

# Observing the English and Scottish 2007 e-elections

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Elections held during May 2007 in England and Scotland for the first time allowed accredited observers access to polling stations and counts. This provided an opportunity for detailed scrutiny of the use of e-voting and e-counting equipment in these elections. This article assesses the use of these technologies using observations from 10 constituencies and data obtained using Freedom of Information Act requests, interviews with officials, candidates and parties and reports on previous trials. It finds that inadequate time was available during the procurement process for cross-party consensus to be built around the English e-voting trials or for systems to be fully tested. Design errors meant that a very large number of Scottish ballots were spoiled, while problems with ballot papers required a large number of votes to be counted manually. Votes initially missed due to an over-wide Excel spreadsheet changed the result in the Highlands and Islands and handed control of the Scottish Parliament from the Labour party to the Scottish National Party.

The UK's May 2007 elections were the first to allow officially accredited observers to monitor electoral processes. This provided an opportunity for close scrutiny of the e-voting trials being carried out in a number of English local elections, and the use of e-counting in Scottish local and parliamentary elections.

The Electoral Administration Act 2006 allowed organisations and individuals aged 16 and over to apply for accreditation to the independent Electoral Commission, which adapted the internationally-approved *Declaration of Principles for International Election Observation and Code of Conduct for International Election Observers*<sup>i</sup> for UK use. Under s.29 of the Act, observers may attend:

- proceedings at the issue or receipt of postal ballot papers;
- proceedings at the poll;
- proceedings at the counting of votes.

The Open Rights Group (ORG), a UK-based digital rights group, applied for accreditation a month before the elections and recruited 25 volunteer observers using the website PledgeBank.com. Both authors were involved in coordinating this effort. This allowed a much closer investigation of the use of e-voting and e-counting than had been possible in UK trials carried out in 2003 and 2004. The UK's Freedom of Information Act 2000, which came into force in 2005, also proved invaluable in gaining access to government documents concerning the elections.

In this article we describe our observations of the procurement processes, testing and management that led up to the elections, as well as the process of becoming accredited observers and attending polling stations, elections counts and data centres in order to assess the election outcome.

## **Procurement processes**

At the beginning of 2006, the UK government's Department for Constitutional Affairs began making local authorities aware that they would be able to apply to run electoral pilots in May 2007. It was not until 17 October 2006, however, that the pilot programme was publicly announced and, officially at least, applications could be made to run an electoral pilot. The closing date for authorities to submit their applications was only one month later, 17 November. This left little time for considered applications to be drafted or for discussions to be held with political parties in the application areas.

Earlier, on 3 August 2006, the Department for Constitutional Affairs had issued a call for tenders in the Supplement to the *Official Journal of the European Union*. The call was for a four-year framework contract to supply electoral pilots with interested parties having a month to submit their responses.

Beyond discussions with the Electoral Commission and the Association of Electoral Administrators, we are not aware of any formal or informal consultation process undertaken by the Department for Constitutional Affairs prior to or during the pilot tender, application and implementation process. This lack of consultation is surprising, given the importance of election processes and their results being accepted by voters and candidates from across the political spectrum.

Election officials were informed that discussions with potential suppliers were continuing and only received provisional approval around 11 January. It was not until 29 January that official notice of approved pilots was given<sup>ii</sup>, nearly two full months later than anticipated in the government's published timetable. Of the pilots announced<sup>iii</sup>, five were to provide Internet and telephone voting, compared with fourteen authorities in 2003 that were approved to conduct Internet, telephone and other forms of remote electronic voting. Six authorities were approved to use electronic counting in 2007 compared with two e-counting pilots that had been approved in 2004 and five approved in 2003.

Because of the delay in approving pilots, authorities had little time to invite bids and assess them before beginning project implementation. One authority undertaking e-voting received bids from suppliers on 19 January and just three days later, on 22 January, an evaluation panel at the authority met and approved one bid. Given that over £1 million of public money was at stake, it is surprising that such a decision could be taken so quickly with no further scrutiny.

Pilot programmes in previous years had been criticised for excessively tight time-scales that had resulted in the omission of important steps such as testing, causing problems during execution. The Electoral Commission was not alone in highlighting time-scales as a problem; suppliers and pilot authorities also voiced concerns. In spite

of such criticism the Department for Constitutional Affairs slipped two months behind an already tight schedule.

