Auckland Local Committee Triennial Election

Report following first NZPFU election by electronic voting

Between 12 July and 29 July 2019 we ran the first ever NZPFU election by electronic voting. This was an excellent opportunity to trial the BigPulse platform given that there were 18 candidates standing for 10 committee positions on the Auckland Local. An electorate totaling 567 members was given the opportunity to vote.

BigPulse specialises in high security online elections. They are an international group with bases in the Australia, Canada, UK, Spain and USA. With approximately 1,000 clients in 35 countries, BigPulse's technology supports 17 different languages and they excel in complex, high-security elections. The support provided by BigPulse throughout this election was outstanding.

This report details my feedback, highlights some issues and offers some recommendations for any future electronic ballots.

Setup

Anonymity settings

BigPulse offer many configuration options. For this ballot, I opted for the "A0" option below:

> "A0" means a secret vote. For A0 anonymous polls, our database records your vote in a manner that is de-linked from your personal data. This means it is de-linked from the voting account you used to submit the vote. Your voting account will retain the time you submitted the vote, your IP address and browser signature. In summary, for A0 polls there is no link in the database, either direct or indirect, between your voting account and the choices you selected when submitting the vote. Your vote is immediately de-linked from your voting account as soon as it is recorded in the database. No copy of the vote receipt sent is retained. We call this absolute anonymous vote storage because no one, not even our engineers, can determine how you voted by viewing the database records. The BigPulse re-vote option cannot be used with A0 type polls.

An alternative option that could also be considered for future ballots is A1:

> "A1" means a secret vote. In summary, our database retains a record of how you voted, but that information is never made available to the Client. Unlike A0 type polls, A1 polls retain a link in the database between your voting account and your votes. A common reason for choosing an A1, rather than A0 poll type, is to retain the option of issuing re-vote rights that allow End Users to override any unauthorized or unintended votes. A1 polls also enable unauthorized votes to

be suppressed however vote suppression cannot be used without approval from BigPulse. BigPulse may accept vote suppression requests if its designated account managers are satisfied, at their own discretion, that the request is genuine.

The A1 option allows for any unauthorized votes to be suppressed.

Vote Data Access Timing Restrictions

I opted to suppress vote counts from view until after vote close, however I had access to view who had voted at all times.

There are options to suppress who voted from administrators, however knowing this detail throughout the ballot allowed the Northern Branch Returning Officer to follow up with members and target additional reminders. This also allowed me to provide regular updates on the return success to both the Northern Branch Returning Officer and National Vice President.

Candidate rotation

Rotation means each candidate's position in the ballot is moved down one place after each vote. This prevents bias based on position in the ballot.

I opted not to implement this setting and to instead list the candidates alphabetically. This option could be considered for future elections, however the results do not highlight any obvious issues with position bias.

Candidate biographies and images

Our setup at launch included the supplied candidate biographies in the form of downloadable PDF files.

It seemed the best option to hyperlink from the candidate names on the electronic ballot form to the provided PDF files. These were securely hosted on the BigPulse server.

On Friday night we identified that the FENZ network was preventing the download of the linked PDF files when using **Internet Explorer**. This issue was unrelated to BigPulse or our setup, it was simply FENZ security blocking the PDF viewer (Chrome worked fine on the FENZ network).

To urgently resolve this issue, we extracted the text from each candidate bio for display, thus avoiding the download of any PDF file. This fix was implemented Saturday morning and resulted in a much cleaner display of the candidate biographies.

BigPulse also allows for the display of candidate images. The inclusion of candidate images could be considered for future elections.

You can see how the candidate bios were displayed on this sample ballot form below:

Auckland Local Committee Triennial Election

You cannot vote in this ballot again

Election for Auckland Local Committee

Select up to ten checkboxes

- ☐ **ABBOTT, Frederic William**
- ☐ **BIRD, Terry** click for statement
- ☐ **BURTON, Joshua Steve** click for statement
- ☐ **DEVINE, Steve** click for statement
- ☐ **FOULKES, Nigel James**
- ☐ **GOODHUE, Brett** click for statement
- ☐ **HALL, James Jason** click for statement
- ☐ **JULIAN, Timothy**
- ☐ **LARKING, Carren**
- ☐ **MILLAN, Ivan** click for statement
- ☐ **O'CONNOR, Michael** click for statement
- ☐ **PHILLIPS, David** click for statement
- ☐ **THOMAS, Barry Martin** click for statement
- ☐ **UNDERDOWN, Colin**
- ☐ **WALDOW, John William** click for statement
- ☐ **WHITEHEAD, Jamie** click for statement
- ☐ **WILSON, David Scott**
- ☐ **WRIGHT, Adam** click for statement

