Elections over Internet

Millions of flies can't be wrong

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dig +dnssec naptr 1.6.5.3.7.5.1.4.6.3.9.4.e164.arpa
<table>
<thead>
<tr>
<th>Election Requirements</th>
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<tbody>
<tr>
<td>Everyone can vote</td>
</tr>
<tr>
<td>Check the results</td>
</tr>
<tr>
<td>Hard to fake</td>
</tr>
<tr>
<td>Only one / region</td>
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<tr>
<td>Untraceable votes</td>
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<tr>
<td>Easy to use</td>
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</tbody>
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Traditional Approach

Paper based elections are hard

- To prepare (even fixing mistakes)
- To organise (needs trustworthy staff)
- To secure (more votes than voters, ...)
- To verify (was my vote counted?)

But they are The Symbol of Democracy

- Easy to use every time and everywhere
Proposals Tried Out

Replace paper by a voting machine
- Eases the counting process
- Still requires staff
- Will print ballots, so no Green IT!
- High attack value
- Bad incident handling → Bad feelings

Replace voting offices by a i.e. website
- No staff, no paper, no costs
- No security, no secrets
Elections Broken Down

Hand out a localized voting permit

- Build a voter database
- Distribute keys (face2face, mail, or e-mail)

Hand out ballot papers

- Check against keys and voter database
- Hand out a single ballot to each voter

Collect votes and count them

- Supervise the voting and post processing
Switching To Internet

Keep the process: It's the nerve of voting

Use certificates instead of voter database
  • Regional registration agent hierarchy

Use blind signatures instead of paper ballots
  • Voter chooses an unique ID for the ballot
  • Nobody else knows this ID

Use the signed ballot as key for voting
  • Pseudonymous voting

Keep it trustworthy: Publish everything
Staff Requirements

System depend on official documents
Personal contact to every voter needed
Alternative Clients required
Explanation of software required
Documentation was poor

2005 lot of votes, proofed to work
2009 failed to mobilize people: Zensursula
Media Coverage

Internet Election is a no-go in the press
German Angst dominates the discussion
Organized an election for children
  • Huge work, classical paper ballots
  • Strong cooperation with regional press
  • Ask for help from all Bundestag members
  • Coordinate rooms in plenty of towns
  • Instruct helpful people what to do

Only to push the Internet election into press
Build On Basics

Demand from inter-organisation use cases
System is redesigned: Customizable
Free for ad hoc elections
Pay for personalized access with storage

Hope to see you soon ...
Questions?