An Emperical Study for E-voting System

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Abstract—**E-voting system is capable to polish old established voting procedure by providing added facilities and malleable to voter. Headway in the mobile devices given growth to the novel application that will make voting process dynamic. Number of electronic voting patterns was proposed earlier, but maximum had total loss in providing voter authentication in a valuable and effective way. Our aim is to provide the details and need for e-voting based on android system. In election electronic device is used for voting process i.e. E-voting. The e-voting uses SMS protocol. In this proposed system we are providing e-voting system through SMS using smartphone so result shows that there is no need of internet in their mobile. In smartphone there will be an android application through which voting process will be done without internet in smartphone.**

Index Terms—*Electronic voting machine (EVM), short message service (SMS), Subscriber Identity Module (SIM), Global System for Mobile communications (GSM)*

I. INTRODUCTION

Election allows the public to choose their representatives and express their selection for how they will be governed. Information and communication technology is linked for the proper execution of democratic rights. The principle of election process is fundamental to purity of democracy itself. The election system must be sufficiently sensible to withstand variety duplicitous behavior and must be appropriate so that voters and candidate can accept result of an election [6].

A paper ballot is used to cast the vote in election and may be a piece of paper or small ball is used in voting [4]. Actually it was a small ball used to record decisions made by voters. Each voter use only one ballot and ballot cannot be shared.at polling station voter cast their vote on ballot and put that ballot in box. Another voting system is EVM. The full form of EVM is "electronic voting machine". Votes are stored by using Control unit and it is used by poll workers. Voters used Ballot unit which is placed at election booth. This system uses a six volt alkaline battery so that it can be easily used in rural are "Online voting" or "E-Voting" is also called as Internet voting. In this system by using internet connection voter can

cast his/her votes. Gujarat was the first Indian state which

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implements this system in April 2011.Many people find the EVM system time consuming. This system is developed with the help of TCS [3].

As in rural area, internet facility is not up to the mark as compare to the urban area because of the limited number of towers. So people cannot use internet for voting purpose. The current voting system is time consuming as voters have to wait in a long queue to cast their votes. So to overcome these drawbacks we are implementing E-Voting system using SMS Protocol. With the help of an android application the voter will be able to cast his vote and this vote will be internally converted into normal SMS format and forwarded to the server Through GSM SIM. At the server side we are storing all the SMS in the tabular form. And after storing SMS server will send an acknowledgement to the Voter/Sender. On the day of result declaration the result will be notified on the application.

II. LITERATURE SURVEY

The current voting system is time consuming as voters has to wait in a long queue to cast their votes. So to overcome these drawbacks we are implementing E-Voting system using SMS Protocol. The voter will be able to cast his vote with the help of an android application and this vote will be internally converted into normal SMS format and forwarded to the server through GSM SIM. We are storing all the SMS at the server side in the tabular form. And after storing SMS, server will send an acknowledgement to the Voter/Sender. On the day of result declaration the result will be notified on the application.

PAPER BALLOT SYSTEM:

A ballot is a small piece of paper which is used to cast the vote. The word ballot comes from Italian ballotta, meaning a "secret vote taken by ballots". Ballot papers are printed with the names of the candidates with the symbol allotted to each candidate. Candidates of well-known parties are allotted their party symbols.

Working:

Voting is by secret ballot. Polling stations are generally set up in public institutions, such as schools and community halls [1] to encourage as many voters as possible to vote, the election commission officials try to ensure that there is a polling station within 2km of every voter. No polling stations have more than 1200 voters and on the day of election each polling station is open for at least 8 hours.
On entering the polling station, the elector is checked against the Electoral Roll, and allocated a ballot paper. The voter cast

their votes by marking the ballot paper with a rubber stamp on or the symbol of the candidate of his choice [2].

The elector then folds the ballot paper and inserts it in a common ballot box.

