cost of **voting**

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areeq chowdhury

rt hon john mcdonnell mp

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hannah bardell mp

rt hon tom brake mp

Areeq Chowdhury

If democracy was reborn tomorrow and we came together to decide how our electoral system should operate, would it look remotely the same as it does today? In an age where coins have been replaced by cash, cash has been replaced by cards, and cards have been replaced by contactless smartphone payments; would we replicate a voting system concocted in the 19th century?

The idea that we would decide to create a system based on spending millions and millions of pounds of taxpayers' money on posting poll cards, hand-opening thousands of envelopes, and purchasing 300,000 pencils seems far-fetched to me. In a digital era, in an innovative country like the UK, we should reimagine a better democracy.

As this report outlines, voting online would be the most preferred method of choice for voters under the age of 50, and has the potential to save up to £18m per election. To put that into perspective, that could pay for the annual salary of up to a thousand teachers or nurses. These savings would likely increase further in the long-term as the adoption of online voting increases amongst voters. This report estimates that the cost-per-vote following the introduction of online voting would fall by more than a quarter.

The cost of the current analogue system is more than just money, however. The cost is thousands of voters overseas having their ballots undelivered, hundreds of thousands of voters with disabilities being unable to cast an independent ballot, and millions of young people alienated from the political process. The added value of modernising elections is to have a democratic system fit for the 21st century, true access for all voters with the capacity to further educate existing voters, and the potential to engage some of the 10m to 15m eligible voters that do not currently vote.

With the publication of this report, WebRoots Democracy has now presented extensive research on three key areas of online voting: the benefits, the security challenges, and the cost. We hope the UK Government and devolved administrations across the country will build upon this and begin to pilot online voting for elections.

Areeq Chowdhury

Chief Executive, WebRoots Democracy

Rt Hon John McDonnell MP

Labour welcomes the publication of WebRoots Democracy's report into the economics of online voting. They have provided compelling evidence that digital technologies can provide a cost-effective method for increasing the number of people who can participate in elections. As long as the secrecy and verification of the ballot box are preserved, Labour believes that every citizen should be able to exercise their right to vote easily and conveniently with the most advanced tools available.

Rt Hon John McDonnell MP

Shadow Chancellor of the Exchequer

Labour Member of Parliament
for Hayes and Harlington

Lord Lexden OBE

At a time of unprecedented technological change with everything from our taxes to our weekly shop now being processed online, it is essential that our public services keep pace. There is no greater public service than the organisation of elections through which the people cast their votes to decide who governs them. I am therefore very pleased to welcome this important report from WebRoots Democracy exploring the cost of introducing online voting in UK elections.

Online voting is a reform that would enable British citizens overseas, our brave Armed Forces, and our citizens with vision impairments and disabilities to participate fully and easily in our democracy. As can be seen from the survey data in this report, it is a reform that would be popular amongst our younger generations above all – and they are our future.

It is a reform that has been called for by numerous disability and youth organisations, and its immense potential needs to be fully understood. That is what this report helps us to do.

As the report shows so well, the current voting system is incredibly analogue. With hundreds of thousands of pencils being required and millions of pounds being spent on opening envelopes, our voting system does not reflect the 21st century in which we live. Digital advances have made many industries more cost effective and provided better value for money. This report sets out how these major advances can be extended to our democratic system, too.

Whilst the implementation of online voting would cost a significant amount in the short-term, the return on investment will be huge in democratic terms; greater numbers of people voting and true accessibility to the ballot for all of our electorate. The time has come for us to discuss and agree how this change can best be introduced so that Britain can lead the way, globally, in establishing a digital democracy.

Lord Lexden OBE

Conservative Member of the House of Lords

Hannah Bardell MP

The UK Parliament is often described as the "Mother of all Parliaments" but as time goes on, it becomes less and less clear how true this is. The institution of Parliament appears archaic when you compare it to the way we live our lives in 2017. Whilst tradition can be viewed as nostalgic and something to be maintained, it is not sensible to preserve it at any cost, in every case. To keep up with the constituents we are elected to serve, our institutions and democratic processes should better reflect the modern day. They should be accessible, inclusive and engaging. If embraced, change can even be positive.

It is hard to ignore the fact that 12.9m eligible voters did not take part in the EU referendum in 2016. We should always be looking at what more can be done to engage our people with our political processes. It is never good enough to shrug our shoulders and accept the status quo when things could clearly be better.

Technology has brought great challenges, but even greater advances for our society. As this report sets out, the introduction of online voting would be a vital, cost-effective reform that could enable some of the most marginalised groups in our country to exercise their right to vote. Young people, who increasingly grow up in a technological world might be included more if they could vote electronically. Similarly, voters with disabilities and voters overseas should all be given accessible methods of voting at elections. It seems backward that in 2017, we are yet to enable a process which effectively allows wider inclusion of society.

In Scotland, we have been innovators of democratic reform. Votes at 16 and a mixed-member proportional voting system are in place for Scottish Parliament elections. E-counting is used in local government elections. In Holyrood, members vote electronically better allowing the much sought-after work-life balance that our modern society continually strives for. I agree with WebRoots Democracy that the UK Government should undertake pilots of remote online voting prior to the 2022 General Election. Progress will never be made by simply standing still.

Hannah Bardell MP

Scottish National Party
Member of Parliament for Livingston

Rt Hon Tom Brake MP

As we approach the final months of the year, it's safe to say that 2017 already feels like it will be remembered as a momentous year for the relationship between politics and the digital world. And I'm not only talking about President Trump's ongoing live commentary in 140 characters, the rise of fake news or the endless memes of our political leaders in the recent General Election.

In 2013, I wrote an article arguing that Facebook had made me a better MP. In that piece I argued that digital media was absolutely indispensable to my daily work on behalf of residents in Carshalton and Wallington. It has helped me connect with my constituents in a way which simply wasn't possible in 1997 when I was first elected. Four years on and this claim is even more relevant today.

New technology has provided the means to move from our existing representative democracy to a participatory democracy, which could represent a fundamental constitutional change, affecting the role of MPs and their constituents, as well as the processes by which we govern.

Our democracy is already a full-time player in the digital world so why not modernise some of our institutions and processes, like our electoral system, to catch up with this new era? Adopting online voting to make the most basic exercise in our democracy much easier is the obvious one. Imagine the implications for the EU referendum or the last General Election if 4 million more people had voted.

I welcome this excellent report produced by WebRoots Democracy. The report's findings make it clear that implementing online voting would be cost-effective in the long-term, make voting more accessible, including for people with disabilities and significantly increase voter turnout.

