

**AWARDS SCHEME FOR EXEMPLARY IMPLEMENTATION OF
e-GOVERNANCE INITIATIVE**

**III. NAME OF CATEGORY- 'INNOVATIVE USE OF TECHNOLOGY IN
e-GOVERNANCE'**

1. Coverage – Geographical and Demographic :-

(i) Comprehensiveness of reach of delivery centres,

e-Dashboard was available on Internet which could be accessed from anywhere in the world.

(ii) Number of delivery centres

No specific delivery centres were required as the access to e-dashboard was available on the Internet in public domain

(iii) Geographical

(a) National level – Number of State covered: **All the states were covered**

(b) State/UT level- Number of District covered: **All the 21 Districts of Haryana were covered**

(c) District level- Number of Blocks covered: **All the Blocks (123) of 21 districts were covered**

Please give specific details:-

1. Lok Sabha constituencies in the state: 10
2. Total Number of polling Booths : 16244 at 9684 locations
3. No of counting centre locations : 90

(iv) Demographic spread (percentage of population covered)

As the General elections to Lok Sabha , were keenly watched by people in entire country and political circles across the country, the project covered approx 2.5 crore population of Haryana in particular and entire population of India in General. It was also watched by people in other countries as well.

2. Situation Before the Initiative (Bottlenecks, Challenges, constraints etc with specific details as to what triggered the Organization to conceptualize this project #):

Non availability of real time information to stake holders like Public,Media & Govt. Machinery(Chief Electoral Officer, Returning Officers, District Electoral officers etc.) in time .

The Chief Electoral officer, Returning officers & District Election officers could not have real time information regarding various parameters like Polling Parties dispatched, Polling Parties Reached ,Mock Poll done, Poll Started, Voters turnout ,Poll ended, Voters in queue at 6.00 p.m. & EVM deposited on pre poll day & Polling day.

The Returning officers could not have the status of counting on particular point of time in their Assembly constituencies which are part of Parliamentary Constituencies on the day of counting

The Chief Electoral officer could not have the status of counting in each Parliamentary Constituencies on real time basis on the day of Counting.

Bottlenecks:

- a. The transmission of data to control centers was very slow, data compilation and preparation of reports took a long time.
- b. Simultaneous collection of data from every location was not possible using conventional methods.
- c. Preparation of final reports took long time.

Challenges and constraints:

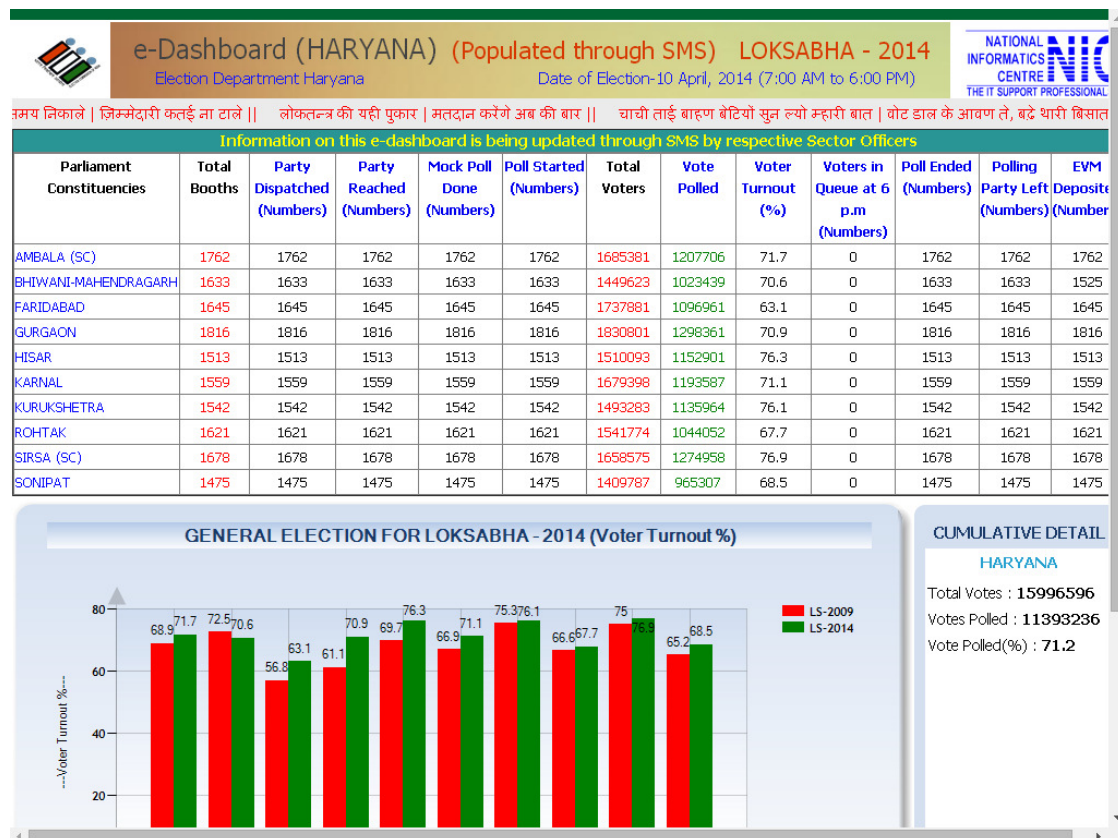
- a. Putting the system in place at each and every polling booth in short time.
- b. Training of approximately 1200 sector supervisors in entire state in a very short time.
- c. Handling of database at a central location and keeping the whole system operational particularly on counting day, when huge Internet traffic was expected on the dashboard.
- d. Non availability of enough trained staff.