Although brief lists of framework suppliers had been published by the Office of the Deputy Prime Minister in previous years, the list of companies accepted onto the Department for Constitutional Affairs framework contract was not published in 2007. When a summary of the approved pilot schemes was published by the Department for Constitutional Affairs on 29 January, in conjunction with the official notice of their approval, no details of the suppliers on the framework was included. Indeed no more than two paragraphs of descriptive text were included for each pilot. This lack of public information made comment on the pilots by experts and political parties difficult.

On request, the Department for Constitutional Affairs did provide a list of suppliers to whom they intended to award a place on the framework and another request provided a list of which suppliers would be the prime contractors for each pilot. A number of major suppliers from previous pilot programmes, including BT, Unisys and Accenture e-democracy services, were not on the proposed framework list or the final list of pilot suppliers. Submissions to ORG from sources that asked to remain anonymous suggest that some vendors were unhappy with the structure of the pilot programme and as a result chose not to participate.

During the Department for Constitutional Affairs' consideration of the pilot applications, the Electoral Commission was asked to comment on the applications submitted. In a letter dated 1 December 2006, Sam Younger, Chairman of the Commission, detailed the Commission's views of the applications. The Commission stated there had not been sufficient time for properly detailed applications to be submitted or for it to perform in-depth assessment of the applications. Owing to the lack of detail in applications, the Commission was unable to support any of the e-counting proposals, though the Department for Constitutional Affairs did approve six of them. Similar criticisms applied to e-voting applications.

The Commission also questioned the level of consultation and support for the pilot applications. ORG has received submissions from a number of political parties in pilot authorities showing that cross-party support was clearly not present. In the case of Sheffield City Council, according to one major party, the application process was conducted without any form of discussion or approval from any of the parties.

In January 2007, the Committee for Standards in Public Life published its 11th Report covering the Electoral Commission and the integrity of the electoral process. The report highlighted weaknesses in the current electoral system, particularly relating to registration, which raised important questions over the integrity of the electoral system as it currently stood. Based on these views, whilst speaking at the February 2007 Association of Electoral Administrators' Conference, Sir Alistair Graham, the Committee's Chair, publicly called for the 2007 electoral pilots to be halted.<sup>iv</sup>

## **Testing and Management**

E-voting and e-counting technologies have a poor track record in the countries that have used them. The e-voting and e-counting technologies deployed on this occasion

did not perform to the standards expected by Returning Officers, candidates and their agents.

ORG was impressed with the dedication of elections staff in working highly unsocial hours and under considerable pressure to deliver these elections. However ORG observed a lack of management at Returning Officer and government level, with a worrying transfer of power—without a corresponding transfer of responsibility—to vendors.

DESPITE REPEATED CALLS by the Electoral Commission for a defined supplier certification process, the Department for Constitutional Affairs chose not to implement such a process for the 2007 pilots. While observers received verbal confirmation from suppliers and election administrators that testing—including for security—had been conducted, there has been no official acknowledgement of this process. No reports or statements have been made about how the security and accuracy of the systems used for the pilots was assessed. Any credible technology implementation process requires systematic testing of usability, security and reliability. As the pilots were for a statutory election it is vital that the results of such testing be made public.

Observers had strong concerns over the security of the count centres in pilot areas. Observers in Swindon were able to enter and exit the count centre several times without challenge, noting a number of unsecured laptops at the location. This was during election day whilst technology was being delivered and set up for the count that night. Swindon's Deputy Returning Officer stated that none of the laptops observed would be used to count e-votes, but how the laptops were to be used for the count was not specified. Leaving any systems physically unguarded is cause for concern, providing opportunities for attackers to load unauthorized software or maliciously modify installed software.

SIXTEEN SCOTTISH PARLIAMENTARY constituencies declared results where the number of spoilt ballots was greater than the winning margin. Based on figures collected, ballots observed during adjudication as well as interviews with candidates, agents and electors, our view is that the design of the parliamentary ballot paper was the primary cause of spoilt ballots. Specifically the placement of the regional vote on the left-hand side of the paper ran contrary to voter expectations. Given that many smaller parties stood candidates nearly exclusively in the regional contests, the pattern of voting from previous Scottish parliamentary elections and the types of spoilt ballots observed, smaller parties were unfairly penalised by the ballot design and associated errors.

