

HOME DEPARTMENT

3.7 Ineffective Computerisation in Police Department

Highlights

To achieve its objectives of control, investigation and prevention of crime, the Department decided to computerise its functions. A centrally sponsored scheme of “Crime and Criminal Information System” was introduced in 1996 by the National Crime Records Bureau, New Delhi. The objective of this scheme was storage of crime and criminal related data and easy retrieval of information in support of crime detection. In addition, in the year 2001, another scheme “Crime Analysis and Automated Record Updating System” was introduced, to computerise all manual records of police stations. However, deficient planning and implementation led to duplication data entry resulting in wastage of manpower as well as errors. The database of Crime and Criminal Information System was incomplete and contained incorrect data due to lack of input and validation controls leading to the database being unreliable and thus not useful. Thus the expenditure of Rs 4.40 crore has not achieved the desired results even after a decade of its functioning.

- **Crime and Criminal Information System has not been implemented in full, though it has been functioning for a decade. Planning Crime Analysis and Automated Record Updating System without considering the existing Crime and Criminal Information System scheme resulted in duplication of data capture and wastage of manpower.**

(Paragraphs 3.7.6.1 and 3.7.6.2)

- **Networking between District Crime Records Bureaus and State Crime Records Bureau had not been achieved even 10 years after the introduction of Crime and Criminal Information System resulting in delayed transmission of data to State Crime Records Bureau.**

(Paragraph 3.7.6.3)

- **The software supplied by National Crime Records Bureau could not be corrected or supplemented by State Crime Records Bureau or District Crime Records Bureaus resulting in several deficiencies/errors remaining uncorrected for years.**

(Paragraph 3.7.7.4)

- **Incorrect/incomplete master tables resulted in capture of incorrect codes for Acts/Sections for crimes and for investigating Police**

Officers in the transaction tables. 9.16 lakh records contained incorrect Sections under Section 41 of the Criminal Procedure Code alone. 1,638 codes were provided against the existing 29 ranks of Police Officers.

(Paragraphs 3.7.8.3 and 3.7.8.4)

➤ **Capture of data from which Crime and Criminal Information System could generate reports in support of crime detection, remained at 8.84 per cent even after an expenditure of Rs 4.40 crore.**

(Paragraph 3.7.9.1)

➤ **Capture of the value of properties involved in crimes was erroneous.**

(Paragraph 3.7.9.3)

➤ **While Crime and Criminal Information System contemplated complete details of all persons involved in crimes, the related data table did not even store the names of the individuals in respect of seven lakh cases.**

(Paragraph 3.7.9.6)

3.7.1 Introduction

To achieve its objectives of control, investigation and prevention of crime, the Department decided to computerise its functions. A centrally sponsored scheme of “Crime and Criminal Information System (CCIS)” was introduced in 1996 by the National Crime Records Bureau (NCRB), New Delhi. The objective of this scheme was storage of crime and criminal related data and easy retrieval of information in support of crime detection. In addition, in the year 2001, another scheme “Crime Analysis and Automated Record Updating System (CAARUS)” was introduced, to computerise all manual records of police stations. An Information Technology Review of these two schemes was taken up in March-May 2006.

All the 37 District Crime Records Bureaus (DCRBs) in the State were provided with computers for capture of data relating to CCIS. Data were to be collected in seven different Forms called Integrated Investigation Forms (IIFs) by police stations and sent to DCRBs for capture in the computer system, using a software supplied by NCRB on SQL Server and Visual Basic. The data was then to be consolidated at the State Crime Records Bureau (SCRB) at Chennai and transmitted to the NCRB for final consolidation. The data was to be used in the detection of inter district crimes by the SCRB and inter state crimes by the NCRB.

CAARUS was conceived to computerise all manual records of police stations. For this purpose, all the 1,413 police stations in the State were supplied with one computer each. Data relating to administrative and crime related activities

of a police station were to be captured in CAARUS and all periodical returns generated therefrom. The CAARUS data was localised to each police station and was to be consolidated further.

3.7.2 Scope of audit

All information pertaining to CCIS were to be analysed for correctness and completeness. Since the source documents had to flow from each of the 1,413 police stations in the State, ensuring their completeness was crucial. Thus, CCIS information at all the Police Stations, DCRBs and SCRB along with the application software and the implementation was within the scope of this audit.