Many politicians look suspiciously at the digital world and the possibilities it offers. Traditionalists fear these technologies, the impact they'll have on the balance of power, our rules and institutions. In an age of online banking, where you can do your groceries online or even buy a house, I say bring it on.

Rt Hon Tom Brake MP

Liberal Democrat Member of Parliament
for Carshalton and Wallington

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executive summary

Purpose and background

The three key questions around online voting for any Government are focused on what the benefits are, how security challenges are faced, and the amount of money that it will cost. We have previously undertaken a lot of research of the benefits of online voting. Those who would mainly benefit are young people, those with disabilities, and those based overseas. We have also published a lengthy document on potential methods of tackling the cyber-security challenges that would arise.[1]

In this report, we seek to answer the final key question of how much the introduction of an online voting option in the UK would cost to implement.

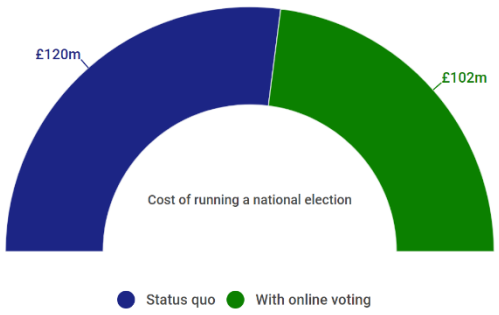
This report is based upon the findings of more than 400 freedom of information requests, a YouGov poll we have commissioned, and a policy roundtable held in London. It also draws upon the digital transformation experiences of the UK Government as well as examples from countries abroad such as Australia and Estonia. As well as estimating the cost of online voting, it provides a granular breakdown of current spending on election administration.

Recommendations

1. The Government should pilot an online voting option for elections in advance of the 2022 UK General Election.
2. The Government should publish their own analysis of how much they consider online voting would cost to introduce.
3. Election expenditure by Returning Officers should no longer be exempt from the Freedom of Information Act.
4. The Cabinet Office and Electoral Commission should publish a granular breakdown of election administration spending in a more open and timely fashion.
5. The Government should adopt the recommendation made in the AEA's 2017 report for email collection at voter registration to be mandatory.
6. The Government should consider the potential of opt-in electronic poll cards.

Key findings

- The estimated cost of administering the 2016 EU referendum in the UK is £120m. According to the Government, the cost of administering the 2017 UK General Election was £140m.
- The implementation of online voting would cost an estimated £140m, meaning the first national election with online voting would cost £260m to administer. Subsequent national elections would then cost an estimated £102m to administer.
- If introduced as an option, the proportion of people voting at a polling station would fall from 78% to 38%. 33% would choose to vote online, followed by 21% by post.
- Online voting could increase voter turnout by 4.7m to 79%.
- The cost-per-vote with online voting would rise to £7.03 in the first national election and fall to £2.76 in subsequent elections, reducing the cost-per-vote by 26% compared with the 2017 General Election.



- The highest costs involved with administering elections currently are staffing polling stations (£18.5m); printing and distributing poll cards (£10.7m); hiring polling stations (£8m); counting ballot papers (£6.3m);

distributing postal votes (£6.2m); printing ballot papers (£4m); and processing postal votes (£3m).

- An estimated £32,000 was spent on purchasing 312,000 pencils for the EU referendum.
- Online voting would reduce the overall length of the vote count by 3.5 hours.

About this version

This is an archived, second edition version of the Cost of Voting report. The formatting of this version differs to the previous edition published in 2017, however the content remains the same.

For any queries please contact hello@webrootsdemocracy.org.

cost of existing elections

cost estimates based on foi results

2014 european parliament election administration spend

cost of existing elections

When casting a vote in a polling station during an election, the cost of organising and running an election is not often discussed or made clear to the taxpayer. There are several costs and procedures used to administer elections in the UK, from printing ballot papers to the cost of pencils used in polling stations. There is no definitive figure used to determine how much an election costs, however, WebRoots Democracy have sent over 400 freedom of information (FOI) requests on the cost of administering elections in each voting area of the UK to help provide a clearer picture on how much elections cost to the UK taxpayer.

In Westminster alone, the cost of administering the EU referendum vote totalled £204,689.04. This included spending £69,847.20 on staffing polling stations and £18,441.73 on distributing postal votes in the UK. Similar costs were found in North Tyneside, with the latest figures totalling £178,810.43. These costs included spending £18,284.16 on processing received postal votes and £27,718.56 on hiring polling stations. What is clear from the responses WebRoots Democracy has received from the FOIs is how many hidden costs there are involved with running and upholding the current system of voting in the UK. Many of the highest costs in each voting area were associated with distributing and receiving postal votes and staffing polling stations – both costs that could be reduced with the introduction of online voting.

During national elections, Returning Officers administer and account for costs in accordance with guidance from the Cabinet Office. A maximum recoverable amount (MRA) is allocated to each administering authority and calculated in relation to several factors including, principally, the size of the electorate. Dr Toby James shared his *'The Cost of Elections'* report with us, which demonstrates that local authorities are increasingly over-budget, for example in 2015-16 electoral services were on average 129% overspent.[2] The report demonstrates that where local authorities suffer from a lack of funding, public engagement strategies, i.e. those to encourage voter registration, are often first to be cut.

58 local authorities across the UK responded to our FOIs with a granular breakdown of spending on administering the 2016 EU referendum. 177 rejected our request citing a clause that exempts Returning Officers from the Freedom of Information Act. During our research, an email was accidentally sent to us by a democratic services officer at one of the local authorities. In the email, the council employee said:

> "When I get it [the FOI], I will use the usual get out clause that the Returning Officer isn't listed under the FOI so is exempt."

This 'get out clause' was used by multiple local authorities with some responses quite clearly copied and pasted.

45 local authorities said that they do not have the information and 138 have failed to send a response, despite the 20 working day limit to respond to FOIs. Through the course of this research it became clear that two significant costs were omitted from our FOI requests. These were the costs of printing and distributing poll cards, and the cost of hiring count centres. Some local authorities provided this information of their own volition - the data from which we have used in calculating our estimate.

The Government's estimate for the cost of administering the 2016 EU referendum is £142m. The estimate for the 2017 UK General Election is £140m. We have therefore used £140m as a benchmark for our own estimate.

Using the data provided by the 58 local authorities, ONS data on electorate sizes[3], and the 2016 Electoral Commission report on the cost of the 2014 European Parliament elections[4] our estimate is that the EU referendum cost £120m. This is a significant distance away from the Government's figures and highlights that there may be even greater hidden costs involved with the administration of elections.

