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# Internet Voting: The Canadian Municipal Experience

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*On January 26, 2010 Carleton University hosted a public policy workshop addressing Internet voting and what Canada can learn from existing cases and trials both locally and abroad. It brought together academics, technical experts, parliamentarians, political party representatives, government officials, representatives from electoral administration authorities and other professionals from Canada, the United States, and Europe. A report entitled, A Comparative Assessment of Electronic Voting, was prepared by the Canada-Europe Transatlantic Dialogue for Elections Canada leading up to the workshop. This article outlines the experiences of three Canadian municipalities that have tried Internet voting and suggests some lessons for other jurisdictions. It is drawn mainly from the report, which is available on the Canada-Europe Transatlantic Dialogue (Strategic Knowledge Cluster) website. This slightly revised and edited extract is published with the permission of Elections Canada.*

In the past decade various types of electronic voting, particularly Internet voting, have garnered considerable attention as possible additional voting methods that hold promise to make the electoral process simpler and more efficient for political parties, candidates, election administrators, and most importantly, for electors. The term electronic voting is a blanket term used to describe an array of voting methods that operate using electronic technology. There are three primary types of electronic voting, namely machine counting, computer voting and on-line or Internet voting. With respect to the last of these types, there are four kinds of electronic voting that use the Internet; these include kiosk Internet voting, polling place Internet voting, precinct Internet voting, and remote Internet voting.<sup>1</sup>

Kiosk Internet voting typically involves the use of a computer at a specific location that is controlled by

election officials. This differs from electronic machine voting because, among other things, the ballot is cast over the Internet. Polling place Internet voting is conducted at any polling station through the use of a computer that is controlled by election representatives. Precinct Internet voting is analogous to polling place voting except that it must occur at the voter's designated precinct polling place. Remote Internet voting is voting by Internet from a voter's home or potentially any other location with Internet access. Remote Internet voting is the predominant focus of this paper given that it is treated synonymously with the term 'Internet voting' in the literature, has the most potential to lower traditional opportunity costs for electors and enhance accessibility, and is most consistent with other technological developments in society.<sup>2</sup>

## Potential advantages of Internet voting

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Proponents of electronic voting, particularly Internet voting, make a number of arguments in favour of its implementation. These are related to technology, social issues, and election administration.

First, electronic voting has the potential to make the voting process easier and more accessible for electors. This is especially true for remote Internet voting and telephone voting, given that ballots can be cast from

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any computer with an Internet connection or any working telephone. These latter methods substantially lower the cost of voting for many electors by creating many more access points from which they are able to vote. There is the potential to eliminate long line-ups at polling stations and better address accessibility issues for persons with disabilities, those suffering from illness, those serving in the military or living abroad, those away on personal travel, snowbirds, and other groups of citizens such as single parents who may find it difficult to visit a traditional polling station. Additionally, remote methods of electronic voting afford electors the opportunity to vote at any time.

With regard to special populations of electors, Internet and telephone voting may also be methods of engaging those voters who are considered the hardest to reach, particularly young people aged 18 to 30. These electors are most familiar with the technology, are the most frequently reported users and would likely benefit the most from the extension of remote types of electronic voting. Remote Internet and telephone voting seem to be especially useful ways of engaging young people away at university and who are not registered to vote in that particular constituency.

Second, Internet and telephone voting could allow greater secrecy for special populations of electors with disabilities (including visually or hearing impaired). By voting electronically and therefore unassisted, these electors are afforded a greater degree of anonymity when casting a ballot. Enabling secrecy for these groups enhances the equality of the vote.

Third, enhancing accessibility and creating more participatory opportunities for electors holds promise to positively impact voter turnout.

Fourth, related to administration, Internet and telephone voting are claimed to produce faster and more accurate election results. Internet and telephone voting systems are said to deliver a faster official ballot tabulation process and are alleged to be more accurate than other types of machine counting (such as punching cards), which are sometimes criticized for error.

