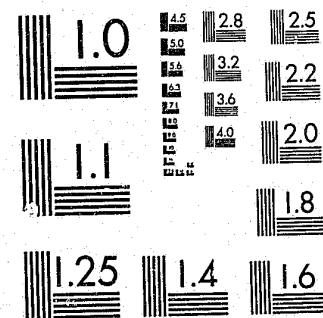


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Washington, D. C. 20531

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CDS COST AND BENEFIT STUDY
EXECUTIVE SUMMARY

NCJ

AUG 7 1980

ACQUISITIONS

Prepared for
The Law Enforcement Assistance Administration

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March 1975

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TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
1	INTRODUCTION	1
2	PROJECT APPROACH	6
	CDS Cost Estimation Assumptions	7
	Cost Estimation Methodology	8
3	CDS COST SUMMARY	9
4	CCH COST ESTIMATES	12
	Assumptions for CCH Cost Estimation	12
	CCH Operating-Cost Model	14
	CCH Development Cost Model	16
	CCH Cost Summary	17
5	STATISTICAL COMPONENTS COST ESTIMATES	21
	OBTS Costs	21
	UCR Costs	21
	SAC, MAS and TA/CDS Costs	23
6	CDS BENEFITS	25
	CCH Benefits	25
	OBTS Benefits	32
	UCR Benefits	34
	SAC Benefits	35
	Benefits of MAS and TA/CDS	35
7	CDS POLICY ISSUES	36

LIST OF EXHIBITS

<u>Number</u>		<u>Page</u>
1	CDS Participating States	4
2	CDS Cost by Year in Constant and Current Dollars	9
3	Cost of Total CDS Program	10
4	Indices of Cost and Performance	13
5	Excerpt From Cost Model Flowchart	15
6	Characteristics of Population Quintiles	18
7	Estimated CCH Development and Operating Costs by Participant	19
8	Elements of CCH Cost	20
9	OBTS Development and Operating Cost by Participant	22
10	UCR Development and Operating Cost by Year	23
11	Other CDS Components Cost by Year	24
12	Response Time Requirements for CCH Inquiries	27
13	Decisions Supported by CCH by Year	27
14	Decisions Supported by Criminal Justice Function	28
15	Summary of Cost-Related CDS Policy Issues	39

1. INTRODUCTION

A Comprehensive Data System Cost and Benefit Study was undertaken by the Institute for Law and Social Research, Washington, D.C., for the Law Enforcement Assistance Administration, Department of Justice.

The objective of the study was to project the cost and benefits of the Comprehensive Data System (CDS). Emphasis was given to the cost and benefits of the interstate exchange of criminal histories, or Computerized Criminal History (CCH) program. Total CDS requirements were projected, with no attempt to allocate funding between state and Federal agencies.

This study identified potential benefits which justify the development, in some form, of both the criminal history and statistical components of the CDS program. However, the cost estimate of \$555.3 million through 1984 is significantly in excess of planned funding levels. These costs, in the opinion of the project team, are higher than necessary to achieve the anticipated benefits.

Costs somewhat below or significantly above the level projected in this study, however, may actually be experienced depending on future CDS policies. A secondary purpose of this study, then, became the identification of policies which can be altered to reduce the cost of the CDS program.

This executive summary presents a background description of the CDS program, summary descriptions of projected cost and benefits of the CDS program and its components, and a discussion of the policy issues which should be studied for improved cost-effectiveness.

Background

As an outgrowth of the impetus given to the development of criminal justice information systems by the Omnibus Crime Control and Safe Streets Act of 1968, LEAA conducted a review of state criminal justice information system capabilities in 1969 and concluded that a uniform format for criminal history records would facilitate both the interstate exchange of such records and the compilation of comparable criminal statistical data.

Also in 1969, LEAA launched Project SEARCH (System for Electronic Analysis and Retrieval of Criminal Histories) with the dual purpose of developing a prototype system for the interstate exchange of criminal history data and of enhancing state criminal history capabilities. After Project SEARCH had demonstrated the feasibility of a criminal history exchange system the Attorney General, in late 1970, authorized the FBI to manage such a system.

Currently, the FBI's computerized National Crime Information Center (NCIC) maintains, and responds to state inquiries about, criminal history records of Federal, multistate, and single-state offenders whose records have been entered in the system. This CCH capability of NCIC is, in essence, an improved and automated rap sheet which can be accessed in a matter of seconds.

Concurrent with efforts to develop CCH, LEAA initiated a project to develop a state-level, computer-based method of recording key events relating to persons as they pass through the criminal justice system. Called Offender-Based Transaction Statistics (OBTS), the automated system is expected to be as informative about criminal justice operations as CCH is about suspects and criminals.

Onset of CDS

In 1972, the CDS program was announced by LEAA as a major milestone in its commitment to improve state and local criminal justice statistical and information system capabilities. Explicit in the program guidelines^{1/} was the goal of a voluntary state system, integrated to provide, without unnecessary duplication, both a national criminal history exchange capability and national criminal justice statistics.

To support this goal, CDS included an OBTS/CCH component, linking those two projects to a common data base. In addition, the program included four other components described in the following paragraphs.

Statistical Analysis Center (SAC). The purpose of SAC is to provide a professional staff that will oversee and coordinate a state's criminal justice information and statistical systems; specify data requirements and insure quality control of data collection; coordinate technical assistance to agencies participating in CDS development; supply objective, interpretative analyses of criminal justice data to appropriate agencies; and report criminal justice data accurately and uniformly for national-level comparisons.

Uniform Crime Reports (UCR). The goal of UCR is to establish responsibility in a state-level agency for the centralized collection and reporting of uniform crime data gathered by law enforcement agencies within the state in accordance with standards developed jointly by the FBI and the International Association of Chiefs of Police. The state agency then forwards the collected data to the FBI for inclusion in its national UCR reports.

Management and Administrative Statistics (MAS). This CDS component is intended to improve the effectiveness of criminal justice resource allocation by collecting and analyzing data pertaining to the financial status, personnel, facilities, and equipment of the various criminal justice functions at the state and local levels.

^{1/}Law Enforcement Assistance Administration, Guideline Manual: Comprehensive Data Systems Program, Washington, D.C., rev. 1974, p. 3.

Technical Assistance (TA/CDS). The objective of TA is to provide state-level professional and technical capabilities needed to develop a CDS.

Current Status of CDS

Since its inception in May 1972, 35 states have indicated a willingness to become part of CDS: to accept CDS funding on the one hand and to agree to regulations regarding the various components, their development, and assumption of future funding. The states participating are indicated in Exhibit 1 by a check under the CDS Action Plan column.

As of February 1975, 29 states had received CDS grants for one or more components. Exhibit 1 also reveals grant awards to states for each component. (Component funding from other sources is not shown. For example, Florida's CCH system, developed with limited funding from Project SEARCH and major funding from state appropriations, became operational in 1972. Although operational, Florida has not received CDS funding for OBTS/CCH.) Twenty-two states have received funding to establish SAC's; 17 states have received one or more awards for OBTS/CCH; 21 have UCR funding; and 6 and 7 have received MAS and TA/CDS grants, respectively.

GAO Observations

Regarding the development of a criminal history exchange system, the General Accounting Office (GAO) issued a report^{2/} which concluded that cost estimates of a project of this size were needed before the sponsoring Federal agencies or the Congress could decide whether they were able or willing to meet the financial requirements of the system. Further, since state and local governments were to assume project costs after a reasonable period of Federal assistance, it was vital that they have the information necessary to determine whether they could finance the development and continued operation of the system.

Thus, GAO recommended that either the FBI or LEAA "determine the total cost of developing and operating the criminal history exchange system so that the participants can decide whether they are able, or willing, to meet the system's financial requirements." This recommendation was foreshadowed by William Lee Reed, who, as Commissioner of the Florida Department of Law Enforcement, presented a paper in 1972 at the International Symposium on Criminal Justice Information and Statistics Systems:

^{2/}General Accounting Office, Development of a Nationwide Criminal Data Exchange System--Need to Determine Costs and Improve Reporting (Washington, D.C., Government Printing Office, January 1973).

	Action Plan	OBTS/ CCH	SAC	UCR	MAS	TA/ CDS
Alabama	✓		✓			
Alaska						
Arizona	✓	✓	✓	✓		✓
Arkansas	✓	✓	✓	✓		
California	✓	✓	✓	✓	✓	✓
Colorado	✓		✓			
Connecticut						
Delaware	✓					
District of Columbia	✓	✓	✓			
Florida	✓			✓		
Georgia	✓	✓	✓	✓		
Hawaii	✓		✓	✓		
Idaho	✓	✓		✓		
Illinois	✓					
Indiana	✓					
Iowa						
Kansas						
Kentucky						
Louisiana	✓	✓	✓	✓	✓	✓
Maine	✓	✓	✓	✓		
Maryland	✓	✓	✓	✓		
Massachusetts	✓	✓	✓	✓		
Michigan	✓	✓	✓	✓		
Minnesota	✓	✓	✓	✓		
Mississippi	✓		✓			
Missouri	✓	✓				

	Action Plan	OBTS/ CCH	SAC	UCR	MAS	TA/ CDS
Montana	✓		✓		✓	✓
Nebraska						
Nevada	✓		✓	✓	✓	✓
New Hampshire	✓					
New Jersey	✓	✓	✓	✓		
New Mexico	✓		✓			✓
New York	✓		✓	✓		
North Carolina						
North Dakota						
Ohio	✓	✓	✓	✓		
Oklahoma	✓	✓	✓	✓	✓	✓
Oregon	✓		✓	✓		
Pennsylvania						
Puerto Rico						
Rhode Island	✓		✓			
South Carolina	✓					
South Dakota						
Tennessee						
Texas	✓					
Utah	✓	✓	✓	✓		
Vermont						
Virginia	✓			✓	✓	
Washington						
West Virginia						
Wisconsin						
Wyoming						
Totals	35	17	22	21	6	7

✓ CDS PLAN APPROVAL OR
DISCRETIONARY GRANT AWARD

EXHIBIT 1 : CDS PARTICIPATING STATES - FEBRUARY, 1975

"The anticipated benefits from CCH-OBTS in providing documentation on the effectiveness of the criminal justice system are well worth the effort necessary for its development, implementation and operation. . . .

"However, these systems require a major expenditure of time, resources, and money while providing little visible signs of benefit in the short run. Criminal justice managers will be placed in the difficult position of going before legislatures to justify that CCH-OBTS returns are, in fact, worth the expenditure. The cost-utility relationship between the current and proposed systems will be given particular attention, for we are in an era of intense competition with other governmental services for the tax dollar."

