e-Voting: Same Pilots, Same Problems, Different Agendas

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Abstract: This paper outlines the preliminary findings of the empirical stage of the research to establish the reasons that in 2003 some English local authorities decided to trial e-voting and others did not. The key findings demonstrate that central and local governments have different agendas and there is little momentum from central government to increase the number of pilot schemes. The central government policy to introduce e-voting via voluntary pilot schemes is only providing a limited insight into the problems surrounding the operation of the new voting methods.

The findings are derived from comparative semi-structured interviews with Election Officers from pilot and non-pilot authorities, and the analysis is based upon Rogers' diffusion of innovations theory framework. The findings illustrate that in the case of e-voting, central government has not adopted a formal diffusion strategy and that a most influential driver to adopt e-voting is not prominently acknowledged in diffusion theory. The results suggest that the theory of perceived attributes needs modification and the issue of the diffusion of a public policy should be considered by government earlier in the public policy process.

Keywords: e-voting, pilot scheme, public policy process, diffusion

1. Introduction

This paper is based on research to establish the reasons that in 2003 some English local authorities volunteered to take part in the e-voting pilot schemes and others did not. Following each e-voting pilot the local authorities are required report to the Electoral Commission.

There is no research to establish the reasons that local authorities do not volunteer for the pilots. This paper outlines the preliminary findings from the interviews with Election Officers from pilot and non-pilot authorities to establish the reasons for their decisions. The study is diffusion based research to establish the reasons why an innovation, in this case e-voting, is adopted or rejected. The research is underpinned by Rogers' diffusion of innovations theory framework to assess whether or not e-voting will diffuse in accordance with that theory.

The findings recognise that the number of authorities willing to join the trials of e-voting are falling and the most influential variables effecting their decision making appear to be the lack of continuity, issues of security, shortage of time for the legislative process, the availability of resources and kudos. The penultimate section of the paper analyses how each of these issues can be addressed by a formal diffusion strategy. The final section includes a recommendation for a revised public policy design as it warns of the potential danger of the lack of feedback from the increasing number of non-pilot authorities.

It also suggests that since local authorities appear to have participated in the trials for their own ends there should be a further category included in the sub-dimension of Rogers' perceived attribute of an innovation, relative advantage. The results demonstrate that consideration of a formal diffusion strategy prior to policy implementation can address the factors inhibiting the adoption of an innovation introduced by central to local government.

2. Framing the problem

Falling turnouts at elections have been recognized as a problem for the last decade (ICAVM, 2002). This concern resulted in the Representation of the People Act 2000 which established a framework for local authorities to take part in pilot schemes trialing new voting procedures (Fairweather and Rogerson, 2002). The pilot schemes began in May 2000 and continued in May 2002. The most extensive pilot programme took place in May 2003 and featured a more widespread use of technology than in previous years; seventeen schemes offered the electorate an opportunity to vote electronically using various methods including the Internet, telephone, text-messaging and digital television. Fifty nine local authorities took part in the scheme with almost 14% or 6.4 million English citizens eligible to vote (Electoral Commission, (a) 2003). Since then there has been the 2004 all postal pilot schemes, a scheme testing administrative procedures in 2006 and this year, 2007, saw 12 pilot schemes.

This study is diffusion based research which is well established in information technology. Rogers (2003) defines diffusion as "the process in which an innovation is communicated through certain channels over time among members of a social system." Dearing (2004) maintains that "very few diffusion studies have empirically tested the extent to which natural diffusion processes can be affected: how to, amplify or attenuate diffusion." A key question of diffusion is how and why some technological innovations are adopted whilst others are not (McMaster and Kautz, 2002). This research is considering an innovation, e-voting, which is being introduced by central government into the social system of the local authorities. Electronic voting is a new practice and so fulfills Rogers' criteria for an innovation as it is "an idea, practice or object that is perceived as new by an individual or other unit of adoption" (Rogers, 2003).

