Why EVMs Are Not Trustworthy?

A Comprehensive Analysis of Security, Transparency, and Fairness Issues

- ▶ EVMs have been praised for simplicity but criticized for security flaws.
- ▶ The lack of transparency in design and operation raises concerns.
- ▶ This presentation highlights key issues with EVMs based on research and evidence.

▶ Malicious software can manipulate votes without detection.
▶ VVPAT systems are vulnerable to ballot stuffing and manipulation.
▶ Thermal printing fades over time; invisible ink risks altering votes.
▶ Hardware tampering allows attackers to extract and alter vote records.

Conclusion: EVMs are susceptible to serious attacks.

Lack of Transparency

- ▶ EVM design details remain undisclosed, hindering public scrutiny.
- ▶ Secret encryption algorithms are untested and prone to vulnerabilities.
- ▶ Open-source software is more secure as it allows community evaluation.

Conclusion: Secrecy does not guarantee security.

▶ Votes can be altered by replacing machine components or using portable devices.

▶ Attackers can manipulate vote splitting to favor specific candidates.

▶ Timing-based vote switching can occur during elections.

Conclusion: Dishonest insiders can easily exploit EVMs.

► Paper ballots are recyclable and environmentally friendly.
► EVM maintenance and manufacturing costs outweigh paper ballot expenses.
► Crowd-funding can cover paper ballot printing costs effectively.

Conclusion: Paper ballots are cost-effective and sustainable.

▶ EVMs do not fully prevent booth capturing.

▶ Robotic paper ballot boxes can provide same booth capturing security as EVMs.

▶ Decentralized counting of paper ballots reduces surveillance needs, fraud risks and costs.

Conclusion: Technology can improve paper ballot systems.

▶ Courts often dismiss PILs against EVMs, undermining public trust.

▶ Independent judiciary and election commission are crucial for fairness.

▶ Public protests are necessary when institutions fail.

Conclusion: Accountability is essential for democracy.

▶ Transition to paper ballots with automated open-source machine learning-based counting.

▶ Make all software and hardware transparent and open-source.

▶ Conduct randomized audits and recounts for accountability.

Conclusion: Transparency ensures free and fair elections.

EVMs = Opaque + Vulnerable

Paper Ballots = Transparent + Secure

Let's safeguard our democracy together!