The Electoral Commission made an inappropriate use of marketing methodologies in studies when assessing potential ballot paper designs. The study conducted failed to test any designs with the constituency column on the left-hand side, an oversight the Commission should have corrected before allowing the study to proceed.

Both the Commission and the government ignored advice from the Usability Professionals' Association in failing to conduct proper testing of the ballot design, as well as of other systems and processes observed in Scotland and England. Marketing research is not a suitable methodology for usability testing; a ballot design risks being unusable without usability testing. There exists a significant body of knowledge, primarily from the US, on ballot design and usability testing. As part of the Usability Professionals' Association's 'Voting and Usability' and 'Design for Democracy' pro-

jects, Association members have shared these materials with the Electoral Commission, and the Department for Constitutional Affairs' predecessor in managing elections, the Office of the Deputy Prime Minister. The London elections of 2000 and 2004 also offered lessons regarding ballot design that the Scottish design process failed to heed.

IN APRIL 2007 the Department for Constitutional Affairs published the Statutory Orders for the elections.<sup>v</sup> These were the legal instruments that made it lawful to hold the pilots. The Orders contained a number of intriguing clauses, such as the following for electronic counting pilots:

*46 Re-count [...]*

*(4) In so far as the votes have been counted using the electronic counting system, the returning officer may treat a request for a re-count as unreasonable unless he has reason to believe that the system has not scanned the votes correctly.<sup>vi</sup>*

Given that the systems were new and on trial, such bias in favour of the avoidance of a recount is surprising. To ensure the proper functioning of the e-counting systems it would have been better to mandate that a statistically significant sample of wards were manually recounted. Furthermore, to maintain confidence in the new systems and elections as a whole, it would have been sensible to have allowed recounts when election agents raised credible doubts. It is quite plausible that the only way a Returning Officer could have reason to believe that the system had not scanned votes correctly would be if some or all votes were counted manually. Requests for recounts, particularly in a pilot setting, should have been welcomed rather than discouraged.

The Statutory Orders were published on the Department for Constitutional Affairs website without any notice on the home page or election news pages and with no public statements. Further details could be obtained by direct requests to civil servants.

## **Accrediting observers**

Under the amended Political Parties, Elections and Referendums Act 2000 individuals aged 16 and over may apply for accreditation as observers. They need to complete a simple form and supply to the Electoral Commission contact details, a digital photo and a declaration that they will comply with the code of conduct<sup>vii</sup> and ballot secrecy provisions. Organisations may apply to become accredited for up to 3 years, and then nominate individual observers to the Commission. ORG followed this procedure, nominating its 25 volunteer observers one month before the elections. Accreditation badges were delivered to ORG by the Commission a week before election day and were valid for the rest of the year.

Under the code of conduct, observers agree while accredited to:

1. Respect sovereignty and international human rights
2. Respect the laws of the United Kingdom and the authority of electoral bodies

3. Maintain and aid in maintaining the secrecy of the ballot
4. Maintain strict political impartiality at all times
5. Avoid obstructing election processes
6. Provide appropriate identification
7. Maintain accuracy of observations and professionalism in drawing conclusions
8. Maintain proper personal behaviour

Although these requirements may seem like common sense, it was unclear whether they would completely prevent observers from commenting on flaws in e-voting and e-counting systems, given their duty not to “express or exhibit any bias or preference ... in relation to any contentious issues in the election process.”

## **Planning observation**

Since this was the first time accredited observers were permitted in the UK, it was unsurprising that there were some difficulties with the observation process. English legislation, regulations and orders did not mandate that observers should be allowed to monitor pilot-specific arrangements and case-by-case negotiation for access proved necessary. The legislation does not cover elections piloting new voting methods and, in a major error, the statutory orders for the pilots made no mention of observation either. In order to be able to observe anything more than the polling station or count centre, such as technology demonstrations or the servers used, ORG had to enter into discussions with each Deputy Returning Officer.