Our estimates for the total amount spent on individual tasks that may be affected by online voting, is set out in the table below. The methodology for this estimate is set out in the

appendix. As can be seen, the highest costs are staffing polling stations (£18.5m) and the printing and distribution of poll cards (£10.7m). Other estimated costs which are not included in the table below are the costs of candidate mailings (£42m), returning officer services (£2.5m), and other conduct costs such as regional returning officer costs (£2.5m). Those are costs which are unlikely to be affected by the introduction of online voting.

Cost estimates based on FOI results

Item	Cost (£m)
Printing ballot papers	4
Distributing postal votes within the UK	5.9
Distributing postal votes abroad	0.3
Staffing polling stations	18.5
Counting ballot papers	6.3
Administering postal votes and proxy vote applications	2
Processing received postal votes	3
Promotional material highlighting the date of the vote across the local authority area	4.8
Pencils at polling stations	0.03
Polling booths	1.9
Ballot boxes	0.4
Tactile voting devices	0.1
Training staff (both counting staff and staff at polling stations)	3.4
Signs directing voters to the polling station	0.2
Polling station signs	0.3
Hiring polling stations	8
Transporting ballot papers	1.3
Storing completed ballot papers after the election	0.3
Provision of disabled access at polling stations	0.2
Printing and distributing poll cards	10.7
Hiring count centres	1.8

2014 European Parliament election administration spend

In December 2016, the Government published a report setting out details of the administration expenditure for the 2014 European Parliament elections. In this election, the Government's report states that £10.3m was spent on preparing, printing, and distributing poll cards to every person on the electoral register. We have used this cost and the cost of hiring count centres in our table above as these were omitted from our FOIs. These costs have been adjusted for inflation. Other costs on postal votes and counting ballot papers are lower than our estimates and is likely in part due to a fewer number of votes being cast and processed. The voter turnout in the 2014 European Parliament election was 30%, less than half of that experienced in the 2016 EU referendum.

The information published by the Government does not delve into as granular a breakdown as our estimates, however it does include additional costs which have not been considered such as the cost of security. They state that the cost of security for the counts was £250k in 2014. They also include costs of travel and subsistence for staff of over £700k as well as translation costs of £1,700. It does not include itemised costs of purchases such as pencils in polling stations. Based on there being 38,983 polling stations, 4 polling booths in each station, and 2 pencils per booth, we estimate that around 312,000 pencils were required for the EU referendum poll at a cost of £32,000.

Comparing the data provided to us via the FOIs, it is possible that some of the differences are caused by the greater volume of votes in the 2016 EU referendum. For example the count cost of Bassetlaw is at least £17,000 according to our FOI for the referendum, but only £8,600 for the 2014 European Parliament election. Similarly for Highland, the count cost for the referendum was £60,000 but only £26,000 for the European Parliament election.

cost of online voting

online voter registration

2012 government digital efficiency report

australia

estonia

cost components for online voting

cost of online voting

There are numerous potential methods of deploying an online voting option for elections and, depending on the chosen method, there will be a number of new costs that will arise. These include the cost of designing the system, the cost of pen-testing, the cost of technical support, and the cost of implementing a new audit system. Other costs will include the cost of a public education campaign to help the public understand how the new voting system works as well as the cost of an emergency response team to deal with potential attacks as they have in Estonia.[5]

Due to the general lack of data that is available on the costs of online voting systems around the world, these costs are difficult to estimate. What is clear, however, is that a number of these costs would be one-off costs and whilst high in the short-term, in the long-term will amount to much smaller costs per election.

According to a joint UNDP, Norwegian, Swedish, and Moldovan feasibility study[6] on online voting published in 2016, the cost of introducing the system is dependent on factors including:

- voting protocol selected
- hardware required
- software licences and custom development costs
- complexity of the solution
- voter authentication methods
- personnel training.

For an electorate size of 618,842 people, they estimated the cost of implementation at between €400,000-€2,000,000. Using the highest estimate, this equates to €3.23 per voter. Using the conversion rate at the time of writing of 0.89 and an electorate size of 46m, this would translate to a cost of around £132m in the UK.

However, it is important to look at this project in the context of implementation within the UK. Therefore, in addition to looking at the research and data available from countries which have implemented online voting, we have also looked towards similar digital transformation projects in the UK, mainly the introduction of online voter registration which was introduced in 2014.

Online voter registration

In 2010, the UK Government announced plans to introduce a new system of individual electoral registration (IER) in which members of the electorate would add themselves to the electoral register individually rather than by household. Previously, a 'head of household' was required to add all eligible residents to the register as one. As part of these plans a new method of online voter registration was introduced where people could apply to join the electoral register by visiting a Government website.

Due to the high sensitivity and importance of online voter registration to the democratic process, this project is a strong indicator of what the potential costs of implementing online voting would be. This was also raised as a strong comparator at our roundtable. The process of online voter registration involves verification that the person registering is who they say they are, and requires the transmission and acceptance of sensitive information about the individual. The same requirements of strong cyber-security defences, safe internet use, and trust in the system exists for online voter registration as it would for online voting. Voter registration is as paramount to the robustness of the democratic process as the act of voting itself. Additionally, similar basic requirements such as the ability to withstand distributed denial of service attacks would need to be in place for the voter registration website.

In the Government's Spending Review of 2010, a total of £108m was allocated to meet the cost of implementing IER. According to the explanatory notes of the Electoral Registration and Administration Bill, this amount included £85m resource funding in 2014/15 to fund registration officers to make contact with each potential elector individually and invite them to register. In a spreadsheet published by the Cabinet Office, £1.5m was allocated to change management to help local authorities manage the change to their internal processes for such a significant reform.[7]

In 2014, additional funding of £4.2m was announced to enable local authorities and other organisations to maximise the rate of voter

registration ahead of the transition to IER. This funding covered activities such as targeted canvassing, innovative approaches, and outreach in schools. A further £9.8m was announced in January 2015 to support the costs of activities aimed at increasing the completeness of the electoral register. In February 2015, an extra £20m was made available to again support the cost of activities to maximise the number of people registering to vote.

In July 2015, additional funding of £3m was announced to help Electoral Registration Officers target people on the register who had been carried forward from the old household register but were not yet registered under IER.

Total estimated costs of introducing IER was therefore £145m. Whilst much of this cost was related to outreach, it would not be a stretch to imagine the costs of introducing online voting involving similar components.