3. Scope of Services/ Activities Covered (Relevance of choice of application for client/ agency, Extent of e-enablement in terms of number of services, Extent to which step in each service have been ICT- enabled #)

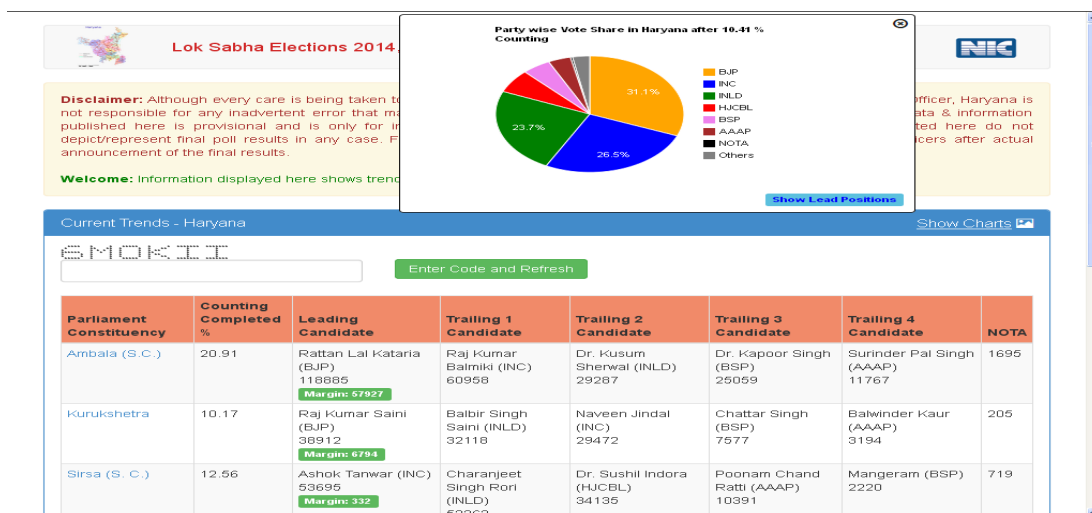
Extensive use of SMS technology was made for implementation of e-Dashboards. All manual reporting of booth status through phone/messengers was eliminated. Data compilation and reporting, which was earlier done manually, was automated. Full picture of poll statistics related to each and every polling booth in Haryana was made available online. This was made possible by regular updating of the e-dashboard through SMSes sent by sector supervisors from the polling booths.