Local authorities fulfill Rogers' definition of an organisation in that they are "a stable system of individuals who work together to achieve common goals through a hierarchy of ranks and a division of labour" (Rogers 2003). However these organisational structures are comprised of individuals. There is a complex relationship between the individuals acting as individuals and their organisational roles. As individuals they consciously or unconsciously pass through the decision-making process for individuals while their organisation is passing through the five linear stages of the organisational decision-making process.

The pilot authorities have responded positively to the agenda setting and matching stage of Rogers' decision making process for organizations as they appear willing to accept the view of central government that the election procedures need modernizing. Each officer then acts as an individual and follows the Rogers' model for the individual. At the second stage, persuasion, Rogers' holds that the perception of five attributes of an innovation are contributory factors in its adoption or rejection. Figure 1 demonstrates the stages of the innovation decision process for the individual and illustrates the stage at which the perceived attributes of an innovation are considered to be influential.
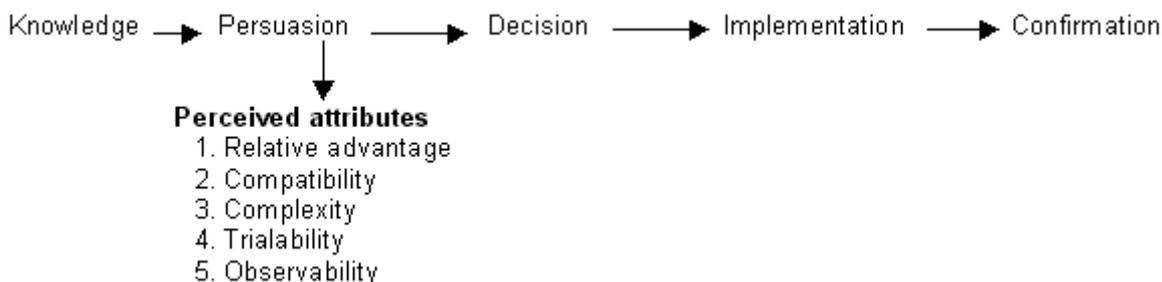
Figure 1: The innovation decision process for the individual

This research adopts the linear approach to the policy making process in order to clarify that the local authorities only become involved in the e-voting policy process at the implementation stage when they are asked whether they wish to trial the new voting methods. Figure 2, below, demonstrates the public policy process based on Anderson's (2000) framework and illustrates the stage at which the local authorities are asked to trial the new voting procedures.
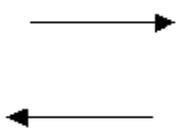
Figure 2: The local authorities' decision making stage of public policy process.

3. Research approach

I have adopted a realist approach to the research. Realism involves looking behind appearances to discover mechanisms which explain human behaviour and is "the most popular position informing enquiry in the human sciences" (Travers, 2001). The realist philosophy is appropriate as a central tenet is demonstrating how an event has occurred in a particular context (Robson 2002).

This research is a comparative case study comparing the reasons that some local authorities trialed the new voting methods and others did not. It is an explanatory study asking the "why" question (Yin, 2003). The sampling unit is the English local authorities and since there is no ideal size of sample as long as the sample is of sufficient size to ensure meaningful comparisons (Mason, 1996), six authorities have been chosen using purposeful, disproportionate stratified convenience sampling. Three of the chosen authorities declined to participate in the 2003 pilots and three agreed to take part. The three pilot authorities were selected, based on convenience, from the group which included Internet voting. This phase of the research was based on semi-structured interviews with the Election Officers of the selected authorities who were assured of anonymity. The structure of the interview schedule drew on the themes identified in the literature review, Rogers' theoretical concepts and was expanded to include variables identified by the respondents. In order to enhance the credibility of the findings a further four authorities were chosen randomly, two had piloted e-voting and two had not. These interviews were conducted by a third party and were based on the interview schedule (Miles and Huberman, 1994). To supplement the information from these interviews it is proposed to conduct two further semi-structured interviews. One with a civil servant within the Department of Constitutional Affairs who will present the government perspective on the adoption and diffusion of electronic voting and the second interview with the Election Officer within the Electoral Administration Association who will outline the national view on the administration of e-voting. However this paper is only concerned with factors influencing local authorities to adopt or reject e-voting as presented by their Election Officers.