Little information was made available beforehand on the form of the pilots and the technologies to be used, and the location and timing of technology demonstrations. Electoral offices were suspicious of requests for more information; many were unwilling to invite observers to briefings unless accredited—Sheffield City Council was even unwilling to allow observers to attend briefings if accredited and/or invited as guests of someone attending the briefing. Given the timing of the accreditation process and the logistics involved it would have been impossible to accredit observers in time for the briefings.

There was a lack of consistency in responses for access to briefings, whether cameras could be used and how Returning Officers would interpret rules for observers. This created a challenge in tracking the interpretation for each area and briefing observers correctly for the area they would be operating in. As a result of ORG’s feedback to the Electoral Commission—and the queries election administrators were sending them as the result of ORG’s own questioning—additional guidance was issued to Returning Officers for e-voting pilot areas. The guidance reiterated the rights observers had to view the count and polling stations, and recommended providing observers with access to view server installations and source code where possible, even though the law did not mandate such access. Department for Constitutional Affairs staff also provided welcome assistance in negotiating access for observers, often supporting ORG’s case to election administrators or suppliers.

Of particular interest were the servers being used to record Internet and telephone votes. Some electoral administrators clearly did not understand what the servers were

and said they would be present in the count centre on election night—when in fact they were located remotely in data centres.

Only one authority, Swindon, initially allowed observers to view their e-voting servers. Sheffield and Shrewsbury & Atcham, both supplied by OPT2VOTE, were cautious but, after some persuasion, passed on ORG's request to OPT2VOTE. After a delay and pressure exerted by their clients and the Department for Constitutional Affairs, a data centre viewing was arranged for election day. South Bucks and Rushmoor, both with ES&S, initially declined ORG's requests. However Rushmoor's officers changed their position once the Electoral Commission's guidance was issued recommending observers be given access to servers. After the election it emerged that South Bucks' Returning Officer had also changed his mind about providing access to servers. Unfortunately ORG were not informed of this change by the vendor instructed to provide access. ES&S also proved hard to contact but, with additional pressure from the Department for Constitutional Affairs, on the morning of election day, confirmed a server visit for that afternoon. Fortunately an observer was able to travel to the server location at short notice; nonetheless scheduled observations are against the spirit and purpose of trustworthy election observing.

There was little evidence that usability testing had been conducted to ensure processes were as easy to use as possible. Though some newer remote-voting channels such as telephone voting may appear superficially attractive to groups of voters such as the elderly and housebound, in practice these were the very voters who appeared to experience most difficulties. ORG received a number of reports concerning difficulties in understanding and using the telephone voting system in South Bucks, and in understanding the registration process in South Bucks and Rushmoor. In the case of South Bucks, it was unfortunate that voters registered for remote voting, but who then experienced difficulties, were prevented from voting in person at polling stations. These voters were effectively disenfranchised.

## **Election night**

In both Scotland and England election administrators, unused to the presence of observers at counts, sometimes did not understand what observers wished to see and varied widely in their approach to information provision and local 'house rules' for observation. In England observers were frequently subject to seemingly arbitrary and changeable decisions via unclear lines of authority, and on occasion observers were granted less access than the media. The Electoral Commission intervened on several occasions to guide election administrators.

Unfortunately on election night the Commission's additional guidance to e-voting pilot to Returning Officers was not consistently applied. In Rushmoor observers were asked not to look at the screens of laptops processing electronic votes but to look at postal votes being processed, while press photographers were permitted to take pictures of the very same laptop screens. In most locations computer screens were positioned too far away from barriers to be observable or were turned away from view so they couldn't be observed. One pilot authority informed us that the Department for Constitutional Affairs' security consultant had advised them to turn their screens

away. Furthermore the Department for Constitutional Affairs had required barriers around the voting technology ‘to protect from coffee spills’ but the net effect was to further distance candidates, observers and agents from the count.

In Bedford, whilst candidates and agents were able to see the results prior to declaration, observers were not permitted to do so; yet elsewhere Electoral Commission guidelines were adhered to and results were observed before declaration. At no location were observers able to observe the ‘zeroing’ of devices prior to the start of the election, nor was the detail of any electronic unsealing or download process observable. Essentially the lack of opportunities and facilities to observe, coupled with the complexity of the technologies used, meant that there was no opportunity for meaningful scrutiny, verification or audit of the counts monitored.

