

# E-SANCHAR (e-Speech Application through Network for Communication, Help and Response), paper prepared for the 13<sup>th</sup> National Conference on e-Governance

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**Abstract** – This project integrates mobile telephony with Information Technology for generating voice calls for timely transfer of information to rural citizens such as old-age, handicap & widow pensioners for the sanction and monthly releases of pension, social messages and many more. This can also be used in cases where direct communication with the beneficiary/target group is felt necessary.

**Index Terms** – Paper submission, National conference, e-governance, submission guidelines.

## I. INTRODUCTION

All of us have at some point of time felt that the Government machinery is so very impersonal, inaccessible, insensitive and remote that it appears unbelievable if you occasionally get a reply or response from the Government. This makes one believe that the system is not that bad after all, that not all is lost, that there is still room for improvement and this ignites a ray of hope. It was what I experienced as a child whenever I used to do household chores which sometimes involved interacting with Government Departments or Officers.

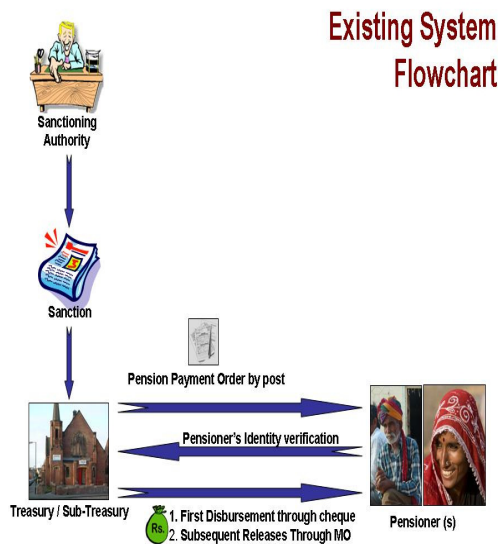
During my tenure as Collector over a period of 6 years, I tried my best to be accessible to public at large, especially, those who used to come from far flung places in the District so that they did not return unheard after spending one full day planning to visit the district headquarters, incurring wage loss on the day of journey and visit to the Collectorate and after all this, returning home empty handed full of frustration and disillusionment with the government machinery. It is this delay and lack of responsiveness and accessibility which provides a perfect opportunity for the development of nexus between the middlemen/intermediaries/power brokers and the ministerial staff who thrive in the mystification surrounding the functioning of Government offices. Their strength lies in being familiar with the labyrinth of the offices and in being able to have the 'right' contact to find out the status of processing of files/papers/important matters related to individuals. There are different ways to break this

nexus such as an 'open – door ' policy, random and unannounced visit of different offices including one's own, developing computerised system of grievance redressal, evolving a system of providing receipts by village level revenue functionaries regarding verbal/written requests made to them by the villagers so that there is documentary evidence of such transactions, periodic review and monitoring, tours, inspections, developing web sites of departments with all key information and forms being put in the public domain and such other measures. However, in none of these methods does the information regarding the status of an individual's application get communicated through a personalised call to that individual or his/her nearest relative.

Social Justice and Empowerment department of Government of Rajasthan despatches pension to the pensioners under various schemes/categories. The pension to the widows, old age and the physically challenged under Social Welfare programs is sent through Postal money orders or by direct credit in the bank account on a monthly basis. Most of these pensioners belong to the rural areas and do not have definite means of finding out when the despatch/credit was made and they remain clueless about it and keep waiting for the pension amount to reach them. At times they even do not even get to know that pension has been sanctioned and credited into their bank account and keep waiting for the money order to reach them.

Under the present circumstances, the pensioners get to know about the status of his/her pension after considerable delay and that too, by personally paying a visit to the office or through some contact person who is able to find out the status of the application. There is no institutional mechanism to intimate these pensioners about their pensions soon after its sanction / release which gives rise to uncertainty making this socially underprivileged section dependent on non-institutional support for obtaining information regarding the status of this pension application. The Socially disadvantaged category are thus forced to depend upon intermediaries regarding their entitlements under the welfare scheme when in fact, these should flow to them as a matter of right.