These concerns with the quality of available cost projections for the interstate criminal history exchange had two major effects. First, it led to LEAA's initiation of the CDS Cost and Benefit Study and, second, to the recognition that it should produce reliable data to support policy decisions in the following areas:

- State-level predictions of the cost of criminal justice information system projects, especially CDS components.
- Federal-level assessment of the financial implications of the total CDS program.
- State-level assignment of system development priorities to maximize system benefits within resource constraints.
- State-level recognition of the benefits to be derived from a criminal justice information system.
- LEAA comparison of cost to results, affecting funding decisions and performance evaluations.

2. PROJECT APPROACH

The CDS Cost and Benefit Study was performed over a one-year period with approximately seven months devoted to field study and five months to analysis.

Field study entailed visits to the criminal justice agencies of eleven states, three regional areas, five municipalities, and the FBI. During the field study, the team investigated costs and procedures for:

- The identification process;
- Namesearch and fingerprint search methods;
- Collection and entry of arrest data to OBTS and CCH;
- Collection and entry of disposition data (arrest, judicial, corrections) to OBTS and CCH;
- Conversion of criminal histories;
- Storage of fingerprints and criminal histories;
- Transmission of criminal histories, both inter- and intra-state; and
- Interfaces with regional, local, judicial, and corrections information systems.

Preliminary analysis identified the need to automate the CCH cost calculations and the need to perform several support studies. Principal among these studies was an analysis of 6,300 manual criminal histories made available by the FBI. This analysis was made to determine the rate of growth of the number of offenders of each of several types which would exist in an automated criminal history data base (Appendix B, Cost and Benefit Study Report).

The CCH cost calculations were automated on a Tektronix, Model 31, programmable calculator. A detailed description of these calculations is given in Appendix A.1 of the Study Report. The calculations were made at the individual state level and were later summarized by population quintile for presentation in the report. No attempt was made to allocate these estimated costs between state, block grant, or CDS funding sources. The calculations can be rerun to estimate CCH cost under a variety of implementation assumptions. The CCH assumptions programmed for this report are described in Section 4 of this summary. General assumptions applicable to CDS cost estimation are discussed below.

CDS Cost Estimation Assumptions

The following five assumptions governed the cost estimation process for all CDS components:

- . All states will implement all five CDS components.
- . Political or jurisdictional obstacles will not significantly delay implementation.
- . OBTS and CCH share a common data collection system.
- . UCR will be implemented according to FBI specifications.
- . SAC, MAS, and TA/CDS funding levels are controllable.

All states, Puerto Rico, and the District of Columbia (hereafter referred to as the 52 states) were assumed to build all five CDS components, excepting CCH in the District of Columbia which could continue to be handled by the FBI. Since they could reasonably be expected to complete CDS development by January 1, 1983, the estimates cover a 10-year period, 1975 to 1984. This time frame includes completion of the system and two years of purely operational and maintenance expense.

Political and jurisdictional obstacles that are currently delaying CCH development were not recognized in assessing cost and benefits. Participants were assumed to load criminal records at the completion of system development, to interface with the national index, to update records with 100 percent of NCIC/CCH criterion arrests on a timely basis, and to record dispositions linked to arrests for privacy and other considerations.

While OBTS was separated from CCH for analytical purposes, the two databases were assumed to be linked operationally by a centralized, single-entry, data collection procedure satisfying OBTS and CCH requirements simultaneously. OBTS development and operating costs were estimated as if states added OBTS data collection and report generation capabilities to existing CCH systems. Therefore, the estimated OBTS cost would not support "stand-alone" OBTS capability.

States receiving UCR funding under CDS were assumed to proceed according to the standard FBI implementation procedure and to produce a system to FBI specifications.

Funding policies for the SAC, MAS, and TA components were assumed to continue past practices. The highly controllable nature of expenditures for these components made an elaborate model unnecessary. However, the future cost of these components is very sensitive to changes in LEAA funding policies.

Cost Estimation Methodology

SAC, UCR, MAS, and TA/CDS costs were projected from a survey of grants already awarded to states. From this survey and consultations with the FBI concerning UCR, the LEAA funding policy for these components was inferred. The cost estimates were produced by extrapolating this policy to the remaining states over future years.

OBTS/CCH, with its relatively uncontrollable future financial requirements, demanded a more elaborate estimation effort. Field trips were made to 11 states where significant OBTS/CCH planning or implementation had taken place. During the field trips, information was collected on the designs of the systems, past and anticipated expenditures, telecommunications and computing equipment requirements, and personal services required for both the automated system and the manual system being replaced.

Based on the 11-state survey, OBTS/CCH cost elements were classified as either development or operating costs. Separate OBTS and CCH development cost estimates were made by extrapolating data from the study states to the remaining states.

To estimate OBTS/CCH operating costs, a model was constructed in the form of flowcharts and task descriptions, depicting state and Federal processing operations. Data from a sample of FBI manual criminal histories were used to establish a relationship between the annual volume for each task and arrest volumes predicted for 1975 through 1984. Unit costs for each task, adjusted for regional salary differentials, were used to convert processing volumes into CCH operating cost estimates by year.

Annual OBTS operating costs were estimated using the same model and were computed as the cost of augmenting the CCH data base with the required OBTS data. Development and operating estimates were combined to produce annual OBTS and CCH cost estimates.

3. CDS COST SUMMARY

Annual and total projected costs for the CDS program are shown in Exhibits 2 and 3. As shown in Exhibit 2, total cost to develop and operate the entire CDS program for the 10-year period 1975 to 1984 is estimated to be \$404.4 million, or \$555.3 million after adjusting for inflation. Annual CDS costs by 1984, after completion of development, are projected at \$46.9 million or \$76.0 million with adjustments for inflation.

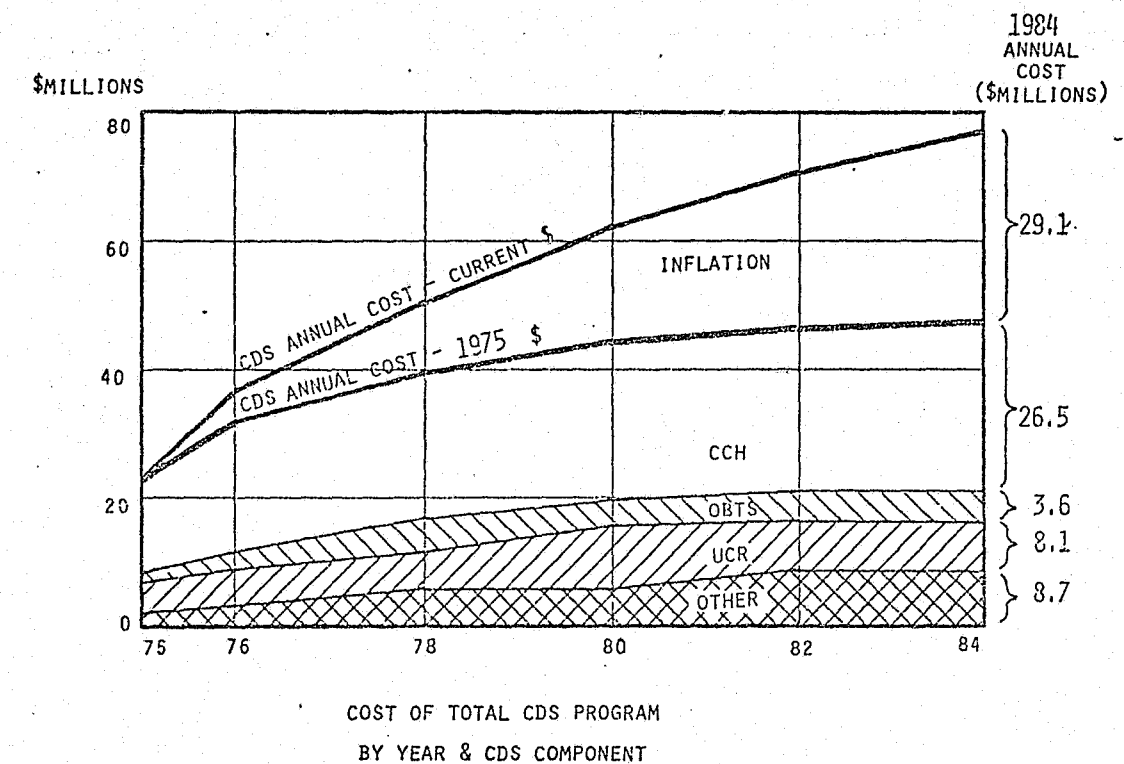
CDS COMPONENT	CDS COST BY YEAR - CONSTANT (1975) \$ MILLIONS										Total Ten-Year Cost
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	
CCH	18.3	21.5	20.1	23.0	23.9	25.2	25.1	25.5	26.0	26.5	235.0
OBTS	1.0	2.2	3.2	4.5	4.2	4.3	4.5	4.0	3.4	3.6	34.9
UCR	4.3	4.9	5.6	6.2	6.8	7.6	8.3	8.1	8.1	8.1	68.0
OTHER:											
SAC	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.2	5.2	5.2	41.5
MAS	.3	.5	.8	1.0	1.2	1.4	1.7	1.7	1.7	1.7	12.0
TA/CDS	.4	.6	.8	1.1	1.3	1.6	1.8	1.8	1.8	1.8	13.0
Total CDS Program (Constant Dollars)	26.5	32.4	33.6	39.5	41.6	44.8	46.6	46.3	46.2	46.9	404.4

CDS COMPONENT	CDS COST BY YEAR - CURRENT \$ MILLIONS										Total Ten-Year Cost
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	
CCH	18.3	23.8	23.8	29.2	31.9	35.0	36.2	38.3	40.6	43.0	320.1
OBTS	1.0	2.4	3.8	5.7	5.6	6.0	6.5	6.0	5.3	5.8	48.1
UCR	4.3	5.4	6.7	7.9	9.1	10.5	12.0	12.2	12.6	13.1	93.8
OTHER:											
SAC	2.2	3.0	3.8	4.7	5.6	6.5	7.5	7.8	8.1	8.4	57.6
MAS	.3	.6	1.0	1.3	1.6	1.9	2.5	2.6	2.7	2.8	17.3
TA/CDS	.4	.7	1.0	1.4	1.7	2.2	2.6	2.7	2.8	2.9	18.4
Total CDS Program (Current Dollars)	26.5	35.9	40.1	50.2	55.5	62.1	67.3	69.6	72.1	76.0	555.3

Note: Additions performed before rounding.

EXHIBIT 2: CDS COST BY YEAR IN CONSTANT AND CURRENT DOLLARS

By 1981, CDS annual costs, measured in 1975 dollars, will have almost leveled off below \$50 million. The leveling shown in Exhibit 3 occurs because of the completion of development efforts and because the declining cost of computer and telecommunications technology partially offsets the small, continuing growth of personnel costs.



