

Chapter-VI
**Analysis of Information
Technology (IT) application**

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e-Kalyan software was developed by National Informatics Center - Himachal Pradesh (NIC-HP) during 2006-08 for sanction and disbursement of social security pension applications and the software had been adopted by the Department since 2008.

Audit analyzed e-Kalyan software with a view to ascertain design sufficiency as per rules/guidelines and efficient service delivery. Following observations were made:

6.1 System/ user manuals

As per para 2.6 of the e-Kalyan Project Management Plan, 2006 (PMP-2006), NIC-HP was to prepare Software Requirement System (SRS) within one month and Software Design Document (SDD) after the preparation of SRS within one month. Further, as per point 6.2 of the PMP-2006 relating to project deliverables, the software application was to be delivered along with the User manual (for departmental users) and System manual (for internal staff of NIC-HP).

Audit, however, noticed that SRS, SDD, user manual and system manual were not prepared by NIC-HP inspite of lapse of more than 13 years after implementation of Social Security Pension schemes through e-Kalyan software in 2008. In the absence of SRS and SDD there is lack of clarity of documented requirements of the Department for e-Kalyan software, issues in mapping of rules, the presence of bugs and porting of legacy data into e-Kalyan.

While admitting the facts, the Deputy Director (ESOMSA) stated (October 2020) that no separate SRS, SDD, User and System manual were prepared as no major difficulty was faced by the Department. The reply is not tenable, as in the absence of these, there were deficiencies noticed as pointed out in previous chapters and succeeding paras.

6.2 Accessibility to e-Kalyan

To ensure accountability and data authenticity, accessibility of e-Kalyan software should be with authorized persons only at various levels, to avoid unauthorized access and security breach. Analysis of data dump revealed the following:

Access of data by multiple users - Scrutiny of data dump revealed creation of 211 multiple¹ user IDs at various levels . Out of these, 141 user IDs (DWO: 21; Supervisor / Superintendent: 28; TWO: 09; and others: 83) were shown active in the data dump. As the access to system was only at district level, creation of IDs for TWOs was irregular which indicated that the software was being handled by unauthorized users.

Password policy – The purpose of a password policy is to establish a standard for creation of strong passwords, protection of those passwords, and frequency of change of the passwords. All user-level passwords should be changed periodically. Password should be enforced to be of a certain minimum length and comprising of mix of alphabets, numbers, and special characters.

¹ Bilaspur: 15; Chamba: 10; Hamirpur: 26; Kangra: 39; Kinnaur: 05; Kullu: 12; L&S: 04; Mandi: 26; Shimla: 27; Sirmour: 22; Solan: 10; and Una: 15

Audit observed that password with a combination of upper/ lower case-numeric-special characters had not been made mandatory. It was further noticed that all the 211 passwords were stored without encryption in database which was fraught with risk of unauthorized access and security breach.

Storage of password without encryption might result in unauthorized access to user IDs and passwords and breach of security.

Login by different users from same PC / IP address - Scrutiny of data dump revealed use of different user logins from the same PC / IP address by different users in all districts. This indicated that the e-Kalyan software had been accessed by different users from same PC / IP while processing of pension applications, which was fraught with risk of unauthorized access of IDs / passwords.

As indicated in above, user IDs with different roles were used in same PC and IP address, which indicates sharing of user IDs/ passwords with different users. Use of multi factor authentication to lower such risks should have been considered.

6.3 Reliability of e-Kalyan database

Audit observations arising out of analysis of data dump related to reliability of e-Kalyan database are detailed below:

Manipulation of data / dates- Pension applications are sanctioned by the sanctioning authority as per Himachal Pradesh Social Security Pension Rules, 2010. Applications are scrutinised at various levels (DEO, Supervisor and DWO) to ascertain eligibility of the applicants. Process of sanctioning the applications is given below:



Analysis of data dump revealed mismatch in timelines in processing of applications (total 7.06 lakh applications) as detailed below:

Supervisor submission date before application date	Supervisor submission date before entry date	Supervisor submission date after final approval date
1961 ²	1143 ³	3843 ⁴

Pension disbursement start date had been captured before date of sanction of the pension in 1515 cases⁵. In addition to these, 50 cases⁶ pertaining to eight districts, were captured where invalid pension start date (dates before start of pension schemes) was mentioned. This was indicative of either irregularity in approval of applications or incorrect feeding of these dates and lack of validation checks in the software.

