



eVoting – a new way to have our say

Insight paper
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New ways to have our say

There's no doubt we now live in a digital world, where our everyday interactions with banks, retailers, government and other service providers are increasingly screen-to-screen rather than face-to-face. We expect to carry out secure transactions in seconds, in a single click or swipe. Plus, we expect a seamless experience to suit our busy lives.

But there's one activity that hasn't gone mainstream for this online trend – and that's the way we vote.

According to a recent survey conducted by Australia Post, Australians believe it's both a duty and a privilege to vote, and they like to have their say on the future of Australia. More than three-quarters (77%) say they would vote even if it wasn't compulsory. And 73% want and expect to be able to vote online in the 2019 election.

However, as almost three-quarters of voters also think it's still important to have the choice to vote in person, we need to consider a holistic solution. Physical (in-person and postal voting) and digital channels, offer varying degrees of convenience, security and accessibility – and as voting is compulsory in Australian government elections, we need to be inclusive of all needs.

The survey, conducted in August 2016, asked 1,000 Australians aged 18 and over about their experience voting in the July 2016 Federal Election.

This report looks at the results of that survey, and examines the current voting landscape in Australia and overseas, as a starting point for wider public discussion about the potential benefits and risks of eVoting.

Many elements of eVoting have already been trialled in a range of election environments both here and overseas. These insights highlight the essential requirements for a trusted and secure eVoting platform that could also provide greater convenience, cost savings, and faster election results.

It's important to note that the survey was conducted after Australia's 2016 Census on 9 August.

Our survey results indicate that the Census issue has not negatively impacted the attitude of Australian voters towards eVoting. But lessons from that experience, as well as general public concern about census data privacy in the weeks leading up to the census, must be considered as we develop an eVoting framework.

“Almost three-quarters of voters believe it's still important to have the choice to vote in person. Physical (in-person and postal voting) and digital channels offer varying degrees of convenience, security and accessibility.”



Australia is ready for an eVoting option

In the last federal election, an increasing number of Australians chose to vote early compared with 2010 – 34% in 2016, compared to just 14% in 2010.¹

Our survey indicates 17% voted in person at an early voting centre and 14% via postal vote. This, along with close outcomes in many electorates, slowed the counting process and almost half of voters were dissatisfied with the length of time it took to declare a result.

And of those who did vote in person on election day, 47% had concerns about the time they had to spend waiting in line, with 20% waiting more than 20 minutes.

Australians are clearly ready to consider eVoting. They believe it will make it quicker to vote, quicker to declare a result and will save the government money. In fact, 47% of those surveyed were surprised eVoting wasn't already available.

It's important to note, however, the concept of voting online to determine democratic outcomes is not quite the same as making an online purchase and payment – as a voter's identity needs to remain anonymous.

In any election, there are winners and losers. The risk of a loss of trust in the results can lead to costly recounts or by-elections, as well as delays in forming government.

However, new technologies already exist to manage voting protocols for a digital age – and ensure security, anonymity and verifiability of eVoting. Australia Post is already building digital solutions that can provide this capability for Australia's government. We also understand the importance of engaging all stakeholder groups – voters, candidates and electoral commissions – throughout the journey, to ensure any alternative methods are both accepted and accessible. Finally, we are already committed to supporting inclusive, secure election processes through our postal vote services.



¹ *The rise and rise of the early voter*, Peter Brent, ABC News 28 June 2016

Australia's voting landscape

Australia is one of the few countries with compulsory voting; for all federal elections, by-elections and referendums, as well as state and territory elections, and local elections.

As a result, we have a high voter turnout – since voting was made compulsory in 1924, the average has been about 95 per cent² – compared with many other democracies. Australia's biggest concern with voting is not inclusion, or increasing the number of votes cast, but providing more accessible polling options for voters.