Fifth, over the long term all types of Internet voting have the potential to be less expensive to operate and execute than traditional paper ballots, which require setting up and staffing polls. However, the start-up costs for machines or kiosks can be very high.

Sixth, the use of less paper can be considerably better for the environment and is the “greener” option when it comes to voting.

Finally, all types of Internet voting and telephone voting have the potential to improve the overall quality of ballots cast by reducing or eliminating ballot errors and by creating better informed electors. There can be no ballot errors, and, if desired, spoiled ballots can be excluded. However, if the legal structure in a jurisdiction requires the option to spoil a ballot or allows for protest votes, a button can be added in some programs to give electors the option to cast a protest vote (or decline to vote). Furthermore, depending on the architecture of the Internet voting system, there is the possibility for additional information to be displayed regarding candidates and their policy positions in conjunction with the on-line vote. This would provide voters with basic information about the candidates and party platforms, and therefore better informing their vote.

### **Drawbacks and Risks of Internet voting**

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Those opposed to, or skeptical of, electronic voting point to several drawbacks and perceived risks that are associated with types of Internet voting and telephone voting methods. The most prominently cited risk relates to security. Threats of computer viruses or hacker-orchestrated ‘denial of service’ attacks are most commonly mentioned as problems that could compromise an election and public confidence in electronic voting. This concern is most prevalent with regard to the security of personal computers. In light of this, the maintenance of ballot secrecy is presented as an issue when using computers that are unprotected, located in public places, or which may be susceptible to virus attacks. Other potential technical problems or issues include power outages or malfunctions in Internet connectivity as well as the possibility of servers shutting down or crashing. The reliable recording and storage of votes is also an important consideration.

Second, problems with access are raised. The material on remote Internet voting discusses the potential for a “digital divide”, which can occur in two ways. There is a digital divide between those who have home computers with Internet connections and those who do not. Second, there may be a digital divide between those who have faster access and those who have slower connections and hence lower quality access.<sup>3</sup> People with higher incomes are more likely to be able to afford access. Furthermore, access is often less expensive and of higher quality in urban areas. Those with lower incomes and who live in rural areas are at a disadvantage. Therefore, the extension of Internet voting has the potential to create divides with respect to many socio-economic variables, namely income, education, gender, geography, and race and

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ethnicity. These potential divides could be problematic for participation and representation.

Third, it is said that remote Internet and telephone voting present greater opportunities for fraud and coercion or vote-buying. Fraud occurs when someone votes on another's behalf without that person's permission, whereas coercion or vote-buying takes place when a voter is pressured by others to vote in a way that he or she would not have otherwise. Both present problems for ballot integrity since it is important that every vote cast be tallied as the voter intended. There is additional opportunity for fraud in electronic voting systems if voter notification cards, which contain unique passwords required to cast a ballot, are intercepted. In the case of ballots not cast in person it is more challenging to verify a voter's identity. Remote voter authentication can be a problem since it may be difficult to confirm that the person voting is actually who he or she claims to be. While digital signatures and passwords can help, they are not foolproof and could potentially be shared.

Fourth, the issue of voter education is cited as a concern. A lot of time and money must be invested to ensure that the public is aware that electronic voting is an option and that voters are able to understand and use the on-line system to cast a ballot. Without correct marketing and advertising it would be difficult to engage electors.

Fifth, privatization is a concern when electoral administrators cede control to a hired firm. Contracting elections out to private companies to run the electronic operations has negative implications for some people, and hence has the potential to negatively impact public confidence and trust in government and elections.

Finally, perhaps the most significant social concern is the threat of the disintegration of social capital or civic life. The proliferation of electronic election services has the power, some say, to alter the nature of electoral participation by causing more electors to vote alone instead of at a polling place with others. Opponents feel this development threatens to erode civic life by effecting local social networks and the role of groups related to elections.

### **Canadian Municipal Trials**

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To date, the Internet has been used to conduct a number of elections in Canada at the local level. This section examines the experiences of Markham, Peterborough, and Halifax with remote Internet voting to shed light on the potential of an Internet voting system in Canada.