² Mandi: 286; Sirmaur: 1629; Solan: 45 and Una: 01

³ Kangra: 54; L&S: 03; Mandi: 1084 and Una: 02

⁴ Mandi

⁵ Bilaspur: 23; Chamba: 05; Hamirpur: 68; Kangra: 558; Kinnaur: 07; Kullu: 17; L&S: 04; Mandi: 13; Shimla: 745; Sirmaur: 12; Solan: 21 and Una: 42

⁶ Bilaspur: 01; Hamirpur: 30; Kangra: 01; Kinnaur: 05; Kullu: 02; L&S: 03; Mandi: 01; and Shimla: 07

Above irregularities indicated that these dates were being fed manually / manipulated in the absence of validation checks.

Pension sanction date and order number - Pension sanction date and order number after sanction of social security pension were to be entered in the respective fields of the e-Kalyan application.

Analysis of data dump revealed that pension sanction date and order number had not been entered / captured in the e-Kalyan application (either left blank or -) in case of 117786 beneficiaries⁷ of eight districts which indicated failure of the department to either perform the necessary process of sanction or failure to feed the necessary details regarding the same.

Incomplete credentials - Details of the beneficiaries viz. name and father's name are to be filled in the respective field.

Analysis of data dump revealed six cases where aforesaid mentioned fields were left blank, while in 104834 cases⁸ either one of these fields was left blank or improperly entered (contained random values) out of total 7.06 lakh applications. This had resulted in processing of applications without complete details due to absence of validation checks as such name field could not be left blank.

Applications rejected due to incorrect entries - At the time of data entry, correct credentials should be entered to avoid rejection of applications at later stage. Audit noticed that after data entry, editing tools for correction in detail of beneficiaries had not been made available to the officials of next levels.

Analysis of data dump revealed that in six districts 25 out of total 7.06 lakh applications⁹ of social security pension were rejected due to incorrect feeding / entry. In the absence of editing tools for changes / correction of beneficiaries' credentials after data entry level, these applications were rejected by the DWOs concerned and processing of these applications had to be re-started.

6.4 Convergence with guidelines / rules

Selection of beneficiaries for sanction of pension from the waiting list is automatic. Design of the e-Kalyan software should be as per prevailing rules / guidelines. Observations with respect to design of e-Kalyan software as per guidelines / rules are detailed below:

Validation checks – Inbuilt validation check in the software for data were missing. This had resulted in selection of ineligible beneficiaries and double payment of pension under various schemes {Para 5.4.1(i)}. Further, option for editing details of a beneficiary after data entry are not available at subsequent levels. In case of errors noticed after data entry, details are required to be entered afresh, after rejecting the previous application. Different unique IDs are allotted in these cases.

⁷ Chamba: 15759; Kinnaur: 01; Kullu: 13681; Mandi: 49545; Shimla: 21428; Sirmaur: 15020; Solan: 02 and Una: 2350

⁸ Bilaspur: 1565; Chamba: 1348; Hamirpur: 19223; Kangra: 977; Kinnaur: 2172; Kullu: 17991; L&S: 1228; Mandi: 42745; Shimla: 12510; Sirmaur: 2947; Solan: 2124; and Una: 04

⁹ Bilaspur: 02; Kangra: 02; Kullu: 01; Mandi: 15; Shimla: 01; and Solan: 04

Integration with other modules – Integration of the e-Kalyan with other existing modules viz. *e-pariwar* portal of panchayats and municipal/civil records (death etc.) for real time verification of beneficiaries and post office / bank portal for status of pension disbursement had not been done. *Feasibility of integration of various existing modules for real time verification and tracking of pension disbursement status for efficient implementation of social security pension schemes may be considered and adopted accordingly.*

Thus, non-convergence of web-based e-Kalyan software with the guidelines / rules had resulted in selection of ineligible beneficiaries. This also indicates that irregularities are persisting even after shift towards web-based software and even basic validation checks had not been introduced / made active in the web-based e-Kalyan software.