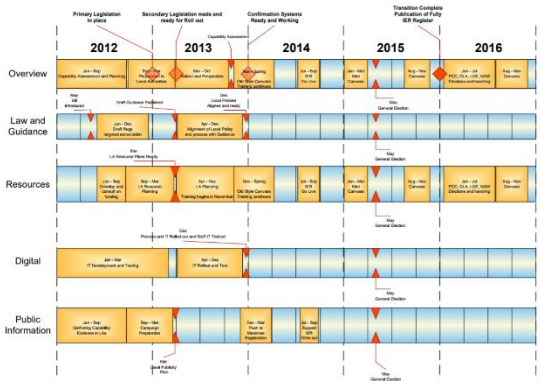
According to a Government Digital Service (GDS) blogpost[8] from July 2014:

> "The digital service allows anyone to register to vote online, from any device connected to the web. It's incredibly quick and simple - it takes less than five minutes. All you need is your National Insurance number (or your passport if you're abroad)."

In another GDS post[9], it was outlined how the online voter registration service was the first time the Government was able to:

- link all local authorities in England, Scotland, and Wales with a central national service across the Public Service Network
- build a way to verify people against the DWP system to allow online registration, authenticated through National Insurance number
- build a system which works across multiple security levels on a national scale in a way that is safe, secure, and transparent to users
- develop an open RESTful API (an application programming interface which exposes some of a program's internal functions to the outside world) which underpins a national service.

There is therefore already strong and similar infrastructure in place that could be looked to when implementing an online voting option in the UK. The planning and implementation would also likely be very similar with online voting. The Government's implementation plan for IER is shown in the diagram they published in a policy paper below.[10] The IT development, testing, and roll-out took two out of the five years of implementation.



2012 Government Digital Efficiency Report

In 2012, the UK Government published its Digital Efficiency Report which argued that considerable savings could be made from bringing transactional services offered by the Government, online.[11] It argued that savings from digital transformation are likely to come from four key areas:

- the reduced staff time involved in processing digital transactions compared to offline alternatives
- estates and accommodation
- postage, packaging and materials
- the costs of supporting IT systems.

Whilst they make clear that the costs of digitising services is 'not trivial' and that the savings potential will 'not be realised immediately', they argued that significant savings could be made for the public sector. The report found that the higher the volume of transactions moved online, the higher the savings. For a volume of over 8 million transactions, they said that annual savings of £320k per 1% shift to digital could be made.

Using figures set out later in this Cost of Voting report, this would equate to savings of around £12m.

The Government's report suggests that higher volume services benefit from economies of scale that 'allow them to realise greater savings from each incremental improvement in digital take-up.'

By function, they set out different levels of savings. These include functions such as ordering goods, providing information, and requesting benefits. Using what would be a similar function of 'making a payment (taxes and fines)', annual savings of £130k per 1% shift to digital could be made. Using our figures, this would equate to savings of around £5m.

Australia

Online voting has been introduced as an option in elections in New South Wales, Australia since 2011.[12] The New South Wales Government, which covers the city of Sydney, was reported to have spent $3.6m on expanding its online voting system, iVote, for the 2015 state general election. In this election, 280,000 votes were cast online, giving a cost per online vote of $12.80, or £7.71.[13]

In New South Wales, only those who are vision impaired, with a disability, live in remote locations, and away on polling day were eligible to vote online.

Mark Radcliffe, Director of Election Innovation at the New South Wales Electoral Commission informed us that the total costs for the online voting system in 2011 was $3.5m. He also told us that the budget for the online voting system to be used in the 2019 State General Election is $5.5m. This would equate to around £3.25m. It is important to note, however, that the online voting electorate size in New South Wales would be significantly smaller at around 500,000 people. We would expect around 10m people in the UK to vote online in a national election.

Estonia

In Estonia, where online voting was first introduced in 2005, one of the long-term purposes of the project was to 'improve the cost efficiency of the electoral administration.' Due to Estonia already having a national population register and an authentication system using ID cards, the experience for the Estonian Government has not been as expensive as it could have been.

According to a European Commission paper, in the six years from development phase to implementation, the costs were less than €500,000. After the first implementation of online voting in 2005, the cost of establishing the new voting method made up 20% of the total electoral administration costs. It fell to 5% in 2009.[14]

According to a submission to the Speaker's Commission Digital Democracy, which called for pilots of online voting in 2015, Smartmatic, whose partner organisation Cybernetica runs the Estonian online voting system reported that the cost of voting had fallen to €0.30 per vote after online voting was introduced.[15] They said:

> "Even after going through two generations of the system in seven national elections over the past ten years, the Government of Estonia has only invested around €1,000,000 in total."

Another paper by the European Parliament claims that online voting in Estonia is 2.5 times cheaper than the paper alternative.[16] It is not clear however how this number is calculated or to which specific costs it refers to.

Cost components for online voting

There are several new cost considerations that would come into play with the introduction of online voting. These include:

- architecture and design of the system
- identity authentication
- professional hackers to test the system for weaknesses
- network flood defences
- technical support (e.g. call centre)
- technical training for staff
- a live monitoring system
- a public education campaign
- an emergency response team to deal with potential attacks as they have in Estonia.

As online voting systems do not come in off-shelf packages, it is difficult to be certain of the actual costs. If implemented, the Government would set up a tender process which may lead to a variety of bids to provide services from the private sector. This would affect costs significantly as providers compete against each other on price and quality. However, if you allocate a notional figure of £1m to each bullet point highlighted above, this would come to £9m. Many of these costs, such as the public education campaign, creating a system of identity authentication, and the design of the system, would be one-off costs in the short-term.

Other costs such as technical training for staff and the costs of an emergency response team may be required at every election. This could equate to around £6m of additional costs per election. However, not all of these costs would necessarily be mutually exclusive to online voting, for example the training of staff would exist regardless in the paper system. With online voting, this training may be different and be required for fewer employees than is the case now.

Based on the experiences of other countries around the world, experiences of digital transformation projects in the UK, and taking into consideration the new cost components of online voting, we are estimating the spend required for an online voting option as £140m for the implementation phase, followed by £6m for each subsequent election.

Whilst online voting will not have a number of the same costs required for the implementation of IER, it is clear from the number of occasions that additional funding was required in addition to the discussions which took place during our roundtable, that there are likely to be a number of unforeseen costs.

It is not beyond the realms of possibility that online voting could cost a similar amount to the £142m spent on IER. Change management, public education campaigns, and the development of new robust online systems would be required for online voting as it was for IER.

This is higher than the potential costs suggested during our roundtable of £100m.

As highlighted earlier in this chapter, translating the figures from the joint UNDP, Norwegian, Swedish, and Moldovan Government feasibility study to the UK, would result in an implementation cost of £132m. Whilst the figures from Australia and Estonia appear to vary wildly to each other, it is important to note that those countries have a very specific context. For example, Estonia already had a national identity scheme in place to start with.