To date, six provinces have passed legislation as part of their respective Municipal Elections Act affording municipalities the opportunity to either implement alternative voting methods or some form of electronic voting, or to pass a bylaw that would authorize the use of alternative voting methods. Alberta, British Columbia, New Brunswick, Nova Scotia, Ontario, and Saskatchewan have all done so (see municipal or local government Election Acts of each province). Though the option of using another method of voting is written into Ontario and Nova Scotia legislation, before implementing an alternative approach it was required that the local councils of Markham, Peterborough, and Halifax pass bylaws specifying the type of method they wished to use and a rationale for its execution. Along with this, the three municipalities created a formal list of procedures to be followed and forms to be used in the context of electronic voting. This was done for Internet ballots and vote tabulators in the cases of Markham and Peterborough and Internet and telephone voting for Halifax.<sup>4</sup>

### **The Markham Experience**

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Markham, Ontario was the first municipality in Canada to introduce electronic voting as part of a comprehensive engagement strategy to increase participation in elections. By increasing the range of services available to electors and making voting more convenient for residents, the Town of Markham hoped to not only increase electoral involvement, but also have a positive effect on voter turnout. In addition to the Internet voting option, vote tabulators were introduced as part of the engagement strategy to help incorporate electors with disabilities (including visually or hearing impaired) and allow them to cast a secret ballot. Tabulators had audio, touch and sip and/or puff abilities to enable these groups of electors to vote unassisted. Tabulators were also incorporated because the town believed they provide a more efficient counting mechanism than traditional tabulation procedures.

Prior to introducing electronic voting, the Town conducted considerable research in anticipation of the 2003 and 2006 projects. Though more extensive research was carried out prior to 2006, some of these initiatives included evaluations of trials in other jurisdictions; a comparative risk analysis of traditional, Internet, and other types of voting; consultations and recommendations from information technology companies; and examination of public attitude data.

The electronic model used by Markham included the option of remote Internet voting in advance polls during the 2003 and 2006 municipal elections

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as well as the use of optic scan vote tabulators in every polling station on election day. The electronic portion of the elections was run by Election Systems & Software (ES&S), of Omaha, Nebraska, a company that previously conducted multi-channel voting trials in the United Kingdom. Markham paid ES&S \$25,000 in 2003 and \$52,000 in 2006 for the development, execution, and operation of the Web site. The vote tabulators were rented to the town at an additional cost of around \$160,000 per election.<sup>5</sup>

Electors wishing to vote on-line were required to pre-register, at which point their names would be taken off the manual voters' list. Every elector received an on-line registration package by mail as part of the regular voter notification process. The rationale behind pre-registration was that it would serve as an additional security precaution and would give the Town a better sense of which electors opted to use electronic voting. Upon registering electors were prompted to create a unique security question and, shortly after, were mailed a unique PIN. Use of the PIN and the correct response to the unique security question were required before a ballot could be cast on the Town of Markham Web site. In 2003, on-line voting was available during a five-day advance polling period and in 2006 it lasted for six days.

The Town of Markham also took a unique outreach approach to informing its electors of the electronic voting service by employing Delvinia Interactive, a firm that specializes in creating digital experiences, to create awareness of on-line voting. Delvinia created an interactive Web site that not only encouraged electors to register to vote on-line and informed them of how the process worked, but also educated them on the importance of voting. The Web site also included links to the various candidates' Web pages in case electors wanted to learn more about them or their programs. The town advertised both the Web site and on-line voting through mailings, print ads, ads in malls, e-mail, telephone, and even by fridge magnets. This aggressive marketing approach is very likely a key to the success of Internet voting in Markham. The same services were used in both election years.<sup>6</sup>

Markham electors had the option of voting from home, their workplace, a library or public place where Internet was available, as well as at touch-screen kiosks that were set up in city hall.<sup>7</sup> In 2003, 12,000 out of 150,000 electors pre-registered to vote on-line and slightly over 7,000 voted on-line. In 2006, advance voting on-line increased by 48 percent, as 10,639 voters chose to use the service to cast their ballots. While

turnout overall was quite similar in 2003 compared with figures from 2000 (about 28 percent), turnout in the advance polls, where Internet ballots became an option, increased significantly (an estimated 300 percent). In 2006, there was a one-percent increase in the amount of electronic ballots cast and overall turnout rose to 38 percent. Rates of use and satisfaction with on-line voting in Markham are highlighted by examining the public attitude data collected by Delvinia.