	1984 OPERATIONAL COST (\$ MILLIONS)	
	CONSTANT (1975) DOLLARS	CURRENT (1984) DOLLARS
CCH	26.5	43.0
OBTS	3.6	5.8
SAC	5.2	8.4
UCR	8.1	13.1
MAS	1.7	2.8
TA/CDS	1.8	2.9
TOTAL	46.9	76.0

EXHIBIT 3: COST OF TOTAL CDS PROGRAM

The accuracy of this forecast depends upon modification of trends and policies which differ from two of the principal assumptions upon which the cost estimates were based. The areas of divergence from these two assumptions are discussed in the following paragraphs.

Medium-cost record conversion policy. This assumption, made in Section 4, postulates a medium cost, "first-offender automation policy" for manual criminal history conversion. However, the more costly "re-entrant conversion policy" is presently in use in most states. If continued, this latter policy would greatly increase the OBTS/CCH personnel costs included in this estimate.

A specific timetable for CCH start-up in each of the 52 states. This assumption is also stated in Section 4 as a basis for CCH cost projection. Present expectation differs from two elements of this timetable:

- . All CDS components were assumed to become operational no later than January 1, 1983. Actually several of the less advanced states have no present plans to participate in CDS. The failure of these states to participate will reduce CDS funding requirements only slightly since most are included in the 20 smallest states comprising population quintiles 4 and 5 and accounting for only nine percent of overall CDS cost (Exhibit 6, Section 4). Nonparticipation by some states will, however, cause the loss of some potential savings for the FBI.
- . States already participating in OBTS/CCH are assumed to have kept up with their workloads. Few of the states already participating in CCH have been able to process arrest and disposition records without building up large processing backlogs. Two states have withdrawn from NCIC/CCH after the date assumed in this study for start-up of their system operation, and other states have dropped one or more entire years of data from their entry process in order to catch up. Therefore, actual 1975 costs will be somewhat less than those projected, and the missing costs would add to future-year projections when those states are able to process their outstanding backlogs.

Cost estimates were made assuming the development of a healthy CCH system and CDS program. Since the above assumptions may not be realizable, the CDS cost projections may require adjustment. However, new cost projections under alternative assumptions can be produced rapidly in the future because the calculations which produced them were automated.

4. CCH COST ESTIMATES

This section discusses specific CCH assumptions which supplement the general CDS assumptions described in Section 2. The construction of a cost model for CCH operation and development is then outlined, followed by a summary of the projected CCH operating and development costs.

Assumptions for CCH Cost Estimation

Although NCIC has broadly defined a national criminal history exchange system, many details affecting CCH costs are currently unspecified. State record conversion criteria, the path of disposition data from courts to state repositories, and the date each state will contribute its first records to NCIC/CCH exemplify cost factors that have not, or cannot, be fully specified by LEAA or the FBI. Therefore, it was necessary to precede actual CCH cost estimation by specifying general assumptions reflecting (1) policies in the 11 states visited during this study, (2) announced intentions of FBI/NCIC and LEAA, (3) anticipated legislative activity, and (4) the opinions of informed observers. The principal assumptions centered around:

- . Single-state/multi-state configuration;
- . Medium-cost record conversion policy;
- . 100 percent fingerprint and disposition submission;
- . Generally available technology;
- . Cost/performance improvements in computing and telecommunications technology;
- . Specific timetable for CCH start-up in each of the 52 states; and
- . System response types consistent with current NCIC/CCH capabilities.

Single-state/multi-state configuration. All single-state, non-Federal, criminal histories were assumed to reside in state data bases while multistate and Federal criminal histories are stored in NCIC/CCH. The NCIC central file also contains an index to all single-state histories. The index contains sufficient identification data to permit retrieval of the criminal history from a state data base. This assumption is in accordance with an announced NCIC/CCH policy which has yet to be implemented. Present practice calls for a procedure in which single-state records also reside in the NCIC/CCH data base.

Medium-cost record conversion policy. Each state was assumed to establish automated records for all first offenders arrested after its CCH begins operation. Prior histories will be converted only for nonautomated multistate offenders who are being arrested for the first time in a new state and for automated subjects whose NCIC/CCH records are found by a state to be incomplete. Therefore, estimated conversion cost lies between the less expensive policy of automating only first-offender records and the more expensive policy of converting manual histories of all subjects rearrested after CCH begins operation.

100 percent fingerprint and disposition submission. Legislation was assumed to exist requiring that each state receive fingerprint-supported reports of all arrests for NCIC criterion offenses. Also Federal and state security and privacy laws were assumed to require that each arrest report be supplemented by a record of the dispositions of all charges.

Generally available technology. All participants were assumed to operate well within technological frontiers anticipated through the estimation period. Data storage, computer processing, and telecommunications costs were all assumed to decline at rates conservatively reflecting recent experience. Widespread installation of facsimile equipment for fingerprint transmission was not assumed nor was automated fingerprint identification by either the FBI or the states.

Cost/performance improvements in computing and telecommunications technology. The assumed indices for improvement in computing

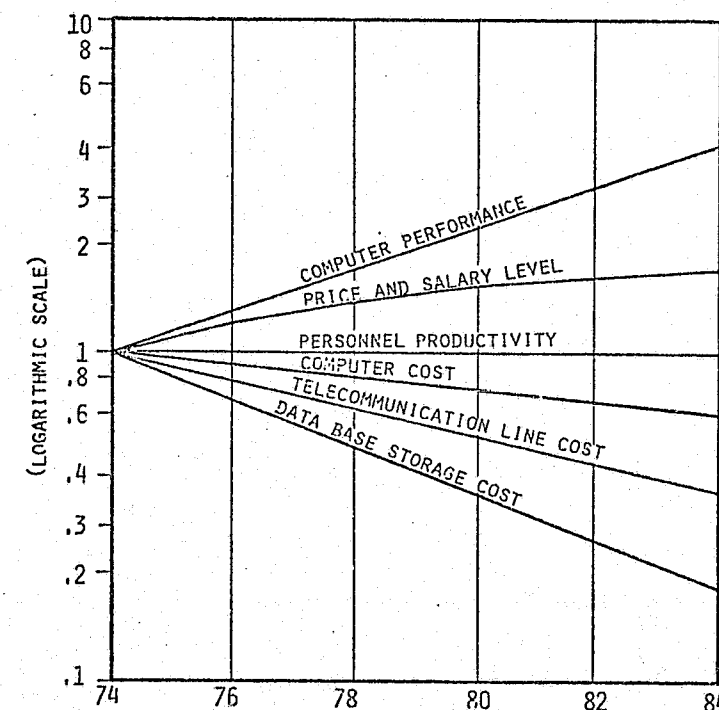


EXHIBIT 4: INDICES OF COST AND PERFORMANCE

power and cost over the 10-year period are shown in Exhibit 4. Computer performance for a standard installation is expected to improve by a function which approximates 14 percent each year, while the cost of that installation is expected to decline by 5 percent per year (before adjusting for inflation). Telecommunication line costs will decline at approximately 9 percent and data base storage devices at 15 percent each year. Personnel productivity, measured by output per man-hour,

is assumed to be constant over the projection period. Price and salary levels were assumed to increase according to forecasts appearing in the FY 1976 U.S. Budget.

A specific timetable for CCH start-up. CCH cost is very sensitive to the time phasing of state participation. Therefore, a timetable was prepared based on the earliest expected date that each state could attain sufficient technical capability. The timetable reflects the opinions of LEAA regional systems specialists, CDS project managers, and NCIC personnel. However, it is optimistic because all states were assumed to participate, and lengthy delays for resolution of political and bureaucratic issues were not included. The timetable implies that twelve states, with about 60 percent of all arrests, will have operating CCH systems by 1976 and that all states will be operational by 1981.

System response types are generally consistent with current NCIC/CCH capabilities. System response types include: on-line remote name-search, on-line remote criminal summary production, on-line full criminal history retrieval for record maintenance only, and off-line (batch) output of criminal histories for mailing to requesting agencies within 24 hours.

Additional CCH assumptions are discussed in Appendix A of the Cost and Benefit Study Report.

CCH Operating-Cost Model

A CCH operating-cost model was used to calculate all elements of annual CCH cost for each state and for each year of operation as a function of the predicted arrest volume for each year. The model consists of:

- Flowcharts describing state and Federal CCH processing of arrest updates, disposition updates, and inquiries;
- A description of the work content for each task illustrated on the flowchart;
- Unit-cost estimates for each task;
- Definitions of the 16 types of arrestees moving through the flow paths; and
- Lists of tasks applicable to each arrestee type during disposition processing and inquiry.

An excerpt from a cost model flowchart is shown in Exhibit 5. It illustrates the decision-making process for conversion of an arrestee's prior history based upon a criminal summary response from NCIC. The model depicts arrestee type E, a nonautomated subject

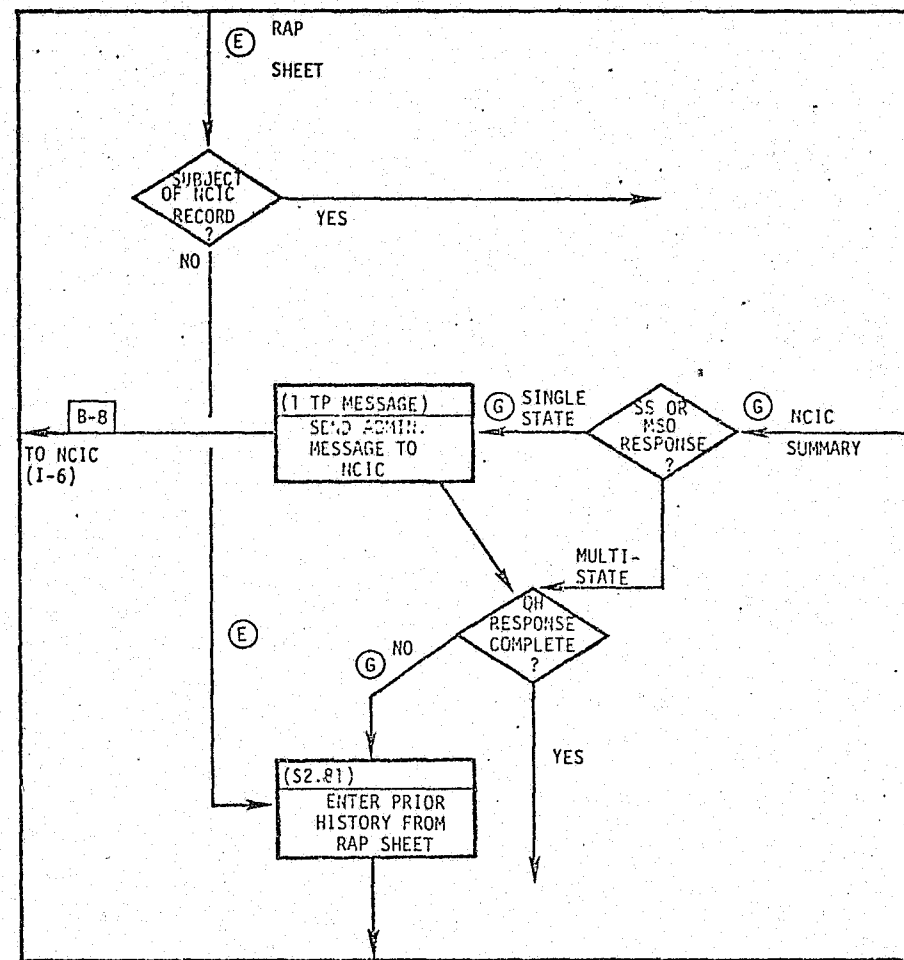


EXHIBIT 5: EXCERPT FROM COST MODEL FLOWCHART

becoming a multistate offender with the current arrest, incurring a \$2.81 conversion cost in the state of current arrest. Arrestee type G, whose single-state record established by another state lacks one or more prior arrests in the current state, would incur the \$2.81 and automatically generate one administrative telecommunication message to NCIC. The message would advise NCIC to retrieve the other state's history and create a full multistate record.

