee;
2. The Statistics Division of the Ministry of the Solicitor General;
3. The Research Division of the Ministry of the Solicitor General;
4. The Judicial Division of Statistics Canada;
5. The Management Information Systems Division of the Ministry of the Solicitor General;
6. The Planning Branch of the Treasury Board;
7. The Department of Justice;

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<sup>3/</sup> It is recognized that other groups including the Policy Planning & Evaluation Branch of the S.G. line agencies, the provinces, municipalities and many Private and Public agencies are involved in some form of quantitative analysis.

- 8. The Hann Proposal;
- 9. The Law Reform Commission.

In developing the respective positions of each of these groups or efforts, there are two questions to be considered. These are:

- 1. The roles of these groups during the initial development of a more responsive information system, or systems, for the criminal justice processes and criminal justice administration in Canada.
- 2. The roles which each of these groups and efforts should play in the continuing development of this information system or systems.

Given these caveats, the development and updating of criminal justice information and the operating information on the criminal justice system can be considered. The Mohr report made a recommendation for satellites and for a submission to obtain a better integrative and responsive statistical information system. The main impetus for this integration would be Statistics Canada, but the Management Information Systems Division,



through its Canadian Criminal Justice Information System, would help in the process of development and up-dating of information.

A high degree of integration between Statistics Canada and the Management Information Systems Division is necessary, both in terms of existing data systems and in the conception and development of integratable information systems.

There are two types of information concerning those processed by the Canadian criminal justice system and the administration of the system:

1. Monitoring information produced both regularly and on demand;
2. Developmental information which is largely the result of research or statistical analyses performed on specific phenomena of crime or crime control.

The main impetus of the Statistics Canada Judicial Division and the Management Information Systems Division effort is the production of monitoring information whereas the main impetus of the Research and Statistics

Branches would be in developing research and statistical studies on the criminal justice system and its administration using this information and drawing implications for future information and data needs.

Monitoring and developmental studies are inter-related since the developmental studies may lead to new and better information for the monitoring of the system and the monitoring provides a data base on which the developmental studies can be based.

The Hann proposal relates to the criminal justice systems management, since it implies certain predicting capabilities with respect to penitentiary workloads, thus improving the administration of the correction sub-system. The CANJUS simulation model is also related to the criminal justice system management, and thus both fall within the scope of developmental studies to be done by or for the Statistics and Research Divisions.

A part of the effort within the CANJUS model will be the Treasury Board theoretical and empirical derivation of costs to obtain a macro simulation model of the Canadian criminal justice system, as well as their expected input on further conceptualization of the model itself. <sup>4/</sup>

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4/ For more information on the proposed contribution of Treasury Board see "Project Proposal for a Systems Model of the Canadian Criminal Justice System".

From the CANJUS model to the actual process of development of the Canadian criminal justice information system there is a large interaction between the Research and Statistics Divisions and the actual process of development.