In terms of remote location for example, 82 percent of electors who voted on-line did so from home and 88 percent of on-line voters cited convenience as the primary reason for doing so.<sup>8</sup> When asked if they would like to see on-line voting offered in elections at other levels of government 90 percent reported being very likely to vote using the Internet in a provincial election and 89 percent in a federal election. These percentages indicate that there is strong public support for remote Internet voting in the Town of Markham, at least among those who use the service. In addition, a portion of previous non-voters (25 percent in 2003 and 21 percent in 2006) declared that they had decided to cast a ballot because of the convenience of Internet voting.<sup>9</sup> One hundred percent of those who voted on-line in 2003 reported they would vote on-line again in the future and 91 percent in the 2006 survey indicated they would be "very likely" to do so. Overall, based on the positive public feedback and increase in turnout, Markham plans to continue to refine its model and employ a similar electronic strategy in the forthcoming 2010 election.

### **The Peterborough Experience**

The rationale behind the introduction of Internet voting in Peterborough was to reduce the need for proxy vote applications and to enhance accessibility for electors, creating more opportunities for them to cast a ballot. In addition, the City was impressed by the increase in voter turnout in Markham's advance polls in 2003 and perceived on-line voting as a means of possibly increasing turnout. The potential to lower election costs was also an important consideration. Overall, the extension of Internet voting was seen as a positive step toward making elections more accessible by creating more voting options for electors.<sup>10</sup>

Peterborough initiated electronic voting for the first time in its 2006 municipal election and, like Markham, plans to continue and expand the use of electronic voting in 2010. Peterborough is demographically different from Markham, in that it is less urban, and has a smaller electorate with 52,116 electors. Nevertheless, its experience with electronic voting was very similar to Markham's. A large percentage of its

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electors have home computers with Internet access. Peterborough is particularly interesting because it has a very large senior population (the second largest in Canada) and so to see a high rate of use among older electors highlights that remote Internet voting is not just a feature that attracts young people.

Prior to the introduction of Internet voting, the City of Peterborough did not collect public attitude data to gauge electors' reactions toward the service; however, they did analyze other cases of electronic voting, different Internet voting providers, and the various types of alternative voting methods available. The City also implemented an aggressive promotional campaign to inform electors of the service, which primarily involved visiting seniors' residences and community centres in the hope of appealing to older electors. Like Markham, Peterborough chose to use remote Internet voting for a five-day period in its advance polls and introduced vote tabulators into all polling stations on election day. City officials awarded the electronic election contract to a Toronto-based company, Dominion Voting Systems, for a total cost of \$180,400, including the rental fee for the tabulators. The system operated on a two-step process very similar to the one used in Markham.

All electors on the voters list were mailed a notice of registration card or letter with, among other information, a unique elector identifier (EID). To access the on-line election services electors were required to login to the system prior to registering, using their EID as well as retyping a security code called a CAPTCHA challenge. To register, electors were required to provide their address (as shown on their notice card) and their year of birth. They also had the option of choosing whether they preferred to have their PIN mailed (as in the Markham trials) or e-mailed to them. Registered electors were then either mailed or e-mailed another card with a PIN. Both the PIN and the login information (EID number and CAPTCHA challenge entry) were required prior to casting a ballot on the City of Peterborough Web site.

Overall, the introduction of electronic voting in Peterborough can be considered a success. Public reaction to the introduction of Internet voting was positive and although initially negative media coverage was an obstacle, this was overcome by providing media sources with additional resources and educating them about the Internet process and the security of the system. No security issues or risks required attention. The City of Peterborough reports that they put "tremendous security methods in place and felt very comfortable the system was secure".<sup>11</sup> The

only drawback of the process cited by City officials was that Internet voting was limited to advance polls only and this is something they would like to see expanded in future elections.