Information related to polling parties dispatched, Parties Reached their destinations, Mock Poll done, Poll Started, Polling percentage, Voters in queue at 6.00PM, Poll ended, EVMs deposited etc. were presented online on the poll management dashboard.

Both PUSH and PULL technology of SMS gateway was leveraged to draw maximum output for the benefit of Administration, Media and general public.



A screen shot of the poll management dashboard showing online poll statistics



A screenshot showing counting day dashboard

4. Strategy Adopted

(i) The details of base line study done,

The manual system of data collection, compilation and reporting was studied and thoughts were applied to collect and compile the data as quickly as possible. In the manual systems of Poll Management the supervisors used to collect the information from the presiding officer of the polling parties & conveyed the information to the respective duty Magistrate, ARO & RO through telephone or Vice Versa. The RO used to compile Assembly wise & booth wise information & send it to the Chief Electoral officer, Haryana through telephone, email or fax which was time consuming & there were lots of delays. Also in counting there were manual procedures for the compilation of Counting information & it was sent to various stake holders through Phone, email & Fax & again there were delays & gaps.

(ii) Problems identified,

The main problems was real time information of Polling Booths, Polling Parties & counting information were not available & also there were delays.

The Chief Electoral officer, Returning officers & District Election officers were not able to have:

1. Real time information regarding various parameters like Polling Parties dispatched, Polling Parties Reached, Mock Poll done, Poll Started, Voters turnout, Poll ended, Voters in queue at 6.00 p.m. & EVM deposited on pre poll day & Polling day.
2. The status of counting on particular point of time in their Assembly constituencies which are part of Parliamentary Constituencies on the day of counting
3. The status of counting in each Parliamentary Constituencies on real time basis on the day of Counting.

(iii) Roll out/implementation model

The implementation of e-Dashboards during general elections to the Lok Sabha 2014 was done in two parts:

1. Poll management dashboard during polling.
2. Counting monitoring dashboard on counting day.

The problems and bottlenecks as indicated in point No – 2, were identified collectively by the Chief Electoral Officer, Haryana and the software development team of NIC. Ways were devised to overcome the bottlenecks through the use of mobile and web technology.

Technology and architecture: For data input from polling centers, PUSH SMS through NIC SMS Gateway was decided as a most convenient way to feed the data into central database. For display of data collected through SMSes from the polling booths, a web application was developed, which could disseminate the information on Internet in a very user friendly manner on a graphical dashboard.

Use of standard Infrastructure acquired under NeGP program was decided to leverage the infrastructure set up under it.

(iv) Communication and dissemination strategy and approach used:

Both PUSH and PULL technology of SMS gateway was leveraged to draw maximum output for the benefit of Administration, Media and general public. Also for the dissemination of information web based e-dashboard was used which shows real time information in the form of table, Bar Charts ,Pie charts etc.

Communication for updating the data on main server from data polling booths and counting centers was through SMS using NIC SMS gateway as SMPP gateway.

Data dissemination to the masses was through web based e-dashboard hosted at <http://electharyana.nic.in>

5. Technology Platform used.

(i) Description,

Mobile Technology used: PUSH and PULL SMS through NIC SMPP Gateway.

Database: SQL Server 2012.

E-dashboard: .Net 4.0

Innovations used: Backend database of the e-Dashboard was updated through PULL SMS, Polling parties were given acknowledgements of their data through PUSH SMS, Before the polling day, poll staff was informed about their duties and rehearsals through PUSH SMS. Project cost for the elections department and District Administration: Nil

(ii) Interoperability

The dashboard was enabled for use on various types of devices, which included mobile devices like mobile phones, Tablet PCs etc.

(iii) Security concerns

Following security mechanisms were put in place:

1. The initiative was time bound activity which was opened for data updation on a particular day and time.
2. Data updation was allowed from pre registered mobile numbers only and acknowledgement of the receipt of message was also sent back to the SMS sender.
3. Captcha codes on home page of counting day dashboard were introduced to filter out unwanted hits and save the dashboard from spamming.
4. Appscan security audit of the e-dashboard was conducted in house at NIC Haryana

(iv) Any issue with the technology used.