At nearly every pilot observed candidates, agents and observers complained that there was little or no communication from the Returning Officer. There was dissatisfaction at the lack of explanation of what was happening and the difficulty in observing proceedings due to the layout of counts as well as the new technology involved. Furthermore display screens were either not informative (repeating the same information throughout the entire night) or showing incorrect information.

Chaotic scenes were observed at the English e-counting pilots, with very significant delays in the declaration of results. Scanner malfunctions and software errors slowed counts and the adjudication process. Scanner sensitivity to poor quality printing, incorrectly cut paper sizes, fold marks and tears from low quality perforations all contributed to high rates of ballots sent for adjudication. The result of these problems was that pilots in Breckland and Stratford abandoned e-counting in favour of a manual count. In Breckland, a manual recount—insisted upon by an election agent—revealed major discrepancies between the numbers counted manually and electronically. Breckland’s Dereham-Humbletoft ward, the one ward in England that was counted both electronically and manually, was found to have 56.1% more District Council votes than when e-counted.

Candidates and agents reported receiving far less information than they expected. Many felt the process of e-counting to be opaque, with counts physically removed to distant locations, little visibility of processes and a generalised lack of information forthcoming from Returning Officers concerning processes or progress. Returning Officers themselves were heard to comment that they did not know what was happening. Returning Officers and suppliers were often secretive about how results were derived, and in general the observability and scrutiny of e-counts was poor.

How and when electronic vote tallies were combined with other subtotals was, in all observed areas, a mysterious process not open to observation or verification. The phrase ‘black box’ is used to illustrate the opacity of the systems and procedures. Electors cast their votes and Returning Officers declared results; whatever occurred in the time between those actions was hidden from view by the technologies and processes used.

In South Bucks and Swindon electronic votes were downloaded and counted on computers controlled by supplier’s staff without any candidate, agent or observer able to examine the process. What could actually have been seen on the computer screens is itself questionable, but the very fact that this was not allowed to be observed was an unacceptable restriction on the count process. In Swindon, CDs were delivered which were said to have the e-votes on them, but nobody had observed the votes being



downloaded to the disks or seen what had happened to them until they were inserted into 'clean' machines at the count which, attendees were told, decrypted and counted the votes.

In Sheffield, apparently due to technical difficulties, the time and location of the downloading of e-votes was changed without notifying observers. As a result only a single Electoral Commission observer was present—by chance, as he'd been there to monitor postal voting procedures. The download of the votes was done at the council offices the night before the main count. On the night of the count no breakdown of votes from different channels was provided to attendees: these were kept in sealed envelopes and declared 'ballot boxes'. Officers then manually added figures together using pencil and paper before presenting the figures to candidates and agents. Understandably agents at the count felt that the numbers had 'just appeared' and were unhappy the process had not been more transparent.

There was a similar experience in South Bucks, with no breakdown provided on the night of how votes had been cast. Candidates and agents had to just accept that the totals for each ward were correct and actually did include all the telephone, Internet, postal and paper votes cast. In contrast, Rushmoor did provide a detailed breakdown of votes cast for each candidate by channel in each ward. This offered the potential for slightly improved scrutiny before the result was declared. However the figures appeared to have been copy/pasted into a word-processed document, providing little assurance as to their source or accuracy.

At the count conducted by the Highlands Council, questions arose concerning the Highlands and Islands regional parliamentary results that the Returning Officer intended to declare. During the adjudication process, Scottish National Party candidate David Thompson kept an informal count that led him to believe that the SNP was receiving approximately 35% of the votes for additional members (the regional list). However when the Returning Officer presented the regional results to candidates and agents prior to declaration, SNP representatives were shocked not to have won any seats. After brief discussions with his agent Mr Thompson decided to challenge the result, managing to do so as the Returning Officer was on his way to the podium to declare the result. It was discovered that votes for the SNP had not been included during the calculations; the omission of SNP votes was probably owing to the spreadsheet operator's inability to see all the parties' votes on the computer screen at the same time. As parties were listed horizontally across the screen and a large number of parties had stood in the election, the data in the spreadsheet had become wider than the computer screen used. Thus without scrolling manually across the full range of the spreadsheet's columns, parties could be missed from the calculations used to allocate seats. Once SNP votes were included in the vote distribution calculations the new result, eventually declared, the SNP received two seats. These results kept the SNP one member ahead of Labour in the new Parliament, that member being the last declared: Mr Thompson himself, who received profuse apologies from the RO.