Subsequent elections would require spend on staff, re-design of the system, live-monitoring, training, defences, and technical support amongst other costs. As will be set out in the next section, as more people move towards an online voting channel, existing spend on elections would fall. However, based on our research and available data, we are estimating a cost of £6m to be spent on the online voting component per national election.

impact of online voting on existing costs

preferred method of voting
bbc results night coverage
cost-per-vote analysis

impact of online voting on existing costs

When looking at the cost of implementing an online voting system in the UK it is clear that its introduction would come at a higher cost than the existing system in the short term. In this report we have estimated that the initial cost of administering the first national election with online voting would be around £260 million. According to our estimates the cost of a national election is around £120 million. Initial costs are therefore substantially higher (£140 million) with online voting due to the new systems and processes that would need to be established. Following initial implementation, the cost of subsequent deployments will be substantially lower and could reduce the overall cost of a national election.

To gain a better understanding of how the introduction of online voting will impact election administration costs, we commissioned a YouGov poll of 1,680 adults across Great Britain asking them which method of voting they would use if the options of online, at a polling station, by post, and by proxy were available. This data is then used as a basis for our assumptions on how the cost distribution would alter with the introduction of an online voting option.

Preferred method of voting	Total	18-24	25-49	50-64	65+
At a polling station (%)	38	33	35	40	46
Online (%)	33	45	38	33	17
By post (%)	21	8	16	22	33
By proxy (%)	2	2	2	1	0
Don't know (%)	7	12	8	4	4

The full results of our YouGov poll can be found in the appendix.

In the 2016 EU referendum, 78% of people voted at a polling station and 22% voted by post.[17] In order to estimate what impact a move towards online voting would have, we have identified variable costs that are exclusive to polling stations and postal votes and adjusted them in line with our YouGov data. We have also identified costs which are exclusive to paper voting such as printing ballot papers, counting ballot papers, and transporting ballot papers to count centres.

Costs exclusive to polling stations include staffing polling stations, hiring polling station venues, and purchasing pencils for polling stations. Costs exclusive to postal votes include distributing postal votes, administering postal vote applications, and opening postal votes.

Our estimate for polling station exclusive costs totals £29,412,122. For postal voting it is £11,275,514. Other paper exclusive costs total £24,327,753.

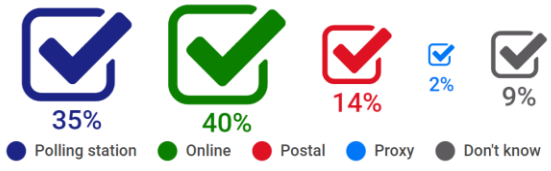
Based on our survey, polling station use would decrease by 38 percentage points to 40% and postal voting would decrease by 1 percentage point to 21%. Paper exclusive costs would be 61% instead of 100%. As such, our estimates for post-online voting in-person, postal, and paper costs are as follows.

Cost	Status quo	With online voting	% change
Polling station exclusive	£29,412,222	£15,025,350	-49%
Postal voting exclusive	£11,275,514	£10,911,788	-3%
Paper voting exclusive	£24,327,753	£14,839,929	-39%
Total	£65,015,389	£40,777,067	-37%

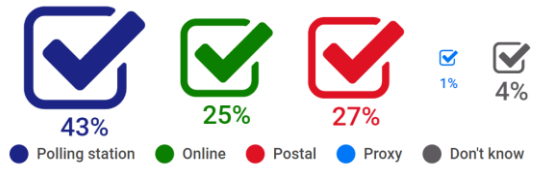
As can be seen, the move away from paper-based methods of voting could lead to significant reductions in the variable costs associated with paper-based voting. For example, fewer people voting by paper means fewer votes are required to be hand counted or fewer postal vote envelopes are required to be opened. Before taking into account the costs of introducing online voting, costs are already down by 37%.

Taking into account our estimate of £140m of initial spend required for online voting, this would take the cost of administering the first national election with online voting as £260m with each subsequent national election costing around £102m. Per national election, this would therefore result in savings of around £18m (£24m savings vs £6m new costs).

Preferred method of voting: 18 to 50 year olds



Preferred method of voting: 50 years and older



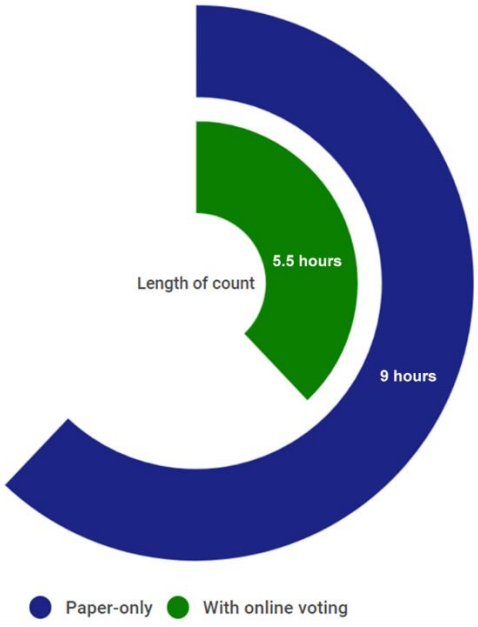
BBC results night coverage

For the purposes of this report, we are looking to explore the financial impact on areas of public spending generally, not necessarily with regards to tax expenditure alone. We have therefore looked at the impact online voting may have on how the television licence fee money is spent on the BBC's results night coverage. This is in relation to the BBC's coverage of the election results as they come in following the close of the poll. The length of the programme is dependent on how long it takes for results across the country to be counted and announced.

As one of the probable impacts of online voting is the reduction in the amount of paper votes cast, and therefore a reduction in the number of paper votes to be counted, it is reasonable to assume that the length of the count will be far shorter. This is if you accept that the online votes would be counted far quicker, perhaps even instantaneously.

The following estimate is based upon the 2016 EU referendum results coverage. According to estimated timings published by the Electoral Commission at the time, the final results were declared at 7am, following nine hours of counting and verification.[18] The coverage on the BBC lasts longer than this, however our estimate is based on nine hours, and on our YouGov poll assumption that an online voting option would result in only 61% of total votes being cast by paper. We will therefore assume that the paper vote would be counted 39 percentage points quicker. On this basis, the count would be completed after 5.5 hours at 3.30am.

Based on content, distribution, and support costs, and using the BBC's 2016/17 Annual Report figures on cost and expenditure on the BBC News Channel (as the coverage is most likely to require similar costs of production as a news programme than other content on BBC One), we are estimating the cost of nine hours coverage on BBC One as £64k.[19] This does not take into account expenditure on social media coverage, predictive graph development, or on BBC radio coverage. This is therefore, likely to be a conservative estimate. With a shorter vote count of 5.5 hours, we are estimating that around £20,000 would be freed up to be spent elsewhere on other BBC One content. This would be a saving of 31%.