There was no noticeable effect on turnout overall (it remained unchanged from 2003 at a rate of 48 percent), but turnout in the advance polls was moderately higher than the figures for 2003.<sup>12</sup> The increase in advance turnout may be a consequence of the fact that aside from the on-line polls, only one traditional advance polling station was open to the public. Also, turnout may have been artificially high in the 2003 election given that there was a referendum question on the ballot. In all, 14 percent of electors who voted cast their ballots over the Internet (3,473 of 25,036). The largest group of on-line voters was baby boomers. Specifically, 70 percent of on-line voters were 45 and older, and the highest rate of use was among electors aged 55 to 64. Only 14 percent of those aged 18 to 34 voted on-line. The higher rate of use among baby boomers is interesting because most survey data indicates that young people are more inclined to report using, or saying they would make use of, Internet voting than other cohorts of electors. If seniors, or older cohorts of electors, are interested in making use of on-line voting, its implementation is more likely. Similar patterns of usage by age group are also present in the Markham and Halifax data.

### **The Halifax Experience**

Halifax Regional Municipality first introduced remote Internet voting in its municipal and school board elections in 2008 as part of a pilot project that sought to establish the viability and reliability of electronic voting. The municipality decided to offer remote Internet and telephone voting, given that voting over the phone appealed to a wider demographic; especially older electors who might have greater difficulty using the Internet. Furthermore, Halifax contains both an urban core and suburban areas, so while some areas are highly connected to the Internet, other parts are only now acquiring Internet connectivity. By implementing both remote Internet and telephone voting Halifax offered those residents who have limited or no Internet access the possibility of voting electronically.

Prior to the 2008 trial, Halifax extensively researched electronic voting options and closely monitored the experiences of other municipalities that had incorporated Internet voting in their elections. In developing their own Internet voting approach Council designated principles to which an alternative voting method was expected to adhere, these included the integrity of the electoral system, increasing voter

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choice by incorporating additional voting methods, potentially increasing voter turnout, improving cost effectiveness, and improving the speed of tabulation and the reporting of results. The four most important considerations in the process were deemed to be:

- outsourcing to a trusted partner,
- the level of security,
- the quality of the voter data, and
- a credible audit process to give voters confidence in the voting process

This last consideration was accompanied by the development of a very detailed bylaw as well as a policies and procedures document.

The trial included a potential 276,000 voters and was contracted to a locally established company, Intelivote, who had previously run elections for eight small Ontario townships in 2006, and for two districts in the United Kingdom in 2007. For a total cost of \$487,151 Intelivote incorporated remote Internet and telephone voting as a component of the advance polls. The remote Internet and phone portion of the election took place during a three-day period two weeks prior to election day.<sup>13</sup> The Halifax experience differs slightly from the Markham and Peterborough projects given that electors were not required to register prior to using remote Internet or telephone voting – residents were instead able to choose to use the service at any time. Also, whereas in the other two trials electors who expressed a willingness to use remote Internet voting (by registering on-line) were taken off the manual voting lists, the technology used in the Halifax trials enabled voters to select their preferred method of voting when they wanted to cast a ballot and not before.

The Halifax approach is also exceptional in that electors were able to spoil a ballot. Not being able to spoil a ballot is often cited as a major disadvantage of electronic voting systems since many typically do not offer an official way to decline a ballot. Intelivote created a “decline to vote” button which was presented along with the candidate names so that electors could exercise this right.