Extreme tiredness also had a role to play in these proceedings. Some election officials had been awake for 35 hours, tasked with counting a large number of constituency, regional and local government results. E-counting had resulted in an unexpectedly high number of adjudications, with ballots sometimes being examined three times at different levels.

Nevertheless, it is surprising that Excel was used to perform such a crucial function in processing the election results. Four years ago the use of office productivity software such as Word and Excel in 2003 English pilots was criticised by the Electoral Commission. Such software does not provide any audit trail or sufficient checks on calculations performed and hence is not appropriate for use in election counts.

Overall, in terms of observability and scrutiny, the e-voting counts were extremely poor. Candidates, agents and observers found there to be very little indeed to monitor, and significant portions of the e-voting process were administered in servers physically remote to the count locations. Returning Officers and their suppliers were often secretive and evasive about the substance and detail of results and how they were derived. Whilst some were willing to discuss matters further or publish more details after the count, this was too late. Once the result is declared it can only be changed through an election petition at great financial cost to the petitioner.

Returning Officers were keen to have efficient, orderly elections that demonstrated the success of their pilots. Additionally suppliers were focussed on not being caught making errors. Taken together with the considerable technological paraphernalia involved in delivering the counts, the result was that counts were 'black box' processes. The amount of information provided to candidates and their agents was wholly insufficient for them to be able to verify in any meaningful sense that the results were accurate before accepting their declaration. Nothing in the process of downloading and counting e-votes was open to observation and verification. ORG observed nothing and received no submissions or Freedom of Information releases that would give confidence in the accuracy of the results produced from the e-voting systems or their collation with results from other channels.

No methods or opportunities were provided for candidates, agents or observers to verify the security and accuracy of the software used nor the results the software produced. Despite some basic attempts at providing receipts, there was nothing to ensure that voters intentions had accurately been recorded or counted as intended. Whilst ORG believes that error is more likely than fraud, ORG is unable to rule either out due to its inability to observe any of the crucial parts of the e-voting elections conducted.

The rules on the use of electronic devices at counts were extremely inconsistent. In Bedford the election office had advised that photography would be permitted from a balcony in the count centre. Yet one observer was forced by a police officer to delete the pictures he had taken from his digital camera while members of the media were on the same balcony taking pictures and video of the count. South Bucks advised that cameras would not be permitted inside the count. No checks were made on entry, yet a few hours into the count when an observer reached to check the time on their mobile phone they were stopped by a police officer stating that the Returning Officer had forbidden all electronic devices. This rule had not been enforced for the first few hours of the count and it emerged the next morning that the Returning Officer had not issued such a rule, intending only cameras to be forbidden. In Swindon even mobile phones were banned in case they contained cameras.

The lack of guidelines on how the pilot elections should have been conducted made it difficult, if not impossible, to assess whether workers and officials at polling stations and counts were using equipment correctly and following the appropriate procedures. It is vital such documents are made freely available at least two weeks be-

fore election day so that observers, voters, candidates and agents can familiarise themselves with their contents.

Subsequent to the elections, one local authority, South Bucks, has been proactive in engaging with ORG observers to improve their learning from the pilots. No other English authority has done so.

## **Role of Vendors**

On election day, vendors provided many assurances regarding progress to Returning Officers that were all too frequently not met. Vendor technical staff at South Bucks were instructed not to communicate with observers, leading to absurd chains of Chinese whispers via non-technical staff. In Swindon, an ORG observer received conflicting reports from a Presiding Officer and a contractor about the status of what appeared to be malfunctioning voting equipment.

Software supplied by vendors incorporated elements that were dated and subject to known security vulnerabilities. This could have been prevented by a rigorous certification scheme for equipment and software, and the lack of such certification is of significant concern.

