European Commission
United Nations Development Programme
International IDEA

Introduction to e-voting

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Organized within TRAIN DEV.NET

In collaboration with CIDA IOM OAS

Introduction to Electronic Voting

- Two main categories of e-voting
- E-voting in controlled environments (EVM or DRE voting)
- E-voting in uncontrolled environments (internet voting, PDA or mobile telephone voting)

E-voting in uncontrolled environments

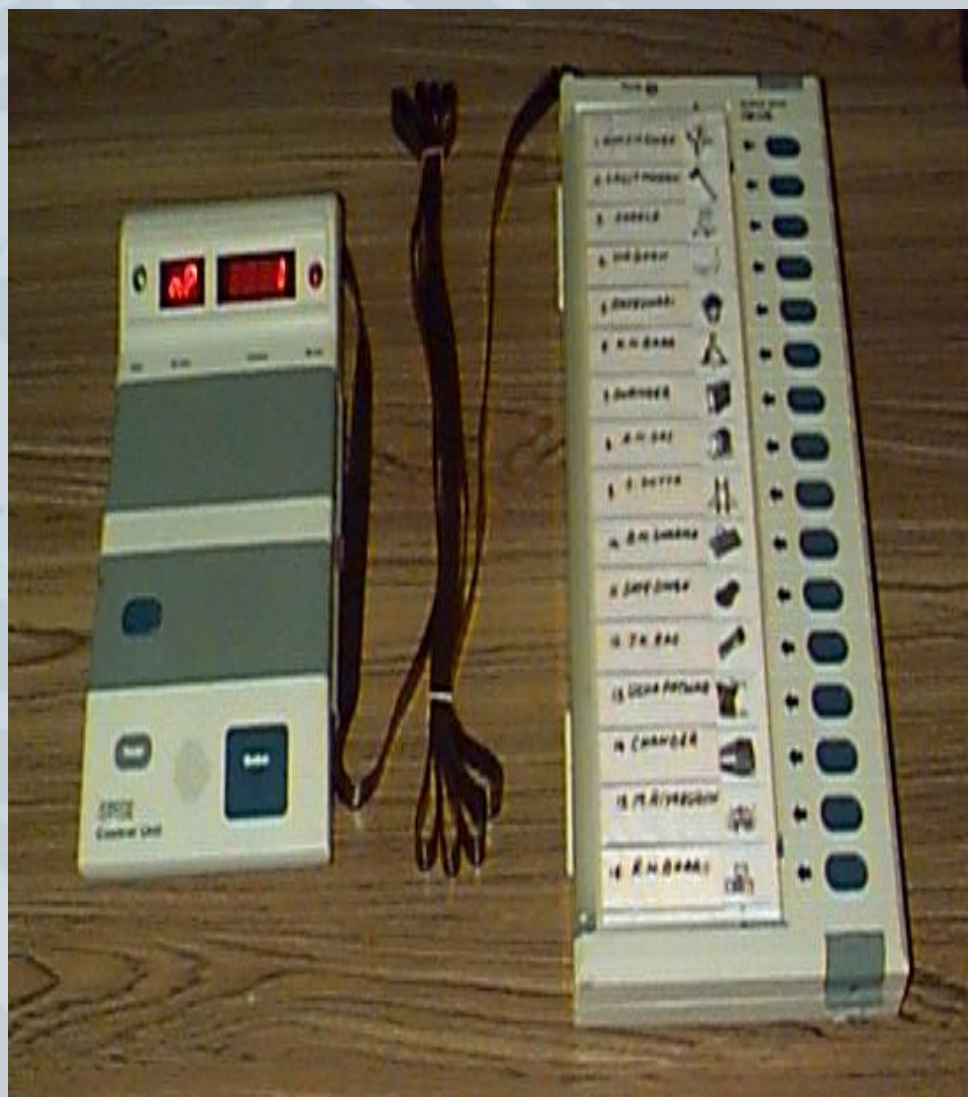
- Internet voting is being piloted in more than 30 established democracies
- Estonia, October 2005, first country-wide elections with the possibility to vote through internet
- Tests on Internet voting have not given yet a definite answer on how to ensure the secrecy of the vote and eliminate the potential coercion exerted on remote voters
- Internet voting will soon be available for countries which enjoy a deep trust in their respective EMB and have a relatively conflict-free society, where the secrecy issue has a more limited weight than in other younger democracies, where the trust in the institutions and in the EMB might not be a given.

