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CRIMINAL JUSTICE POLICIES IN RELATION TO PROBLEMS OF
IMPRISONMENT, OTHER PENAL SANCTIONS AND ALTERNATIVE
MEASURES (TOPIC II)

Computerization of the administration of criminal justice

Report of the Secretariat

Addendum

Executive summary of the Manual on Computerization
in the Management of Criminal Justice

CONTENTS

	<u>Paragraphs</u>	<u>Page</u>
INTRODUCTION	1 - 6	2
I. BENEFITS OF COMPUTERIZATION IN CRIMINAL JUSTICE .	7 - 9	3
II. PLANNING COMPUTERIZATION	10 - 12	5
III. OBJECTIVES OF COMPUTERIZATION	13 - 15	6
IV. APPLYING COMPUTERIZATION TO CRIMINAL JUSTICE	16 - 19	7
V. PLANNING AND IMPLEMENTING COMPUTER SYSTEMS	20 - 24	8
VI. PRACTICAL CRIMINAL JUSTICE COMPUTERIZATION	25 - 30	10
VII. CONCLUSION	31	12

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Executive summary of the Manual on computerization
in the management of criminal justice

INTRODUCTION

1. Computers are already in widespread use in criminal justice systems, yielding considerable benefits for those who use them. At the same time, some attempts at computerization have failed to reach fruition or have been costly and ineffective. From these experiences it has been possible to construct a set of guidelines which would ensure the successful implementation of computerization in criminal justice.

2. There are three guiding principles which should be adhered to in formulating policy for computerization in criminal justice:

(a) Top management responsibility. First, top management needs to be directly involved in any attempt at automation, not only to make decisions about the scope and nature of computerization but also to commit resources and to create the necessary management structures to ensure that the computer systems are completed and are effective. Objective evaluation of the system after completion is an important component of that process. All too often, policy makers wish to leave such responsibilities to computer professionals. Top management must take the responsibility directly, however, because the work of planning and introducing computer systems crosses many political and administrative boundaries, requires a considerable commitment of resources and tackles problems which are essentially managerial in nature;

(b) Top down approach. Secondly, the task of computerization should be tackled from the top down; it is essential to understand the overall objectives of the organization and to develop a computerization plan which tackles them in a co-ordinated manner. Too often, manual processes are automated in isolation, without due reference to the overall goals of the organization, resulting in systems which do not achieve their full potential benefit;

(c) One step at a time. Thirdly, automation should be tackled in small, carefully planned and managed steps. Many computerization projects fail because they are too grandiose in their design. While it is important to have a clear view of the entire system, and to understand the relationships between various parts, implementation should proceed one step at a time.

3. Many of the applications of computerization to criminal justice work, particularly in the early days, made a relatively insignificant impact on the operation of criminal justice as a whole, although they involved considerable investments of financial and staff resources. The early applications concentrated on computerizing those parts of the criminal justice system that were similar to work in the general

commercial world and for which computer solutions had already been developed. The first computer systems for the police were data base systems to record criminal histories and to computerize court administration-involved accounting systems to handle fine and fee payments, and data base systems to record details of cases waiting to be heard. In prisons, the systems in use were usually statistical in nature, to keep track of the numbers of inmates.

4. Those applications usually addressed local needs rather than the overall or fundamental objectives of criminal justice. For example, although computers have reduced some of the administrative paperwork associated with case handling by courts, apart from a few specific examples, until relatively recently few have assisted significantly in the conduct of trials, the throughput of cases, or the judicial decision-making process. Similarly, in prisons, although computers provided an audit function for keeping track of the numbers of inmates in custody, they did not assist significantly with overcoming the basic problems of prison overcrowding or régime management.

5. Great care is needed, therefore, to computerize in a manner which will yield real benefits, both in relation to the overall task and objectives of the criminal justice system and of its agencies, and to the level of investment in the computer system.