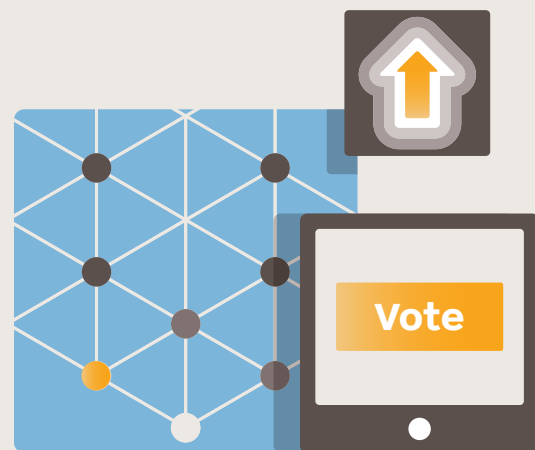
In the 2016 federal election, more than 1.4 million Australians failed to cast their vote – the highest number since 1922.³ This is despite the Australian Electoral Commission investing in a significant effort to enrol more eligible voters through information from other government agencies, such as Centrelink. There may be various factors behind this number: for instance, the timing of this election clashed with school holidays, and it's possible those non-voters deliberately chose not to enrol.

Whether it was due to timing or choice, more convenient channels for voting could have improved both the number of ballots cast and the speed of delivering results – in the 2016 federal election, it took eight days to declare an outright winner.

The cost of holding elections has also risen steadily over the years, with the 2016 federal election estimated to have cost taxpayers at least \$227 million, or around \$15 per voter.⁴ Additional costs can arise in the case of human error – when 1,370 ballots were lost in Western Australia following the 2013 federal election, the re-election of six senators cost over \$20 million.⁵

What is eVoting?

eVoting can refer to the end to end process of enrolment, voting, recording and counting to create a digital election management platform. In saying that, digital technology can also be used at any stage in the process.



² *Compulsory enrolment and voting*, State Library NSW

³ *Election 2016: Voter turnout lowest since compulsory voting began in 1925*, SMH, August 8 2016

⁴ University of Melbourne Election Watch

⁵ *ibid*

Election management platform

Enrol and verify identity



Online enrolment and identity verification for first-time voters



Update enrolment details

Cast vote



Electronic certified lists (real-time voter mark off)



Electronically-assisted voting (audio prompts via phone or voting machine for visually impaired voters)



Stand-alone custom-built voting machines (connected on LAN rather than broader internet)



Dedicated computer or network (cast an online vote in a polling centre)



Mobile polling teams (visit voters with dedicated mobile devices)



Own device for voting (any device with internet access, any location)

Count votes



Electronic counting



Automated scanning of ballot papers (intelligent software recognition)



Digital storage of votes

Electronic certified lists will reduce the opportunity to vote multiple times, and reduce marking errors by polling officials, with no obvious risks. But while the use of remote internet voting (on a voter's own device) will make it substantially easier to vote and reduce human error in counting – with a faster result – it is also open to data manipulation and cyber attack.

Australia's eVoting experience

Australia does already offer eVoting in specific circumstances in NSW and the ACT.

iVote was introduced in 2011 for the NSW State General Election. It allows eligible voters who are blind, disabled and/or more than 20km from a polling centre on election day, to vote via the internet or phone. In 2015, almost 300,000 NSW voters registered to use this service.⁶

97%

of iVote users were satisfied or fairly satisfied with the process in the 2015 State General Election.⁷ It can provide a faster poll result and a more secret ballot than an assisted phone system. And according to the subsequent NSW Electoral Commission Report, voters who registered for iVote were also more likely to vote than those who registered for postal vote.

“In a world where people seek greater flexibility and the convenience of online operations, iVote contributes to increasing or at least maintaining voting participation”

the report stated.

However, the iVote system was also found to be vulnerable. There were security gaps in the platform that could enable someone to read or change votes, which led to the introduction of a verification service in 2015.⁸

In the ACT, voters have been able to use electronic voting terminals in six polling booths since 2001. These are linked to a server via a secure LAN. While voters have a high degree of confidence in the system, the ACT is a small jurisdiction so this hardware infrastructure is relatively easy to manage.