The delivery of SMS depended heavily of mobile networks of various ISPs and timely delivery of SMS was key to real-time updation of data on e-dashboard. Any delay in SMSes being delivered could result in delays in data updation and representation. Although all sector supervisors were trained properly in various formats of SMSes to be sent, but, any wrong format sent could cause rejection of data by the server.

(v) Service level Agreements(SLAs) (Give details about presence of SLA, whether documented, whether referred etc. #)

The project was decided and implemented between NIC Haryana State Centre and the Chief electoral officer, Haryana. Both of agencies involved being Government organizations, no SLA was signed between the two.

6. Demonstrate innovative use of ICT for development (Give details about use of new and emerging technology, innovative usage of ICT for process change to improve quality of the life/ organizational effectiveness, relevance of technology to provide the service #)

Extensive use of SMS technology was made for implementation of e-Dashboards. All manual reporting of booth status through phone/messengers was eliminated. Data compilation and reporting, which was earlier done manually, was automated. Full picture of poll statistics related to each and every polling booth in Haryana was made available online. This was made possible by regular updating of the e-dashboard through SMSes sent by sector supervisors from the polling booths.

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7. Citizen Centricity (Give specific details on the following#)

Impact on effort, time and cost incurred by user,

- Quick decision making based on real time statistics available on the E-dashboard.
- Fast collection of data related to various parameters of election activities.
- The e-Dashboard for Poll Management facilitated monitoring of different parameters related to polling parties from polling booths & group SMSes in case of poll disruption at any booth.
- The e-Dashboard for counting facilitated real time dissemination of counting statistics to various stakeholders.
- Graphical representation of data in the form of bar chart depicting the party positions and a pie chart showing vote share of various political parties in whole state as well as in each PC.
- The E-dashboards facilitated Greater Visibility of the entire process.
- Ready availability of data for further transmission to the ECI.
- Less hassles, as all information was available to the media on e-Dashboards.
- Enhanced Public Interface.
- Instantaneous Information Dissemination to General public, Administration and Media.
- Bringing in enhanced transparency.
- Direct Interaction with all field staff through SMS gateway. Important instructions were also passed on through SMSes to registered mobile numbers of ROs, DEOs, Sector Supervisors and other officials.
- SMS alerts and awareness messages to voters in Haryana.

Cost Effectiveness:

- The NIC SMS gateway was used and the portal was hosted at NIC-Haryana Data centre on the existing web servers.
- The Software was developed in-house by NIC-Haryana team. No cost was passed onto the State election department.
- The project was implemented in a cost effective way ensuring economy in expenditure.
- The only cost was the cost of sending SMSes by the field staff on election duty to the NIC Server. The State election department has reimbursed the cost of SMSes to the staff on election duty.

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(ii) Feedback/grievance redressal mechanism.

The project is not a workflow based service delivery system. The grievances redressal does not apply to this initiative.

(iii) Audit Trails.

Records of every transaction made through SMS or Internet was kept in the backend database which included Time stamp, Mobile number of the sender, Information sent and parameters included in the SMS.

(iv) Interactive platform for service delivery.

The information was provided to the user in real-time. No interactive features were required as latest and updated information was the only intended output the initiative.

(v) Stakeholder consultation

Stakeholders from Government side i.e. CEO Haryana, District Administration and Polling staff were consulted and their views & suggestions were considered for better service delivery.

8. Adaptability and Scalability (Give details about Local language support, ability to leverage shared Government infrastructure, Standardization of technology used (hardware, software, application etc. #)

As elections in a democratic country like India is a standard process, E-dashboard project is a classical example of highly sustainable and replicable projects which can be used as an elections monitoring, reporting and decision support system during elections anywhere in the country.

These E-Dashboards were first of all used in Municipal Corporation elections 2013 under the State Election Commission, Haryana.

These were again used in Lok Sabha 2014 elections with certain improvements.

The Technology used is that e-Dashboard Portal was hosted at NIC Haryana Data Centre with specially provisioned Hardware.