Three theories from Rogers' diffusion of innovation theory framework are used to assess whether e-voting will diffuse in accordance with those theories. The innovation-decision process model for the individual consists of five linear stages from first knowledge to persuasion and decision then to implementation and confirmation. Similarly the model for organizations consists of linear stages, agenda setting and matching in the initiation stage and redefining, clarifying and routinization in the implementation stage. The final model from the framework is the perceived attributes theory which identifies five attributes of an innovation, the perception of which will influence adoption.

4. Findings

Although this research is to establish the influential variables affecting the decision making of the local authorities it has become apparent that the pilot schemes have become biased in favour of repeat testing of administrative innovations for which there is little or no central funding. The electronic element has become less important as demonstrated table 1 below, which shows how few local authorities participated in the 2007 scheme.

Table 1: Authorities taking part in the pilot schemes of casting a vote by electronic means. The initial pilot schemes in 2000 were low key with the focus on polling places and hours and postal voting (Electoral Commission, (b) 2003). 2006 schemes comprised pilots of administrative functions. The table excludes authorities piloting administrative functions.

Local Authority	2002	2003	2007
Basingstoke		✓	
Bolton	✓		
Chester	✓	✓	
Chorley		✓	
Crewe and Nantwich	✓		
Epping Forest		✓	
Ipswich		✓	
Kerrier		✓	
Liverpool	✓		
Newham			
Norwich		✓	
Rushmore		✓	✓
Sheffield	✓	✓	✓
Shrewsbury		✓	✓

S. Bucks			✓
S. Somerset		✓	
S. Tyneside		✓	
St. Albans	✓	✓	
Stratford	✓	✓	
Stroud		✓	
Swindon	✓	✓	✓
Vale Royal		✓	

(Electoral Commission, 2002, 2003(b): DCA, 2007)

The findings recognize that each of the two types of local authority, the pilot authorities and non pilot authorities, have their organisational problems with e-voting. The most influential variables affecting local authority decision making regarding e-voting appear to be the lack of continuity, issues of security, the time element, availability of resources and kudos. All the Election Officers acknowledged that the initial decision whether or not to trial the new voting procedures emanated from them.

"We act as the gatekeepers, it is only when we put ideas to the council that they are considered." (Non pilot officer)

4.1 Continuity

The officers who had conducted the trials of the new voting methods all expressed concern that e-voting has only been available for local elections. They reasoned that the issue of funding may be pertinent in that parliamentary and European elections are funded by central government whereas funding for local election e-voting pilots falls to the local authorities. They noted the danger in this sporadic availability of the new voting methods for the citizens as their comprehensive pilot schemes of 2003 have not been followed by any other large scale e-voting pilots. Further remarks regarding the lack of continuity by central government focused upon postal voting, a method which appeared to encourage more citizens to vote. However, in certain instances the government would not allow further trials of postal voting and pressed the local authorities to trial other voting methods.

"We are giving mixed messages" (Pilot scheme Election Officer)

The general opinion is that the trials have been useful but that their value is ending as local authorities are becoming more reluctant to take part. This reluctance stems from the increasing amount of legislation emanating from central government, in particular the Electoral Administration Act 2006 the requirements of which greatly increase the officers' workload with no consequent increase in funding. There seems to be a consensus that central government should decide whether to introduce the new voting methods more widely or set them aside.

The innovative councils that volunteer to participate in most central government initiatives acknowledge that if they fail to apply for the voting pilots central government will contact them directly to find out their reasons for not volunteering. The local authorities that do not offer to trial any central government initiatives do not face the same scrutiny.