Cost calculations, for the representation given in Exhibit 5, require estimates of the proportion of arrestees belonging to each type. These estimates were drawn from a sample of FBI manual criminal histories. The time intervals between prior arrests on the manual records were used to predict the intervals between future arrests to be recorded in CCH under the assumed conversion policy. Separate estimates were made for subjects with prior single-state, multistate, and Federal records. Joint application of the time interval and interstate mobility distributions to a linear projection of recent arrest trends generated arrest forecasts by type of arrestee. The cost model was used to translate these arrest forecasts into CCH operating cost estimates.

CCH Development Cost Model

Development cost estimation did not require the rigorous modeling necessary for operational cost estimation. Development costs were extrapolated from an analysis of the actual CCH cost experience of six states. Field study provided cost figures from Arizona, Georgia, Minnesota, and New Jersey. Published reports provided additional data from New York and Mississippi. Supporting detail was also extracted from a review of all OBTS/CCH grant applications.

Extrapolation of development cost from the study states to the 52 states was based on the following assumptions:

- A state data communication system was assumed to be in place with lines, interfaces and terminals to major law enforcement agencies, and with an interface to NCIC. A portion of the state data communication system's annual operating cost was prorated to CCH on the basis of transaction volumes.
- A state data processing center was assumed to be in place for processing both CCH and other law enforcement applications. State data processing center costs were prorated to CCH as an operating cost in a similar manner.
- A full state fingerprint identification capability was assumed to be able to process fingerprint cards for all NCIC criterion arrests. Cost of additional fingerprint processing generated by mandatory 100 percent fingerprint submission is attributed to CCH as an operating cost.
- Development tasks were assumed to be completed in the following time periods:
 - Year 1 - systems definition and design,
 - Year 2 - start implementation, start staffing,
 - Year 3 - full staff hired, start operation.
- The size of CCH management and support staffs were estimated as a function of the state's population.
- Excluded from development costs but treated above as operating costs are:
 - computer upgrade cost,
 - historical records conversion and data entry, and
 - additional communication lines and terminals to major prosecutors' offices.

Population Quintiles		Characteristics			CCH Cost % of Total
State Groups Ordered by Population	% of Natl. Arrests	% of Natl. Population	Median CCH Start Date	Number of States	
1. Ten Largest States FL, CA, NY, PA, IL, TX, MI, NJ, MA, OH	60%	54%	'74	10	45%
2. GA, MN, LA, VA, MO, MD, IN, NC, TN, WI	19%	21%	'78	10	13%
3. SC, CO, PR, AL, CT OK, WA, IA, MS, KY, KS	12%	15%	'79	11	8%
4. AZ, UT, ME, WV, HI, NM, NB, RI, OR, AR	7%	7%	'78	10	6%
5. Ten Smallest States ID, NV, MT, DL, WY, NH, SD, ND, VT, AK	2%	3%	'79	10	3%
FBI/Ident. & NCIC/CCH					25%

EXHIBIT 6: CHARACTERISTICS OF POPULATION QUINTILES

Exhibit 7 disaggregates CCH cost into development and operating expense by year for each quintile and for the FBI. The substantial operating cost estimated for the largest quintile reflects the extensive CCH development work already accomplished by those states. In all quintiles, estimated operating cost rises as states join the system, until 1981 when all states are assumed to be operational. The fairly level cost profile following 1981 reflects the interaction of increasing transaction volumes, counterbalanced by decreasing costs for data processing, telecommunications, prior history conversion, and error correction.

The substantial proportion of development cost attributed to quintile 1 indicates that despite large expenditures in past years, completion of systems currently being developed will require large expenditures in the future. Generally, development costs decrease with state population because smaller states need less of the following components: training and equipment for coding and entry clerks, sophisticated software to handle large transaction volumes and data bases, and field personnel for liaison with local agencies. An exception to this pattern is quintile 2, where substantial previous development in Minnesota, Georgia, and Louisiana lowers expected future development cost below that of quintile 3.

CCH PARTICIPANTS	COST CATEGORIES	CCH COST BY YEAR (\$ MILLIONS)										Total Ten-Year Cost
		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	
Quintile 1	Development Cost	5.8	4.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.3
	Operating Cost	<u>7.2</u>	<u>8.4</u>	<u>8.9</u>	<u>9.8</u>	<u>9.8</u>	<u>9.9</u>	<u>10.0</u>	<u>10.1</u>	<u>10.2</u>	<u>10.3</u>	<u>94.6</u>
	Total Cost	13.0	13.1	9.6	9.8	9.8	9.9	10.0	10.1	10.2	10.3	105.9
Quintile 2	Development Cost	0.8	1.3	1.9	1.0	0.5	0.3	0.0	0.0	0.0	0.0	5.8
	Operating Cost	<u>0.0</u>	<u>0.7</u>	<u>1.0</u>	<u>2.2</u>	<u>2.8</u>	<u>3.2</u>	<u>3.5</u>	<u>3.5</u>	<u>3.5</u>	<u>3.5</u>	<u>23.8</u>
	Total Cost	0.8	2.0	2.8	3.2	3.3	3.5	3.5	3.5	3.5	3.5	29.6
Quintile 3	Development Cost	0.4	0.8	1.6	1.7	1.2	0.6	0.0	0.0	0.0	0.0	6.4
	Operating Cost	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.7</u>	<u>1.3</u>	<u>2.0</u>	<u>2.3</u>	<u>2.3</u>	<u>2.3</u>	<u>2.3</u>	<u>13.3</u>
	Total Cost	0.4	0.8	1.6	2.4	2.5	2.6	2.3	2.3	2.3	2.3	19.7
Quintile 4	Development Cost	1.1	1.3	0.8	0.7	0.8	0.6	0.0	0.0	0.0	0.0	5.3
	Operating Cost	<u>0.2</u>	<u>0.4</u>	<u>0.4</u>	<u>0.6</u>	<u>0.8</u>	<u>1.0</u>	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	<u>1.4</u>	<u>9.0</u>
	Total Cost	1.3	1.7	1.3	1.4	1.5	1.6	1.4	1.4	1.4	1.4	14.3
Quintile 5	Development Cost	0.2	0.6	0.5	0.9	0.6	0.5	0.0	0.0	0.0	0.0	3.4
	Operating Cost	<u>0.0</u>	<u>0.0</u>	<u>0.2</u>	<u>0.2</u>	<u>0.4</u>	<u>0.5</u>	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>	<u>3.7</u>
	Total Cost	0.2	0.6	0.7	1.1	1.0	1.0	0.6	0.6	0.6	0.6	7.1
FBI/Ident. and NCIC/CCH	Development Cost	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Operating Cost	<u>2.5</u>	<u>3.3</u>	<u>4.0</u>	<u>5.1</u>	<u>5.7</u>	<u>6.6</u>	<u>7.3</u>	<u>7.6</u>	<u>8.0</u>	<u>8.4</u>	<u>58.5</u>
	Total Cost	2.5	3.3	4.0	5.1	5.7	6.6	7.3	7.6	8.0	8.4	58.5
All Participants	Development Cost	8.4	8.8	5.5	4.4	3.1	2.0	0.0	0.0	0.0	0.0	32.2
	Operating Cost	<u>10.0</u>	<u>12.8</u>	<u>14.5</u>	<u>18.6</u>	<u>20.8</u>	<u>23.2</u>	<u>25.1</u>	<u>25.5</u>	<u>26.0</u>	<u>26.5</u>	<u>202.8</u>
	Total Cost	18.3	21.5	20.1	23.0	23.9	25.2	25.1	25.5	26.0	26.5	235.0

Note: Additions performed before rounding.

EXHIBIT 7: ESTIMATED CCH DEVELOPMENT AND OPERATING COSTS BY PARTICIPANTS

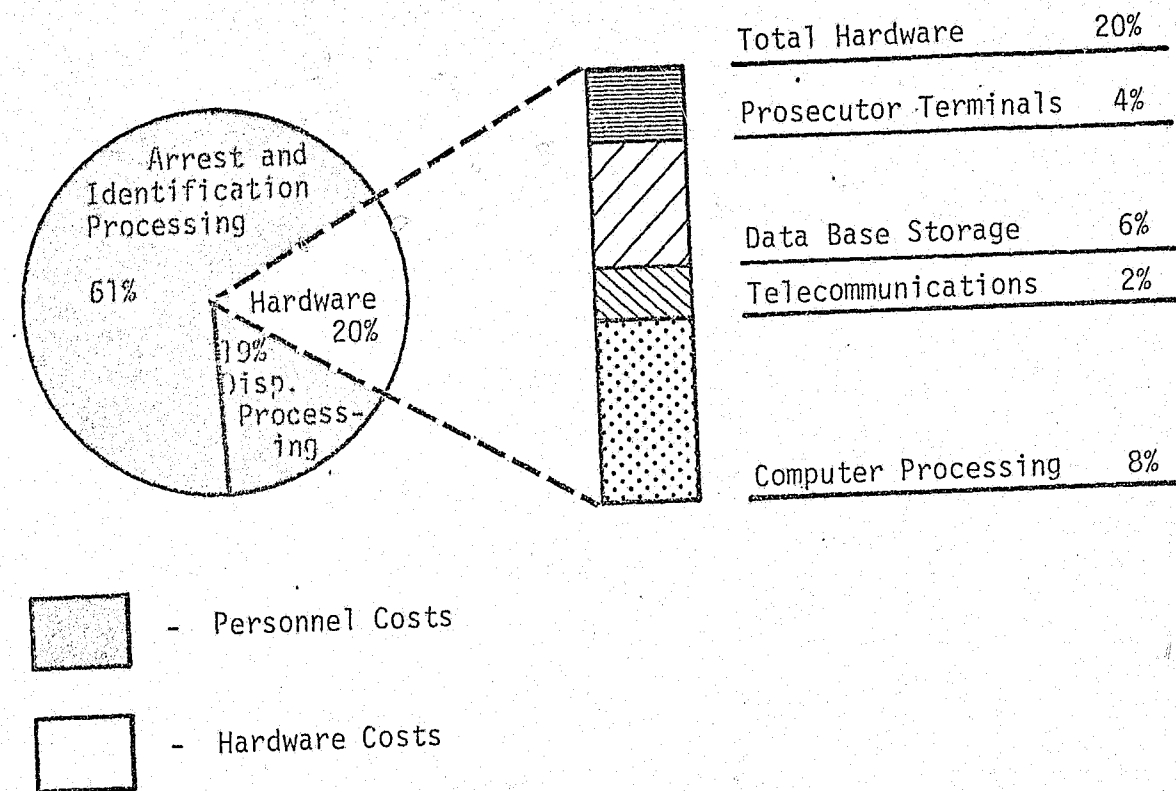


EXHIBIT 8: ELEMENTS OF CCH COST.