6. It is also important to recognize that the main problems associated with the computerization of criminal justice are not primarily of a technical nature; rather they are associated with the difficulties of managing the criminal justice system itself. Computerization cannot turn a badly managed organization into an efficient one, but it can help a well-managed organization to work more effectively and more efficiently. A prerequisite for any attempt at computerization is therefore to ensure that the organization itself is well-structured, properly managed and efficiently operated. Failure to do so will result in deficiencies in the organization being revealed in a dramatic and costly way once the process of computerization is begun.

I. BENEFITS OF COMPUTERIZATION IN CRIMINAL JUSTICE

7. The benefits of computerization in criminal justice arise only from the ability of computer systems to make a properly managed and structured criminal justice system work better; the benefits of computerization are therefore those associated with improvements in the efficiency or effectiveness of the criminal justice process itself. Computerization per se offers no benefits or advantages. Indeed, given the high costs of computerization, the inappropriate use of computers can seriously reduce the effectiveness of an organization and will impose high continuing costs for which little or no benefits are realized. Given that the criminal justice system is an essential component of society in that it protects the fundamental human rights of individuals through the

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upholding of the rule of law, it follows that any mechanism for improving the operation of criminal justice will have a very significant impact on many of the values which are held most dear. At this level, computers can and do provide significant benefits - they assist in the detection of crime, they provide better and more accurate information to help judges to make better decisions, they store information accurately, and they reduce the chance of wrongful arrest or conviction, while assisting with the conviction of the guilty.

8. These overall benefits are not achieved in isolation; they arise through the systematic application of computers both in individual criminal justice agencies and in a co-ordinated way across agencies. As a result, they facilitate the day-to-day operation of the criminal justice process. By way of example, some of the benefits of computerization in individual agencies and at a policy level are as follows:

- (a) At the operational level:
 - (i) For law enforcement officers, to trace the past criminal history, outstanding arrest warrants and summonses of suspects, not only in the local area but country-wide, or even internationally;
 - (ii) For prosecutors, to provide much-needed assistance with the preparation and handling of the increasing volume of cases and to provide automated systems to ensure that case preparations are completed within statutory and other time-limits;
 - (iii) For judges, to gain access to statute and case law pertaining to selected cases, and to obtain accurate information on the past criminal record of persons found guilty; for court administrators, to maintain accurate records of court decisions and to monitor the implementation of those decisions; often computers also assist with the administration of related court responsibilities, such as the collection of fines and costs, service of warrants, and the like;
 - (iv) For prisons, to record details of inmates and provide accurate registers of those held in custody; on a national scale, such systems can track individuals anywhere in the prison system;
 - (v) For probation and parole officers, to monitor the progress of cases;
 - (vi) To enable information to be passed rapidly and accurately between agencies to enable cases to be dealt with rapidly;

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(b) At the level of senior management in individual agencies: For service chiefs, to monitor the effectiveness of their service in terms of key effectiveness measures, such as the reported crime rates, clear-up rates, incidence and detection of serious crime, sentencing patterns, case throughput and incidence of re-offending;

(c) At the criminal justice policy-making level: To provide accurate aggregated information from individual agencies in a form which enables the operation of the overall criminal justice system to be monitored - for example, through relating the effects of custody diversion programmes to the incidence of re-offending, based on information obtained from police, courts or probation/parole records;

(d) Internationally: To enable criminal justice agencies in different countries to benefit from the experience of others through the international exchange of information to common standards, facilitated by the use of computers both to compile the information and to enable it to be exchanged easily.

9. In practice, these different levels and types of benefits are interlinked. For example, the introduction of computer systems to facilitate the day-to-day operational work of the courts and police will enable accurate and timely statistical information on the arrest and sentencing practice to be obtained and passed to an automated criminal statistics system, so long as the individual operational and statistical systems are designed to common standards and with such information exchange in mind.

