Smart Voting System Smart Phones

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Abstract—**This paper proposes a technological and systematic way of polling during elections with the help of smartphones. Using this technique we can get rid of standing in long awaiting queue for casting vote during election. This system deals with the latest technology of encryption and decryption of information in the form of Bar codes and QRcodes. All we need is a smartphone with a decent resolution of camera and possibly an internet connection that communicates with the remote server of the online polling system. The authentication can be done by using the bar code in the voter ID of the voter that has been given by the government. The vote casting is confirmed with the help of QR code in the election slip.**

I. INTRODUCTION

This paper deals with the sophisticated way of casting vote during elections wherein we need not stand in a long queue for casting vote since this can be done at their own residence of the person who is going to cast the vote. Since the current generation has become technologically improved to a greater extent and all the people will have smartphones. This paper proposes a way of doing things so easily without even typing. This is all about the new and efficient concept of QR code and Bar code recognition by the use of the camera rather than individual specific device for reading QR and Bar codes. The user either have an Application related to the environment of the smartphone or use the high end browser which can access the camera of the smartphone. At the time of election, the election commission of India will be providing a voter slip that will ensure that he is eligible for casting vote in that particular election. Along with it the user should be ready to have the voter ID provided by the election commission. There

will be a bar code in the voter ID which will serve as a login for the user. Once the user is opening the login page of the browser or launches the Application, he/she can click on the login button and wait for the camera application of the smartphone to get launched and then the user have to keep the voter ID within the range of the encrypted code reader area. Further the user has to enter the D.O.B of the user. The information obtained from scanning the bar code and the D.O.B data is being transmitted to the server of the election commission of India. If the data matches with the database entry, then the corresponding user's name shall be replied in the response message which shall be displayed to the user screen. This shall indirectly inform the user that he is authenticated. After this the user will be displayed the respective ward for which he is able to cast vote. He should select the ward and can click on view ballot paper button that has the list of candidates who is being participating. There will be a radio button for each candidate where we have to select and then click on CAST THE VOTE button. This will redirect the user to a page which will verify that the user is having the election slip which is being given by the election commission of India. He is now have to scan the QR code that is being imprinted on the election slip. Since some one can have the voter ID and cast vote. This method can avoid fraudulent of misusing someone's right to vote.

II. LITERATURE SURVEY

All computer scientists who have done work in or are interested in electronic voting seem to agree that online voting does not meet the requirements for public elections and that the current widely-deployed voting systems need improvement.

Voting on the Internet has disadvantages based on the areas of secrecy and protection against coercion and/or vote selling. It's such a truly bad idea that there seems to be no credible academic effort to deploy it at all. The Kenyan General elections of 2007 brought national attention to problems with current methods of casting and counting votes in public elections. Most people believe that the current system should be changed; there is much disagreement on how such changes should be made.

Kenyans in the Diaspora have begun signing a petition in a fresh attempt to force the electoral body to allow them vote online in the next General Election. They advocate using the OVS since it reduces cases of uncounted, unmarked, and spoiled ballots and the cost of travelling to cited polling stations. They are opposed to the use of High Commissions and embassies as polling stations and embassy officials as returning officers. The IEBC has in the past recommended that Kenyans abroad vote at the embassies and consulates closest to them. In the US, for example, Kenyans are expected to vote in Los Angeles and New York. Their report even proposes a framework for a new voting system with a decentralized, modular design.

Other researchers have done work in electronic voting; while they may not explicitly mention voting from remote poll sites, their work is nonetheless relevant to any effort at designing or implementing a remote poll site voting system. Lorrie Cranor acknowledges the problems inherent in each kind of voting apparatus, but doesn't make an overt recommendation on her

site for one technology over the rest. Some other academicians like Peter Neumann focus on the immensity of the problem one faces when trying to design and implement a truly secure voting system. They often remind us of Ken Thompson's Turing acceptance speech and the fact that we really can't trust any code which we did not create ourselves. Therefore, they tend to be extremely suspicious of proprietary voting machines and their makers who insist that we should "just trust [them]."

Neumann gives a list of suggestions for "generic voting criteria" which suggests that a voting system should be so hard to tamper with and so resistant to failure that no commercial system is likely to ever meet the requirements, and developing a suitable custom system would be extremely difficult and prohibitively expensive.