In the 2007 Federal Election, remote electronic voting was trialled for Australian Defence Force personnel. While the

1,511

voters who used the system were happy with the process, the cost of the trial, at over

\$1.7m

was extremely high and access was limited to those serving in four regions. A system that could provide convenient access to all voters, no matter where they were located, could be more cost effective.

From these limited trials, it's clear:



Trust is important

If there are loopholes that could allow votes to be changed after the vote is cast, there will be concern around the accuracy of the result.



Sanctity of results is crucial

With the results in marginal seats increasingly close, we cannot compromise electoral integrity: the security, sanctity and secrecy of a ballot. This means any platform needs to maintain a secret and anonymous ballot.



A sustainable voting platform needs to be scalable

As the number of users grows, the system becomes increasingly cost-effective, but it also needs to be able to securely handle a large number of data transactions within a short timeframe.

6 & 7 2015 NSWEC Report on the Conduct of the 2015 State General Election

8 iVote flaw 'allowed vote to be changed'; electoral commission fixes vulnerability, Bill Ockenden, ABC News 24/3/2015

What do Australian voters want and expect?

Our survey found that while 73% of voters expect to have access to eVoting, 77% would use it in the next Federal Election, and they don't mind whether that involves a touchscreen in a booth, or using their own device.

They believe voting at home would give them more flexibility over when and where they vote, but also agree that a touchscreen in a booth would make voting quicker and obtain a result sooner.

eVoters from the younger families and younger professionals segments are more likely to say voting should be online only.

Of those who would use eVoting (eVoters), 72% say people should still have the option to vote in person.

Counting votes

75% of Australia's voters say they would trust the accuracy of election results, regardless of whether they are counted manually or through automated technology. Automatic counting is more trusted by younger families, younger professionals and youths.

However, there are concerns about cyber attacks and privacy – with voting on your own device at home causing greater concern. 23% of eVoters are concerned about the risk of cyber attacks on their own device, 17% are worried about the privacy of their personal details and 16% are concerned with the risk of fraud. Tracing votes back to voters is also a consideration.

Those who prefer traditional voting methods have similar fears. 28% of traditional voters say the risk of cyber attacks is a barrier to choosing to eVote, while 23% say it's the privacy of their personal details and 19% worry about their vote being traced back to them. Importantly, 11% say they're not comfortable using computers or the internet, and just 1% say it's because they don't have access.

Demographic differences



Older professionals, younger families, younger professionals and youths are more likely to choose eVoting – with

62%

of older professionals surprised it isn't already available.

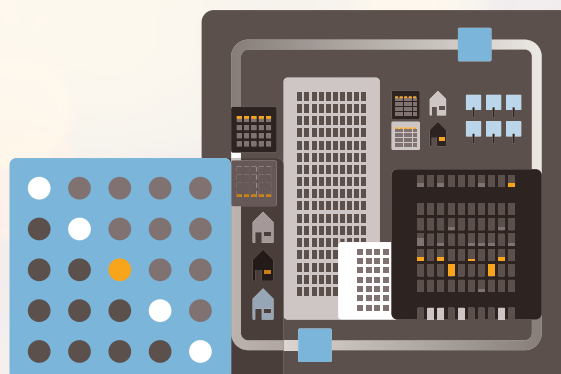
Retirees, older families and household duties (stay at home parents) are more likely to be traditional voters.



Accessibility

According to a recent Digital Inclusion project, 93% of Australians now have access to the internet at home.

Our survey found that more than half of Australians are online frequently throughout the day. 41% are comfortable doing everyday banking online, while 37% are open to using new online services. The majority do not feel pressured by the shift to online services.



The case for eVoting

As the survey results highlight, Australian voters believe the option for eVoting would provide a number of benefits to them, and to the election process.



Faster to vote

With almost two-thirds saying eVoting will make voting quicker, this is the most popular benefit for voters. It also gives them more flexibility and choice to vote when and where it suits them. With the rise of early, in-person and postal votes, it appears people find it increasingly challenging to visit a polling booth on a specific day between set hours. This is not just about reducing the amount of time spent queuing on election day.