We have submitted an FOI to the BBC for the actual amount spent on BBC referendum night results coverage.

Cost-per-vote analysis

In order to get a full picture of how money is being spent on election administration, the value of the expenditure should be measured. For this, we will measure it by 'cost-per-vote'. Looking at the most recent national vote, the 2017 UK General Election, we will compare the cost-per-vote to the potential cost-per-vote that could arise with online voting.

Assuming our £120m cost for administering a national paper-only vote is accurate, the cost-per-vote of the 2017 UK General Election based on 32,181,757 voters is £3.73.

One of the key benefits of the introduction of online voting is the potential it has to increase overall voter turnout. For particular sections of society such as voters with vision impairments and disabilities, or voters based overseas, it is clear to see how an accessible, remote online voting system would boost participation at elections. It is more difficult to predict what this effect will be on the wider electorate. With the electorate changing at every election, quite limited insights can be gained from looking at the factors that motivate certain groups of voters to vote or not vote at an election.

Equally, whilst other countries around the world can be used as an indicator of whether or not online voting could have a positive effect on voter turnout, the context of these countries are often entirely different to the UK, so could be akin to comparing apples with oranges. Since introducing an online voting option in 2007, the turnout in Estonian Parliamentary elections has increased by 6.2 percentage points.[20] Following the 2015 state election in New South Wales, one in ten users said they would not have cast a vote had they not been able to do so online.[21]

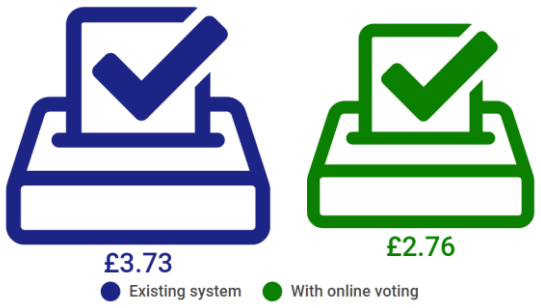
It is also important to note that even if overall voter turnout was to fall following the introduction of online voting due to other factors affecting the election, it is still possible and likely that online voting will encourage individuals to cast a vote who may have otherwise not done so. Online voter registration serves as a good example as to how an online platform can enable many traditionally disenfranchised groups, such as young people, to participate due to factors such as social media promotion and celebrity endorsements.

To understand what the impact on the cost-per-vote value would be following the introduction of online voting, we have nonetheless calculated our own estimate on what we believe turnout could be increased to. This estimate is based on three different surveys. One conducted by the Electoral Commission for their recent report, *Voting in 2017,* in which they conducted 6,154 interviews post-election in March, May, and June of 2017.[22] The second is a survey undertaken by Atomik Research and Cable.co.uk of 1,746 people in June 2017.[23] The third is a WebRoots Democracy/YouGov survey from July 2016 of 1,736 people.[24] The Electoral Commission study looked at the reasons why non-voters did not take part in the election and the other two surveys looked at whether non-voters would have voted had they been able to do so online. This is the only practical method a prediction of how voter turnout may be impacted can be made.

In the Electoral Commission study, 30% of non-voters said they did not vote in the election because they 'had not had time', 'were too busy with work', or were 'away on polling day.' In the Cable/Atomik survey, 42% of non-voters said they would be likely to vote if they could do so online. 29% of non-voters in the WebRoots Democracy/YouGov poll said they would have voted in the EU referendum if they had been able to do so online. Applying these percentages to the number of non-voters in the 2017 UK General Election results in the following estimates.

Survey	Total number of non-voters in GE2017	More likely to vote if online method available	Estimated turnout
Electoral Commission (2017)	14,546,648	4,363,994	78%
Cable/Atomik (2017)		6,109,592	82%
WebRoots Democracy/YouGov (2016)		4,218,528	78%

Using a simple average of these three figures, our estimate is that online voting could increase voter turnout up to 79%. A voter turnout of 79% at the 2017 UK General Election would equate to 36,991,733 voters. Applying this figure and assuming our estimate that the first national election with online voting would cost £260m, the cost-per-vote in that election would be £7.03 per vote. Assuming the 36m voters figure stays the same for the subsequent national election, costing £102m, the cost-per-vote would fall to £2.76. This would therefore reduce the cost-per-vote by 26% compared to the 2017 UK General Election.



policy roundtable

policy roundtable

On Wednesday 11th October 2017, we organised a policy roundtable for this report in London with election experts, academics, and technologists. The roundtable looked at the current costs of elections, examples of digital transformation in the public sector, and the costs associated with online voting. The list of attendees at the roundtable can be found in the appendix.

The first part of the meeting covered the current costs of the elections. We asked what the main and hidden costs are of administering elections and referenda in the UK. Various potential hidden costs were raised by attendees. A significant hidden cost is candidate mailings - totalling £30-40 million per election. As Simon Hearn, the Deputy Chief Executive of Electoral Reform Services explained, every candidate in an election is entitled to send a certain amount of material and that cost is covered by the government. Such content could easily be shared online and there is already a move towards this, as was the case in the Police and Crime Commissioner elections.

Dr Toby James, who has been researching the current cost of elections at the University of East Anglia, brought up the issue of Returning Officers' (ROs) pay, which has received a lot of attention in Scotland recently. Returning Officers can claim a fee for running the election, which is independent and in addition to their salary as a local government officer. With elections becoming more frequent, some returning officers in larger councils have been able to reclaim considerable sums.

Angela Holden, from the Association of Electoral Administrators (AEA) raised the topic of local authorities recharging for the full costs of conducting a national election more so in recent years due to local authority budget pressures. She said that not all costs are covered by central government as a direct election expense, and that some costs around the electoral register are covered by the local authority as an Electoral Registration Officer function and as such will not show up on the claim forms submitted to the Cabinet Office.

Other costs raised include the cost of the local authority notifying the public that an election is taking place, which is currently done with a hand-delivered Writ for every Local Authority. Anna Wallace, from PwC, added that there may be wider costs to the economy and the environment that arise out of paper-based voting:

"If it takes me half an hour to walk to the polling station and back, or I come in to the office late in the morning, what's the cost of lost productivity? And what about the environmental cost: the printing, the postage of the candidate mailings, what's the carbon footprint of all that?"

The next part of the meeting touched on how the move towards online voter registration has impacted administration costs. Angela Holden raised the issue of duplicate registration, pointing out that whilst online registration makes it easier for people to register to vote, there are also many more people now re-registering to vote. This creates significant administrative costs for local authorities. The key problem is that voters have no method of checking whether they are already on the electoral register and so register many times over 'just to make sure'. The AEA has issued a recommendation for a simple online 'look-up' function for voters to check whether they are already registered, which according to Mike Summers from Smartmatic, would be 'an absolute piece of cake from a technology point of view.' Dr Toby James agreed with this, suggesting the UK could adopt a similar system to that used in some of the US states and in the Republic of Ireland since 2002.