A voting machine must produce human-readable hardcopy paper results, which can be verified by the voter before the vote is cast, and manually recounted later if necessary.

David Chaum presents a very interesting scheme, whereby voters could get receipts for their votes. This receipt would allow them to know if their votes were included in the final tally or not, and to prove that they voted without revealing any information about how they voted. The security of this scheme depends on visual cryptography developed by Naor and Shamir, and on voters randomly choosing one of two pieces of paper. Mercuri and Neumann advocate the use of this technique in electronic voting systems.

In the recent years, voting equipments which were widely adopted in many countries may be divided into five types

Paper-based voting: The voter gets a blank ballot and use a pen or a marker to indicate he want to vote for which candidate. Hand-counted ballots is a time and labor consuming process, but it is easy to manufacture paper ballots and the

ballots can be retained for verifying, this type is still the most common way to vote.

Lever voting machine: Lever machine is peculiar equipment, and each lever is assigned for a corresponding candidate. The voter pulls the lever to poll for his favorite candidate. This kind of voting machine can count up the ballots automatically. Because its interface is not user-friendly enough, giving some training to voters is necessary.

Direct recording electronic voting machine: This type, which is abbreviated to DRE, integrates with keyboard; touch screen, or buttons for the voter press to poll. Some of them lay in voting records and counting the votes is very quickly. But the other DRE without keep voting records are doubted about its accuracy.

Punch card: The voter uses metallic hole-punch to punch a hole on the blank ballot. It can count votes automatically, but if the voter's perforation is incomplete, the result is probably determined wrongfully.

Optical voting machine: After each voter fills a circle correspond to their favorite candidate on the blank ballot, this machine selects the darkest mark on each ballot for the vote then computes the total result. This kind of machine counts up ballots rapidly. However, if the voter fills over the circle, it will lead to the error result of optical-scan.

Recent years, a considerable number of countries has adopted E-voting for their official elections. These countries include; America, Belgium, Japan and Brazil.

III. EXISTING SYSTEM

A. Description

The Existing system for which this proposal is being done is little basic that it needs registration of the user's mobile number in the Election commission portal. This registered number has to be linked with the particular user's voter details. The voter will receive the OTP via the mobile number which he has registered. This OTP will be the gate pass for verification of the voter that he himself is voting.

B. Flaws of the existing system and Overcome by current proposal

Since the user shall receive the OTP he has to have the mobile by hand and during the election time and there may be traffic of network for sending the OTP in form of SMS.

IV. SYSTEM DESIGN AND IMPLEMENTATION

A. Abbreviations and Acronyms

1. QR code means Quick Recognition code.
2. OTP – One Time Password.

B. System requirements

This system requires a smartphone with a decent resolution of megapixels of camera along with a network connection of minimum of 2G network at client side to interact with the server of the election commission of India which has a database of all the members who are eligible for voting.
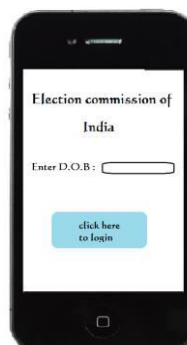
C. Design of the Proposal

Fig 1. The first page where we have to enter the date of birth and continue for verifying the login by scanning the Bar code.

Fig 2. Scanning of Bar code to verify authentication.

Fig 3. Acknowledgement for authentication after scanning the bar code.

Fig 4. Display of the ballot paper for the candidate to vote by selecting the radio button.
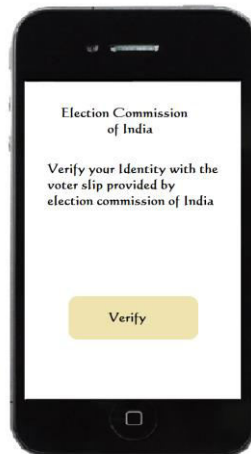
Fig 5. Pre confirmation page for casting vote.

Fig 6. Scanning of the QR Code for verifying the voter's secondary identity of authentication for confirmation of vote.

Fig 7. Confirmation of casting of vote.

V. CONCLUSION

This work is done to reduce the workload of the user and also increase the security by encryption of data of the particular user in the form of specialized Barcode and QR codes which have different structure and also the data can be sent as a Post message in the request message and get its prior response.

Since the smartphones are durable and are dynamic in requesting and responding to the data the can be used in this project so that minimal cost of operation and work load and cost of the system.

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http://www.iiec.or.ke/