Exhibit 8 disaggregates CCH operating cost by major cost elements. It indicates that 61 percent of all CCH cost is incurred for labor and non-EDP equipment for identification and arrest record processing in the states. An additional 19 percent is allocated to disposition collection and updating, and the remaining 20 percent to hardware and EDP personnel. Within that 20 percent, the largest component is computer processing; another 3 percent is prorated to installation of terminals in prosecutors' offices. (On-line receipt of criminal summaries, and a consequent need for lines and terminals, is required to realize benefits for prosecutors; however, it was assumed that a hard copy full criminal history, mailed within 24 hours of request, would satisfy court information needs. Therefore, lines and terminals to courts were not included in the cost estimate.)

In summary, the analysis of CCH costs showed small development costs relative to operating costs. Within operating costs, increasing volumes raise personnel requirements throughout the forecast period; ever-improving technology decreases the cost of data base storage, telecommunications, and computer processing through the forecast period.

5. STATISTICAL COMPONENTS COST ESTIMATES

This section includes cost estimates for the OBTS, UCR, SAC, MAS, and TA/CDS components of CDS.

OBTS Costs

OBTS cost estimates were based on the following principal assumptions:

- The acronym "OBTS" stands for Offender-Based Transaction Statistics, rather than for Offender-Based Tracking System. Real-time processing is not assumed.
- State-level data collection and data entry, processed in common with CCH, was assumed. OBTS was charged only with the marginal cost for data items not required by CCH.
- OBTS forms contain a common identifier which permits the linking of multiple offenses for the same individual.
- Only state-level OBTS costs were included. No Federal costs were predicted, since no Federal role in OBTS processing has been defined. Local OBTS costs were not included because of the presumption that OBTS data will be generated as a byproduct of local record-keeping operations.
- Development costs for OBTS were incurred during the two years following CCH start-up.

OBTS costs are summarized in Exhibit 9 by population quintile. Development cost estimates for the ten smallest states range from \$145,000 to \$170,000 for the two-year development period. In the largest states, the range extends from \$240,000 to \$410,000. Individual estimates were made for 11 advanced states and for the District of Columbia.

Development costs for the ten-year period total \$13.9 million, and operating costs total \$21.0 million.

UCR Costs

UCR cost estimates were based on the assumption that FBI specifications for a UCR system would be followed, that each state would require a two-year development period, that all states would begin

PARTICIPANT	COST CATEGORIES	OBTS COST BY YEAR - CONSTANT (1975) \$ MILLIONS										Total Ten-Year Cost
		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	
Quintile 1	Development	.8	.8	1.0	1.2	.2	0	0	0	0	0	4.0
	Operating	0	1.0	1.3	1.5	1.7	1.9	2.0	2.1	2.2	2.3	16.0
	Total	.8	1.8	2.3	2.7	1.9	1.9	2.0	2.1	2.2	2.3	20.0
Quintile 2	Development	.1	.1	.3	.7	.8	.5	.3	.2	0	0	3.0
	Operating	0	0	.1	.1	.1	.3	.4	.5	.6	.6	2.7
	Total	.1	.1	.4	.8	.9	.8	.7	.7	.6	.6	5.7
Quintile 3	Development	0	0	0	.3	.8	.8	.7	.3	0	0	2.9
	Operating	0	0	0	0	0	0	.2	.3	.3	.4	1.2
	Total	0	0	0	.3	.8	.8	.9	.6	.3	.4	4.1
Quintile 4	Development	.1	.3	.3	.3	.3	.3	.4	.2	0	0	2.2
	Operating	0	0	0	.1	.1	.1	.1	.1	.2	.2	.9
	Total	.1	.3	.3	.4	.4	.4	.5	.3	.2	.2	3.1
Quintile 5	Development	0	0	.2	.3	.2	.4	.4	.3	0	0	1.8
	Operating	0	0	0	0	0	0	0	0	.1	.1	.2
	Total	0	0	.2	.3	.2	.4	.4	.3	.1	.1	2.0
Total All Participants	Development	1.0	1.2	1.8	2.8	2.3	2.0	1.8	1.0	0	0	13.9
	Operating	0	1.0	1.4	1.7	1.9	2.3	2.7	3.0	3.4	3.6	21.0
	Total	1.0	2.2	3.2	4.5	4.2	4.3	4.5	4.0	3.4	3.6	34.9

EXHIBIT 9: OBTS DEVELOPMENT AND OPERATING COST BY PARTICIPANT

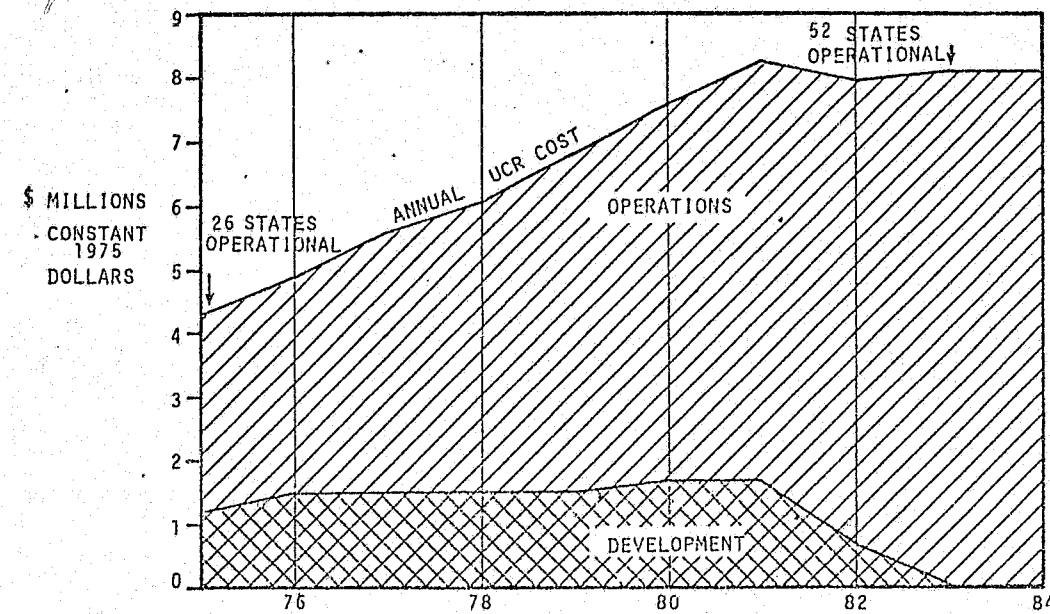


EXHIBIT 10: UCR DEVELOPMENT AND OPERATING COST BY YEAR

development before January 1, 1981, and that, consequently, all states would be fully operational by January 1, 1983.

Development costs were assumed to be equal for all states. Development costs of \$200,000 for year 1 and \$175,000 for year 2 were based on a consistent pattern of costs observed in the study states. An observed median operations cost of \$156,400 was applied to year 3 and beyond.

UCR operations and development are shown in Exhibit 10. A cost leveling is forecast at \$8.1 million by 1983, at the completion of the development phase. Ten-year development costs total \$11.2 million, operations cost will be \$56.8 million, totaling \$68.0 million or, with adjustments for inflation, a ten-year total of \$93.8 million.

SAC, MAS and TA/CDS Costs

Cost estimates for the SAC, MAS, and TA/CDS components were based on the assumption that funding for these components would continue at present levels. They do not generate uncontrollable expenditure requirements and have negligible development costs. All states were assumed to be operating these components by January 1, 1981.

Median costs for active or recently completed projects were used in the cost projections. On an annual basis, median costs were:

SAC	\$100,000
MAS	31,900
TA/CDS	34,700

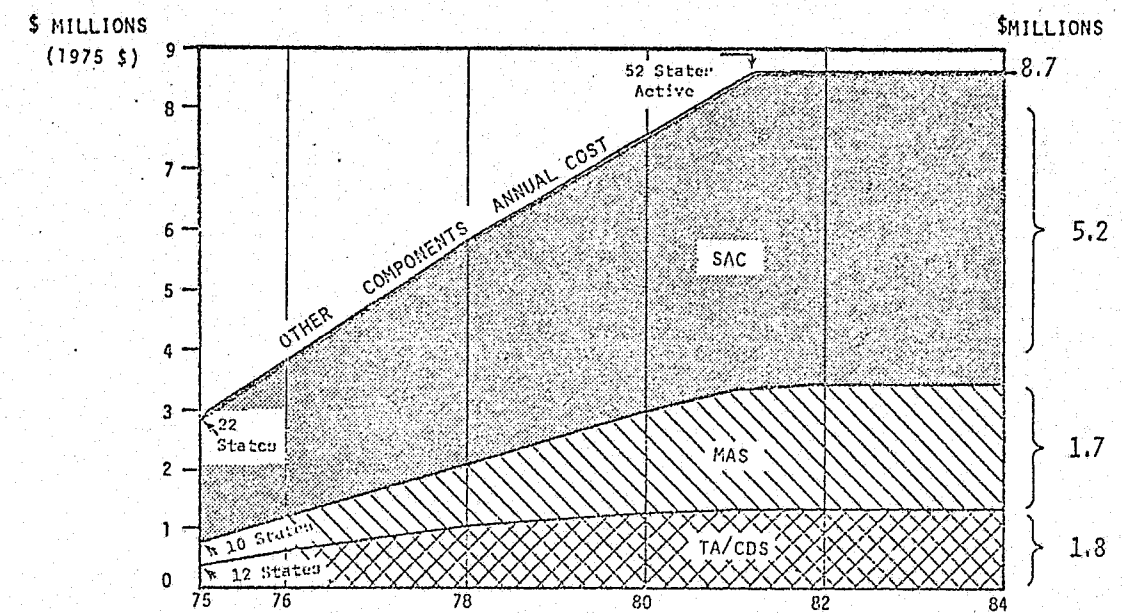


EXHIBIT 11: OTHER CDS COMPONENTS COST BY YEAR
(SAC, MAS, TA/CDS)

A cost summary for these three components is shown in Exhibit 11. A level annual cost of \$8.7 million will be reached by 1981. Ten-year total costs are shown below.