3.7.3 Audit objectives

The main audit objectives were to study whether

- the information compiled was credible and complete,
- there were sufficient controls existed from input to the output levels,
- the information was made available to all the intended users in time and
- the information available was utilised by intended users.

3.7.4 Audit criteria

The audit criteria adopted are to check the data with

- manual returns and figures therein, which is still in vogue,
- Criminal Procedure Code (Cr.PC), Indian Penal Code (IPC) etc.,
- scheme of codification and master data¹ in the system,
- Police Station records and manuals,
- original source documents and
- general information available.

3.7.5 Audit methodology and coverage

The entire CCIS data (from January 1996 to January 2006) was downloaded and examined in Audit. The application software was examined for its completeness and adequacy of controls. The outputs generated and their utilities were also examined. The systems followed in the DCRBs for data capture and the constraints faced were ascertained through a questionnaire and cross-checked in four DCRBs. The implementation of CAARUS was not examined as it was still at an initial stage of implementation.

¹ Master data sets are synchronized copies of core business entities used in traditional or analytical applications across the organization.

As the Department had classified their data as confidential, the entire examination was carried out in the premises of SCRB. Important points noticed during the review are discussed in the succeeding paragraphs.

3.7.6 Planning and implementation

Schemes with overlapping functions were introduced in the Department without any timeframe for their implementation, the implications of which are discussed in the succeeding paragraphs.

3.7.6.1 CCIS not yet fully functional

Absence of time limit for making the system functional resulted in continuance of parallel manual function for the last 10 years.

Though Crime Records Bureaus at the District, State and National levels were formed in the year 1985 and computerisation of various records through CCIS was taken up in 1996, no limit was fixed by which time these were to become fully functional. As capture of data remained grossly incomplete, all the manual functions have continued in parallel with the computer system for more than a decade and the CCIS scheme has yet not become fully functional.

3.7.6.2 Faulty planning of CAARUS

Planning for new scheme without taking into account the existing CCIS scheme, resulted in duplication of data capture.

CAARUS was introduced in 2001 five years after implementation of CCIS without taking cognizance of the ongoing Scheme. CAARUS encompassed all the information captured in CCIS resulting in duplication. Details of all First Information Reports (FIRs) filed and all related information were to be captured once in the Police Stations for CAARUS and again in DCRBs for CCIS. No interface was established between the schemes to share information captured for one scheme with the other. Keying in vast data, twice, resulted in appreciable wastage of manpower and also increased the probability for data inconsistency.

3.7.6.3 Failure to provide the planned networking

The contemplated network of connecting the computers in the DCRBs and SCRB have not been established even after a lapse of 10 years.

As per the Memorandum of Understanding between the State Government and the Government of India, all DCRBs and the SCRB were to be connected via a network. However, even after 10 years, data is still transferred through tape media resulting in a delay of upto 30 days in transfer of crucial information. Failure in this regard has reduced the usefulness of CCIS.

3.7.6.4 Non-existence of provision for storage of vital information on criminals

No provision for storage of photograph and/or fingerprints of criminals in the CCIS data.

CCIS has provision to store identity of all criminals such as their build, height, complexion, identification marks, deformities/peculiarities, teeth, hair, eyes, habit, etc. But, no provision is made for storage of their photographs or fingerprints, which are more precise identities, though such information is available in most cases with the Police Stations.

3.7.7 System design

The software was developed by NCRB, New Delhi and the State Police did not have the design documents. Thus the same could not be studied in audit.

3.7.7.1 *Deficiencies in the software*

SCRB, as a user of the software for over a decade had the responsibility to highlight and get the deficiencies, if any, in the software rectified. However, the following deficiencies were observed to be still persisting in the software.

3.7.7.2 *Non-availability of provision for the filing a second charge sheet for the same FIR*

No provision for inclusion of data relating to second FIR.

If in a case, a set of persons were charge sheeted on one occasion, and the remaining persons charge sheeted later, the software does not allow entry of data relating to the later charge sheet. The deficiency left the data incomplete where more than one charge sheet was filed in a case.

3.7.7.3 *Deficiency in capture of vehicle related crimes*

Capture of data for one vehicle only available.