1. Data Entry server : One high end web server.
2. Public View : Two high end web servers with Load Balancer
3. Database server: High end server for backend database.
4. Internet Bandwidth: One Gbps NICNET Link.

The E-dashboards have been developed in .Net technologies and do not use any digital signatures or encryption technologies. The e-Dashboard have been made mobile compatible also which enables users to view the dashboard on wide variety of devices including mobile devices

Both these dashboards will again be used for upcoming Assembly elections in Haryana in September/October 2014. It can be implemented in any state in India.

9. Adaptability Analysis

(i) Measures to ensure adaptability and scalability

Backend and process design can be readily considered for use at national level for any such nation wide event like elections, where statistical data from large number of centres is to be collected in a short interval.

The system can be scaled up for any such program.

(ii) Measures to ensure replicability

As elections in a democratic country like India is a standard process, e-dashboard project is a classical example of highly sustainable and replicable projects which can be used as an elections monitoring, reporting and decision support system during elections anywhere in the country. The e dashboard was designed in a way that it can be replicated in any state of India with little customization.

(iii) Restrictions, if any, in replication and or scalability.

There are no restrictions from Elections department Haryana and/or NIC Haryana state centre in replication of the software for any Government work.

(iv) Risk Analysis

10. New Models of Service Delivery (Give details about type of partnership model use, Links to/Supported by Public/Private Organization Links provided to relevant websites etc. #)

No such partnership model was used for this initiative.

11. Efficiency Enhancement (Give specific details about the following #)

(i) Volume of transactions processed

On the day of polling i.e. 10th April 2014, **307595** SMSs were sent by all the supervisors in the state for various events.

Hit Statistics for Counting Monitoring e-Dashboard, Haryana (<http://electharyana.nic.in>) on counting day (16/05/2014)

Total No of Hits on counting dashboard: **1,16,69,543**

(ii) Coping with transaction volume growth

To cope up with the high volume of transactions, following infrastructure was put in place:

1. Data Entry server : One high end web server.
2. Public View : Two high end web servers with Load Balancer
3. Database server: High end server with 256 GB RAM as backend database server.
4. Internet Bandwidth: One Gbps NICNET Link.

(iii) Time taken to process transactions,

The data on dashboard was updated within 20 Seconds of sending of the SMS, providing real-time information display on the e-dashboard.

(iv) Accuracy of output:

The display of compiled data/graphs on the e-dashboard was 100% accurate.

(v) Number of delays in service delivery

No Delays.

12. User convenience (Give specific details about the followings #)

(i) Service delivery channels (Web, email, SMS etc.)

Web/Internet.

(ii) Completeness of information provided to the users,

Full information related to all parameters included in the dashboard.

(iii) Accessibility (Time Window),

Poll day monitoring dashboard was accessible from 9th April to 10th April 2014 (Poll day) till the end of polling process.

Counting monitoring dashboard was accessible on 16th May 2014 from 7:00AM onwards till completion of counting and result declaration.

(iv) Distance required to travel to Access Points.

As the e-Dashboards were available on Internet, there was no need to go to any service centre. Information could be accessed from anywhere on any kind of Internet access devices including mobile devices.

(v) Facility for online/offline download and online submission of forms.

No such facility was required.

(vi) Status tracking.

As the e-dashboard is not a workflow application, there was no concept of status tracking in it. However the status of polling process and counting was continuously monitored by the CEO Haryana, all Returning Officers (ROs) using inbuilt modules for CEO and ROs.

13. Sustainability (Give details about sustainability w.r.t. technology (technology used, user privacy, security of information shared – Digital Encryption etc. #), Organization (hiring trained staff, training etc. #), financial (Scope for revenue generation etc. #))

1. The E-dashboards have been developed in .Net technologies and do not use any digital signatures or encryption technologies. The e-Dashboard have been made mobile compatible also which enables users to view the dashboard on wide variety of devices including mobile devices.
2. The e-Dashboards are not intended for any kind of revenue generation but have resulted in cost savings for the administration and elections department.
3. Tutorials in the form of training handouts for the sector supervisors were written and proper training was provided to the sector supervisors in the use of predefined SMS codes. Similarly counting staff was also trained in data updation on the counting dashboard.
4. As the e-Dashboard attracts huge traffic in a limited time period, revenue generation can be done through limited advertisements on the dashboards for fixed time slots or logos of some companies can be displayed at suitable places on the e-dashboards to attract sponsorship.