Mike Summers also told us that some countries have already moved to opt-in electronic poll cards which, if rolled out in the UK, could save substantial printing and distribution costs. A poll card's purpose is to notify voters that an election has been called and where the relevant polling station is. Currently, UK law requires all registered voters to receive their poll card by post, but given the potential cost-savings, this legislation could be reviewed to introduce an additional online option.

The Law Commission has already run a major project to review all UK electoral legislation, which is currently extremely fragmented, and issued the Cabinet Office with a recommendation

for its consolidation. In addition to making elections easier to administer, the simplification of electoral legislation would make the incorporation of new technologies much smoother. As Mike Summers pointed out:

"We're having to introduce and inject technology into the existing process but it's being constrained by the current legislation. If you were to redesign the process from a blank page using technology, it would be so easy, all of this could be joined up to work properly."

The introduction of digital technology at other stages of the electoral process is already showing positive results. As an example, the move to digital canvassing tools which are more efficient at data collection and do not require printing and postage costs is estimated to have saved Tower Hamlets £30k. Simon Hearn pointed out that the discretionary collection of voters' email addresses at the registration stage could then be used to send reminders and alerts to voters to increase turnout on polling day.

The final part of the meeting asked what costs are likely to arise with the introduction of online voting and if it would lead to savings in the long term. The expected start-up costs are the development and roll out of the software as well as independent security testing. Mike Summers stated that the cost of online voting in Estonia had been no more than €2 million since 2005. This is largely due to the population of Estonia being small and due to infrastructure around electronic ID cards already being in place. Simon Hearn stated that no more than around £30,000 had been spent by the Labour Party for provision of online voting in their leadership election, in which 81% of the 422,871 voting members did so online. We shared our working estimate of £100million for initial start-up costs, which the attendees agreed seemed reasonable.

survey data

survey data

To assist with our research for this report we commissioned a YouGov poll of 1,680 adults in Great Britain. The question asked what the preferred method of voting would be if online voting was an option alongside voting at a polling station, by post, or by proxy. Apart from proxy voting, voting by post comes out as the least preferred method amongst Remain and Leave voters, across genders, and every age group until over 65s. Postal voting also appears to be the least preferred method across social classes, and every geographical region of Great Britain.

Although only by a small margin, online voting has a higher preference amongst female respondents (34%) compared to male respondents (32%). This follows a trend across many of the opinion polls undertaken on online voting in recent years. In our 2015 YouGov poll on whether online voting should be implemented for the EU referendum, 57% of female respondents supported implementation compared to 54%. The same was found in our poll of Londoners asking the same question about the 2016 London Mayoral Election with 60% of female respondents in favour compared to 59% of male respondents. Similar trends are outlined in the table below.

Survey	Male respondents favourable to online voting	Female respondents favourable to online voting
Sky News/Survation[1]	77%	84%
Demos/Populus[2]	63%	70%
Lodestone/Survation[3]	60%	66%
WebRoots Democracy/YouGov – EU Ref[4]	54%	57%
WebRoots Democracy/YouGov - London[5]	59%	60%
Opinium[6]	43%	46%
Tecmark/YouGov[7]	40%	42%
WebRoots Democracy/YouGov – Cost of Voting	32%	34%

The data from our poll mainly shows a clear difference across age groups, which provides an indication of what future preferences will be with regards to the electoral process. Amongst 18 to 50 year old respondents, voting online is the most preferred method of voting compared to in-person and postal. Amongst this age range, 40% chose online voting as their preferred method, followed by 35% at a polling station, 14% by post, and 2% by proxy. Of those over the age of 50, 43% chose voting at a polling station, followed by 27% by post, 25% online voting, and 1% by proxy.

Looking towards future generations of voters, it is clear that online voting is likely to become the preferred method of voting across all age groups, rather than young people alone. This could have significant implications for the cost of administering elections, as the fewer paper votes cast in favour of online votes, the lower the cost of the election will be. If we base our previous estimate on how paper vote costs would be affected based on the responses from 18 to 50 year olds, the post-online voting cost distribution would be as follows:

Cost	Status quo	With online voting	% change
Polling station exclusive	£29,412,222	£13,898,448	-53%
Postal voting exclusive	£11,275,514	£7,274,525	-35%
Paper voting exclusive	£24,327,753	£12,407,154	-49%
Total	£65,015,389	£33,580,128	-48%

As time goes on, it could be that as with Estonia, take-up of online voting would increase in future, reducing the amount of money being spent on processing polling station and postal votes. If this were to happen, the return on investment could significantly increase with each election. The additional cost for the online voting method in this instance would be to have the capacity to process more votes.

recommendations

recommendations

1. The Government should pilot an online voting option for elections in advance of the 2022 UK General Election.

The introduction of online voting is an idea which enjoys widespread mainstream support across opinion polls which have been conducted on the topic. Opinion surveys have found that the British public think that online voting would make them more likely to vote, would increase turnout, and should be implemented for elections.[25] The survey conducted for this report found that voting online would be the preferred method for those aged under 50 years old.

As previous research by WebRoots Democracy has found, the introduction of online voting presents significant potential for voters with disabilities, young people, citizens overseas, and for the Armed Forces abroad.[26] Previous pilots in the UK were conducted more than a decade ago when internet access, social media use, and smartphone access were either non-existent or not mainstream. Over the past decade, technology and the public's use of the internet has undergone huge advancements.

WebRoots Democracy has called on the Government to pilot an online voting option for elections since May 2014. In 2015, the Speaker's Commission on Digital Democracy called for the electorate to be able to vote online by the (then planned) 2020 UK General Election.[27] This was a recommendation echoed by the House of Commons Political and Constitutional Reform Select Committee, following their investigation into voter engagement.[28]

2. The Government should publish their own analysis of how much they consider online voting would cost to introduce.

The Government ultimately hold better data on the costs involved in administering elections and as both the Cabinet Office and Electoral Commission rejected our freedom of information requests to release this data, the Government's own analysis on how much they believe online voting would cost would be useful. In the absence of any official and published analysis, rejection of this report's figures would carry no weight and can only be speculation.

3. Election expenditure by Returning Officers should no longer be exempt from the Freedom of Information Act.

A number of local authorities rejected our freedom of information requests on the basis of the Returning Officer being exempt from the Freedom of Information Act. As the money spent during elections is from the public purse, our view is that this expenditure should be subject to the Freedom of Information Act. As the AEA informed us during our roundtable, they are encouraging local authorities to positively respond to FOI requests. However, it is clear that many continue to use their exemption.