In cases involving vehicles, the engine number, chassis number, make, model, colour, cost, etc., are to be captured. But the system provides for capture of details in respect of only one vehicle for each crime resulting in capture of incomplete information when more than one vehicle have been involved in a case.

3.7.7.4 *Absence of provision to alter the Section under which a case is booked*

No provision for altering the Section originally fed.

As per procedures, the Sections of an Act under which a case is initially filed can be altered subsequently. But in CCIS, once an FIR is filed under a particular Section, the same cannot be altered. As a result, in all FIRs that have suffered a change of Section, the relevant data cannot be altered in CCIS.

Any modification to the application or the master data could be made by NCRB only. Thus any deficiency observed by the DCRB or SCRIB, the users of the CCIS, was to be brought to the notice of NCRB for rectification. However, the software still contained the above deficiencies/errors which remain uncorrected despite being in use for 10 years.

3.7.8 Errors and deficiencies in Data

3.7.8.1 *Deficient codification procedures and incorrect data storage*

Various ‘Penal Code Sections’, types of crimes, methods adopted by criminals, nature of properties involved, etc., were codified in CCIS for maintaining uniformity in data capture and to facilitate querying. However, an analysis disclosed incorrect codification and deficient procedure for their updation as discussed below:

3.7.8.2 *Incorrect pattern adopted for codification of FIRs*

Due to assignment of code numbers to districts and police stations separately, the transfer of a police station to another district warrants change in both places.

In CCIS, each FIR is assigned a unique 13 digit numeric code, consisting of details of FIR, the police district, the police station, year and the serial number of the FIR. The code did not provide flexibility in case of changes in the jurisdiction of Police Stations from one district to another. If a police station was transferred from the control of one district to another, codes of all related FIRs, are to be suitably changed in the records at the DCRBs, SCRB and NCRB failing which the related FIRs lose their identity. For example Pothanur Police Station and Kuniyamuthur out post were transferred from Coimbatore District (Code No. 585) to Coimbatore City (Code No.586). However, the corresponding changes in the codes were not incorporated in all the earlier records. In the circumstances the earlier records lose their linkage with any existing Police Station.

3.7.8.3 *Incorrect codification of Acts and Sections*

Deficiencies in codification.

FIRs and charge sheets are filed based on one or more Sections of the several penal codes like the IPC, Cr.PC etc., in force. Such information instrumental in classification of crimes were codified in CCIS. Analysis revealed incorrect storage of Acts/Sections against crimes as shown below:

In 20 Records, there was duplication in codification of Acts and FIRs could be filed against both the codes.

Same Section of an Act was codified in many different ways. For example, while Section 41 under Cr.PC has only 10 different sub-sections, 150 different sub-sections were codified under it. This resulted in 9.16 lakh FIRs containing incorrect Sections under the above Section alone constituting a 17 *per cent* error level.

3.7.8.4 *Non-codification of investigating Police Officers*

Deficiencies in the maintenance of master table for codification of police officers.

To identify an Investigating Officer, codes were provided. Codes were also provided to their ranks in the Police Department. An examination of data disclosed the following.

- No definite pattern was adopted for codification of the Investigating Officers. The codes were numeric in some cases and alpha numeric in others.
- The codification of the officials was not complete. As such, Codes were allotted only for 5,654 officials as against the actual strength of the Department, which is around 88,000, yet codes were entered for the remaining officers in an arbitrary manner, as codes other than these 5,654 allotted codes were noticed in 87,063 FIRs.
- Out of the 52.95 lakh FIRs captured, the identity of the Investigating Officer was not captured in respect of 20.19 lakh FIRs forming a 38 *per cent* omission. Similarly the identity of the supervising official was not captured in the FIR table in 42.18 lakh cases forming an 80 *per cent* omission.

- Codification of ranks did not follow a definite pattern, in terms of hierarchy. For example the code of an Inspector was 28 while the code of a Sub-Inspector was 20 and that of a Deputy Superintendent was 11.
- A total of 1,638 different codes were allotted against existing 29 ranks in the Department.
- There were 26 Records where Additional Superintendents of Police were supposed to be investigating cases under the control of Assistant Sub-Inspectors as per the database.