The existing system can be represented as follows:



Problems in the existing system:

- Pension Payment Order (only once) is issued to pensioners which takes considerable time to reach the concerned beneficiary through the payment portal system.
- Bulk money-orders are printed and issued for transfer of pension payment
- No institutionalized system available with pensioners to find out/ confirm the status of their application
- Prevalence of intermediaries who thrive on ignorance illiteracy, physical disability of this disadvantaged group
- Inability of this age group to frequently commute
- Possibility of transaction cost by the intermediaries cannot be ruled out

**Application context:**

The application seeks to:

- (a) Provide information to the applicant or to the contact person chosen by the applicant regarding the status of sanction of their pension soon after the pension payment order (PPO) has been issued.
- (b) Provide information to the applicant / contact person approved by the applicant soon after the pension amount has been released by the sub treasury to be credited into the bank account / post-office account of the applicant and facilitate transfer of the pension

amount into the bank account of the applicants who have volunteered for the opening of bank account for receiving pension.

- (c) The voice call, apart from the above information flow also presents the humane face of administration and helps in building up tremendous trust and faith in Government besides bringing in efficiency and effectiveness in administration through greater transparency, accountability, responsiveness and accessibility besides generating lots of goodwill in favour of the Government of the day.

The aforesaid objectives can be met only when the information flows over a mobile platform which has a much larger penetration in rural areas as compared to IT. Moreover, transmission of information as outlined above through voice call does away with the problem of illiteracy which is quite common in this age group as well as in the target population being covered under the project

This project integrates mobile telephony with Information Technology for generating voice calls for timely transfer of information to rural citizens such as old-age, handicap & widow pensioners for the sanction and monthly releases of pension, social messages and many more.

- It is harnessing the benefits of the telecom technology in providing information to rural citizens
- It integrates mobile / telephony network with I.T. for generating voice calls to rural citizens under various beneficiary programmes

The statistics given below explains very simply the advantages of linking IT application with mobile telephony.

As on 1st November 2009

**Total no. of phones:** 519 million  
*Mobiles:* 482 million  
*Landlines:* 37 million

-- **Total no. of PCs:** 36 million

-- **Internet accounts:** 16 million  
*Broadband:* 7 million

-- **Active Internet users:** 60 million

Keeping the aforesaid ground realities in mind and with a view to meet the above said objectives, the pilot project by the name of E-SANCHAR (e-Speech Application through Network for Communication, Help and Response) was conceived of.

Under State “100 Days Action Plan”, the Department of Information Technology & Communication (DoIT&C) in association with Directorate of Treasuries & Accounts (DTA), successfully executed a Pilot Project called “E-SANCHAR”- e-Speech Application through Network for Automated Communication, Help And Response; of integration of mobile telephony with the developed pensioner’s software being run at Sub-Treasuries (ST) for disbursing pensions to eligible:

- old-age,
- widow and
- physically handicapped pensioners

**Selection of Treasury:**

After deciding to implement the project with the aforesaid aims, DoIT&C in consultation with Jaipur district administration chose Shahpura Sub Treasury for implementation of this pilot project. Presently, approx. 3800 pensioners have been registered and pensions through money order are given.

At the sub-treasury following IT-equipments are available:

1. Old computer MS-Windows 98 based machine with 64MB RAM attached with a TVSE 24 pins dot matrix printer (DMP)
2. P4 computer with MS-Windows-XP attached with a 9 pins DMP and a BSNL broadband connection.
3. Ground Work:
  - a. NIC had developed software for all treasuries. It helped in expediting the preparation of MO printing only. The software was examined by DoIT&C and necessary suggestions were made to the Director, T & A so that the same could be incorporated in the existing application of NIC. The NIC module was to be revised with respect to:
    - i. Master & monthly release data entry module
    - ii. Module for generating text file for uploading
    - iii. Module for generating bank advice
  - b. In the meanwhile, with the help of District Collector, Jaipur, entire PPOs’ information available with Shahpura Sub-Treasury was sent to SDO (Shahpura) to capture the relevant details. Contact numbers in 33% of the cases could be received from BDO, Tehsildar & Gram-sevak i.e. approx. 1300 out of the total PPOs:
    - i. Contact number (mobile / land-line : own or reference)

- ii. Bank account (existing or new with willingness) with branch name/ bank name
- c. The aforementioned data were entered into the software after necessary examination.