4.2 Security

The officers indicate that the some members of the electorate appear worried that the pilot schemes may have been withdrawn because of security concerns as there have been reports in the media regarding fraud in certain areas of the UK. This suspicion is linked to their lack of trust in the political environment identified by, among others, the Rowntree Trust (RFT) in their report *Power to the People* 2006. There are well documented doubts regarding the security and secrecy of the vote and the voter, the most recent concern is expressed in the report from the Committee on Standards in Public Life (CSPL) 2007 on the operation of Electoral Commission (Rubin, 2001:Mercuri, 2001:Fairweather and Rogerson, 2002:Mitrou in Gritalis,2003). However one pilot authority officer decided not to concentrate on reassuring the electorate that e-voting was secure, as he reasoned that that would reinforce the message that it may not be as secure as people think.

4.3 Time

The time element appears as an influential variable in both the pilot and non-pilot officers' decision making. When an Election Officer opts for an e-voting trial, they only have a very limited time in which to apply to the Home Office to amend the legislation to be election compliant. Due to Parliamentary time constraints the necessary amendments to the legislation appear only a matter of weeks prior to the election date. One officer spoke of having to seek information by listening to the Parliamentary reports on the radio. Since e-

voting is conducted in conjunction with conventional voting methods the usual election preparations are also being arranged so the late permissions establishing the type of pilot procedures mean that there is extra strain on an already fully committed election department, points illustrated by the following quotes.

"We had to run to catch up" (Non-pilot Election Officer).

"We are not avoiding it (e-voting), the main reason we are not doing it is that we do not have time" (Non-pilot Election Officer)

4.4 Resources

All the Election Officers confirmed the importance of the provision of resources to facilitate the introduction any innovation introduced from central to local government including e-voting. In the case of e-voting increased resources were needed to either provide additional staff or provide funding to administer the new voting channels. One of the non-pilot Election Officers was enthusiastic to try e-voting and the council's administrative practices had been revised in 2003 so this officer was convinced that staff could cope with the additional workload, but was thwarted by the wishes of the elected members. The other two non-pilot Election Officers considered that e-voting resulted in an unacceptable increase in their workload and they were not willing to inflict this extra stress on the staff in their offices. One of the pilot Election Officers was not convinced that his staff could cope and he did not wish to trial e-voting but he was over ruled by his superior and the council members. This officer described himself as "sinking" under the stress of the work load and the lack of specialist staff. However the other two pilot authorities were confident that their authorities' staff could cope and any necessary alterations to working practices had been introduced. Even the most enthusiastic advocate of e-voting criticized central government for not appreciating that the smaller authorities lacked the necessary resources, namely adequate funding and a sufficient number of experienced staff, to cope with the increase in the workload brought about by conducting an e-election in conjunction with a traditional election.

"Life is traumatic enough in a campaign period without putting these additional burdens upon us" (Non-pilot Election Officer).

A further concern centered on financial matters where there appears to be some confusion. All the Election Officers are proud of conducting well run elections and acknowledge that e-voting is very expensive and that the traditional way of conducting an election is the most cost effective. The non-pilot authorities are under the impression that the trials are only partially funded and the pilot authorities regard the funding as adequate. One non-pilot authority claimed that all the expense, including market research, fell upon their budget. That authority felt that the government research regarding the new voting methods was being conducted with local finance. The 2007 prospectus for the pilot schemes notes that "as in the past" central government "will consider providing funding" for the electronic element of the pilot but each application will be judged on its merits and "will only be approved if it has an effective business plan and offers value for money" (DCA, 2007). However finance did not appear to be a problem for the pilot authorities. Nevertheless the actual or perceived lack of funding appears to be used as a reason to justify each Election Officer's opinion of e-voting. The interview with the officer within the DCA may clarify the issue of funding.