With such incomplete and inaccurate data, various reports produced by CCIS were unreliable. The Department in their reply (June 2006) stated that efforts were on to make the system perfect.

3.7.8.5 Deficiency in codification of Police Stations

Duplicate codes were allotted to 11 police stations in the state. Out of these, FIRs were registered under both the codes in five such police stations.

3.7.9 Other data deficiencies

Data capture in CCIS was deficient and the captured data contained errors on a large scale. Such level of errors virtually rendered the database unreliable and the outputs therefrom were thus unreliable and misleading.

3.7.9.1 Incomplete data capture under CCIS Scheme

Seven IIF Forms² have been prescribed for transmission of information from police stations to the DCRBs for capture of data under CCIS. The information furnished in each of the IIF is listed below:

Form	Name of Form	Purpose of Form
I	First Information Report	Preliminary information on a crime as recorded in the first instance
II	Crime Details Form	Details of the crime as recorded by the investigating officer after visit to the scene of the crime
III	Arrest/Court Surrender Form	Details of the criminal on his arrest or after he has surrendered
IV	Property Search and Seizure Form	Details of property lost, seized or recovered
V	Final Form/Report	Details of charge sheet filed against the accused
VI	Court Disposal Form	Disposal of the case by a court of law
VII	Result of Appeal Form	Further appeals filed in the court by the state, accused or complainant

Form I provides only preliminary information and Forms II, III and IV provide specific information on the Crime, the Criminal and the Property

² Integrated Investigation Forms.

involved respectively. Forms V, VI and VII indicate follow up action and final disposal. Thus to produce any meaningful output, data was to be captured completely under each Form. While capture of data from Form I was 99.17 per cent complete (February 2006), capture of details from Forms II to VII was only 8.84 per cent complete. As capture of the critical data remained incomplete, the prospect of CCIS achieving its objectives appears difficult. The department did not insist upon the submission of Forms I to VII by Police Stations. The Department accepted the projected shortfall in capture of data. Thus, even after an expenditure of Rs 4.40 crore, capture of data from which CCIS could generate reports, in support of crime detection remained at 8.84 per cent.

3.7.9.2 *Misclassification of property*

Misclassification of the types of properties in the data.

The properties involved in crimes are classified³ into main-codes and sub-codes and are also assigned a property-type in the database. An examination of the data disclosed the following:

- In 1,492 records, properties were classified under incorrect property types.
- There were 26 records where the classification of sub-codes was incompatible with the existing main-codes. For example, Musical Instruments were classified under the main-code 'Agricultural Products'.
- The main-code remained blank in 25 records.

The above indicated lack of input controls. The department accepted the observation (June 2006) and attributed the same to lack of controls and inexperience of data entry operators.

3.7.9.3 *Incorrect quantification of Properties*

Incorrect provision of value to the properties while capturing the data.

The quantification and valuation of the property involved, based on the assessment of the Investigating Officer are instrumental in determining the gravity of a case. Despite the criticality of the information, the data had several deficiencies as discussed hereunder:

- The value of the property was not captured in respect of 14,648 cases, despite availability of quantity and unit measurement in 13,707 cases.
- A manual check disclosed incorrect valuation of properties in 65 cases. For example, 70 grams of gold was valued at Rs 20 lakh. Similarly, there were errors in the capture of data relating to quantity involved. For example, 15,000 buffalos were reported lost in a single case.

³ For example, for a gold chain, the main-code is 'Jewellery' (3733), the sub-code is 'gold neck chain' (1315) and the property-type is 'Un-numbered Property' (2).

- The unit of measurement in several records had no relevance to the actual commodity. For example jewellery was quantified in “bags, bundles, centimeters, dozens, hectares, kilometers, litres, meters, numbers, packets, pairs, quintals, sheets and tonnes”. Similarly cash was quantified in terms of litres, tonnes, bags, kilometers, bottle, pairs, bundles, meters, grams, sheets, dozens and packets. The unit of measurement remained blank in 20,994 (12 per cent cases) out of 1.74 lakh cases.
- The owner of the property and the identification of the nature of property in terms of belonging to the Victim or Accused or as Abandoned/Unclaimed/Government was not captured in 55,501 records.

The Department in their reply accepted the observations and instructed their district offices to guard against such errors in future.

