

The Scenario of Electronic Voting Machine in India

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ABSTRACT: Voting is the constitutional right in India under the representation of the people Act 1951 under Article 19 (1) (a). Elections are held regularly to the parliament, state legislatures and to the institutions of urban and rural bodies after every 5 years in India. Fundamental right of voting in election process forms the basis of democracy. After completing 18 years of age every citizens must cast his or her vote. Election is the process through which people choose their representatives to represent them in the decision and policy formation process of the government. Use of Electronic Voting Machine in the election process is one of the remarkable contributions of science and technology. It has made electoral process in India simple and easier as compare to the ballot papers and ballot boxes. After the 35 years of India's Independence EVM has been started using for election. Use of EVM makes sure our democracy is not affected. This research paper will evaluate machine's effect and analysis the process of election in detail.

Keywords: Electronic Voting Machine.

I.INTRODUCTION

Electronic voting is the electronic means of conducting votes using electronic voting machine (EVM). The machines are developed by the Election corporation of India and Bharat Electronics Limited and microcontrollers supply by the US and Japan. The Indian government is the owner of these companies. In the year 1980 the first Indian EVM was developed by the ECIL. According to the Representation of People (RP) Act, 1951 Supreme Court of India did not permit use of voting machines in elections. Later the R. P. Act was amended in the year 1989 incorporating section 61A. EVMs manufactured in the year 1989-90 were used in experimental basis for the first time in 16 Assembly Constituencies at the general elections to the respective Legislative Assemblies in the states of Madhya Pradesh (5), Rajasthan (5), and NCT of Delhi (6). From last 23 years the Election Commission has successfully used EVM for

conducting 113 Elections to the lower house of the state legislature and 3 Lok Sabha Elections.[4] The traditional method of using ballot paper for the elections has been gradually replaced by the EVM in India. The EVM use in the Indian voting is globally known as Direct Voting Machines which traces the votes directly in electronic memory. The EVM used in Indian voting is unique and quite different from the EVMs used in other nations like the USA.

EVM System: An EVM consist of two units one is control unit and second one is balloting unit and they are joined by a 5 meter cable. The candidates name and symbol are programmed in the control unit. The booth officer in- charge of the control unit will release a ballot instead of issuing a ballot paper by pressing the ballot button on the control unit of EVM. This will help the voter to cast his votes by pressing the blue button on balloting unit for the candidate and symbol of his choice. [3]

II. METHODOLOGY

We will describe the effect and analysis of EVM in the elections of India in our paper. The research is based on the various available sources, documents and articles about the Indian Electronic Voting. The historical data and the chronological data have been considered while writing a paper. The effectiveness of the EVM in the election process of India with its opportunities has been discussed in the paper. The suitability and reliability of the data have been considered. To proposed work in scientific way the different valid literatures have been consulted. The challenges, security requirements also have been discussed in the paper.

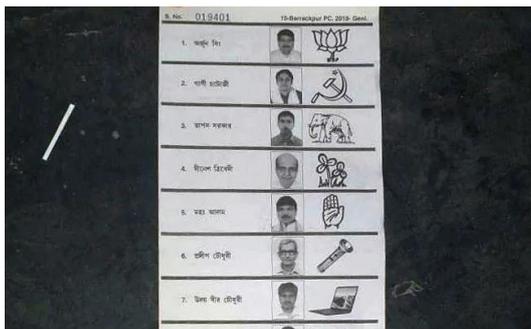


Figure-1: Sample of Ballot Paper

III. WORKING PROCESS OF EVM

The EVM consist of balloting unit and control unit they are joined by the 5 meter cable. The polling officer is the in charge of the control unit. The balloting unit is in the different compartment than the control unit. EVM runs on the 6 volt alkaline



Figure-2: Electronic Voting Machine

Batteries this feature can make usable in times when there is no electricity. Balloting unit consist of horizontally aligned blue buttons that consist of candidate name and their symbol of party. The polling officer in charge of the control unit charges a button with 'ballot' written on it and they use it to proceed to next voter. [3] The simple steps to voting on EVM machines:

STEP 1: As soon as the voter enters in the polling compartment the booth officer will activate the ballot unit.

STEP 2: The voter has to cast his or her vote by pressing the blue button against a symbol and name of a candidate.

STEP 3: As soon as the voter press blue button, a red light will glow besides the chosen candidate and beep sound will be produced.

STEP 4: After that the voter will be able to see ballot slip and reconfirm the casting of his votes against symbol of his choice.

IV. BENEFITS OF USING EVM

1. Easy to travel and transport as compare to the ballot paper and ballot boxes.

2. Difficult for the hackers to hack because it doesn't consist of the external path for communication. It means it doesn't run on electricity. That is the most modified and advanced version of the electronic voting machine.

3. the most important EVM machines are cost effective one machines can work for 15 years. Hence overall cost of the election gets reduced.
4. The casting and counting of votes happening in very less time. Overall procedure doesn't take much time.
5. The EVM with the voice support to assist the visually impaired voter to cast votes without any problem.
6. Fake voting can be avoided using electronic voting machine hence they are effective against fake votes.
7. For the physically challenged people Electronic voting machine with touch base screen are proven to be advantageous to cast the votes.
8. For the future reference the EVM machines are helpful to save data for longer period of time.
9. The use of EVM in the election process has made drastic change in the election process.
10. When the votes are close finally there are no possibilities of fake votes.
11. EVM makes recounting of votes in case of any interruption because of the control unit.
12. The result of election declared in very short period of time due to the use of Electronic Voting Machine use in the election process. [1]

V. DISADVANTAGE OF EVM

1. Lack of Transparency: the lack of Transparency in the election process can mistrust among the voters and the political parties. They can raise the question on fairness and accuracy of the voting.