Another important feature of the model used in Halifax is that voters were able to switch voting channels if they wished. For instance, an elector could start voting on his or her cell phone on the way home from work (e.g. vote for mayor) and then continue voting for the remaining positions (e.g. councillors and school board members) from his or her home computer.<sup>14</sup>

To ensure security and anonymity, a specific set of steps was undertaken. Every Halifax resident on the

voters list was mailed a letter explaining how to vote electronically and provided with a PIN. At any point during the three-day period electors were able to log on to a secure Web site controlled by Intelivote or call a phone number and cast their ballot electronically. The on-line process required electors to complete a CAPTCHA challenge, and then use their PIN and date of birth to confirm their identity. Once these security steps were complete a menu prompted electors on how to vote for mayor, councillor, and school board representatives.

In terms of security more specifically, the system used in Halifax used four levels of security checks. The first, a “penetration test”, involved a contracted IT firm trying to break through the system to evaluate whether existing security mechanisms were capable of adequately preventing another person or group from tampering with the system. The second check involved analyzing the encryption system used in the communication between computer servers. The third was an external audit of the entire voting process undertaken by an auditing firm. Finally, the fourth check analyzed the network’s overall security to ensure prevention of attacks and problems.

Public acceptance and support of electronic voting in Halifax was relatively strong. As early as 2004, Halifax began conducting polls in which more than 70 percent of respondents said they would be in favour of implementing an electronic voting option. While 44 percent reported that voting at the polls was their preferred method, 35 percent indicated that they would prefer Internet voting if it were available. No objections were raised at council meetings and there was no public protest. Though voter turnout did not increase overall (from 2004 to 2008 it dropped from 48 percent or 125,035 voters to 38 percent or 100,708 voters), turnout on advance voting days (where remote Internet and telephone voting were offered as options) increased from 14,000 electors in 2004 to 29,000 electors in 2008 despite it only being offered for a three-day period.<sup>15</sup> Though the 2008 election was deemed a close mayoral race it was also held near the Canadian federal election and this may have been an important factor in the lower turnout.

Municipal officials were sufficiently pleased with the 2008 pilot project that they recently conducted another remote Internet and telephone voting trial as part of a special by-election that took place on September 19, 2009. This time, however, the option to vote using the Internet or telephone from remote locations was continuous (from the first voting day up until and including election day). Voter turnout was

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35 percent, a 12 to 25 percent increase from turnout in the three previous by-elections (21, 10 and 23 percent respectively) and 75 percent of all votes cast were electronic (59 percent were on-line ballots).

This by-election was also unique because Halifax launched a candidate module (designed by Intelivote), which allowed candidates the opportunity to track participation by searching electors by name or address to see if they had participated. This module was received well by all candidates and used by most of them to varying degrees. It was also positively received by election administrators, who reported being pleased that candidates' representatives were not crowding the polling place during the election. While candidates' representatives still had the legal right to attend the polls, being able to track participation on-line apparently eliminated the need to do this.

Overall, Halifax personnel are sufficiently pleased with the trials that they plan to eliminate a substantial number of polling stations in the 2012 municipal election. Council anticipates this will result in "increased turnout, lower election costs, and happier electors".<sup>16</sup> If these considerations are accurate, the Halifax model may be an important methodology to consider in the development of electronic voting programs in other Canadian jurisdictions or regions elsewhere.

### **Lessons from the Municipal Experience**

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With respect to voter turnout, making assessments from these municipal cases is difficult given that, with the exception of Halifax's by-election, remote electronic voting options were only offered for a specific time during advance polling and so it is not possible to know what effect these options might have had on overall turnout. The extension of remote Internet voting did, however, have a positive impact on advance turnout in Markham, Peterborough, and Halifax. Furthermore, turnout in the recent Halifax by-election noted a substantial increase. While we cannot evaluate the overall impact of remote electronic voting on turnout until there are more substantive trials and data collection its effect in the Halifax by-election is promising. Advance turnout figures also suggest the extension of Internet voting may have a positive impact on voting turnout.

Other important considerations can also be taken from these trials, particularly the marketing scheme employed in Markham and some specific elements from Halifax's approach. Making electors aware of the availability of electronic voting methods and informing them of how they may access these services is an important prerequisite to the deployment of Internet

voting models. The strong positive impact Markham experienced with respect to voter turnout may also very well be linked to the town's aggressive marketing campaign. This may also be the case with regards to the promotional campaign Peterborough targeted to older groups of electors.