The system which has been conceptualized in association with DTA, NIC, and Social Justice & Empowerment Department has started generating voice call as below:

- a. New PPOs which have been received at the sub-treasury and having contact numbers (mobile no. / land line no.) were fed into the revised pensioners software
- b. Before preparing text softcopy for processing, a thorough manual check was done jointly by Department of Information Technology & Communication (DoIT&C), Sub-Treasury Officer and DTA official. Looking to the internet bandwidth, a text file was planned to be uploaded as it requires less space for storage and can, therefore, be uploaded through Internet quickly or within no time. The text file has following information which is used by automated dialer system to generate voice calls to the registered pensioners-id, those in respect of whom information regarding own or reference mobile/landline number exists.

**Text File:**

Sno.	Field	Width	Description
1.	TREASURY CODE	(4) characters	-Code of treasury
2.	PPO NO	(10) characters	-PPO Number
3.	PPO NAME	(40) characters	-Pensioner’s name
4.	PPO FATHER	(40) characters	-Pensioner’s father/ husband name
5.	CATEGORY	(1) character	- Type of pension
6.	SEX	(1) character	- Gender
7.	AMOUNT	(10) characters	- Pension amount in Rs.
8.	DEAD/ALIVE/STOP	(1) character	-Pension status due to death or stop
9.	STOP DATE	(10) characters	-Date on which pension stopped
10.	PENSION ISSUE DATE	(10) characters	-Issue date of pension
11.	PAYMENT DATE	(10) characters	-Payment date
12.	STD CODE	(5) characters	-STD code
13.	LAND LINE	(8) characters	-Land line phone number
14.	MOBILE NO	(10) characters	-Mobile number
15.	POST/ BANK FLAG	(1) character	-Account in PO or Bank
16.	ACT NO	(20) characters	-Account number
17.	BANK/POST OFFICE	(40) characters	-Name of bank or PO
18.	MONEY ORDER DATE	(10) characters	-Money order date
19.	SYSTEM TIME	(8) characters	-System time

- c. After processing them, a text file is generated through the software which is required to be uploaded to the URL: <http://esanchar.rajasthan.gov.in> (UserID: 2012; Password: abc) from where the voice call dialling system is initiated and matured on the pensioners' contact numbers.

#### Voice Call Format:

- 1 नमस्कार, आपके लिए एक महत्वपूर्ण सूचना कृपया ध्यान से सुने। श्रीमान/श्रीमति \_\_\_ जी आपकी वृद्धावस्था/किछवा/विकलांग पेंशन रु \_\_\_ दिनांक \_\_\_ को जारी कर दी गयी है। आप संबंधित कोषालय में तुरंत संपर्क करें।
- 2 नमस्कार, आपके लिए एक महत्वपूर्ण सूचना कृपया ध्यान से सुने। श्रीमान/श्रीमति \_\_\_ जी आपकी वृद्धावस्था/किछवा/विकलांग पेंशन रु \_\_\_ दिनांक \_\_\_ को मनीआर्डर कर दी गयी है, आप को अगर सात रोज में मनीआर्डर न मिले तो आप संबंधित कोषालय में तुरंत संपर्क करें।
- 3 नमस्कार, आपके लिए एक महत्वपूर्ण सूचना कृपया ध्यान से सुने। श्रीमान/श्रीमति \_\_\_ जी आपकी वृद्धावस्था/किछवा/विकलांग पेंशन रु \_\_\_ दिनांक \_\_\_ को बैंक में जमा करा दी गयी है। अगर यह पेंशन राशि 3 दिवसों में आपके खाते में न मिले तो आप संबंधित कोषालय में तुरंत संपर्क करें।

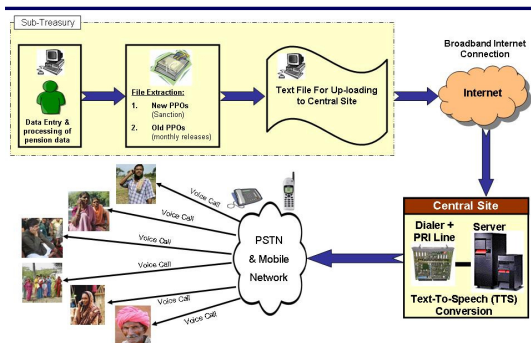
#### Technology used

Use of Telephone and mobile technology along with IT are the key ingredients of E-SANCHAR. The project is based on a client server technology consisting of a very light weight web based GUI from where the treasury operator can upload tdatabase of recipients with relevant pension details and mobile/telephone numbers of people who should receive the call. The database is in simple text format and can also be zipped to conserve ban width.