14. Result Achieved/ Value Delivered to the beneficiary of the project-(share the results, matrices, key learning"s, feedback and stakeholders statements that show a positive difference is being made etc):

Key benefits to the (i) To organization (ii) To citizen and Other stakeholders are listed below.

- Quick decision making based on real time statistics available on the E-dashboard.
- Fast collection of data related to various parameters of election activities.
- The e-Dashboard for Poll Management facilitated monitoring of different parameters related to poll parties from polling booths & group SMSes in case of poll disruption at any booth.
- The e-Dashboard for counting facilitated real time dissemination of counting statistics to various stakeholders.

- Graphical representation of data in the form of bar chart depicting the party positions and a pie chart showing vote share of various political parties in whole state as well as in each PC.
- The E-dashboards facilitated Greater Visibility of the entire process.
- Ready availability of data for further transmission to the ECI.
- Less hassles, as all information was available to the media on e-Dashboards.

15. Extent to which the Objective of the Project is fulfilled-(benefit to the target audience i.e.G2G, G2C, G2B, G2E or any other, size and category of population/stakeholder benefited etc):

The objective of the project i.e. dissemination of information to public as a G2C e-governance initiative was completely fulfilled. As already stated, the elections to the Lok Sabha 2014, were keenly watched by entire population of Haryana and in other states as well. This project benefitted approximately 2.5 Crore people of the state in particular and General population all over the country and abroad as well. Project also resulted in major cost cutting in the form of savings on phone calls, FAX, Printing of reports and traveling expenses.

Few statistics to show the successful implementation of the project:

1. Lok Sabha constituencies in the state: 10
2. Total Number of polling Booths : 16244 at 9684 locations
3. Total Voters : 1,59,95,012
4. Votes Polled : 1,14,93,864
5. No. of candidates : 230
6. SMSes received : 3,07,585 (On polling day, to update the voting statistics at central database)
7. Number if web site hits on counting day: 1,16,69,543

16. Comparative Analysis of earlier Vs new system with respect to the BPR, Change Management, Outcome/benefit, change in legal system, rules and Regulations

Previously it was not at all possible to collect, compile and present the poll related data from over 16000 pollings booths in 9684 locations and 90 counting centres simultaneously. The Chief Electoral Officer Haryana at Chandigarh, Deputy Commissioners of all 21 districts of Haryana, media people and general public could see the overall picture live on Internet.

Media people need not had to visit polling booths to collect various statistics like poll percentage etc. A control room was set up at CEO, Haryana Office at Chandigarh, where the dashboard was displayed on a projector screen. Media could prepare their reports by collecting data from this e-Dashboard. Final picture of the elections was available as soon

as the poll ended, whereas previously exact picture emerged after late in the night or sometimes in the next day morning.

The CEO, Haryana and Officials of district administration were at peace as they did have to answer queries from media personnel quite frequently and media people were happy as they could get the information on a click of the button.

17. Other distinctive features/ accomplishments of the project:

1. Monitoring Feature for any interruption in the poll process during the poll day: The mobile numbers of senior authorities of the Elections like Chief Electoral Officer, Haryana, Observers, Deputy Commissioners and Superintendents of Police were also captured. The officers under the group were simultaneously cautioned by auto generated SMS, if any SMS from the sector supervisors was sent to the server for interruption.
2. The e-Dashboard project was appreciated by the CEO, Haryana
3. e-Dashboard Project was presented as Haryana's Elections best practice, in the North Zone Symposiums on July 25, 2014, organized by Election Commission and attended by CEO/Election Officers from Punjab, Haryana, UT Chandigarh, NCT of Delhi, Uttarakhand, Himachal, UP, Rajasthan and J&K.