



NTNU

Faults in Norwegian internet voting

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Why Should You Care?

If you are a theorist:

- There will be things in a deployed voting system that you had no idea were there. And they will bite you.



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If you are a practitioner:

- You need a realistic appreciation of what to expect, even when using established vendors.



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PPPS. Increased turnout was a goal in 2016 and 2018, and it was achieved.

Some Faults without Consequences

- Cryptographic implementation error.



Some Faults and Somebody Complains

- Late start in 2011 and in 2018.
 - Negative press in 2018.



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 - Negative press in 2018.
- Unstable infrastructure in 2016.
 - Negative press because of low availability.

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 - Municipalities seemed satisfied.
- Configuration errors in 2018.
 - The public seems not to have noticed.



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- Misprints in 2011.
 - Unintended experiment to detect if voters verify return codes: $\approx 85\%$ verification rate!
- Configuration errors in 2018.
 - Natural experiment to measure abandonment rate: 1 in 3 failed to recover.
- Misprints in 2011, Implementation fault in 2013, Unstable infrastructure in 2016, Configuration errors in 2018.
 - Large potential for negative press.
 - Openness seems to help.

Who Cares?

Vendors:

- What to emphasize in system design, testing and operations.

Practitioners:

- Preparedness and the need for testing.

Theoreticians:

- It's a complicated world, don't be too fancy!