The front end allows the operator to schedule the calling immediately or the next day. Calling process can be stopped/resumed as per requirement or next database can also be uploaded. At the back-end the server components are used to store data on to an RDBMS, serve the web pages for the front-end, Hindi TTS engine to convert names and words from Roman text to Hindi and an auto dialogue system to pick recipients from the database among dial their mobile/telephone numbers and play back customized message to the recipient.

The back-end server for this is quad – Xeon with 2 GB RAM, 40 GB HDD, fast Ethernet and IU fitted with the Tormenta. ISBN PRI/E 1 PCI Card housed in a data Centre with an internet lease line and an ISDN PRI/E1 line from a leading telephone provider. The front end is a regular PC with an internet connection. The server is running on Linux and using APACHE and web server.

#### E-Sanchar System depicts



#### How and why is it an innovation?

- E-SANCHAR has been prepared to provide quick and efficient dissemination of information to citizens through data-base driven automated voice calls. This is to address deprived citizens and enlighten them that government cares for them and adheres to the principle of SMART Governance.
- The project is simple in nature.
- This is an automatic information dissemination (AID) system
- It is harnessing the benefits of the telecom technology in providing information to rural citizens
- It integrates mobile / telephony network with I.T. for generating voice calls to rural citizens under various beneficiary programmes
- It can be used as a plug in module in all individual / group beneficiary scheme and whenever the government wishes to directly communicate to the beneficiary group/citizens entering across intermediaries.

- d. Currently, server and other required hardware/telephone lines used installed & configured in the State Data Center housed in the Department of Information Technology & Communication at Yojana Bhawan, Jaipur.

#### Stake Holders Consultation

Director Treasury & Accounts, Bank and other officials of DTA were consulted for the project.

*E-SANCHAR has been integrated as one of the mode of communications under Chief Minister Relief Fund monitoring system.*

**Before Deployment:** There was no mechanism to intimate pensioners about the described and status of their pension amount by the State Government.

**After Deployment:** Pensioners get to know in around in real time the status of the despatch of their pension amount and by when should they expect that money to reach them.

#### **Process and Methods which facilitated Innovation:**

In the field of ICT, everybody is talking about ICT product to be installed catering to urban citizens first then the rural ones. It is rare to see any application addressing the concern of the rural poor who are deprived and marginalised.

This project entitled E-SANCHAR (e-Speech Application through Network for Automated Communication Help And Response) is integrating mobile/telephony network with ICT to generate automated voice calls for disseminating timely information to citizens (rural pensioners – old age, widow & handicap pensioner; considered for PoC).

The project implemented by the government is out of a genuine concern about their welfare and shows in the truest sense that it cares for them. This enhances the dignity of the target group in the eyes of the local community. Information flow also presents the humane face of administration and helps build trust and faith in government. Voice call does away with the problem of illiteracy which is quite common in this age group & gives a personalized touch of administration.

#### **Horizontal Replication and Scaling up Process:**

- Project for up scaling of the project in approximately 70 sub treasuries & treasury office at 7 divisional headquarters has been submitted.
- The application has been plugged into the web based application under preparation regarding the CM relief Fund and in the process of integrating with Arogya online and Schemes of Rural Development & Panchayati Raj Department in Bhilwara District.
- A proposal for plugging in the component to the Pension Scheme and Scholarship Scheme of Social Justice Department is under process.
- For the next Financial a proposal of Rs 49 Lacs for the horizontal replication of the project has been approved in the budget.

- Department of IT. GoI conveyed appreciation of the innovative product and enquired whether it could be made available for other State Government.
- DoIT & C through RajCOMP is also in the process of commercial sale of the product.

#### **Constraints and challenges overcome:**

The biggest challenge was the choice of communication media. Sending intimation by letters was prone to the same delays as face by a money order. Since, most of the beneficiaries were illiterate they would again depend on someone else to read them.

Eventually it was decided to use telephones and mobile for reaching out to pensioners. To announce the transparency in the process and empower the pension beneficiaries with timely information, the department decided to provide/personalize information to them about their pension sanction and credit on a monthly basis.