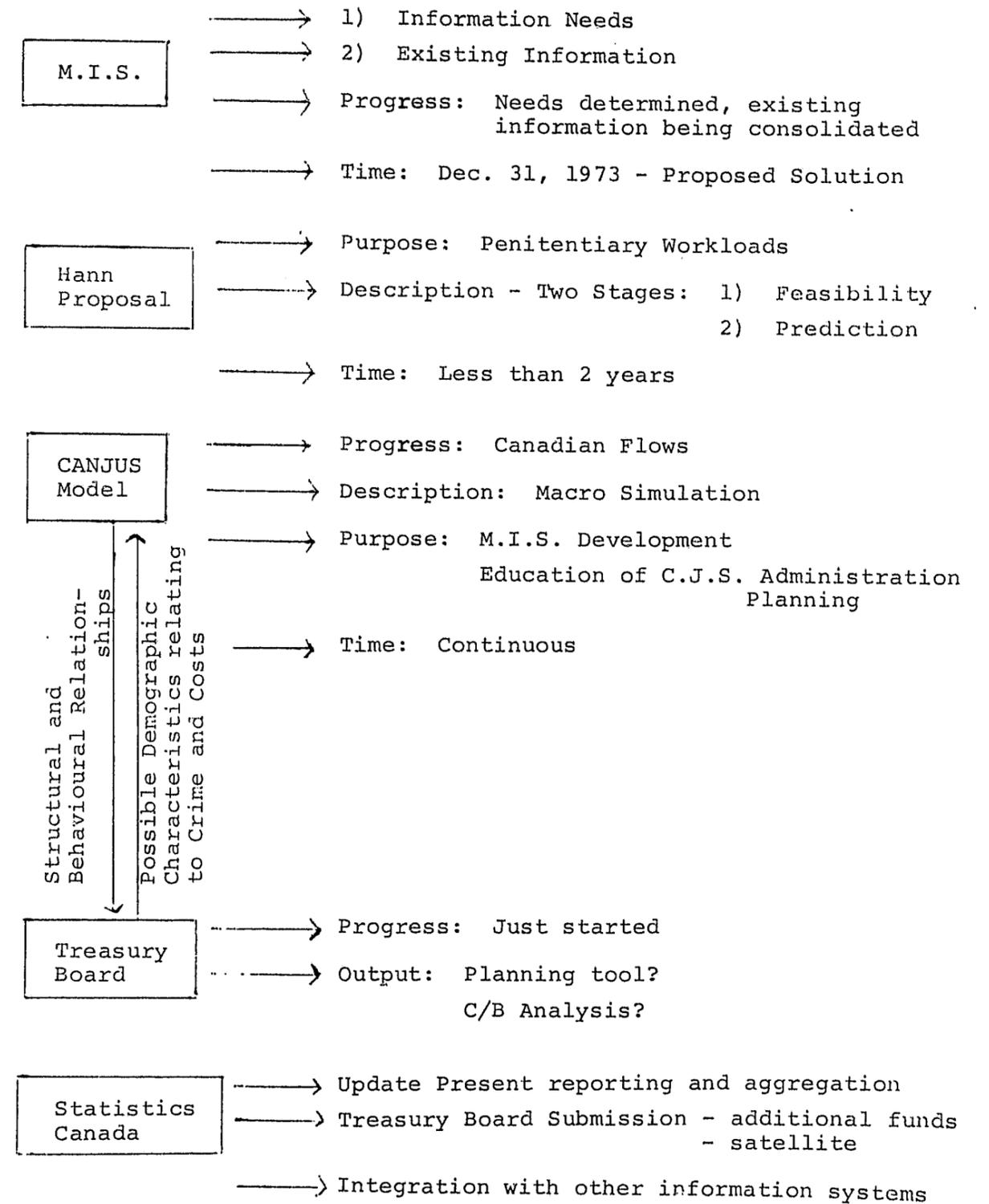
IV PRESENT RELATIONSHIPS AND PROGRESS

A resumé of the progress made by individual groups is shown in Figure 4. Areas such as the Law Reform Commission, the Justice Department, the Mohr Report, are not considered in detail because their effort up to this point has been reasonably well defined with respect to the criminal justice system. The Management Information Systems Division is studying two basic areas:

1. The needs for criminal justice information. This includes both operational and planning information.
2. Determining what criminal justice information exists within the federal and other levels of government.

A higher degree of co-operation is being sought with Statistics Canada to develop and implement integratable information systems. With respect to Ministry and Agency needs, it is expected that the Management Information Systems Division will take a leading role, and with respect to the general public needs, Statistics Canada Judicial Division would lead. An important consideration

FIGURE 4



during the study which is now being undertaken has been communication and consultation with the provinces. The M.I.S. effort is just one of several federal agencies who are co-operating with the provinces (including Statistics Canada and Justice). It is important that contacts with the Provinces be co-ordinated to ensure the credibility of such federal efforts. The completion date for the Management Information Systems report is December 31, 1973. This report will deal with the processes needed to obtain a good management information system for the criminal justice system and propose an implementation schedule.