WebRoots Democracy welcomes the Freedom of Information (Extension) Bill 2017-2019 that is currently going through Parliament.[29] This Bill intends to subject Electoral Registration Officers and Returning Officers to the Freedom of Information Act.

4. The Cabinet Office and Electoral Commission should publish a granular breakdown of election administration spending in a more open and timely fashion.

Whilst breakdowns of election administration expenditure are published, they are not published in a fully granular fashion in which all individual and variable costs are identified. For example, in the published expenditure of the 2014 European Parliament elections, spending by individual electoral area is broken down into five headers without explanation of, for example, count centre hire costs. In addition, this breakdown was published in December 2016, more than 30 months after the election was held.

5. The Government should adopt the recommendation in the AEA's 2017 report for email collection at voter registration to be mandatory.

The 2017 report by the Association of Electoral Administrators, *It's time for urgent and positive Government action*, calls for there to be a

requirement for voters to provide their email address when applying to join the electoral register.[30] This presents a number of opportunities for the Government and the electorate. As is the case with tax and company accounts, email notifications can be sent to individuals warning them of key upcoming dates. As well as informing voters of an upcoming election, email could have the capacity to provide further information about the election itself. For example, it could let the voter know what the role of their local councillor of Member of Parliament is.

6. The Government should consider the potential of opt-in electronic poll cards.

As this report shows, the printing and distribution of poll cards are a significant public expense in the administration of elections and referenda. Allowing voters to opt instead for electronic poll cards could lead to savings to the tune of millions of pounds which can be spent elsewhere such as promoting the election across constituencies. An electronic poll card could be sent via email and provide information on local polling stations, local candidates, and the purpose of the election itself. It would be a potential opportunity to further educate voters, an opportunity which does not present itself with current poll cards.

appendix

appendix

WebRoots Democracy / YouGov survey results

Sample Size: 1680 GB online Adults
Fieldwork: 10th - 11th October 2017

		Vote in 2017			EU Ref Vote		Gender		Age				Social Grade		Region				
	Total	Con	Lab	Lib Dem	Remain	Leave	Male	Female	18-24	25-49	50-64	65+	ABC1	C2DE	London	Rest of South	Midlands / Wales	North	Scotland
Weighted Sample	1680	576	551	102	637	690	816	864	190	707	398	385	958	722	225	544	360	405	146
Unweighted Sample	1680	563	577	115	743	699	743	937	194	685	422	379	1051	629	169	571	365	415	160
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Currently if you are unable to vote in person for an election on the day, you are able to vote by post or proxy (i.e. you can have someone you trust cast your vote for you).																			
If each of the following ways of voting were available, which method would you most prefer to use to vote in an election?																			
At a polling station	**38**	45	40	45	41	44	40	37	33	35	40	46	40	37	40	37	38	39	41
Online (e.g. smartphone, PC)	**33**	29	34	33	33	26	32	34	45	38	33	17	35	30	35	35	31	27	39
By post	**21**	23	22	17	21	24	18	23	8	16	22	33	19	23	20	21	20	24	15
By proxy	**2**	1	2	2	1	1	1	2	2	2	1	0	2	1	2	1	2	1	1
Don't know	**7**	2	2	4	2	5	9	5	12	8	4	4	5	9	3	6	9	9	4

Estimate methodology

The estimate for the cost of administering the EU referendum is based on the results of more than 400 freedom of information requests (FOIs) to local authorities, devolved administrations, and other relevant bodies across the UK. These requests asked for a breakdown of expenditure by the following headings:

- Printing ballot papers
- Distributing postal votes within the UK
- Distributing postal votes abroad
- Staffing polling stations
- Counting ballot papers
- Administering postal vote and proxy vote applications
- Processing received postal votes
- Promotional material highlighting the date of the vote across the local authority
- Pencils at polling stations
- Polling booths
- Ballot boxes
- Tactile voting devices
- Training staff (both counting staff and staff at polling stations)
- Signs directing voters to the polling station
- Polling station signs
- Hiring polling stations
- Transporting ballot papers from polling stations to count centres
- Storing completed ballot papers after the election
- Provision of disabled access at polling stations

These figures were also requested for the 2017 General Election, but due to the short amount of time which has passed since that election, we did not receive a significant number of responses.

Using data from the Office for National Statistics on 2016 electorate sizes, each of these figures was divided into a cost-per-registered-voter (CPRV) for each of the 58 voting areas which had provided breakdowns. Three CPRV figures were calculated for each header, a high CPRV, an average CPRV, and a low CPRV. For our estimate, the average CPRV for each header was used except for 'pencils at polling stations' and 'tactile voting devices' where the low CPRV was used. These figures were then extrapolated for all voting areas.

Figures from the 2014 European Parliament elections were used for the cost of hiring count centres and for printing and distributing poll cards.

Voting areas which responded to our FOIs with a breakdown of election spending were: Arun; Babergh; Bassetlaw; Breckland; Broxbourne; Canterbury; Charnwood; Colchester; Cotswold; Dacorum; Darlington; Gateshead; Gosport; Great Yarmouth; Harrogate; Hart; Hartlepool; Hertsmere; Highland; Hounslow; Ipswich; Maldon; Melton; Mendip; Mid Sussex; Newcastle-upon-Tyne; North Dorset; North East Lincolnshire; North Tyneside; Nottingham; Peterborough; Portsmouth; Purbeck; Rushcliffe; Rushmoor; Rutland; Ryedale; Solihull; South Derbyshire; South Lakeland; South Tyneside; Stockton-on-Tees; Suffolk Coastal; Sunderland; Tamworth; Telford and Wrekin; Thanet; Three Rivers; Torfaen; Tunbridge Wells; Warwick; Waveney; Westminster; Weymouth and Portland; Windsor and Maidenhead; Woking; and Wyre Forest. Data was also provided for the entirety of Northern Ireland.

Roundtable attendees

A policy roundtable for this report was held at PwC in London on Wednesday 11th October 2017. The attendees are as follows: Areeq Chowdhury (WebRoots Democracy); Laura Deslandes (WebRoots Democracy); Maya Fryer (WebRoots Democracy); Anna Wallace (PwC); Simon Hearn (Electoral Reform Services); Luke Ashby (Electoral Reform Services); Angela Holden (Association of Electoral Administrators); Dr Toby James (University of East Anglia); Edward Saperia (Newspeak House); Mike Summers (Smartmatic).

Acknowledgments

Special thanks for this report goes to the WebRoots Democracy volunteer team, in particular Rachel Fielden; Laura Deslandes; Tess Woolfenden; Georgia Wild; Khadija Said; and Maya Fryer.

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