E-voting in controlled environments

- More than half billion voters in the world already use this form or voting in two of the most populous world democracies (India and Brazil)
- Does not present the same range of advantages normally attributed to uncontrolled internet e-voting (better turnout, enable voters' mobility, facilitate disadvantaged categories)
- It does not endanger the fundamental requisite of the secrecy of the vote
- It does offer some important answers on the issue of transparency through a development of various forms of auditing mechanisms. Possibility to introduce Voter Verified Audit Trails (VVATs)
- Increase in requests by EU partner countries

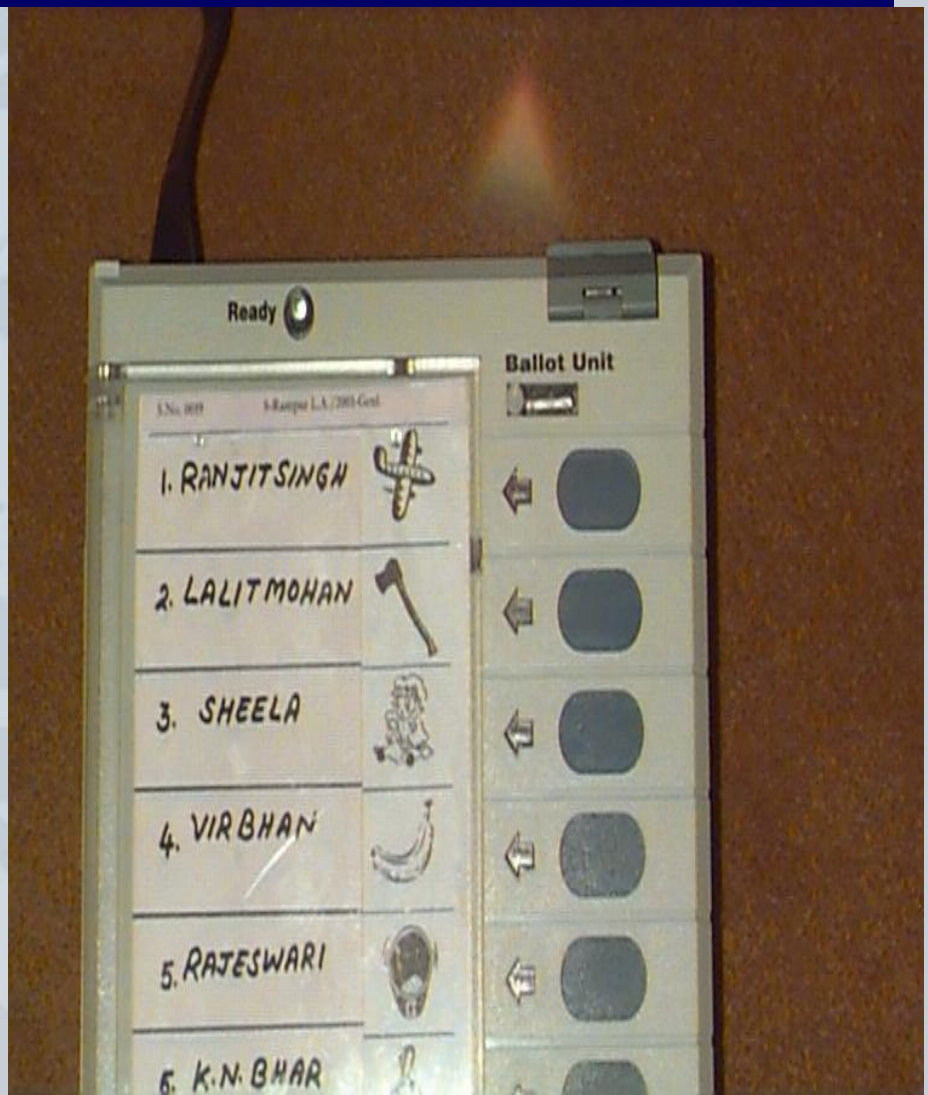
Indian Voting Machines

- **Two sub units, control and balloting**
- **Linked with 5 meter long cable**
- **7.5 volt single alkaline battery**



Indian Voting Machines – Balloting Unit Detail

- **Provision for conventional ballot paper**
- **Voting by pressing button *instead* of marking.**
- **Can be used for 64 candidates and 3840 voters.**
- **No provision for invalid votes**



Indian Voting Machines
Control Unit Details

- Manned by the PS Chair
- Displays the number votes who voted
- Informs the PS Chair of when the voter has voted
- Get the results by pushing the results button