Cost savings

Just over half expect eVoting would save the government money. Economic modelling suggests a hybrid voting system (digital and physical) could save the government up to \$32million.⁹ Other countries have found efficiency gains, lower labour costs and fewer materials have led to savings of up to 34%.¹⁰



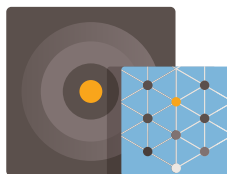
Faster results

Delays to an election result causes uncertainty, not just in government but also in financial markets. 59% of Australian voters believe eVoting would make it quicker to form government.



Greater accuracy

Elements of eVoting, such as real-time electronic lists or digital identity verification, could also remove the risk of some Australians voting more than once. In the 2013 Federal Election, nearly 2,000 Australians admitted to doing so – with one voter casting 15 ballots.¹¹



More accessible

eVoting may be more convenient for voters who find it challenging to vote in person at a polling booth, whether that's due to mobility impairments or because they live in regional or remote communities. However, this will depend on their access to internet. It should also be noted that Australians living in regional and rural areas were more likely to prefer traditional voting methods.

Reasons for eVoting

65%

Quicker to vote

59%

Quicker to declare a result

56%

Easier to vote

53%

Increased flexibility on when and where to vote

51%

Saves the government money

Source: Australia Post commissioned survey, n=830

⁹ The Boston Consulting Group (BCG) modeling based on ABS and AEC data: physical voting costs average \$7.68/vote vs \$2–3 for digital votes, assuming 50–67% votes are cast electronically

¹⁰ Swiss Post e-Voting service

¹¹ Senate estimates hearing, February 2014

Weighing up the risks

As with any online platform, eVoting could be vulnerable to attack, and a relatively small subversion in key electorates could swing an election result. So it's important to manage the risks, especially if the system becomes increasingly open to people using their own devices and as the scale of use expands.

The survey found Australian voters trust eVoting results, whether it is through a touch screen in a polling booth (95% would trust the results) or using their own device at home (88% would trust the results).

However, they are concerned about the following risks:

Cyber attacks – security breaches could enable an attacker to read or change votes. Given the survey was carried out just after the 2016 Census it's no surprise this concern was top-of-mind in the survey results – with 23% of eVoters concerned about this risk if they vote on their own device at home.

Fraud – any loopholes that would enable votes to be altered or manipulated would affect the trust in the accuracy of an election result.

Barriers to eVoting for traditional voters

28%

Risk of cyber attacks

23%

Privacy of personal details

19%

Votes traced back to the voter

14%

Prefer voting how they've always voted

11%

Not comfortable using computers / internet

1%

Don't have access to computers / internet

Source: Australia Post commissioned survey, n=170 (traditional voters, more likely to be household duties, older families and retirees)

Q Which of the following reasons explains why you would not use electronic voting?

Australia's 2016 Census provides some additional context for these concerns. The Office of the cyber security Special Adviser's Review into the events, described the 2016 eCensus as a 'setback', and a 'serious blow' to the public's confidence in the ability of government to deliver secure digital services.¹²

The Review also suggested all government agencies could learn from the ABS' experience. Specifically:

- The importance of a co-ordinated crisis response and communication plan
- Cyber security risks need to be managed at every stage – from procurement to project governance
- Adequate DoS (denial of service) protections and controls must be in place
- The public needs to be reassured about their personal data privacy and security as part of any change program.

Worryingly, post-Census surveys indicated 32 per cent of Australians believe the data collected from the 2016 Census is now unreliable.¹³ They will need to be confident the final results of an election are robust and credible – despite any setbacks.



12 *Review of the Events Surrounding the 2016 eCensus*, 13 October 2016 – Office of the cyber security Special Adviser, Department of the Prime Minister and Cabinet
13 *ibid*

The global experience of eVoting

Around the world, eVoting has had mixed results.