The chips are imported but not disclose to the voters. And the required source code is not often disclosed to the public.

2. Machine malfunction: The Electronic Voting Machine can be prone to the malfunction these can lead to the lost or miscounted votes which will lead to the total results of the elections change.
3. Cost and maintenance: The funds spent on EVMs could be utilized for other pressing needs in the electoral process or public services. The initial cost of acquiring EVMs and the ongoing expenses related to their maintenance can be significant.
3. Limited Audit-ability: EVM may lack sufficient audit ability, making it challenging to conduct post-election audits and verify the accuracy of the results. Many EVMs are not checked in properly
4. Lack of standardization: it is difficult to implement uniform security and auditing procedures because different regions or countries may use different EVM models or systems, leading to a lack of standardization.
5. Limited Voter Verification: Unlike traditional paper-based systems where voters physically mark their choices on a ballot, EVMs provide limited means for voters to verify that their votes have been accurately recorded. This can lead to concerns about the possibility of votes being miscounted.

VI. EVM challenges in India

In all parties meeting held on 12 may 2017 the Election Commission of India (ECI) had informed members of regional as well as central level parties that it would hold an Electronic Voting Machine(EVM) challenge as well as recommend opportunity to the both national and regional parties to express that Electronic Voting Machines utilized in the elections of state legislature in the month of Feb-Mar 2017 were tampered and that Electronic Voting Machines can be tampered even under the laid down technological and executive protects. However, it is found that in 20th May.2017 on the most general the Election Commission held a Press Conference to publicize Electronic Voting Machine Challenge as well as sent invitation to every state as well as national Parties to take part in the Electronic

Voting Machine Challenge from 3th of the June, 2017 onwards. Interestingly, two well known parties, i.e. Communist Party of India (Marxist) as well as Nationalist Congress Party (NCP) presented their attention in sharing the Electronic Voting Machine Challenge as well as the said parties reported to the Challenge Venue on 3rd June, 2017. But, they did not wish to participate in the Challenge; however they presented only their attention in accepting the Electronic Voting Machine process. To clear their questions, the said political parties cooperated widely with the TEC of the Election Commission of India. [4]

Security Requirements

The security requirements that electronic voting system must satisfy are –

Eligibility: only eligible voters can cast their votes during election period that have completed the age of 18 years.

Authentication: The process that makes sure the one who votes is the right one and no one else.

Voter's privacy enable's voters to vote in a highly private way in which their personal information and voting process information are protected and can't be known by others.

Robustness: electronic voting system should be protected against any attacks, fraud and disruption.

Fairness in announcing voting results only at the end of allowable voting period. [3]

India's confidence on EVM

As per the observation no foreign countries in the world use EVM as huge as our country does. India is the second largest country in the world having biggest population by default the biggest national residents to vote utilizing EVMs. From the initial introduction of EVM in the year 1982 it is observed that India has taken 22 years to the nationwide exercise of Electronic Voting Machine in 2004. The main factor is acceptance of EVM in India is the high

assurance of the voters in the EMB. In the year 2009 the ECI has widely affirmed their "trust in the infallibility of the Electronic Voting Machines," Saying that, "they are completely tamperproof. According to the experts the research completed that despite detailed protections, and Electronic voting machines in India are weak to major attacks. The design of Electronic voting machines of India relies wholly on the material protection of the machinery as well as the reliability of election insiders. [4]

VII. FUTURE SCOPE

The execution and implementation of EVM in e-voting system would require a significant investment in hardware, software and internet connectivity. In the future system could be improved by the incorporating block chain technology. For the security and audit ability purpose. And more advanced system will be contain comprehensive voter database that includes biometric information such as facial recognition, fingerprint technology for authentication and verification of the voter. The online voting through EVM system may offer many advantages over traditional paper based voting; however there are still some concerns and challenges to consider. Assurance of equal access and participation, protecting voter's privacy etc .It is important that the results are easily accessible to maintain trust in the election process. [6]

VIII. CONCLUSION

It is concluded that the voting through the ELECTRONIC VOTING MACHINE is the need of time. As all the developed countries are using it. It is true that every system has its own advantages and disadvantages and its unique uses as well as every country have their different conditions. The electoral voting machine has improved legitimacy of Indian elections as well as public confidence in front of world community. The electronic voting machine in India is a "national pride" as well as the reality in

election system in India. The election system in India is broadly globally accepted as the “Universal Gold Standard”.[4] The use of EVMs in the general elections instead of paper ballots in India greatly helped in saving more than 0.2 million trees which use to produce 10,000tons of paper. It is observed that due to illiteracy among the public mostly in the rural areas people were unaware to cast their vote properly. Due to the same reason huge number of votes seen cancelled while cast votes in ballot papers. It is observed that using EVMs has minimized the chance of riggings and booth capturing in elections. [5] The use of EVMs in the elections has attracted more people towards our democratic polity. Now people are waiting to cast their votes in the elections of gross-root levels –The Panchayati Raj Institutions with EVMs. At the end we can say that EVMs are the greatest contribution of science and technology to the democratic countries in the world.

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