[Skip]

Anonymous setting A0 · Restricted access voting · Votes cannot be changed · Page visible to authorized people only

Clicking on "click for statement" against the candidates name displays the text of the bio as follows. This is a much cleaner solution rather than downloading individual PDF files. Using Terry Bird's bio as example:

NZPFU

Signed in as KdwM4QUE · Sign-out · My Details · Contact

Auckland Local Committee Triennial Election

You cannot vote in this ballot again

Election for Auckland Local Committee

Select up to ten checkboxes

☐ **ABBOTT, Frederic William**

☐ **BIRD, Terry** click for statement
My name is Terry Bird and I am seeking a position on the Auckland Local Committee.

I have been a Union member for all my working life including over 30 years in the Auckland Brigade.

I have been on the Auckland Local Committee for less than a year and have found the work challenging and interesting and would like to continue.

There are challenging times ahead and the Auckland Local Committee has an important role advocating for our members.

Vote for me, I will work hard for you.

Close statement for BIRD, Terry

☐ **BURTON, Joshua Steve** click for statement

☐ **DEVINE, Steve** click for statement

☐ **FOULKES, Nigel James**

☐ **GOODHUE, Brett** click for statement

☐ **HALL, James Jason** click for statement

☐ **JULIAN, Timothy**

☐ **LARKING, Carren**

☐ **MILLAN, Ivan** click for statement

☐ **O'CONNOR, Michael** click for statement

☐ **PHILLIPS, David** click for statement

☐ **THOMAS, Barry Martin** click for statement

☐ **UNDERDOWN, Colin**

☐ **WALDOW, John William** click for statement

☐ **WHITEHEAD, Jamie** click for statement

☐ **WILSON, David Scott**

☐ **WRIGHT, Adam** click for statement

Recommendation 1

That only plain text candidate statements are used and we do not link to downloadable PDF candidate biographies. If it is decided to allow candidate images, that the format, file size and dimensions be set.

Communication

The email communications sent to members is completely customizable.

I did not make any variation from the default template provided.

The word *REMINDER* was included as a prefix in the subject line for the first, second and third email reminders.

The words FINAL REMINDER was included as a prefix in the subject line of the final email reminder.

Some ideas to boost engagement are provided below:

Recommendation 2
Given the setup time involved, at least a **minimum of 5 working days** must be allowed before the launch of any future electronic election.

Poll Result

Total number voted: **504 of 567 (88.9%)**
Percentage voted from mobile devices: **12.3%**