Estonia was the first country to implement nationwide internet voting in 2005.¹⁴ During the pre-poll period, voters logged onto the system, verified their identity and cast their vote. Their identity was removed from the ballot before it reached the National Electoral Commission for counting, and voters could vote as many times as they liked during this period with each vote cancelling the last.

Just over 30% voted online in the Parliamentary elections in 2015 – and in the 2011 elections. It's estimated this saved the equivalent of 504,000 Euros in wages (11,000 working days).

However, an independent report in 2014 pointed out security holes in the system (which the government denied).¹⁵



The **United States** suffers from ageing machines with a range of capabilities – from direct recording electronic systems to punch-card voting machines.

Concerns with the reliability and security has led to a movement away from eVoting. 70% of voters in the 2014 mid-term elections cast a paper ballot rather than electronic, despite a \$3 billion investment in electronic voting machines after the 2000 election – when Florida's 'hanging chads' ultimately decided the result.¹⁶



Switzerland has trialled internet voting at confederation, canton and commune level since 2004.

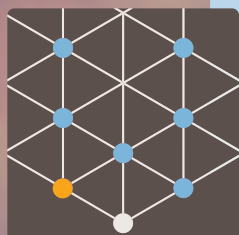
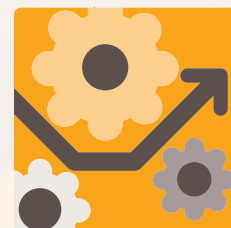
eVoting is mainly offered to citizens overseas, so the number of voters who can access the system is limited.

There has been a controlled introduction, with the choice of three eVoting systems for cantons to use.



In **New Zealand**, a proposed internet voting trial for the 2016 election was called off due to security and readiness concerns, but it remains cautiously open towards eVoting.

After a low voter turnout in local-body elections in Auckland (as low as 16.3% in some areas), an Electoral Office representative said the key to improving turnout (especially for younger voters) is to offer online voting in conjunction with postal voting.¹⁷



¹⁴ e-Estonia.com: *i-Voting*

¹⁵ *Second interim report on the inquiry into the conduct of the 2013 federal election: an assessment of electronic voting options*

¹⁶ *States ditch electronic voting machines*, The Hill, November 2 2014

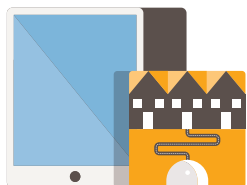
¹⁷ *Low turnout renews calls for online voting at local elections*, NZ Herald October 2, 2016

A new platform for eVoting

As the survey reveals, one in four Australian voters expect eVoting to be available by the 2019 federal election. We believe the capabilities of new technology will make this possible, and it is important to begin a staged approach to its implementation.

The development of this capability has clear benefits for all levels of government elections. But it could also be used to conduct referendums or plebiscites more cost-effectively and could apply to workplace or industrial elections, student groups or sporting clubs.

The rapid evolution of technology such as biometric identity verification, makes it possible to overcome many of the challenges with eVoting, and could provide a secure and convenient platform that is accessible to all voters.



1: Identity platform – digital identity management

A robust identity verification solution plays a vital role in a secure eVoting platform. This will ensure voters are eligible to vote, they vote in the correct electorate and only cast one vote. Australia Post is already working on plans for an open digital identity ecosystem that could be used for this purpose, providing a single digital identity credential that can be verified through biometric technology (such as a face scan).



2: Casting a vote – touch screens in booths and own devices

To achieve voter acceptance, an effective eVoting system will need to address citizen access and experience as well as data integrity and security. Providing a choice of channels – in-person at a polling booth, and online from their own or fixed device – will ensure the greatest flexibility for voters.

Our survey asked voters to choose their preference for eVoting; between a touchscreen in a polling booth and using their own device at home. Both were equally preferred.

For those who chose a touchscreen, the main reasons were improving the speed of declaring a result and making it quicker to vote. Those who chose their own device, said having greater flexibility on when and where they could vote was important.