	Ten-Year Total Cost (\$Millions)	
	(Constant Dollars)	(Current Dollars)
SAC	\$41.5	\$57.6
MAS	12.0	17.3
TA/CDS	13.0	18.4
TOTAL	\$66.5	\$93.3

6. CDS BENEFITS

A measurement method for CDS benefits was needed for evaluation of future policies. Assignment of dollar values to CDS benefits, other than for direct cost savings, was rejected early in the project as a measurement method. It was believed that subjective assignment of dollar values, in the absence of a competitive market for CDS products, would be misleading and of less value for policy analysis than would be a cataloging of objectively measurable CDS uses. This project has therefore attempted (1) to identify realizable CDS benefits and (2) to quantify the benefits as a basis for policy evaluation.

CCH Benefits

Six areas for CCH benefit assessment are examined in this section:

- . Improvement of the criminal justice decision making process;
- . Federal agency operations;
- . Community protection;
- . Protection of individual rights;
- . Criminal justice systems improvements; and
- . Cost displacement, or potential savings to be realized from the automation of manual processes.

Improvement of the Criminal Justice Decision-Making Process. Benefit assessment in this area was concerned with the CCH system's capability for improving both the quality and speed of criminal justice decision-making. The decision processes, and the potential recipients of CCH benefits are listed below.

The principal operational benefits of CCH are the potential improvements in the quality and timeliness of criminal justice decisions. These benefits result from the availability of information from CCH which is not otherwise available within a usable time period (e.g., a record of crimes committed in a distant jurisdiction). Rapid CCH response, particularly the availability of a criminal summary within seconds, is necessary for realization of these decision-making benefits.

Criminal Justice Decision Process	Agency Receiving Principal CCH Benefit			
	Police	Prosecutor	Judiciary	Corrections
Investigation	✓			
Citation, Arrest, and Minor Case Disposition	✓	✓		
Jailing	✓			
Screening & Arraignments		✓	✓	
Plea Negotiation and Trial Preparation		✓	✓	
Sentencing and Supervision of Sentenced Offenders			✓	✓

CCH impact on the quality of individual decisions can be determined through comparisons between the volume of those decisions, and the characteristics of the criminal justice system of the future that would be affected by "speedy trial" legislation, and recommendations of the National Advisory Committee on Criminal Justice Standards and Goals. Exhibit 12 presents an estimate of the numbers of decisions in 1975 and 1984 and an indication of decision time constraints based on recommendations of the National Advisory Commission (NAC). This analysis indicates that by 1984, CCH could potentially contribute to the quality of over 19 million decisions annually, and that it might improve the quality of those decisions, specifically those which must be made within a matter of hours. Such decisions number in excess of 12 million according to the same estimate.

Exhibit 13 shows a projection to 1984 of the number of arrests by year and the number of decisions potentially supportable by CDS. During the 10-year period 1975-1984, there are over 165 million potentially supportable decisions. With the implementation schedule assumed for cost estimation, CCH will be able to support nearly 73 million, or 44 percent of the potentially supportable decisions. By 1984, CCH support will increase to 62 percent and will continue to increase.

DECISION PROCESSES SUPPORTED BY CCH INQUIRIES	NUMBER OF POTENTIALLY SUPPORTABLE DECISIONS (MILLIONS)		MAXIMUM RESPONSE TIME (PERIOD FOLLOWING ARREST)	NUMBER OF RESPONSES REQUIRED WITHIN 6 HOURS IN 1984 (MILLIONS)
	1975	1984		
1. Investigations (Screening of suspects by investigators)	3.01	4.14	unknown	---
2. Citation, Arrest and Minor Case Disposition (Field officer's decision to issue a citation or make a physical arrest; summary of processing of minor cases)	5.02	6.90	6 hours	6.90
3. Jailing (Booking individuals into local jails)	1.47	2.03	6 hours	2.03
4. Screening and Arraignment (Decisions as to further processing by prosecutor and pretrial release by the magistrate)	2.51	3.46	6 hours	3.46
5. Plea Negotiations and Trial Preparation (Misdemeanor Pleas and Trials) (Felony Pleas and Trials)	.59 .40	.81 .55	30 days 60 days	---
6. Sentencing and Supervision of Sentenced Offenders (Presentence investigations, incarceration and interstate probation, parole arrangements)	.90	1.24	unknown	---
TOTAL	13.90	19.13		12.39

EXHIBIT 12: RESPONSE TIME REQUIREMENTS FOR CCH INQUIRIES

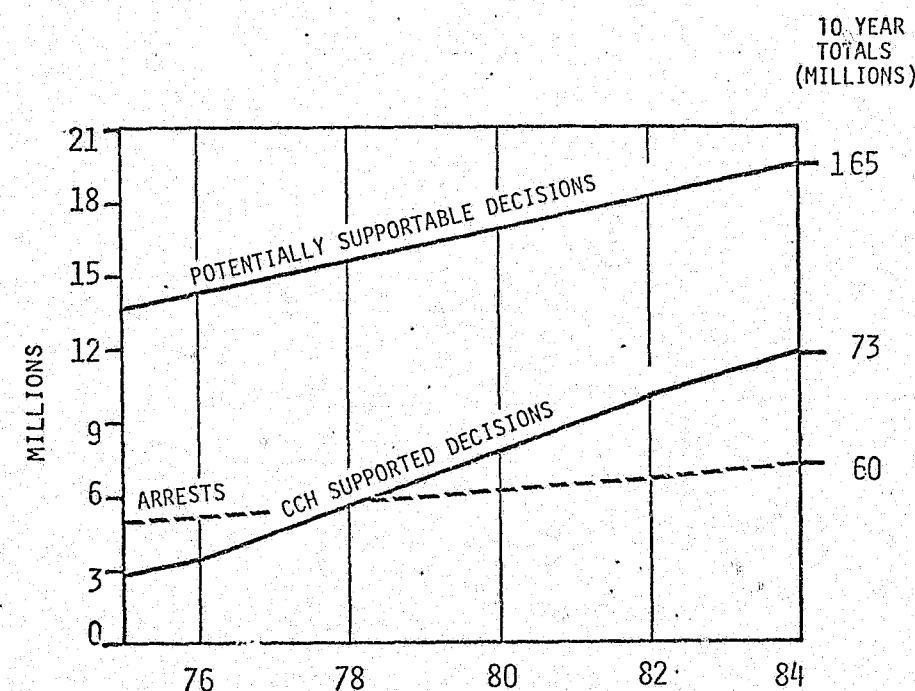


EXHIBIT 13: DECISIONS SUPPORTED BY CCH BY YEAR

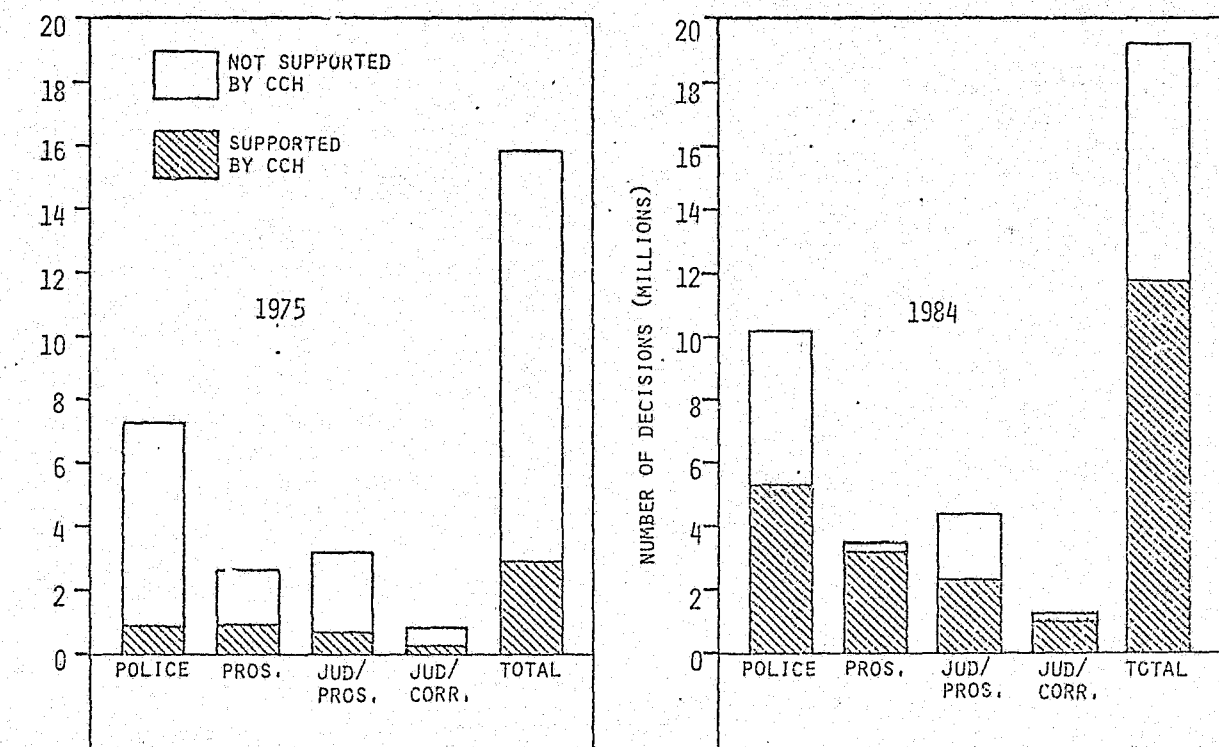


EXHIBIT 14: DECISIONS SUPPORTED BY CCH BY CRIMINAL JUSTICE FUNCTION

Exhibit 14 shows the six decision-making processes in four functional groupings: (1) police, (2) prosecutor, (3) judiciary and prosecutor, and (4) judiciary and corrections. Of specific interest is the major support afforded in non-police areas. Throughout the projection period, the major beneficiaries will be the prosecution, the judiciary and correctional officials.