Time Graph of Votes Harvested

First reminder sent Tuesday 16 July 2019 12:00 NZST

Third reminder sent Wednesday 24 July 2019 12:00 NZST

Second reminder sent Saturday 20 July 2019 12:00 NZST

Final reminder sent Sunday 28 July 2019 12:00 NZST
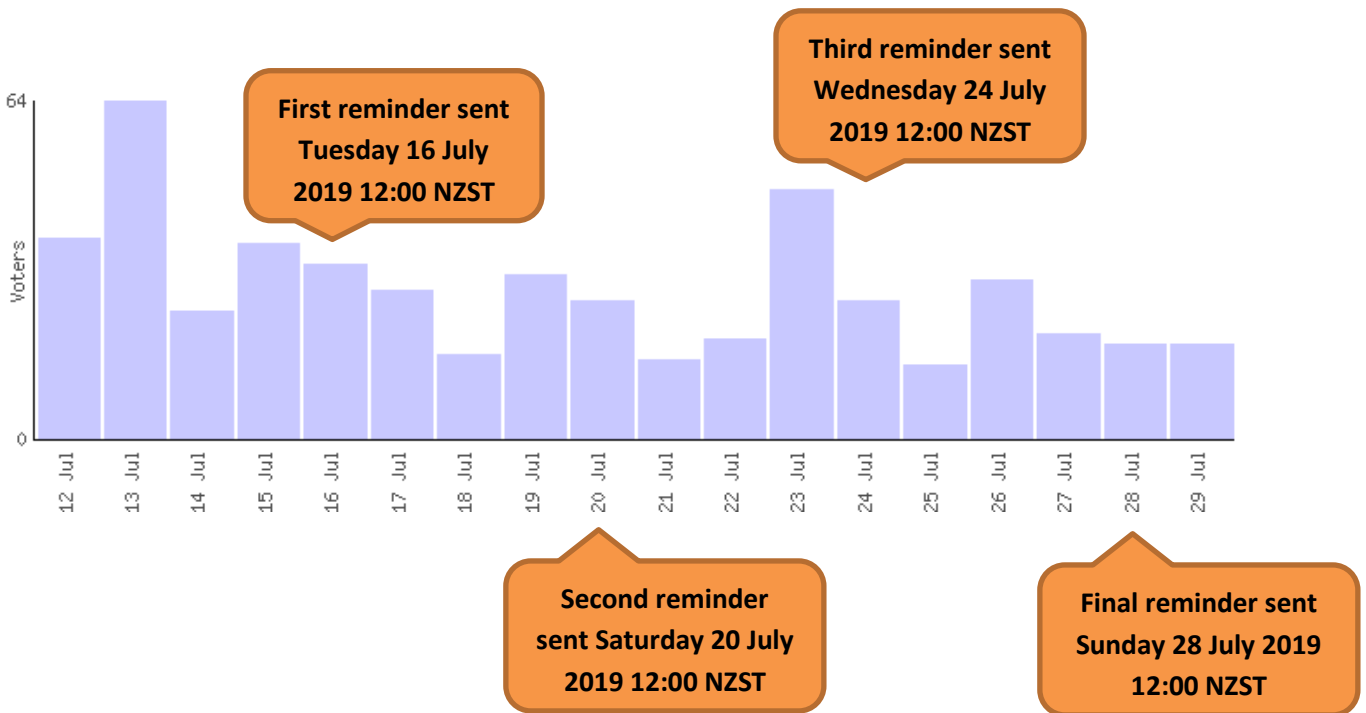
Issues and security considerations

Quality of payroll data provided by FENZ

During the election process it was found that some members' email addresses provided by FENZ were incorrect. For example,

███████████████ @fireandemergency.nz was provided incorrectly by FENZ when only ██@fireandemergency.nz is in use.

███████████████ @fireandemergency.nz was provided incorrectly by FENZ when only ██eandemergency.nz is in use.

In total, 13 members made contact claiming that they did not receive a voting link. In these cases, I sent the link again while attempting to confirm a successful receipt (regardless of how many emails are sent, the system will only allow a member to vote once).

We can monitor email bounces through BigPulse, and not a single email bounce was recorded.

One member in particular who made contact with the Northern Branch Returning Officer would have received the voting link a total of 7 times. Another member who claimed the email was never received later admitted it was eventually found within the member's inbox.

Interestingly, we track the open rates of all NZPFU eNewsletters. Of those members who made contact with us claiming that they never received a voting link, we can see that the open rate of all NTMs sent to those same members is as low as 5%.

Clearly email is not the best medium for some members.

Recommendation 3
That FENZ be approached questioning the supply of incorrect email addresses for members.

Manipulation of membership data

The provided "Auckland Local Members" database incorrectly included four members who are not members of the Auckland Local:

REGION2	AUCKLAND	Area 07 Management	
REGION2	AUCKLAND	Area 07 Management	
REGION2	AUCKLAND	Area 07 Management	
NHQ	AUCKLAND	Region 02 Urban Training Coordination	

As soon as these members were identified, they were immediately removed from the electorate inside BigPulse.

Further, it was found that this member was not included in the Auckland Local electorate even though he is an Auckland Local Member:

NHQ	WELLINGTON	Special Risk Safety and USAR Management Team	

Recommendation 4
That the NZPFU investigate how the membership database links members to their respective Local and how we handle members who are assigned to NHQ or Regions. We need to ensure that we recognise the members' true Local in future elections.