The most recent Halifax case is particularly valuable to study given that it did not require electors to pre-register to vote on-line, offered a "decline to vote" button enabling electors to refuse a ballot, offered telephone and Internet voting simultaneously, allowed voting for the whole election period, and implemented a candidate module that allowed candidates' representatives to track electoral participation online whether an elector voted using the Internet or in a traditional polling station. This combination of features had the goals of reducing barriers to voting, maintaining the traditional integrity of the voting process, and increasing ballot accessibility. The absence of pre-registration in Halifax made the remote Internet and telephone voting options of maximal utility.

Furthermore, Halifax's incorporation both remote Internet and telephone voting was an important decision to maximize accessibility. While a majority of households in a given jurisdiction may have Internet access, many rural areas may experience limited connectivity and those with lower incomes may not be able to afford access. Instituting Internet kiosks in public places such as shopping malls, libraries, and community centres is one method of making remote Internet voting more widely accessible to these groups of citizens, but the extension of remote telephone voting offers these electors the option of remote voting. Traveling to an electronic polling location may very well present as much of a barrier as traveling to a traditional polling station. In addition, the ability of Intelivote's system to allow electors to switch voting channels is a model of enhanced accessibility and efficient delivery of service. A multi-channel model such as this, where remote voting options are interchangeable, makes voting much more feasible for certain groups of electors, notably those who are out of the country, busy professionals, single parents, and electors with disabilities.

It would be useful for Canadian electoral agencies to develop a number of goals, principles or benchmarks that Canadians would expect from an electronic voting system. These could include:

- maintaining the integrity of the electoral system,
- increasing accessibility and convenience for electors,

- increasing electoral participation,
- being innovative while maintaining traditional customs and conventions,
- improving the speed of tabulation and the reporting of election results,
- maintaining or enhancing the inclusiveness of the electoral process,
- responding to technological and attitudinal changes in society,
- preserving or increasing system transparency,
- continuing to earn and maintain public trust, and
- ensuring cost effectiveness

Additional research with respect to software type, security protocols, and risk assessment methods would be beneficial as well.

Ultimately however, practical testing and pilot projects are the only ways of knowing what will work and what will not. Trials of particular methods will give the best insight into understanding what requirements must be met for Internet voting to work well in Canada as well as the actual pros and cons of electronic approaches. A by-election is perhaps a useful starting point, but a more expansive trial would be necessary prior to the introduction of Internet voting nationally. A regionally concentrated trial, or a group of selected constituencies that are regionally representative, would be a useful approach to testing. Only after such testing would it be feasible to offer remote Internet voting as an option for all Canadian electors, as a complement to the traditional process.

In particular, the following eight steps or supportive factors can be identified as important prerequisites in the development of an Internet voting approach.

First, ensuring access is essential. This includes making sure that an adequate number of households have computers with access to the Internet, while taking account of differences between constituencies. Ensuring equality of access may require the inclusion of additional public Internet voting sites or making other voting methods more accessible in areas of lower income or rural areas where connectivity may be an issue.

Second, a culture of support – from government, the election administration body, political parties and candidates as well as electors – is required. To allow for a smooth introduction, it is important that all parties affected by the change are generally supportive, and that concerns are addressed.

Third, there is a need for a legal framework that supports the use and implementation of alternative electronic voting methods. In most cases, Canadian trials will require approval of the specific method by

parliamentarians, and likely additional legislation if the method is to become a permanent fixture of the Canadian electoral process.

Fourth, thorough research and an assessment of trials and tests in other jurisdictions as well as an analysis of their outcomes is essential. It would be helpful to pursue the cases discussed in this report and others to identify particular features of superior approaches that may be useful in developing a given model for Canada.

Fifth, it is important that there be a clear picture of the benchmarks and requirements an additional voting method would be expected to fulfill, as this will provide a framework for distinguishing which electronic or Internet voting method is a good fit for the Canadian electoral process.