Federal Agency Operations. CCH will benefit those Federal agencies with criminal justice responsibilities as well as those making inquiries associated with employment and licensing decisions (pursuant to Public Law 92-544), and Federally chartered or insured banking institutions. Federal agencies in the Department of Justice which will benefit from CCH are the Federal Bureau of Investigation, the Immigration and Naturalization Service, Bureau of Prisons, U.S. Marshall Service, and Drug Enforcement Administration. Within the Department of Treasury, examples are U.S. Secret Service, Bureau of Customs, and Bureau of Alcohol, Tobacco, and Firearms. Examples of other affected Federal agencies are the U.S. Postal Service, U.S. Civil Service Commission, and Small Business Administration.

Federal agencies are a major user of the present NCIC/CCH system. During the month of September, 1974, nearly 30 percent of all NCIC/CCH criminal summary inquiries were from Federal agencies, principally the U.S. Secret Service, FBI Field Offices, the Bureau of Customs and the Bureau of Prisons. This relatively high Federal use no doubt reflects the large percentage of the CCH data base currently devoted to Federal offenders. As state record contributions grow, state inquiry volumes should follow, decreasing the proportion of total inquiries that are made by Federal agencies. The sole Federal consumer of on-line full criminal histories in September 1974 was the U.S. Bureau of Prisons with inquiries totaling 53.6 percent of the national traffic.

Community protection. Community protection will be improved in several ways through the use of CCH information. These involve the enforcement of criminal statutes directed at recidivists; special handling of career criminals; assessment of the danger potential of persons in custody; awareness of previous escapes from custody and failures to appear for trial; and screening of persons for positions of public trust.

Protection of individual rights. CCH can have both positive and negative effects on individual rights.

Positive effects. CCH will assist in minimizing unnecessary incarceration by providing more information at the time of bail hearing. A potential benefit exists for reduction of danger to persons in jail by identifying and isolating dangerous inmates. CCH will also promote evenhanded treatment, especially when diversionary decisions are to be made.

CCH can contribute to protection of the privacy of individual's records. Individuals having arrest records are entitled to protection from harm that might result from dissemination of inaccurate records or from their unlawful use. Present abuses include the timing and completeness with which records are established, updated, sealed and purged. In some cases, locally maintained records have been used in a manner contrary to law and sound public policy--notably, private agencies have obtained information as part of preemployment investigations. CCH may reduce these abuses through the exercise of operational controls and audits which are not available to manual systems. For example, CCH can edit records to assure that they are updated within time limits, especially final disposition data. It can automatically generate messages to responsible authorities requesting the submission of such data. It has the potential for automatically erasing arrest information when certain criteria, e.g., the addition of disposition data within certain time periods, are not met. Automated sealing and purging can be done with more certainty and at a much lower cost. Safeguards can be installed (e.g., terminal operator codes) to provide greater protection for records than can be given records stored in file folders.

Negative effects. Individuals who might gain unauthorized access to a terminal would have the opportunity to acquire information about individuals from throughout the United States. Such information could be used for extortion or otherwise to damage the reputation of individuals of record in the system.

Criminal Justice Systems Improvement. Implementation of Standards and Goals^{1/} recommendations of NAC will be facilitated by CCH. The effects of CCH are assessed in Appendix C of the Cost and Benefit Study Report as they apply to the following standards:

Use of Citations

Police Standard No. 4.4: Citation

Courts Standard No. 4.2: Citation and Summons in Lieu of Arrest

Corrections Standard No. 4.3: Alternatives to Arrest

Screening and Diversion

Police Standard No. 4.3: Diversion

Courts Standard No. 2.1 and 2.2: Diversion

Corrections Standard No. 3.1: Use of Diversion

Pretrial Release

Police Standard No. 4.4: Release on Own Recognizance

Courts Standard No. 4.5: Presentation Before Judicial Officer Following Arrest

Courts Standard No. 4.6: Pretrial Release

Safety of Persons in Jail

Corrections Standard No. 2.4: Protection Against Personal Abuse

^{1/}National Advisory Commission on Criminal Justice Standards and Goals, Six Reports of the National Advisory Commission on Criminal Justice Standards and Goals (Washington, D.C., Government Printing Office, January, 1973).

Speedy Trials

- Police Standard No. 4.1: Cooperation and Coordination
- Courts Standard No. 3.1: Abolition of Plea Negotiation
- Courts Standard No. 4.1: Time Frame for Prompt Processing of Criminal Cases
- Courts Standard No. 4.3: Procedure in Misdemeanor Prosecution
- Courts Standard No. 4.8: Preliminary Hearing and Arraignment
- Courts Standard No. 4.9: Pretrial Discovery
- Courts Standard No. 4.10: Pretrial Motions and Conference
- Courts Standard No. 4.11: Priority Case Scheduling
- Corr. Standard No. 4.10: Expediting Criminal Trials

Cost Displacement, or potential savings, to be realized from the automation of manual processes. Potential cost savings of \$150 million (in 1975 dollars) over the ten year period from 1975 to 1984 could be realized from replacement of manual functions by automated CCH operations. \$45 million of this amount could be realized by the states and \$105 million at the FBI's Identification Division if the manual update of rap sheets were halted for all subjects automated in the CCH system. However, present practice and informed opinion suggest that parallel operation of manual and automated systems may continue for several years. For this reason the project team elected not to subtract this cost displacement amount from the projected costs shown in Section 3 of this summary. These savings will remain potential until policies are established to reduce parallel operations.

Summary. Congressional enactment of speedy trial legislation, and its implementation over the next 16 months, will have a profound effect on the Federal judicial system. This newly enacted Federal legislation may stimulate enactment of similar statutes in the states. When this happens, current manually operated criminal history systems will not be able to support the millions of decisions which must be made within hours of the time of arrest.

If the criminal justice system is to evolve as NAC recommends and if it is to work effectively within speedy-trial time constraints, then an automated criminal history exchange system will be a necessity. Until that necessity arises, CCH benefits can be summarized as:

- Support for 73 million state and local decisions for the period 1975 to 1984.
- Support of Federal agency operations for national security, criminal justice, employment, and licensing.
- Facilitating the exchange of criminal history information for community protection as well as protection of individual rights, realizing that hazards are introduced for personal security and privacy.
- Support for important criminal justice system improvement as recommended by NAC, and
- Potential cost savings of \$130 million from automation of manual processes.

OBTS Benefits

OBTS exists in the CDS program as a state-level capability for producing offender based transaction statistics as a byproduct of CCH data entry. The CDS guidelines imply that a centralized, state-level common OBTS/CCH data base is the only fundable approach; the cost model presented in Appendices A.1 and A.2 assumes such an approach, based on New Jersey's OBTS.

There are, however, other OBTS and related systems which are operating or planned in states and localities. In assessing benefits two other types of systems can be defined: a decentralized or local-level tracking system -- especially appropriate for major urban centers; and a vertical or state agency system -- often appropriate for a state with a strong judicial conference and/or a centralized state-level correctional agency. Benefits of the three approaches are discussed in turn below.

Centralized, state-level offender based transaction statistics capability, as envisioned by CDS, can provide analytical support for a number of activities. Among these are:

- Allocating limited funds among correctional institutions, state court and prosecution activities, and specialized criminal investigation efforts.
- Planning and managing probation, parole, and correctional programs, particularly when workloads are determined by flows of subjects across jurisdictional lines.
- Coordinating and evaluating special investigative/prosecutorial efforts targeted at narcotics or organized crime.

- Identifying and ameliorating scheduling problems in state trial courts.
- Developing and evaluating legislative initiatives in the fields of penal statutes, specification of permissible sentences, and judicial procedure.

Additional state-level uses have been cited in Project SEARCH Technical Reports 4 and 5.

Decentralized, local-level tracking systems, not funded by CDS, are generally operating on-line within a single large city or metropolitan area. These have other benefits, including the following:

- Ability to answer status and schedule inquiries from litigants and witnesses.
- Ability to monitor aging of cases.
- Ability to locate pending cases involving police officers no longer available for court appearance.
- Ability to identify multiple cases pending against a single individual and to use this knowledge in bond recommendations.
- Ability to plan police manpower uses based on knowledge of when officers are needed in court.

Besides these management uses, local systems can periodically produce data tapes for compilation of transaction statistics as a by-product of everyday operations. If these systems are designed for CDS data compatibility, these tapes can be passed to the state for analysis and can be used locally as well. Added local benefits of these statistics include:

- Establishment of priorities in the use of criminal justice resources, with consideration for the impact of one segment's priorities on other segments of the criminal justice system.
- Improved police/prosecution coordination to decrease the incidence of unsuccessful prosecutions caused by procedural difficulties.
- Program evaluation and planning in such areas as prison furloughs, pretrial diversionary programs, and increased use of citations in lieu of pretrial detention.

Vertical or state agency systems feature data collection within a criminal justice system component -- generally a state's judicial and/or correctional system. LEAA has, as part of the CDS program, funded upwards of 12 state judicial information systems and an equal number of state correctional information systems. Conceptually, post-arrest OBTS data requirements could be satisfied by extraction from a larger body of data passed from lower levels to a single, state-level agency information system. Agreed upon data elements could then be passed, by tape or on-line, to the final OBTS data repository.

Linkage of a centralized state-level OBTS to a vertical system could produce most of the benefits ascribed to OBTS/CCH. However, in the case of judicial systems, the satisfaction of civil data needs and information requirements would be an additional benefit. Correctional information systems would produce other benefits in terms of information for management, research and evaluation.

Because of the trade-offs between the OBTS/CCH components of CDS and the intrinsic benefits of other state and local systems which can also provide OBTS data, the following questions are raised:

- Whether the improved quality of statistics produced as a byproduct of CCH operations justifies the delay in CCH implementation caused by linkage to OBTS.
- Whether the improved quality and standardization of data entered at the state level justifies the expense of duplicating data already entered in other state and local system.
- Whether LEAA guidelines can be made flexible enough to recognize different system configurations most compatible with various state operating environments.
- Whether states will address their statistical needs through flexible approaches involving planned coordination of criminal justice information systems at all levels within each state.

Realization of potential benefits is subject to resolution of these issues. Therefore, assignment of benefits to OBTS as a CDS component cannot be made at this time.

UCR Benefits

UCR is expected to provide more complete crime and arrest statistics, as the voluntary UCR program becomes state mandated. More comprehensive UCR data will enhance state and local law enforcement planning by providing:

- More reliable statistical data from which the extent and seriousness of the state's, as well as each locality's, crime problems can be determined.

- Specific crime and offender data including the age, sex, and race of arrestees--needed for systems planning; and

- A geographic, as well as a demographic, distribution of offenses that will be of value in establishing program priorities for both planning and resource allocation.