"Not only did we have to stand the cost of the paraphernalia but we had to pay for the market research company and they are not cheap. So we had the additional cost to prove to the government what we already knew." (Non-pilot Election Officer)

4.5 Kudos

While the government aim of the e-pilots was to establish the security and reliability of the voting mechanisms and begin to build public confidence (Electoral Commission, 2002). The pilot authorities appear to have different aims. It is apparent that the pilot local authorities view e-voting as a means to an end. It is advantageous to have taken part in the trials. When the Audit Commission prepares the Comprehensive Performance Assessment it is beneficial for that council to be known as an innovator. This reputation ensures favourable scores which in turn allow more freedom from the controllers in central government. By trialing e-voting, the pilot authorities wish to attain rewards, such as Beacon Status for the election processes so they are seen as leaders in that field. This involves mentoring other authorities to raise their status to that of the mentor and as a reward the Beacon Status authorities have access to increased funding.

"If your name is known in the ODPM you tend to have more influence, getting known in those circles is a good idea." (Pilot Election Officer)

"The Chief Exec wants every award he can get." (Pilot Election Officer)

This increased kudos of the pilot authorities is not limited to the council as an organization. The Election Officers also feel that they personally benefit from increased cachet. After one pilot scheme the officer had been invited to speak at a European seminar regarding best practice for e-voting.

> *"I personally got a lot of credit for the success." (Pilot Election Officer)*

In contrast the non-pilot authorities do not appear to harbour any ambitions regarding increased status. As the pilot schemes are voluntary they do not feel that their councils or the electoral officers will lose status by not taking part. Those officers consider it a matter of pride to conduct a well run traditional election and the complications of organizing an e-voting election are seen as a threat to the conduct of a conventional election.

There are meetings held under the auspices of the Electoral Administrators Association where the members are addressed by an officer of the Department of Constitutional Affairs but since in 2003 only 59 of the English local authorities volunteered for the pilot programme these meetings do not seem to have had a promotional effect. All the Election Officers remarked that whenever district or national meetings are held very few comments are made about e-voting, the most popular topics are the increased workload and the new legislation. All the authorities value the support and guidance of the network of associations and district groups, such as the Local Government Association, through which the authorities meet and exchange views and the non-pilot authorities do not feel any peer pressure to conduct electoral pilots.

5. Approaches to diffusion

Rogers' (2003) diffusion of innovations theory can address each of the issues outlined in this paper. Each electoral officer acts as an individual when considering the adoption of e-voting and they follow Rogers' decision making process for the individual.

5.1 Continuity

The lack of continuity can be addressed during the persuasion stage of Rogers' theory as the Election Officers form an attitude towards the innovation based on the characteristics of that innovation. The ability to trial and observe an innovation can influence decision making. The local authorities may be more willing to participate in the pilot schemes if they did not feel so overwhelmed by new legislation and by central government denying them the opportunity to continue with their successes largely based on postal voting. The pilot authorities want to build on their success while at least one of the non-pilot authorities is content to allow other authorities to trial the new voting methods and solve the problems. Most of the Election Officers judge that central government should either introduce e-voting or reject it, as the pilot schemes are being conducted by the same authorities and there is no general increase in knowledge regarding e-voting.

The diffusion of innovations theory holds that the individual learns through direct verbal contact and maintains that individuals change their behaviour as a result of communication with others (Rogers, 2003). If the local authorities see that the pilot schemes are successful then they may be less reluctant to participate. However the 2003 electronic pilot scheme was only marginally successful in terms of increasing the turnout. "An indicative figure of the size of increase is in the region of 0-5%" (Electoral Commission, (a) 2003). All the Election Officers learned either first hand or through the Electoral Commission reports or through personal contact both the advantages and disadvantages of conducting e-voting. The advantages to the Election Officers centred upon increased status but, for the non pilot officers the apparent disadvantages appear to outweigh the advantages as issues of lack of staff, lack of time and increased workloads will influence future decisions regarding participation in the trials.