Staff from one vendor, ES&S, had been instructed not to speak to observers. This resulted in absurd situations whereby an observer asked a Returning Officer a question who asked a company manager who would then ask a technician. This reply would then be relayed back through each person to the observer, when clearly those in the middle knew far less about the technologies than the technician or the observer.

Local authorities were highly dependent on the suppliers they selected to provide the pilots on their behalf. Returning Officers and their deputies were observed to have little or no technical knowledge, leaving them unable to judge the quality of the technologies supplied. They were unable to monitor technical issues—and hence hold their suppliers to account. As problems occurred before and on election night, Returning Officers were totally reliant on what the vendor told them, whether or not it was true. Some Returning Officers took a more robust approach to managing their suppliers than others, but all essentially could only tell their suppliers to ‘make it work now’. The lack of a local-authority- or Department for Constitutional Affairs-provided technical expert to assist Returning Officers on election night left them often seeming lost and unable to do anything more than hope suppliers could resolve whatever issues they were having.

On a number of occasions supplier staff were observed to take actions that were not properly auditable, and worked outside of the defined boundaries of the systems provided. In South Bucks technicians were observed using a USB key to transfer files between computers. Such devices can be used to load unauthorised software or modify existing software to behave in malicious or unexpected ways. It was not clear what the key contained or why a transfer was needed to resolve the software problems encountered at South Bucks, but the Returning Officer and Deputy Returning Officer seemed unaware of the implications of such an action. USB keys were also observed inserted into computers used at the Rushmoor count. In Warwick a submission from a party present at the count indicates that files and directories had to be moved around

and even deleted to restore software operation. Once again this was done without concerns expressed by the Returning Officer or Deputy Returning Officer over the effects this would have on the audit trail or accuracy of the election. In all cases an absence of expertise with which to properly judge events and implications led Returning Officers to show insufficient concern for actions observed.

Given the quantity of money being spent and the importance in maintaining confidence in the integrity of electoral systems it is surprising that little attention was given to providing technical support to authorities. One Returning Officer commented, after their pilot had been completed, that the Department for Constitutional Affairs and the Commission had always been ‘just observing’. The Returning Officer felt, especially given the tight timescales, that he should have been given more support, advice and help from the Department for Constitutional Affairs but also advice on best practice from the Electoral Commission.

## **Conclusion**

The accreditation of observers for UK elections has been a welcome innovation that will increase public trust in the integrity of the electoral system, as well as meet UK obligations under a number of international treaties. The increased transparency observers can provide is vital when significant changes are being made to the system.

The introduction of e-voting and e-counting technology into the English and Scottish elections has not so far been a smooth process. The English pilot procurement and management procedures had fundamental systematic flaws that led to grossly insufficient technology and risk management. Having created a tight timetable and introduced delays to the pilot process, the Department for Constitutional Affairs then passed responsibility to insufficiently prepared local authorities without providing enough support. Given their generally very low levels of technical expertise, staff in local authorities exhibited disproportionately high levels of confidence in the technologies their pilots used. It is unclear why a company such as ES&S, who provided e-voting products with unsatisfactory security to other governments,<sup>viii</sup> could even be considered for participation in the UK pilot programme.

The management of the pilots by the Department for Constitutional Affairs was not significantly developed since the 2003 pilots, whose conduct had raised numerous recommendations for fundamental changes from the Electoral Commission and other stakeholders. Many problems and oversights have been blamed on the short timescales and the immovable deadline of election day. These same excuses have been used in the evaluation of pilots since their inception in 2000. The Department for Constitutional Affairs, the suppliers and the authorities have had ample opportunity to reflect on the conduct of the previous pilots. Their failure to do so is disappointing.

Elections are challenging projects that must deliver confidentiality, accuracy and integrity. The infrequency of statutory elections, annual at most, makes procedural improvements difficult—staff change and knowledge is not shared or experiences recorded. However, this has always been the case and the continued failure to learn from previous pilots suggests any changes to election practice made because of past experience have been inadequate.

