European Commission
United Nations Development Programme
International IDEA

Joint Training on
Effective Electoral Assistance

DAY 3
Brussels, 22-26 October 2007
Introduction of Electronic Voting Machines
The Indian Case

Anand Kumar E M Rao
Deputy Chief Electoral Commissioner of India

Joint Training on Effective Electoral Assistance
Day 3
STRUCTURE OF PRESENTATION

• THE GENESIS
• INTRODUCTION OF EVMs
• TECHNOLOGICAL FEATURES
• USE IN THE FIELD
• ADVANTAGES
• ISSUES IN ADOPTION OF NEW TECHNOLOGY
• DEMONSTRATION
GENESIS - CONCEPT

• Problems with conventional marking system in vogue since 1962:

  - many times invalid votes exceeded margin of victory.

  - huge requirement of paper, a scarce commodity, for printing millions of ballot papers.

  - storage and upkeep of ballot boxes during non election period.
GENESIS - CONCEPT

- 1977: Election Commission of India (ECI) asked Electronic Corporation of India to design an EVM to suit Indian conditions while retaining the basic features of the conventional marking system.

- 1979: Prototype developed.

- 1980: Demonstrated to Political Parties.

INTRODUCTION OF EVMs

- ECI submitted a proposal to amend the law.
- May 1982: EVMs used for the first time.
- 1984: Supreme Court struck down use of EVMs in absence of enabling law.
- Dec. 1988: Law was amended.
- 1990: A high powered committee examined technical and functional aspects of EVMs.
- EVMs not used till 1998 - Considered unwise to use them before establishing credibility in the minds of various stakeholders.
INTRODUCTION OF EVMS

- 1998: EVMs used in 16 Assembly Constituencies in three states.
- 1999: EVMs used in 46 Parliamentary Constituencies in 17 states for approx. 60 million voters.
- 2006: EVMs being used in local bodies elections also.
TECHNOLOGICAL FEATURES

- Two sub units:
  - Control.
  - Balloting.
- Linked with 5 meter long cable.
- 7.5 volt single alkaline battery.
TECHNOLOGICAL FEATURES

- Provision for conventional ballot paper.
- Voting by pressing button instead of marking.
- Can be used for 64 candidates and 3840 voters.
TECHNOLOGICAL FEATURES

• Can be used for first past the post system. Developing PR model.

• State-of-the-art microprocessor with ‘burnt in’ software which cannot be retrieved or altered. No need to change software with election.

• Data recorded on non-volatile redundant memory chips and can be retained even if the battery is removed.

• Portable and user friendly with easy operation sequence.

• Normal operational life 15 years. Cost around USD 300.
NEW FEATURES

• Time stamping with the help of built-in real time clock to detect rigging.

• Paper trail can be generated for results and court use.

• Detachable memory.

• Power save mode and power status display.

• Multiple machines can be linked for aggregate result.

• Features for biometric verification, wireless result transmission can be introduced.
USE IN THE FIELD

• 1\textsuperscript{st} technological check 3 months before the election.

• 2\textsuperscript{nd} check at the time of preparing EVMs for the polls.

• EVMs prepared and \textquote{candidate set section} sealed (setting no. of candidates) in presence of all political parties & election observers.

• Mock poll must on election day – result compartment sealed after mock poll.
USE IN THE FIELD

- Reserve kept for replacing malfunctioning machines.

- Failure rate below 0.5%.

- EVMs stored in a central place for counting on designated day to allow re-polls, adjourned polls.

- ECI, political parties and CSOs do voter education.

- EVMs engaged in election petitions not reused.
ADVANTAGES

- Modernizes election process – makes it more credible and transparent making rigging difficult.
- Simple to operate and install.
- User friendly – can be used even by illiterates/blinds.
- No invalid votes. Multiple voting not possible.
- Preserves voting secrecy.
- Facilitates quick and accurate counting.
- Re-usable by simply erasing the memory.
ADVANTAGES

• Can be used in remote areas without electricity.

• Huge savings in terms of man and material cost:
  - for printing, checking, storing, security, transportation and counting of ballot papers.
  - for storing ballot boxes.
  - at the time of counting.

• Lower operating costs and more efficient in terms of time.
ADOPTION OF NEW TECHNOLOGY

• Make **true assessment** of the need – should not be driven by vendors or any other consideration.

• Must be **APPROPRIATE** considering educational, social, economic and technological development of the country.

• Do cost benefit analysis.

• Amend law to enable use of technology.

• Must be introduced gradually building confidence among stakeholders.

• Proper voter information – to counter mis-information.
COULD IT HAVE BEEN USED IN NIGERIA

- Yes, as First Past the Post System followed.
- Most of the areas do not have regular electric supply.
- Could have saved huge cost for printing ballot papers.
- Could have saved time in printing new ballot papers after Vice President’s candidature was allowed.
- Enabled quicker counting.
BALLOT UNIT - DETAILS

- Ready Lamp
- Slide Switch Window
- Candidate’s Button
- Candidate’s Lamp
- Ballot Paper Screen
BALLOT UNIT - INTERNAL PARTS

- Ready Lamp
- Slide Switch
- Candidate’s Button
- Masking Tab
CONTROL UNIT

ON Lamp
Display Section
Ballot Section
Total Button

Busy Lamp
Candidate Set Section
Result Section
Ballot Button
CONTROL UNIT - BOTTOM COMPARTMENT

- Power Switch
- Connector for Interconnecting Cable
- Bottom Compartment Cover
- Connector for Auxiliary Unit
CONTROL UNIT - DISPLAY SECTION

ON Lamp

2-Digit Display Panel

4-Digit Display Panel

Busy Lamp
CONTROL UNIT - CANDIDATE SET SECTION

- Candidate set section inner door
- Candidate set section outer door
- Provision for thread seal
- Latch
- Power pack compartment
- Plug for power pack
- Provision for Thread seal
- Candidate set button
CONTROL UNIT - RESULT SECTION

- Result I button
- Clear button
- Close button
- Result II button
- Inner latches
- Frames for Paper seal
Control Unit - Ballot Section

Total button

Ballot button
THANK YOU