5.2 Security

Consideration of the perceived attribute, compatibility, within the persuasion stage of the diffusion theory would address the issue of security of the vote and the voter. The Election Officers are in agreement that electronic service delivery is growing and they see voting as part of that growth. Nevertheless even though both the pilot and non pilot authorities acknowledge that e-voting is compatible with other electronic transactions they are concerned about the security of the voting process. Central government may need to disregard the opinions of the officers who wish to introduce electronic voting as the consensus appears to be that there are many ways to manage risks but that "you cannot guarantee there is no risk at all" (Frank, 2004). Indeed the majority of the commentators have reached the conclusion that there should be no remote voting using the Internet (Mason, 2004).

5.3 Time

The problem of the lack of time could also be addressed during the persuasion stage as an issue related to the complexity attribute of an innovation. The pilot authorities agreed that the public had not found the voting procedures complicated. However all the Election Officers remarked on the complexity of the election administration. A further complication was acknowledged by some of the Election Officers regarding the loss of control over the whole process as it was felt that the software systems providers take control of the proceedings. The lack of time merely complicates the administration of an election and central government has the power to remove this blocking mechanism.

5.4 Resources

There appears to be some confusion regarding the adequate provision of resources exacerbated by the phraseology in the pilot prospectus. Detailed attention to the knowledge and persuasion stages of diffusion theory may resolve this awkwardness and reassure the local authorities that adequate funding and personnel will be forthcoming. At the knowledge stage potential adopters should learn about the innovation and gain some understanding of its functioning. There is only a limited attempt at a promotional campaign to impart information regarding the nature or best practice of e-voting even though the government's researchers Fairweather and Rogerson (2002) recommend a strategy to engender enthusiasm for the pilot schemes. The invitation to participate in e-voting is issued by e-mail and each authority must seek their own answers to any questions they have. However as so few local authorities are volunteering for the pilot schemes the Election Officers suggested that the pilot schemes are now of limited value and it is the apposite time to introduce e-voting nationally and completely revise the necessary legislative procedures. The local authority officers meet regularly within a network of local and national bodies but central government do not take these opportunities to promote the new voting practices.

5.5 Kudos

Rogers' relative advantage attribute of an innovation is the most influential attribute influencing decision making (Rogers, 2003). All the Election Officers agreed that e-voting could benefit participatory democracy by offering convenience and choice in the voting methods but the greatest advantage perceived by the pilot authorities was the reward of increased organizational and individual status. However the non-pilot authorities could not see any advantage for their organization and viewed the added workload as a distinct disadvantage. Central government should devise a strategy that would produce advantages for all local authorities to trial e-voting. Pettigrew et al (1994) note "rewards, in the broadest terms, may be important."

6. Conclusions and recommendations

The findings suggest that e-voting will not voluntarily diffuse within the UK in accordance with Rogers' model of the diffusion of an innovation as central government does not appear to have considered a formal diffusion strategy for e-voting. This research seeks to relate the diffusion of an innovation to the public policy process and recognizes that the introduction of e-voting takes place during the implementation stage of the policy process. These findings suggest that the UK government should consider the strategy advocated by Hogwood and Gunn (1988), "that potential problems are considered in advance of implementation." A more effective policy would consider the diffusion strategy during the design phase of the public policy process and not wait until the implementation stage.