The Deputy Director (ESOMSA) stated that the web-based e-Kalyan software is in developing phase and possibility of integration of existing modules with the e-Kalyan could be explored in future.

6.5 Generation of reports

Various reports viz. sanction list, waiting list, suppression list, disbursement list, etc. related to social security pension in respect of active quarter can be generated in the web-based e-Kalyan software. It was noticed that:

Previous quarter reports - Reports related to previous single quarter were extractable in the previous client server-based e-Kalyan software; however, these reports could not be extracted in the current web-based e-Kalyan software and departmental functionaries had to go through manual files (which is susceptible to errors) or approach NIC for the same when required. Further, it was also noticed that details regarding number of beneficiaries suppressed or substituted in the previous quarters or a particular financial year could not be extracted from the e-Kalyan and these are to be consolidated manually.

Generation of reports under widow / divorced / single woman category – Consolidated report for widow / divorced / single woman category pensioners can be extracted in the e-Kalyan; however, category-wise reports in respect of widow, divorced or single woman cannot be extracted, and these reports are required to be segregated manually.

General query–General query report based on income of the beneficiaries had not been made active in the e-Kalyan, in the absence of which general verification regarding eligibility of beneficiaries on the basis of income criteria cannot be done by the departmental functionaries.

Non-incorporation of above-mentioned queries/reports in the e-Kalyan meant that the benefits of IT-enabled tools in processing of social security pension applications and reduction of manual work were not being realized to the fullest extent. Test-checked DWOs / TWOs also stated that functions related to generation of previous quarters' reports should be there in the software. Above detailed functionalities may be incorporated in the e-Kalyan software for its optimum utilization.

Thus, non-availability of above mentioned processes, defeated the purpose of swift extraction and analysis of data and also rendered the data analysis prone to manual errors.

6.6 User access and feedback

For optimum utilization of the e-Kalyan software and transparency, access to end user (applicant / beneficiary) in respect of online application, application status tracking, pension disbursement status, etc. should be provided. It was noticed that:

End user access – In the web-based version of e-Kalyan, access is available only to the departmental functionaries and end-user *i.e.* applicant / beneficiary had not been given any access. In the absence of this, facility of application submission by the applicant, application status tracking, etc. is not available to the applicant / beneficiary.

Feedback loop – Feedback mechanism in the form of electronic intimation about pension application status, sanction of pension and transfer of pension benefits has not been put in place, in the absence of which beneficiaries had to make personal enquiry or correspondence to get status of their applications or transfer of pension.

Above detailed functionalities could be added for better implementation of the schemes and optimum utilization of IT enabled tools.

Summary–

- *Software Requirement System, Software Design Document, user manual and system manual for ease to manage and use the e-kalyan software had not been prepared by the HP-NIC.*
- *Basic checks to prevent unauthorized access to e-Kalyan and auto validation of data entered in e-Kalyan were not available.*
- *e-Kalyan software had not been designed in convergence with guidelines / rules of social security pension schemes.*
- *Software had not been integrated with other existing modules such as e-pariwar portal of panchayat and post office / bank portal for real time beneficiary' verification and status of pension disbursement.*
- *Facility for generation of previous quarters' reports and access to end user had not been provided in the web-based e-Kalyan software.*

Recommendations – The State Government may consider:

- *To prepare requisite System and user manuals for ease to manage and use software by the departmental authorities and users.*
- *Incorporating basic checks to prevent unauthorized access and auto validation of data entered in revamped e-Kalyan.*
- *Designing of the e-Kalyan software as per prevailing guidelines / rules and incorporation of validation checks as per eligibility criteria so that benefits are transferred to eligible persons only.*
- *Multi factor authentication for login in the e-Kalyan to lower risk of security breach of data.*
- *Devising a suitable mechanism for allotment of sanction order in serial automatically through the e-Kalyan software with the facility of sanctioning of new cases by the Deputy Commissioner in the software itself.*
- *Enabling extraction of pervious quarters' reports, integration with existing modules and access to end user for optimum utilization of the e-Kalyan.*