The Hann proposal is to predict the workloads in the penitentiary system and is divided into two stages - first a feasibility study and then an actual analysis and prediction of penitentiary workloads over the coming twenty years. The time-frame should be less than two years and if approved, a staged funding of the project is recommended.

The CANJUS simulation model has obtained branching ratios and flows on the Canadian criminal justice system for eight provinces (excluding Quebec and Alberta) and is in the process of obtaining Canadian costs

and workloads for the system. Again, the problem of provincial communication must be raised. Eventually, this will be handled by the Communication and Consultation Branch of the Ministry; meanwhile, such communication will be known by and co-ordinated with other federal efforts. This is a very aggregate simulation and deals with only some 25 stages of the justice system. In the short term, it would be expected to have implications for the type of management information system which might be developed on a federal level for the Canadian criminal justice system and in the long term:

- a) To have educational implications for persons who are administering the system;
- b) To help improve the planning process;
- c) To assist in the development of better information systems.

The CANJUS model currently supplies the structural and behavioural relationships and the Treasury Board effort will, hopefully, provide some of the costs which are associated with the administration of justice in Canada as well as further conceptualization and possible causal modelling.

The exact role which Statistics Canada would play in these efforts has been outlined in the context of the other groups on Figure 3 and until a firm position is taken by the Judicial Division of Statistics Canada, any further outline of their position would be premature.

From this data then, a set of recommendations are drawn:

1. The Hann Proposal be funded for the first phase of the proposal which is a feasibility study. Once the results have been considered, further action can be taken if appropriate.
2. The Management Information Systems Division should have as much interaction with Statistics Canada in terms of existing data and in terms of improved information systems for the Canadian criminal justice system, as possible.
3. The Statistics and Research Divisions continue to have interaction and involvement with the Management Information Systems in terms of the model as well as information interaction outlined in Figure 2.

4. The Mohr Report should be viewed as a consensus as to the need for integration and development of a statistical series for the Canadian criminal justice system.
5. The Treasury Board effort should be integrated and oriented towards the cost information and later conceptual development using the initial behavioural and structural development having been done by the Statistics Division of the Ministry of the Solicitor General.
6. Increased co-operation with other federal agencies; provincial, municipal and local agencies to increase involvement in these efforts as on-going participants.
7. With respect to (6) particularly, all communication with the provinces and municipalities should be co-ordinated with the other major federal interests in this area including Statistics Canada and Justice. Within the Ministry, the Communication and Consultation Branch will assume this function in general.

A Co-ordinating Committee for research and analysis liaison with provinces will be instituted consisting of the Division Heads and the Branch Head from Research and Systems Development Branch and a representative from Policy Planning and Evaluation and Communication and Consultation as well as certain persons such as consultants who are specifically concerned with this function.

This paper is not intended as a final answer to the organization of the efforts being made to improve the C.C.J.S. by means of quantitative analysis but a first step to initiate discussion between interested groups and agencies concerned with crime and crime control in Canada.

LIST OF REPORTS

STATISTICS DIVISION

CANJUS PROJECT

Working Papers

TITLE

REPORTS

1/73	Organization of the Statistics Division Volume I	
2/73	A Preliminary Description of the Canadian Criminal Justice System Volume I	
3/73	Organization of Quantitative Approaches to the Canadian Criminal	
4/73	A Preliminary Description of the Canadian Criminal Justice System Volume II	#1
5/73	Use of the CANJUS Model for Planning and Evaluation in the Canadian Criminal Justice System	#2
6/73	Data Incompatibilities for Penitentiary Admissions and Parole Violations	#3
7/73	Information Systems Report on Canadian Criminal Justice System Costs: Problems and Recommendations	#4

## STATISTICS DIVISION

Working PapersTITLE

CANJUS PROJECT

REPORTS

8/73	Prediction of Penitentiary Population Volume I	#5
9/73	Information Systems Report on Workloads in the Canadian Criminal Justice System: Problems, Recommendations and Directions for Future Development	#6
10/73	The CANJUS Input Identity System	#7
11/73	Parole Expenditures and Workloads in Canada	#8

**END**