II. PLANNING COMPUTERIZATION

10. To achieve significant benefits from computerization, the investment in development and computer equipment need not be large; indeed it is often the case that the best value is obtained from the smallest computer systems. However, there must be an overall plan to guide the introduction of computer systems, no matter how small or large they might be. Benefits at the operational level can often be achieved in the short term simply through the piecemeal provision of small computer systems, but unless these individual developments are co-ordinated in some way, the information collected by the individual systems will not be compatible and, as a result, any later plans to make operational improvements by automating the transfer of information between agencies (or even between offices of the same agency) will prove impossible or unnecessarily expensive.

11. More benefits from computerization are achieved through careful and methodical planning than through the purchase of innovative or expensive computer equipment. For that reason, it is important that the decision to computerize, the formulation of policy on computerization, the detailed planning and management of computerization, and the

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co-ordination of computerization with other organizational changes are all seen as the responsibility of the senior managers of criminal justice rather than of computer specialists or vendors. The level of senior management which is most appropriate will depend on the nature and scale of the computerization, but in a well ordered approach it would be expected that:

(a) Policy on the overall approach to computerization of criminal justice, in terms of inter-agency standards and information needed for policy formulation, should be set at the national level (and state level in federal systems) by the equivalent of the head of the Department of Criminal Justice (or, where the functions are separated, by the chief of police or head of the prison service), and the head of the judiciary, assisted and advised as appropriate by their respective staffs;

(b) Policy on the application of computers within criminal justice agencies should be set by the heads of the individual agencies, taking account of any overall policies for the criminal justice system as a whole;

(c) The scope and overall design for computer systems in individual agencies should be decided by the head of the agency, in consultation with local managers of the agency;

(d) The formulation of detailed plans for implementing computer systems in individual agency offices should be the responsibility of the local manager.

12. There is scope, and indeed a need, for computer specialists to be involved in advising decision makers in the formulation of policy or in the detailed planning of individual computer systems, although it is stressed that the role is an advisory and not a decision-making one.

III. OBJECTIVES OF COMPUTERIZATION

13. It is essential both to the users of computer systems and to the senior managers responsible for taking the decision to computerize that clear objectives be set for the systems; for the users, the objectives should spell out exactly why the system is to be introduced and the specific benefits which are expected to come from it (and which have to be achieved if the project is to be worthwhile). To the senior manager responsible for allocating resources to the project, specific objectives should provide clear and unequivocal criteria by which to assess the system when it is complete.

14. To be effective, system objectives need to be specific, quantitative, time-limited and related to the performance of the organization itself, rather than to the computer system. Thus, for example, the stated objective to reduce the clerical effort per court

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case to 1.5 person-hours is helpful, while the goal to improve overall efficiency is not. It is too vague to be of value.

15. The specification of clear objectives means that, once implemented, computer systems can be evaluated objectively; they either achieve their objectives or they do not. If they do not, the causes can be examined and rectified, while if they do, the experience gained from the project can be put to good use in helping to design future systems.

IV. APPLYING COMPUTERIZATION TO CRIMINAL JUSTICE

16. There is no simple recipe to prescribe how computers can best be applied to criminal justice. Computers come in a wide variety of shapes and sizes, as do organizations for criminal justice. Computers, for example, can be small desk-top microcomputers or large room-size mainframe computers; they can operate in isolation, or they can be connected together; the programs and information on them can be centralized at one point or can be distributed over a wide area; the computer programs can be designed to serve just one criminal justice agency or all agencies of the criminal justice system; they can be designed to serve a local area or a whole country. Equally, criminal justice agencies can be managed centrally, locally or somewhere in between; the geographic boundaries of different criminal justice agencies can match or not; common standards and definitions can apply to information in each agency or not; and there can be a central co-ordination of the criminal justice system as a whole or not.

17. Nevertheless, it is clear from experience that some well-defined combinations of approaches do not work as effectively as others. Criminal history systems, for example, work most effectively on a national level and generally require a large mainframe computer to work effectively. Court case management systems, on the other hand, lend themselves to locally based computer systems of modest size. Some degree of integration of function is effective when it is between groups of criminal justice agencies which work closely together, but attempts to develop fully integrated systems which attempt to serve all criminal justice agencies together are rarely successful.

