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Subject: Re: Answering Question Taken on Notice
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Justice and Community Safety Committee
Inquiry into the 2020 Australian Capital Territory Election
Answer to Question to on Notice: Electronic Voting Security and Transparency

I welcome the chair's request for further details about electronic voting security and transparency.

I support the recommendations in Vanessa's response to the question on notice about electronic voting. I'd also like to add some specific recommendations to improve the accuracy of the counting program, and the secrecy of votes.

As Vanessa said, this will be an ongoing conversation between voting experts, the Government, the Legislative Assembly, the Electoral Commission, and ACT voters. So I will focus on recommendations that facilitate these kinds of conversations, using examples from previous elections.

I would welcome feedback from various stakeholders about their priorities for improving the correctness and security of electronic voting.

Here are my recommendations about electronic counting:

There is a fundamental difference between scrutineering electronic counting and paper counting. If paper counting is performed incorrectly, an observant scrutineer or a recount can correct the count.

However, if electronic counting is implemented incorrectly, as was the case in 2020, all recounts with the same program will produce the same result. To observe the details of the electronic voting process, technically experienced scrutineers need access to the preference data, requirements, design, and source code. This allows scrutineers to review and re-implement the counting process. (Which was how Andrew Conway discovered the defects in the 2020 count.)

Specifically, section 118A (3)(a) provides for the approval of electronic counting programs only if they are correct. And section 187C provides for re-counts with the same electronic counting program.

But there are no legislative provisions for challenging the correctness of a counting program, or for re-counts with a fixed program. Voters or candidates could make an application to the Court of Disputed Returns. But this is a costly public process, which attracts high levels of media scrutiny.

Instead, the Assembly could pass legislation for initial expert scrutiny of electronic systems. At least 6 months before the election, the commission could release public drafts of the system code and documentation. This is equivalent to paper ballot counting, where

the counting rules and process are known well in advance, and scrutineers can directly observe the execution of the process.

The 6 month period would allow expert scrutineers to review the system, and recommend changes or fixes, before the final approval is made. It would also allow the commissioner to obtain sufficient evidence for the correctness of the program, before their final approval. (As required by 118A (3)(a).)

Creating an initial draft stage may also help address the commission's concerns about inaccurate election system information. Transparently releasing an initial draft is an excellent way to obtain expert feedback on a system (as was the case for the 2001-2016 ACT elections). It provides plenty of time for the commission to correct any inaccurate claims, and work with experts to provide evidence that the system is correct. Scheduling this process well before the election also reduces the risks for the commission and scrutineers, compared to a scenario where counting is ongoing.

Transparency can also help increase public confidence in the security and privacy of electronic voting - as it has for previous ACT elections from 2001-2016.

The Assembly might also want to update 187C to allow:

- candidates to request corrections to the count, and
- the commissioner to perform a re-count with a corrected program.

As an example, in March 2021, the commissioner performed a re-count with a corrected program to fix the 2020 preference distributions on their website.

The legislation should allow for re-counts that fix electronic counting defects. This is particularly important if correcting the defects elects different candidates. Having a more detailed legislative framework would help candidates, expert scrutineers, and the commission to work together to make corrections in a consistent and timely fashion.

I also have similar recommendations about the secrecy of electronic votes:

Just like electronic counting, there is a fundamental difference between electronic vote submission, and paper vote submission. A scrutineer or election official can observe personally identifying information on paper votes.

However, personally identifying information in electronic votes can be very subtle. To ensure electronic vote secrecy, technically experienced scrutineers need access to the system security analysis, requirements, design, and source code. This allows them to review the data collected by the system, and discover potentially identifying information.

For example, in 2018 I discovered two kinds of potentially identifying information in the 2001-2016 electronic voting systems, vote order, and vote and roll times. And a 2019 security review by the commission discovered some additional risks.

Specifically, section 118A (2)(d) and (3)(b)(i) provides for the approval of electronic counting programs only if they maintain vote secrecy.

But just like electronic counting, there are no legislative provisions for challenging the secrecy of a counting program, or getting fixes made to that program. Voters or candidates could apply to the court to challenge the approval of a program. As with electronic counting challenges, this is a costly public process, which attracts high levels of media scrutiny.

If the Assembly passes legislation for initial expert scrutiny of electronic systems, the same process would cover both electronic counting and electronic vote secrecy. (But for electronic vote secrecy, it should also include the documentation and code for systems that identify voters, such as roll mark-off systems.)

Similar timeframes, transparency, and expert scrutiny would help identify and correct any defects across all these systems. (See my detailed recommendations in the counting section.)

Overall, changes like these would allow expert scrutineers to have genuine input into the correctness of the ACT's electronic voting systems.

I would welcome the opportunity to help draft policy or legislation to promote these outcomes, or make other improvements.

T Wilson-Brown