3: Security – robust and demonstrably secure system

An eVoting platform will also need to protect data from unauthorised access and confidentiality breaches, including cyber security risks and fraud. Blockchain could be the core technology underpinning this solution, as it would allow people to vote from anywhere and provide a real-time audit of results.

A ballot could be cryptographically represented through blockchain to ensure the voter is anonymous, and their data is protected from public access.

Blockchain is still an emerging area of technology, but Australia Post is already investing in the technology required to underpin this platform – ensuring authentication protocols cannot be broken and intrusion detection protocols are in place.

Australia Post's cyber security Operations Centre monitors all our applications and infrastructure – and has, as yet, not had a significant data breach.



4: Choice – physical and digital options

To meet the needs of voters, physical voting channels will still be required. Our physical network of more than 4,000 Post Offices, including 2,500 in rural and regional areas, could provide that option.

For many years, Australia Post has assisted national, state and territory electoral commissions with postal voting. Our Reply Paid service is used by voters to return completed postal votes without any cost to the voter.

During an election period, we also have special arrangements to ensure postal votes are counted, sorted and delivered in the most efficient manner.

A roadmap to eVoting

One possible way to provide a robust eVoting channel, is with voters registering via a mobile device. Their information (and their vote) can be made anonymous, and they can change their vote until polling closes. They can also receive confirmation of their vote via secure text and can view live voting result feeds on the same device.

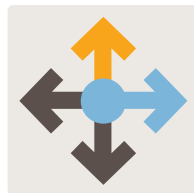
This seamless experience could provide a new level of engagement and involvement, and will be crucial as voting apathy grows amongst millennials and generation Y voters.

We recommend a staged implementation.



Stage 1

Localised trials of eVote app at small scale, to test voter behaviour and experience, as well as compliance and audit protocols



Stage 2

Work with government to evolve regulatory and legal constraints to accommodate voting at a parliamentary scale



Stage 3

Offer an eVoting solution to pre-polling voters (such as absentee, overseas, defence force and interstate voters, voters in remote areas, disabled or vision impaired voters) at a state election



Stage 4

Offer an eVoting solution to all eligible voters on an opt-in basis, with options to vote online via app, via touchscreen at a polling booth, assisted voting by phone and paper ballots with electronic scanning and counting



Stage 5

eVoting becomes the preferred voting method with high penetration

In conclusion

Twenty years ago, there was fear about the security, usability and accessibility of online banking. Today, we make payments online every day. And with the rapid acceleration of cardless withdrawals, mobile payments and crypto-currencies, the potential for real-time transactions is well and truly here.

Although there are additional challenges for conducting a robust, trusted and anonymous election process, these same technologies can be applied to eVoting.

The benefits to both voters and government are clear – with the potential to achieve; faster results, reduced costs, improved convenience and greater accessibility. Voters have told us they want it, and expect it by the next Federal Election.

We cannot expect eVoting to completely replace traditional voting. To provide true choice and accessibility in a democracy with compulsory voting, we need to consider a holistic solution that combines digital, postal and in-person options in a way that optimises the benefits of each channel – without compromising security or trust in the election result.

We believe Australians are ready for eVoting, and that it should be part of an election platform that provides true choice to every voter.

We welcome further discussion on this important issue.



How Australia Post can power a citizen-first approach

Australia Post already supports a fair and accessible election process; by providing enrolment forms in Post Offices around Australia, delivering enrolment campaign mail to more than 11.5 million households in the lead-up to elections and by enabling voters to cast a postal vote at no cost via our Reply Paid service.

We also have special arrangements during an election period to ensure postal votes are counted, sorted and delivered in the most efficient manner.

Working extensively with all levels of government, Australia Post is committed to providing greater choice of how people can access services as part of a multi-channel engagement strategy. And we also support the AEC and other electoral bodies as custodians of Australia's federal and state electoral process.

We have already invested in digital identity, payment and information management services – because we know that delivering secure, future-proof solutions will require a robust framework and infrastructure.

We also understand the capabilities needed for bringing a community along a journey of change.