18. Overall, the most effective approach appears to be to apply computerization in relatively modest steps, serving one or two criminal justice agencies at a time. Although there are many hundreds of criminal justice computer systems in use throughout many countries, there is also a large number of failures - systems which never made it to completion, or which were abandoned shortly after implementation. Often these systems failed because their purpose was not clearly specified or their design was not prepared in sufficient detail; as a result, it is often difficult to ascertain exactly why they failed. A common theme, however, is that system planners, often with prior experience limited to the commercial world, underestimated the scale and complexity of criminal

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justice requirements and effectively bit off more than they could chew. The world of criminal justice computing is littered with grandiose plans for systems which never made it off the drawing board.

19. Breaking the task down into smaller steps, each manageable in its own right but consistent with the overall computerization plan, reduces the risk of failure. Compatibility and integration of individual stages is ensured so long as clear and consistent definitions for the information items held in the computer systems are adhered to in order to enable any future needs for exchange of information to be met. This requires a high degree of co-ordination and planning in criminal justice computerization.

V. PLANNING AND IMPLEMENTING COMPUTER SYSTEMS

20. There are numerous stages involved in planning and implementing computer systems, whether in criminal justice or in any other sphere of activity. By far the majority of the effort required in planning and preparing for computerization, as opposed to the technical design and development of the systems themselves, is of a managerial nature, relying on the detailed knowledge of the operation of criminal justice and of its agencies rather than on any detailed or technical knowledge of computer systems. The task of planning computerization is therefore more appropriately that of senior management staff of the agencies affected by the computerization, assisted, where appropriate, by their operational and clerical staff (who share a wealth of knowledge about how the existing processes do or should work) and by technical computer staff or advisors (who can offer advice on the technical options available for meeting specific requirements).

21. The first stage of computerization will always be to develop an overall plan for the scope, objectives and scale of computerization proposed, within which any subsequent systems development will take place. This is sometimes referred to as needs assessment. It is not unlike the preparatory stages of other major building projects, in which architectural or engineering plans are essential before the construction of any component part of the total project can begin. The overall plan, however, should not be a technical blueprint for a computer system; rather it should recognize that at best, computers can merely store, manipulate and retrieve large amounts of information quickly and accurately. It follows, therefore, that the plan for computerization should address what information is to be held, what is to be done with it and who will use it, all of these decisions addressing the overall objectives to the organization of introducing computerization.

22. The strategic requirements for computerization are likely to change over time, reflecting the changing objectives of, and demands on, the criminal justice system. It is therefore important to see the preparation of an overall plan as a continuing process, involving a regular and systematic review of requirements.

23. Once the overall plan has been decided upon, the contribution of individual computer systems to the total objectives can be more clearly identified, and priorities can be set to decide which projects are tackled first.

24. For each project tackled, there are several stages, each requiring resources and management. All too often, computerization is seen only in the limited terms of the technical aspects of systems development - the writing of computer programs and the installation of computer hardware - resulting in projects which are under-resourced and which therefore fail. All projects should go through the following stages:

- (a) Setting up a project management structure to ensure that the proposed computerization is completed on time and within budget and achieves the objectives set for it, and to provide a mechanism for users to influence and guide the development of the computerization;
- (b) Analysing the requirements to determine precisely what the computer system must do, what information it needs to store and what screen and report layouts are required;
- (c) Breaking down the total project into manageable stages, and analysing the time and resources required to complete each stage;
- (d) Deciding how best to implement the proposed system - whether to utilize an existing system from another agency, for example, or to develop a new system ab initio;
- (e) Deciding what computer hardware, if any, needs to be purchased, and planning and implementing the procurement procedures, as necessary;
- (f) Developing the system, where necessary, or modifying an existing system to meet the specific needs of the organization;
- (g) Piloting the system, as necessary, to verify that it functions satisfactorily and to enable users to familiarize themselves with the system and refine their requirements;
- (h) Testing the system both to ensure that it works correctly under all test conditions and that the users satisfy themselves that it operates correctly under normal operational conditions;
- (i) Implementing the system by installing it on computer hardware, planning the change-over from manual to automated working and ensuring that the automated system works reliably enough to replace the manual methods;
- (j) Training the users in the use of the system;