Sixth, a marketing and information campaign appears to be an important step toward not only launching, but also maintaining a successful Internet voting program. In addition to informing electors of the choice of alternate voting methods, information concerning the importance of voting or other details regarding candidates or their platforms could be included.

Seventh, gradual, practical testing appears to be a necessary step. Gradual trials would involve introducing Internet voting in sequential electoral races whereby the number of voters affected would increase with each pilot as well as the perceived importance of the election.

Finally, adequate evaluation of pilots is recommended to ensure the method is meeting desired objectives, and that all stakeholders are satisfied with the change and its consequences. This would involve conducting surveys among political parties, candidates, election administrators, and electors.

Careful examination of the literature on Internet voting as well as the pilot experiences suggests that both the extremely optimistic and pessimistic positions about the effects of Internet voting are overstated. Internet voting will not act as a panacea for the social causes responsible for electoral disengagement, nor will it remedy negative attitudes toward political entities. It will, however, increase voting opportunities for electors and make casting a vote more accessible.

Internet voting will not erode democracy or result in vote buying and election fraud any more than does the existing system. The Internet will undoubtedly change the political landscape in Canada with or without the introduction of Internet voting, since it



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already is impacting electoral campaigns, information access, and overall election administration. While there are valid concerns that should be considered and thought out in the development of a given model, the successful operation of Internet voting in other jurisdictions suggests that it can be implemented and, in fact, improve the electoral process for electors and election administrators.

### Notes

1. Michael R. Alvarez and Thad E. Hall. 2004. *Point, Click & Vote: The Future of Internet Voting*. Washington: Brookings Institution Press.
  2. Bryan Mercurio. 2004. "Democracy in Decline: Can Internet Voting Save the Electoral Process?" *John Marshall Journal of Computer and Information Law* 22,2: pp. 101-143.
  3. Michael R. Alvarez and Thad E. Hall. 2004. *Point, Click & Vote: The Future of Internet Voting*. Washington: Brookings Institution Press.
  4. This section is based largely on interviews and personal communications with:
    - Andrew Brouwer, Deputy Clerk, Town of Markham,
    - Dennis Flaherty, Manager, Strategic Communications, Town of Markham,
    - Nancy Wright-Laking, Office of the Municipal Clerk, City of Peterborough,
    - Jennifer Sawatzky, Deputy Division Registrar, City of Peterborough,
    - Linda Grant, Returning Officer, Regional Municipality of Halifax,
    - Cathy Mellett, A/Manager, Office of the Municipal Clerk, Regional Municipality of Halifax.
  5. "2003-2006 Election Cost Rebate and Election", Town of Markham, 2007.
  6. Adam Froman, President, Delvinia Interactive, Personal interview, October 2, 2009 and December 8, 2009.
  7. Kathleen Sibley. 2003. "Markham Voters Go From in Line to Online." *itbusiness.ca*, November 12.
  8. Delvinia Interactive. 2007. *Understanding the Digital Voter Experience: The Delvinia Report on Internet Voting in the 2006 Town of Markham Municipal Election*.
  9. CANARIE Inc. 2004. "Canada's First Study on Internet Voting Proves Voters Want e-Democracy." News Release, February 2.
  10. City of Peterborough. 2006. Report FACLK06-002. *Award of P33-05 – Lease of Internet Voting Services and Vote Tabulators – 2006 Municipal Election*. Peterborough: City Council, January 30.
  11. Nancy Wright-Laking, Clerk, City of Peterborough, Personal communication, November 23, 2009.
  12. James Hoover, Dominion Voting Systems, Personal communication, August 27, 2009.
  13. Tim Bousquet, 2008. "iVote: Can Electronic Voting Save Democracy?" *The Coast*, September 18.
  14. Dean Smith, President, Intelivote, personal interview, August 26, 2009.
  15. In 2004 there was a plebiscite on Sunday shopping held in conjunction with municipal elections, which increased turnout in all municipalities.
  16. Dean Smith, President, Intelivote, personal interview, August 26, 2009.
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