The inability of Returning Officers and the government to understand events as they unfolded, let alone to manage those events, is of considerable concern. Returning Officers were supplied with information by vendors as the counts proceeded, but were poorly equipped to interpret and act on its technical aspects. The lack of general technical understanding and knowledge about the e-counting and e-voting systems across all election staff was perturbing. Returning Officers often displayed a lax attitude towards problems that arose, sometimes appearing more interested in declaring any result, correct or otherwise, than in getting to the root of those problems.

The lack of reliable audit trails, the actions of some vendors that left no audit trail and a general reluctance to perform manual counts to confirm the results of e-counting mean that there is no meaningful way to verify that voters' intentions were accurately counted.

At many stages throughout the electoral process, information was not provided in an open and timely manner. ORG itself experienced obstruction from some authorities and government departments when seeking information concerning the elections; candidates and their agents were frequently left in the dark concerning count progress; suppliers were on occasion economical with the truth. Both authorities and suppliers should have anticipated problems with the immature technologies used and should have been better prepared to deal with them.

The presentation of electoral matters often left stakeholders, such as candidates and agents, unclear as to where responsibility lay between the Electoral Commission and the government. In both Scotland and England, the Commission became closely entangled in supporting the government in the successful delivery of the elections and the technologies selected. A more hands-off approach would have strengthened the Commission's impartiality and would have reinforced its role as being independent of the government.

Despite the considerable resources and publicity given to the elections, including official leafleting and extensive local press coverage, there has not been a demonstrable and consistent trend towards increased turnout. The problems that arose in Scotland, in particular, are likely to have a long-term detrimental effect on voter trust and confidence. Pilots held to date suggest that e-voting will not deliver the additional voter engagement expected by the government.

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Stephen Bridges, Richard Cain, Marc Hankins, Glyn Wintle, Mat Booth, Neil Holmes, Tony Kennick, Philip Nicholls, Simon Temple, Anthony Quinn, Alistair Alexander, Louise Ferguson, Chris Adams, Felix Cohen, Martin Taylor, Becky Hogge, Jason Kitcat, Calum Morrell, Jonathan Hogg, David Thomson and Norman Gray.

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<sup>i</sup> United Nations Electoral Assistance Division, *Declaration of Principles for International Election Observation and the Code of Conduct for International Election Observers*, adopted 27 October 2005. Available from [http://www.accessdemocracy.org/library/1923\\_declaration\\_102705.pdf](http://www.accessdemocracy.org/library/1923_declaration_102705.pdf) (last accessed 23 July 2007).

<sup>ii</sup> Department for Constitutional Affairs. Electoral pilot schemes - supporting documents. Available from <http://www.dca.gov.uk/elections/suppdocs.htm> (last visited 2 August 2008).

<sup>iii</sup> Department for Constitutional Affairs. Electoral Modernisation Pilots – Local Government Elections 3 May 2007- Details of pilot initiatives, January 2007. Available from <http://www.dca.gov.uk/elections/elections-may-07.pdf> (last visited 2 August 2008).

<sup>iv</sup> A. Graham. Speech to the Association of Electoral Administrators Annual Conference, 27 February 2007. Available from [http://www.public-standards.gov.uk/upload/assets/www.public\\_standards.gov.uk/aeafinalweb.doc](http://www.public-standards.gov.uk/upload/assets/www.public_standards.gov.uk/aeafinalweb.doc) (last accessed 2 August 2008).

<sup>v</sup> Ibid note ii

<sup>vi</sup> Breckland District Council (Electronic Counting) Pilot Order 2007 p8. Other e-counting pilot orders used the same language though not always with the same section number.

<sup>vii</sup> Electoral Commission, *Observers at United Kingdom elections*, January 2007. Available from [http://www.electoralcommission.gov.uk/files/dms/ObserversBooklet-Final\\_24020-17831\\_\\_E\\_\\_S\\_\\_W\\_\\_.pdf](http://www.electoralcommission.gov.uk/files/dms/ObserversBooklet-Final_24020-17831__E__S__W__.pdf) (last accessed 23 July 2007).

<sup>viii</sup> Indiana Election Commission minutes, 20 January 2004 pp.10–18. Available from [http://www.in.gov/sos/elections/pdfs/IEC\\_Minutes\\_January\\_20\\_2004.pdf](http://www.in.gov/sos/elections/pdfs/IEC_Minutes_January_20_2004.pdf)