3.7.9.4 Inconsistent data relating to Automobiles

Capture of inconsistent data regarding automobiles.

Capture of information like type of automobile, registration number, make, chassis number, engine number and status of vehicles involved in crimes was made mandatory. An examination, however, disclosed several deficiencies as discussed hereunder:

- Out of 67,672 records, the engine number was blank in 12,914 cases and had irrelevant information in 4,485 cases. Similarly, the chassis number was blank in 7,288 cases and had irrelevant information in 8,292 records. The registration numbers were blank in 1,461 cases and had unrelated information in 1,071 cases. There were also 1,434 cases where all these three crucial items of information were either blank or contained irrelevant information.
- Certain inconsistent information like, a bicycle valued at Rs 91,943, a moped valued at over Rs 90 lakh and a motor cycle valued at Rs 11.10 lakh were also noticed.
- There was also a case where an FIR was filed on the loss of a Boeing 747 (Jumbo) aircraft black in colour valued at Rs 1,600 in the Kallikudi police station of Madurai district.

Such erroneous/incomplete and irrelevant data would be useless in crime detection and did not justify the capital investment and recurring expenditure on such data capture. Department in their reply (June 2006) attributed the state of affairs to the huge volume of work and the cumbersome processes involved and stated that steps were initiated to make necessary corrections.

3.7.9.5 Deficiencies in the storage of FIRs

An examination disclosed several deficiencies as discussed hereunder:

- The information relating to Penal code Sections in respect of each FIR were stored separately. It was observed that for 99,945 FIRs, such information were not available.

- In 115 cases, the FIRs were shown as filed even before the dates on which the crime was committed.
- 1,496 FIRs were shown as filed even before the receipt of such information. In respect of 5,467 FIRs⁴, there was abnormal delay in the filing of FIRs ranging between five days to more than 365 days after the receipt of information.
- In 18,352 cases, incorrect 'days' were stored.
- The details of action taken remained blank in 10,04,277 cases and contained irrelevant information in another 46,713 cases.
- Out of 3,18,390 property related cases, the value was not captured in 2,28,192 cases.
- There were 133 FIRs registered as emanating from non-existent police stations.
- For recording certain crimes like riot etc., duration of the crime is also to be captured. The duration of crime had abnormal values in respect of 16,685 FIRs⁵, with the maximum period recorded as 90,560 days.

The above deficiencies and inaccuracies indicated absence of proper input and validation controls. The Department stated (June 2006) that all the DCRBs in the State have been instructed to guard against such inaccurate recording of data.

3.7.9.6 *Incorrect and incomplete details of arrest and surrender*

CCIS provides for capturing information relating to persons involved in case and for the capture of additional information in respect of persons surrendered/arrested. However, the information was deficient as listed below:

Incomplete details of arrests and surrenders.

- Out of 7,72,423 arrested persons, additional information such as date of arrest, place of arrest etc., were not captured in 8,760 cases.
- In respect of 39,258 cases, basic information such as name, date of birth, build, height etc., were not captured even though additional information have been captured.
- The status of the arrested person like, kept in 'police custody', 'judicial custody', etc., was not indicated in 3,824 records.

Further, an analysis of 19,95,151 records containing details of persons arrested, surrendered or suspected disclosed the following.

⁴ 5 to 10 days : 1,084 cases, 11 to 30 days : 1,055 cases, 31 to 90 days : 1,071 cases, 91 to 180 days : 858 cases, 181 to 365 days : 839 cases and more than 365 days : 560 cases.
⁵ 100 to 1,000 days: 13,320 cases, 1,001 to 5,000 days: 3,262 cases, 5,001 to 10,000 days: 124 cases and more than 10,000 days: 79 cases.

Incomplete information on the identity of persons arrested/surrendered /suspected.

Sl. No.	Item	Discrepancy	Number of cases
1.	Name	Blank or meaningless information	7,00,381
2.	Initial	Initials were at the beginning	68,349
3.	Name of related persons	Blank or meaningless information	13,74,425
4.	Nationality	Blank	15,02,424
5.	Religion	Blank	16,31,213
6.	Date of Birth	Blank	6,64,876
7.	Build	Blank	14,57,071
8.	Height	Blank	13,56,781
9.	Complexion	Blank	17,05,228
10.	Teeth	Blank	18,24,729
11.	Hair	Blank	18,24,259
12.	Eye	Blank	18,45,983
13.	Dress Habit	Blank	18,03,404
14.	Language	Blank	16,30,367

Such discrepancies were as a result of non-existence of input controls and data validation procedures, thus rendering the entire data unreliable. In the absence of these details, generation of name based reports provided for in the software was not possible.