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(k) Planning and implementing the transfer of data from existing manual (or automated) records to the new system;

(l) Preparing and issuing documentation to assist users in the use of the system and to provide technical guidance to the computer staff who will maintain and support the system, and training materials to the staff who will train users;

(m) Evaluating the extent to which the completed system meets its design objectives, and subsequently, monitoring their continued achievement;

(n) Preparing procedures to check information quality and to ensure that quality standards are held within pre-defined limits;

(o) Planning for the eventuality of major disasters which could affect the computer system, such as fire, flood or malicious action;

(p) Planning for the physical security of the computer system and the information stored in it;

(q) Planning and preparing procedures to ensure that all requirements of data protection are met;

(r) Planning the ongoing support and development of the system;

(s) Setting and maintaining standards to define the layout and interpretation of all items of information stored in the computer system.

VI. PRACTICAL CRIMINAL JUSTICE COMPUTERIZATION

25. The exact choice of systems applicable to any particular jurisdiction and the priorities attached to them will need to be based on a full strategy study. In practice, however, a small number of different categories of criminal justice computer applications are in widespread use and may be regarded in some instances as being a useful starting point for computerization. These are:

- (a) Central criminal history system;
- (b) Court case management and administrative system;
- (c) Prison inmate recording systems;
- (d) Criminal justice statistics system.

26. Of those listed, numerous examples are already in use, and many of them may be suitable for transfer to other jurisdictions. Despite the availability of such systems for transfer, however, the basic planning

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stages still need to be completed in order to determine an overall plan for computerization and to set specific objectives for the main computerized systems against which to judge the potential performance or capabilities of existing systems for transfer.

27. For any proposed computerization there are usually three options available:

(a) To use a computer system which has already been developed for use elsewhere;

(b) To adopt a computer system from elsewhere, but to modify it to suit the particular requirements of the organization;

(c) To design and develop a new computer system ab initio.

The costs of each of these options should be examined in relation to the benefits achievable from it.

28. Even in cases where it is decided to develop a new system from scratch, however, a start can be gained from the experience of other similar agencies, both in terms of examining the functionality of the computer systems they have implemented and taking into account the lists and definitions of information elements held in the systems. Because there is likely to be considerable overlap in the requirements of one agency as compared to another, the information from other computer systems may be used as a checklist to ensure that essential items of information or system functions are not omitted.

29. Any significant computerization will have an impact on an organization and its staff by altering the way in which people are required to work, the flows of information between staff and the tasks which they are required to perform. The introduction of computerization therefore needs to be handled sensitively and with careful planning. Keeping staff informed of proposals to introduce computerization and providing adequate training in the use of the system and its effects on the work of the organization play essential roles in ensuring that staff are prepared for, and will work with, the computer systems.

30. For the planners of the system, there is a significant responsibility to ensure that any personal information held on the computer system is protected - both physically, to prevent it getting into the wrong hands, and in other ways, to prevent it from being used in ways which might infringe upon the rights of those to whom the information refers. There is also a responsibility to ensure that the computer system as a whole is protected from damage or failure, both by taking steps to reduce the incidence of such events and by planning to reduce the effects of such events when they do occur.

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VII. CONCLUSION

31. When all these steps are taken, experience has shown that computerization in criminal justice can and does achieve significant benefits which justify the considerable investment of time and resources. The decision to computerize or not is the responsibility of the senior managers of the criminal justice system. Equally, the success or failure of computerization depends on the extent to which the same senior managers prepare for, and plan, the computerization.