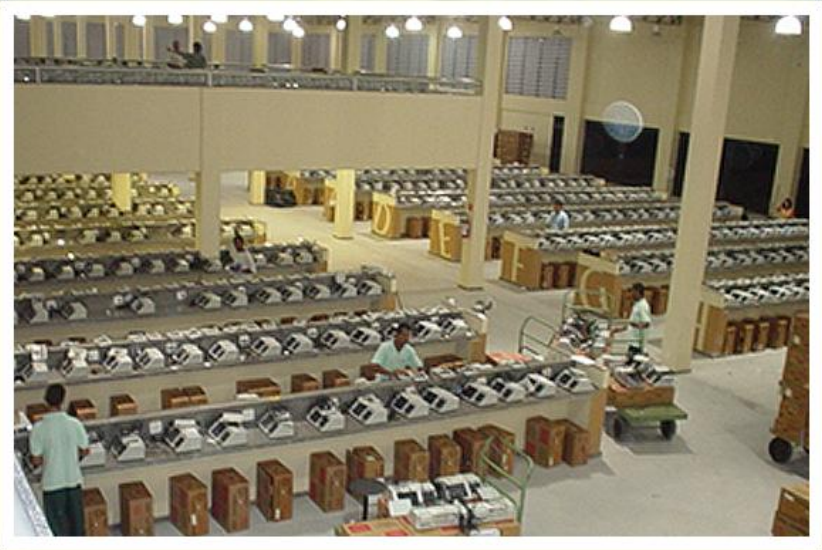
US voting machines 1

US voting machines 2

Brazil Case Study – 2006 Date

TERRITORY	**8.547.403,5 km²**
POPULATION	**187.200.000**
VOTERS	**125.913.479**
ELECTORAL SECTIONS	**380.945**
VOTING STATIONS	**91.244**
ELECTORAL ZONES	**3.073**
MUNICIPALITIES	**5.658**

ELECTORAL LOGISTICS IN A COUNTRY OF 8.547.403,5 km²



ELECTORAL LOGISTICS IN A COUNTRY OF 8.547.403,5 km²

Introducing e-voting - The 8 steps

- **1st Stage**
- **Public debate, surveys, debate with political parties. Planning design, parameters identfication and related actions**

- **2nd Stage**
- **Developing a sense of ownership within the electoral management body and its territorial structure of the informatization process**
- **Digitalization of the voter register**

- **3rd Stage**
- **Establishment of the IT Development Committe for the electoral process. Feasibility studies and hardware and software development plan.**

- **4th Stage**
- **Public international tender.Hardware acquisition and software develoment**

- **5th Stage**
- **Development of the electronic ballot box prototype, piloting, feasibility tests**
- **Final decision on the model**

- **6th Stage**
- **Quality control- on site and laboratory test, field simulations**

- **7th Stage**
- **Implementation in 1996 elections ad post-elections audit. Development of permanent training plan**

- **8th Stage**
- **Gradual introduction of e-voting machines throughout Brazil 1996-2006**

Brazilian Voting Machines

ELETRONIC VOTING MACHINE

MODEL 2008

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Brazil Case – the Process

Printing the results

disk

Transmission
ZE´S

Data communication

Totalization
TRE

Results via INTERNET

National Consolidation
TSE

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The Brazilian case – Some considerations

- **“ A Brazilian solution to a Brazilian problem”. The customization is the key**
- **The trust is the Brazilian EMB was such that they could do away with the paper trail. The transparency has never been an issue**
- **An enormous and continuous investment**
- **Emphasis on professional development, civic education and ownership**
- **Can it be exported?**

The Venezuelan case – background

- **The EMB is a constitutional power, well resourced and staffed**
- **High political polarization**
- **Lack of trust in the EMB**
- **E-voting as a measure of fraud prevention – "*para matar el acta mata voto*"**
- **Limited emphasis on professional development, civic education and ownership**

The Venezuelan voting machines

- Touch Screen to support multiple electoral races
- Printer Attached to produce VVAT
- Two memories available

The Venezuela Paradox

- The extreme sophistication and high reliability of the voting system does not make up for the lack of trust in the EMB among several stakeholders
- The huge investment in technology has not been yet matched by a similar effort in capacity building and voter information
- The higher the distrust in the EMB, the higher the need for transparency and security measures

Main consideration in favour of e-voting

- Longer-term cost reduction
- Speed and accuracy of the results
- Potential turn-out increase
- Fraud prevention

Main consideration against e-voting

- Lack of transparency
- Increased training and voter information needs
- Vendor “dictatorship”
- Increased potential for central manipulation

Issues for Discussion

- There is an inverse relationship between the degree of sophistication and security measures applied to EVMs and the degree of trust enjoyed by the EMB
- The key role played by independent auditing procedures
- What role observation can play in electoral processes using e-voting in controlled environment?
- E-voting in controlled environment with touch-screen machines producing VVAT appears to be the most reliable and transparent way forward for e-voting in developing countries. It will not be the cheapest option.