It was noticed that not even a single person was identified as ‘Convicted’ out of 21 lakh records containing details of persons involved in FIRs indicating incomplete capture of information.

Such incorrect/incomplete data in the CCIS would not help the identification of criminals. The department attributed (June 2006) most of the above errors to the prevailing cumbersome procedures in data capture and massive nature of data backlog.

3.7.10 Deficiencies in the classification of crimes

The Modus Operandi (MO) adopted by a criminal is one of the key factors based on which detection of a crime is to be attempted through CCIS. For this purpose, crimes are classified into Major Heads, Minor Heads and Methods⁶, a combination of which helps in determining the exact MO relating to a particular case. However, the storage of these factors in the data tables was poor, to play any sustainable role in crime detection through CCIS.

3.7.11 Non-assignment of Major Heads

Classification of crime headings not assigned in all cases.

The major head is based on the Section under which a case is filed and it is to be automatically assigned by the system. It was seen that for 2,63,741 out of

⁶ **Major Heads:** Murder, Robbery, Dacoity etc.; **Minor Heads:** adultery, running train, urban, rural; **Methods:** firearms, bomb throwing, snatching.

14,80,873 cases, major heads were not assigned. The Department in their reply (June 2006) attributed the omissions to the deficient earlier version of the software and has promised rectificatory action. However, it was noticed that such omissions are found to exist right from 1996 to till date.

3.7.12 Non-assignment of Methods in respect of FIRs booked

Data on Methods of crime captured only in 13.88 per cent of cases.

The 'Method' relating to a crime is the *defacto* MO, based on which investigation is proceeded with.

While it was possible to capture 'Methods' of all crimes for which Major Heads were available, it was done only in respect of 1,71,199 out of 12,33,012 records. The Department replied (June 2006) that the deficiency in software had been brought to the notice of NCRB for necessary correction.

3.7.13 Utilisation of CCIS Data

Exclusive utilisation of data for crime detection is yet to commence.

In CCIS, efforts are still on only to complete the capture of data and no targets have been set to bring it to its functional use. Though functioning for the past 10 years, attempts are being made merely to complete the capture of data with correctness and completeness and utility given secondary importance. Monitoring mechanisms watched only the quantity of data captured and not its quality, through monthly returns. No performance indicators for measuring the utility value of CCIS were prescribed. All the manual systems that helped in crime detection in the pre-computerised days were still operational. There is no count of the number of crimes that were detected using the assistance of CCIS. It is thus assessed in audit that utilisation of CCIS data for crime detection is yet to commence.

The fact that the SCRB was not generating reports provided for in CCIS in support of crime detection, was accepted by the Department in their reply (June 2006). The system of periodic assessment of the CCIS claimed to be in position by them was ineffective.

3.7.14 Conclusions

Computerisation in the Police Department centered around two schemes the CCIS and CAARUS. The CCIS is yet to become fully functional even after 10 years of its inception. Non provision of the linkage between the CAARUS and CCIS for data porting from CAARUS to CCIS has led to duplication data entry resulting in wastage of manpower as well as errors. Even after 10 years of implementation, the DCRBs and the SCRB are yet to be connected in a network, resulting in abnormal delay in the transmission of data from districts to the state headquarters. The critical data required for generating reports from CCIS is still largely incomplete. The application deficiencies have led to the database being incomplete and also incorrect, making it unreliable and thus not useful. No tangible benefits have thus accrued so far from this computerisation.

3.7.15 Recommendations

In order to make CCIS functional and to achieve the desired objectives, the following recommendations are suggested.

- Suitable interface between CCIS and CAARUS has to be established to avoid repetition in data capture and consequent loss of manpower.
- The capture of data should be made complete and up-to-date.
- The capture of data with regard to all the IIF Forms should be considered for assessing completeness.
- The correctness of data has to be ensured through suitable controls.