UCR statistics benefit law enforcement tactical operations primarily by facilitating timely and accurate special studies of particular local crime problems. For example, by combining UCR data with certain administrative data, e.g., the size of the work force in a particular crime zone, workloads can be continuously monitored and changed in an attempt to achieve optimum manpower utilization.

Another significant benefit of state-level UCR is that it will force many police agencies to keep records of crimes and other law enforcement events. Many small agencies have never maintained such data completely and accurately, as required by the UCR component. The significance of this improvement should not be underestimated, but dollar-and-cent assessment of it requires rather unrealistic assumptions.

SAC Benefits

At the present stage of CDS development, Statistical Analysis Center benefits have generally been nonstatistical. With rare exceptions, data collection systems have not been operational long enough to produce usable raw material for statistical analysis.

However, in several states the SAC has served as a focal point for expressing user needs to the designers of OBTS/CCH. Its status outside operating criminal justice agencies uniquely qualifies the SAC for this role. Therefore, as more states begin OBTS/CCH development in the future, this use of the SAC can be expected to grow.

Benefits of MAS and TA/CDS

In the absence of specific requirements for these components, states have used MAS and TA/CDS funds to address a variety of needs specific to their situations. No misuse of these funds was noted in the study states; however, expenditures on these components cannot be described as financing progress toward any single national objective.

7. POLICY ISSUES

The costs estimated in this study are significantly higher than those originally projected for CDS. Federal funding, originally planned for CDS development, is now being used to cover initial operations and other costs which some participating states are either unwilling or unable to assume. Many states do not yet perceive the CDS program to be permanent and viable. Consequently, they prefer to utilize Federal funds to the maximum extent possible while withholding a full commitment of state personnel and resources. The net result is a CDS program with a growing need for Federal funds. In the opinion of the project team, survival of the CDS program will require either an increase in Federal funding to more than double the present planned level over the next 10 years or the revision of several high-cost-impact CDS policies to reduce the need for Federal funds.

Several policies were identified as candidates for revision, since they offer potentially large cost reductions with only minor losses in CDS benefits.

These policies are listed in Exhibit 15, together with comments on their contribution to CDS goals, rough assessments of their cost impact, and some suggested alternative policy directions.

The issues are briefly discussed below.

1. Participation of all 52 states is anticipated for the CDS program. This desirable objective may not be achieved within 10 years because: (1) lack of program funds may require limitation of state participation to those most able to help themselves, and (2) many less advanced states are unable to meet the administrative requirements for CDS funding in a short time period and may require technical assistance or actual Federal support.

2. Manual criminal history systems will duplicate CCH operations for 10-years or more. With few exceptions, the participating CCH states and the FBI are continuing full manual duplication of their CCH system entries and updates despite NCIC policy. If this practice continues, by 1984 more than \$18 million per year in potential CCH cost savings will be unrealized.

3. Dedicated computers for CCH must be under the management control of a criminal justice agency. Some states have legislatively restricted the number of computers or computer centers within the state. Current NCIC policy requires that computers for CCH processing, data base management, and message switching be located under the management control of a criminal justice agency. The conflict between these two policies has prevented CCH participation by some states.

4. Lack of cooperation between law enforcement and judicial agencies in some states limits disposition reporting to OBTS/CCH. In some states, lack of cooperation between law enforcement agencies and the judiciary severely delays OBTS/CCH implementation, increases collection cost, or diminishes the accuracy and completeness of disposition data collected for OBTS/CCH. Potential CDS cost increases, due to this problem, have not been incorporated in the cost projections of this study. No specific solutions are suggested by the study other than a serious need to develop funding policies which would encourage cooperation among affected agencies in all participating states.

5. Delayed fingerprint identification, added processing, and duplicate reporting. Present practice in most states results in submissions of fingerprint cards to both the state fingerprint identification bureau and to the FBI's Identification Division. Duplicate fingerprint submission substantially, and needlessly, raises national fingerprint processing costs. Delay is another critical factor; unless the subject is known to local authorities, the present fingerprint identification process returns positive identification of an arrestee (required as the key for CCH inquiry) in time periods ranging up to two and three weeks. CCH benefits could be materially enhanced by shortening the time for all identifications to hours.

6. Prior manual histories are converted for subjects rearrested after CCH start-up. Compared with "first-offender automation," the present "re-entrant conversion" procedure of converting prior manual histories can more than double the number of clerical personnel needed during the first 10 years of CCH operation. Therefore, this study assumed that first-offender automation must replace the current policy for all except multistate and Federal offenders. The CDS Cost and Benefit Study demonstrated that very little benefit is lost under the less costly policy and that neither policy will retire the manual system within ten years of CCH start-up. (See Exhibits B-5 and B-6 in Appendix B of the CDS Cost and Benefit Study Report.)

7. Multistate offender criminal histories reside in the central NCIC/CCH data base. The present CCH policy of maintaining multistate offender records at NCIC rather than in the state data bases has been based on the joint expectations of lower cost and higher reliability for this approach. The CDS Cost and Benefit study, however, found unexpectedly high cost associated with error correction of entries to this central data base. Furthermore, several states with strict privacy legislation are delaying NCIC/CCH participation because they fear loss of dissemination control over arrest records contributed to a central file. The study does not include a cost/benefit analysis of alternative configurations.

8. Disposition reporting requirements are not being enforced. This policy facilitates CCH implementation by avoiding judicial/law enforcement controversies. However, future privacy legislation may require

erasure or expunction of arrest records not followed by dispositions within a reasonable time period. In this case, retroactive disposition collection would be virtually impossible, rendering much of the data base unusable. An LEAA funding policy requiring full disposition reporting should be explored and cost-effective disposition collection methods developed. NCIC has an important role to play in encouraging full disposition reporting.

9. OBTS/CCH source document data are collected at the state level. Source data coding and key-entry comprise nearly 60 percent of CCH cost. Several states are collecting disposition source documents for key-entry at the state level even though the same, or similar, data are being key-entered into other state and local systems. Significant opportunities exist to reduce costs and improve accuracy by a funding policy which would encourage non-redundant collection of disposition information through interface between OBTS/CCH and other automated criminal justice information systems.

10. Statistical components are being funded prior to development of a national system design. CCH and UCR systems are guided by a limited amount of technical design documentation prepared by the FBI, but the statistical components, especially MAS and TA/CDS, are directed only by the general guidance given by the CDS Guideline Manual. As a result, the relatively fixed amounts granted to states for these components are utilized in widely diverse ways which do not necessarily support the coherent growth of a national criminal justice statistics capability. Guideline revisions should be considered for more specific direction of these funds.

11. Management control of the CDS program, especially criminal history exchange, is fragmented among:

- The FBI, including NCIC and the Identification Division, for record maintenance and identification;
- LEAA, including funding for the CDS, State Judicial Information Systems (SJIS), and Offender-Based State Correctional Information Systems (OBSCIS) programs;
- State Planning Agencies (SPA's), which distribute block grant funds to state and local agencies;
- FBI/NCIC for systems management and standards (CCH and UCR); and
- FBI/NCIC and LEAA for technical assistance.

Since CDS inception, several of these policies have raised expenditures above the level necessary to achieve CDS goals. Until resolved, they will continue to do so. The form of their resolution could raise future CDS costs above the path projected in this report. Substantial future planning, supplemented by analyses of alternatives, will be needed to develop a more cost-effective CDS.

PRESENT POLICIES OR EXPECTATIONS	CONTRIBUTION TO CDS GOAL ACHIEVEMENT	POLICY ALTERNATIVES	COST IMPACT OF POLICY CHANGE
1. Participation of all states is anticipated for the CDS program. However, some states are not ready for participation, and current funding policies may not support participation of all states within the next ten years.	Very high	1. (a) Delay participation of technically less advanced states. Process data from these states at federal level. (b) Encourage participation of less advanced states by providing technical assistance and modified funding policies.	Moderate
2. Manual criminal history systems will duplicate CCH operations for ten years or more.	Negative	2. (a) Refine CCH system design and provide technical assistance to reduce need for duplicate operations. (b) Modify funding policy to reduce financial support for duplicate operations.	Very high
3. "Dedicated computers" for CCH are required to be under the management control of a criminal justice agency.	Barrier to some states' participation	3. Consider alternative definitions of security assurance.	Low
4. Lack of cooperation between law enforcement and judiciary in some states limits disposition reporting to OBTS/CCH.	Negative	4. Consider funding policies which would encourage cooperation in those states.	Unknown
5. Delayed fingerprint identification response encourages multiple submissions, added processing, and duplicate reporting	Negative	5. High technology, rapid response identification systems would enhance CCH benefits. Encourage a uniform single fingerprint submission policy, and technical assistance by the FBI to the states.	Very high

EXHIBIT 15: SUMMARY OF COST-RELATED CDS POLICY ISSUES

PRESENT POLICIES OR EXPECTATIONS	CONTRIBUTION TO CDS GOAL ACHIEVEMENT	POLICY ALTERNATIVES	COST IMPACT OF POLICY CHANGE
6. Manual histories are converted for subjects rearrested after CCH startup (re-entrant conversion policy)	Very low	6. Automate only those subjects whose first arrest occurs after CCH startup (first-offender automation policy)	Very high
7. Multistate offender criminal histories reside in the central NCIC/CCH data base	Access to multi-state information is essential to CCH	7. Maintain an index to both single and multistate offenders, with records in state data bases.	High
8. Dispositions are not required for CCH arrest records as a condition for funding	Higher speed of CCH implementation System may violate future privacy legislation	8. (a) Full disposition reporting in NCIC/CCH format (b) Full reporting of dispositions linked to arrest charges.	Lower cost than full disposition reporting
9. OBTS/CCH source document data are entered at state level	Less with each succeeding year (as local criminal justice systems are implemented)	9. Collect OBTS/CCH dispositions through interface with other automated systems	High
10. Statistical components are being funded prior to development of a national system design. MAS and TA/CDS components are undefined but account for 6% of CDS cost over ten years.	Negative	10. Develop specific guidelines for implementing statistical components. Consider diverting MAS and TA/CDS funds to other components until their roles are defined.	Moderate
11. Management control of the criminal history exchange program is fragmented: .FBI/NCIC and FBI/Ident.: federal-level data storage .LEAA: funding for CDS, SJIS, OBSCIS .SPA'S: state and local block grants .FBI/NCIC: systems management and standards .FBI/NCIC and LEAA: technical assistance	Negative	11. 1971 OMB recommendation for coordination of interstate criminal history exchange program at the level of the Attorney General	High

EXHIBIT 15: SUMMARY OF COST-RELATED CDS POLICY ISSUES (CONT.)