Advantages:
1. All Voters Use an Identical Ballot.
2. Paper Ballots are Easily Understood by Voters.
Disadvantages:
1. Problem of printing up all the ballots.
2. Each district will have different ballots.

EVM:
As in earlier method, voter has to cast his/her vote by putting the stamp in front of their favorite candidate name [2]. And then by folding that ballot paper, it is inserted into the ballot box. This is very hectic process, time consuming and very much prone to errors. So during the next election, Election Commission of India, has introduced a new method of polling i.e., EVM. EVM means "Electronic Voting Machine". It is used in the Indian General and State Elections to implement electronic voting from 1999 elections to 2004 elections. The EVMs reduce the time in both casting a vote and results declaration as compared to the old paper ballot system.

Working:
The Electronic Voting Machines (EVM) consists of 2 components:

- Control Unit. that
- Ballot Unit.

Control unit stores and assembles votes and used by poll workers. And the Ballot Unit is used by Voter and it is placed at the election booth. These both units are connected via a five meter cable [2]. The system is powered by a battery pack inside the control unit. It is a six volt alkaline battery, which means they can easily be used in rural areas where there is no electricity.

A voter has to simply press a button in front of his favorite candidate to cast his/her vote [2].Only six votes in a minute can be accepted by the machine, and after each vote, machine locks itself and can be unlocked using a new ballot number. The polling booth is always presided by a government officer who is the in charge of the controlling unit of the EVM. To accept another ballot the machine is unlocked by the in charge officer. This system is tamper-proof and a person won't be able to cast more than one vote. One machine is able to accept up to 3,840 votes, and cater to 16 candidates each. So if there are four EVM's at a polling booth, then these machines can cater 64 candidates. If there is a constituency, where there are more than 64 candidates, the polling booth has to fall back on the traditional paper ballots.

Advantages:
- It is tamper-proof.
- Illiterate people find it easier to press a button than putting a stamp on a paper

Disadvantages:
- Vulnerability to hacking
- Voter verified paper audit trails

INTERNET VOTING:
It is also called as "Online Voting" or "E-Voting" [1]. E-voting means using system voter can cast his/her vote by using electronic device through the internet connection [3, 5]. In April 2011 Gujarat became the first Indian state to experiment with Internet voting. Many people find the second process time consuming. As they have to go to the particular area where the ballot is set and then they have to stand in a long queue. So they just avoid to go to cast their votes. And enjoy that day as holiday. This facility has been extended so that educated people, who generally refrain from voting due to inconveniences of standing in long queues, come forward and engage in the polling process [1]. So the State Election Commissioner, Government of Gujarat has announced to take elections Online as well as using the EVM system so that the NRI's can also cast their votes. The system developed with the help of TCS.

Working:
- Citizens can register online via the SEC website and choose if they interested to vote from their own PC or through an e-Booth. The voter's credentials will be verified by the SEC officials and they take voter's signature in physical form.
- After the citizen's application gets approved, he will receive a user name and password on his e-mail id and registered mobile number. He will then be able to activate his account and choose a new password.
- On voting day, registered citizens will be able to login to their account, and vote online through a digital ballot paper. Note that voting has to be done through the same computer which was used for activating the account. For additional verification, an SMS passcode will be sent to their registered mobile number, which has to be entered during online voting. The passcode is valid for 5 minutes and can be re-generated in case of failure, a maximum 2 times. An encrypted receipt will be issued after successful voting.
- Voters choosing e-Booths will just need to go to their nearest e-Booth with a photo id and vote online.

Advantages:
- Saved Ballot Templates
- Reduced costs
- Disadvantages:
- Requires Internet.
- Requires Java Runtime Environment (JRE).

III. CONCLUSION

A real-time e-voting system based on android phones. The analysis of this system is based on SMS voting. It is then developed by implementing techniques using android platform. If this system will be used in real life election process then the usability of this system is very high. It will definitely helpful for the users who wish to vote and the voting process will be made very easy by using this application.

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