#### **Impact of the Project:**

Apart from being fully automatic and providing direct and personal communication with individual beneficiaries, the project also helps in creating awareness about other beneficiary programmes.

1. E-SANCHAR application can be linked with individual ration card holders residing in the catchment area of a ration shop to inform them about allotment of wheat, kerosene, etc. on a real time basis when the allotment order is issued for the particular shop by the district supply officer.
2. Beneficiaries under various scholarships scheme can be told about the release of scholarships by integrating sanction of scholarship with the mobile/landline number.
3. E-SANCHAR can be used as a very effective IEC tool for social messages which are quite common in several Government run schemes / programmes.

Apart from meeting the objectives outlined above E-SANCHAR has the capability to have reality check conducted in a wide variety of other Individual Beneficiary / Group Beneficiary programme and remove any intermediaries between the Government and the targeted beneficiary.

If the application is up-scaled and implemented through out the State by various Government departments it would help in generating a large data base of the deprived section of rural population which can be targeted through other social benefit schemes also.

**Lesson learned /experiences:** Combination of IT with mobile technology would be the most effective mechanism for addressing issues related to individual beneficiary programmers related to rural population in India.

**Benefits:**

**To the Citizen:** Success in eliminating personal visits, time saving and confidence building towards government systems, maintenance of bank account on a voluntary basis close to their home.

**To the Government:** Increased transparency, accountability and responsiveness in service delivery.

**Proof of Concept:**

The DoIT&C selected following two dates on which pensioners' data was to be uploaded towards PoC:

1.	31 <sup>st</sup> March, 2009	New PPOs (first pension is yet to be disbursed)
2.	2 <sup>nd</sup> April, 2009	Monthly release of PPOs (regular monthly pension)

**Voice Calls Generated:**

- On 31<sup>st</sup> March, 2009, 28 pensioners' data was uploaded at 19:21 Hrs. and the calls were made
- On 2<sup>nd</sup> April, 2009, 120 pensioners' data was uploaded for monthly releases at 13:30 hrs and the calls were made
- On 9<sup>th</sup> April, 2009, 547 pensioners' data was also uploaded for monthly releases and the calls were made
- On 20<sup>th</sup> April, 2009, 654 pensioners' data was also uploaded for monthly releases and the calls were made
- On 22<sup>st</sup> April, 2009, 42 pensioners' data was uploaded and the calls were made On 19<sup>th</sup> May, 2009, 24 pensioners' data was uploaded and the calls were made
- On 4<sup>th</sup> June, 2009, 205 pensioners' data was uploaded for monthly releases and the calls were made
- On 13<sup>th</sup> June, 2009, 993 pensioners' data was uploaded for monthly releases and the calls were made

**e- SANCHAR Call Status of Shahpura Sub-Treasury**

Date	Month	New PPOs		Old PPOs		Total	
		Total Calls	Matured	Total Calls	Matured	Total Calls	Matured
3/31/09	Feb.,09	28	20	-	-	28	20
2/4/09	March,09	-	-	120	63	120	63
9/4/09	March,09	-	-	547	422	547	422
20/04/09	March,09	-	-	654	385	654	385
22/04/09	March,09	42	28	-	-	42	28
6/14/09	April,09	-	-	993	316	993	316
7/15/09	May,09	-	-	1878	402	1878	402
8/17/09	June,09	-	-	2044	1457	2044	1457
9/9/09	July,09	-	-	1838	1324	1838	1324
15/10/09	Aug.,09	-	-	1850	1325	1850	1325
11/11/09	Sept., 09	-	-	2431	1779	2431	1779
12/16/09	Oct., 09	-	-	2649	1911	2649	1911
1/12/10	Nov., 09	-	-	2910	2118	2910	2118
<b>Total</b>		<b>70</b>	<b>48</b>	<b>17914</b>	<b>11502</b>	<b>17984</b>	<b>11550</b>

**Total Pensioners = 3200 ; Bank A/c Opened = 3000 Nos.**

**Trademark & Copyright:** DoIT & C through RajCOMP is at an advanced stage of obtaining e-SANCHAR trademark and copyright for the logo.

**II. ACKNOWLEDGEMENTS**

E-SANCHAR application is a result of coordinated efforts from DoIT & C, Director Treasury & Accounts, and Officials of Shahpura Sub Treasury, Government of Rajasthan and active support from the rural bank and the beneficiary group and their relatives.