Security risk using external email addresses

A total of six members made contact requesting that the secure voting link be sent to their private external email address. Reasons cited included being on annual leave, being on work-accident leave or being overseas – all members claiming that they could not access the FENZ network from their current location.

This poses a security issue because we need to be satisfied that the member providing the external email address was in fact the member who they were claiming to be.

The risk being that someone controlling the email account impersonates a member in an attempt to receive a valid voting link.

One such email request originated from an unknown Hotmail account – this request was denied. Other requests were verified so that we were satisfied the member was who they said they were.

Given that FENZ provide WebMail Portal access, one consideration is that this process is simply not allowed. That is a decision for the NZPFU to make.

We should acknowledge the high number of members voting from mobile devices – **12%** of all votes were made from mobile devices.

Poll result

The ballot closed automatically on time as expected.

This link shows the poll result:
http://www.bigpulse.com/pollresults?code=1337600i5Dd7ijc7jQ8rcmASdqk

BigPulse recommend that this result should be considered preliminary subject to checks by the appointed Returning Officer or person authorised to confirm the result.

Both the result link and vote receipt link are secure links which display data obtained directly from the BigPulse secure database. This represents the most secure way of demonstrating the integrity of the result – eliminating any risk of documented results misrepresenting the actual vote data harvested. Both links could be published or distributed to members.

When both the result link and vote receipt link are published then all voting members are able to participate in a transparent audit.

The Northern Branch Returning Officer incorporated the BigPulse poll result page in his Ballot Declaration and this declaration was provided as a downloadable PDF file from the NZPFU website.

The platform does allow for the Poll result link to be emailed to all members with email addresses in the Poll Group's Electorate. This tool could be considered for future elections.

Recommendation 5

That the NZPFU decide on what, if any, audit is undertaken on the preliminary result and whether the secure link to the poll result and/or link to vote receipts is disclosed to members. Further information on the electronic election vote count verification protocol is available here:
https://www.bigpulse.com/verificationprotocol

NOTE: Within about six weeks, but not before one month, BigPulse will delete all voting accounts and any uploaded member files not associated with people in our support team. Votes are not deleted unless requested because they do not contain personally identifiable data and can remain as a useful historical record. Ballot details are retained and provide useful templates for further elections.

Voter feedback and comments

During the online voting process, BigPulse provide the opportunity for the member to submit formal feedback on the process.

The following voter feedback and comments were received:

	Date	Comment	Category
1	29 Jul 19 09:43:32	Voting for all positions within the NZPFU needs to change to this format !!!	General
2	27 Jul 19 18:41:38	this is the easiest and most efficient way I have ever voted. I hope this system will continue.	General
3	25 Jul 19 14:32:13	This is the way! C'mon Auckland Local; VOTE!	Technology feedback
4	24 Jul 19 12:49:38	Process seemed to work well however I could not access the Bio's of the candidates and relied on personal knowledge	General
5	23 Jul 19 11:36:00	great system!!!!	General
6	20 Jul 19 17:01:16	I think this is a good move, however committee members still need to make themselves known and seen around all stations.	General
7	16 Jul 19 13:31:32	Really convenient and engaging to have this online. Would like to see all NZPFU voting done this way.	Technology feedback

8	16 Jul 19 12:55:53	Awesome to have electronic voting available. Amazing and much more convenient	General
9	16 Jul 19 11:30:09	So much easier isn't it?? I am off on non work accident and am able to vote from home. Well done. Kind regards Anton	Technology feedback
10	15 Jul 19 19:14:05	Congratulations on getting electronic voting up and running. Great stuff.	Technology feedback
11	15 Jul 19 09:35:10	long time coming,,, well done thanks a million	General
12	13 Jul 19 20:37:23	This process is far superior to the ballot paper system and needs to be adopted nationally. Thanks for catching up with the 21st century and to those responsible for sorting this out	Technology feedback
13	13 Jul 19 18:30:50	Great idea with the electronic voting	General
14	13 Jul 19 10:21:31	I had difficulty reading the Bio's and after querying this was directed to use Chrome as the Bio's opened on Chrome	General
15	13 Jul 19 06:20:12	this was a much better way to vote, so easy and will capture people on leave as well.	General
16	12 Jul 19 19:03:48	How easy was that?	General

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30 July 2019