The solution to the problem of how to make e-voting work lies with the UK central government. Their public policy decision to implement e-voting via a series of trials has had only limited success. Nevertheless the local authorities that took part in the 2003 comprehensive e-voting pilot have provided valuable feedback via the Electoral Commission, to enable problems to be addressed. However over 300 local authorities did not take part therefore there is no feed back from them. The government needs the feedback from policy evaluation to act as a "self-adjusting mechanism" to provide information for improved policies (Minogue in Hill,1993) Should e-voting be introduced nationally it is probable that there will be a new set of problems presented by those authorities that have not conducted the trials. The reporting of these problems will have a consequent effect on the attitude of the citizens to the new technology and may prove to be a deterrent to their using e-voting. The citizens are already politically disengaged and distrustful of the political environment and so may refuse to cast their vote leading to a larger fall in electoral turnouts. The issue of electronic voting is linked to the general trust in political systems and governments (RFT, 2006). Indeed some members of the public in the pilot areas are already questioning the reasoning behind the lack of continuity of electronic voting. Their suspicions regarding the security aspects are mirrored by the apprehensions of the

Election Officers who recognize that the security issues have not been successfully addressed. The new voting methods must offer at least the same levels of security as the traditional method to ensure the public has confidence in the new system (Electoral Commission, (a) 2003).

Since the pilot authorities appear to have trialed e-voting partly for their own ends, the findings suggest that there should be a further category included in the sub-dimension of the attribute relative advantage. Rogers' (2003) maintains that relative advantage is "the ratio of the expected benefits and costs of adoption of an innovation." The sub dimensions include "economic profitability, low initial cost, a decrease in discomfort, social prestige, a saving of time and money and the immediacy of reward." This research suggests that the relative advantage of an innovation should include an enabling element. That is the degree to which the innovation is seen as a pathway or gate-keeper to a further aim. If the adoption of the innovation permits the adopter to achieve one or more further aims at some indeterminate time, it increases the likelihood of adoption.

This paper demonstrates that an effective diffusion strategy based on established diffusion theory can address the factors inhibiting the adoption of e-voting by the local authorities. If central government accepts these findings it can secure the voluntary diffusion of this and future innovations from central to local government.

References

Anderson, J (2000) *Public Policy Making* (4th ed) Washington: Houghton Mifflin Co p15

Committee on Standards in Public Life (CSPL) *Eleventh Report* [online] www.public-standards.gov.uk

Dearing, J. (2004) *Improving the State of Health Programming by using Diffusion Theory* in Journal of Communication (9) 21-36

Department for Constitutional Affairs (DCA) Details of Pilot Initiatives [online] www.dca.gov.uk

Electoral Commission (b, 2003) Briefing Paper London:Electoral Commission p2

ElectoralCommission 2002 pilot schemes {online} www.electoralcommission.org.uk/elections/may2002.cfm

Fairweather, B and Rogerson, S (2002) *Implementation of e-voting in the UK.-Technical Options Report* London: DCA p9,37,49-53

Frank, D. (2004) E-voting requires risk assessments [online] www.fcw.com/fcw/articles/2004/0607/pol-rsk-06-07-04.asp

Gritzalis, D.A. ed. (2003) *Secure Electronic Voting* Massachusetts:Kluwer Academic Publishers p52

Hill, M (1993) *The Policy Process: A Reader* London:Harvester Wheatsheaf p22

Hogwood, B. and Gunn, L. (1988) *Policy Analysis for the Real World* Oxford:Oxford University Press p9

Mason, J (1996) *Qualitative Researching* London:Sage

Mason, S, (2004) Is there a future for Internet voting? [online] www.stpaulslchamber.com

McMaster, T. and Kautz, K (2002) A short history of diffusion in Bunker, D., Wilson. D., and Elliot, S. (eds) the *Adoption and Diffusion of IT in an Environment of Critical Change*. p16

Mercuri, R. (2001) *Rebecca Mercuri's Statement on Electronic Voting* {online} www.notablesoftware.com/RMstatement.html

Miles, M. and Huberman, M (1994) *Qualitative Data Analysis* London:Sage p267 p 281

Pettigrew, A., Ferlie, E., and McKee, L (1994) *Shaping Strategic Change* London:Sage

Public Select Committee 1st Report [online] www.publication.parliament.uk/pa/cm200102/cmselect/cmpubadm/334/33403

Robson, C (2002) *Real World Research 2nd ed.* Oxford:Blackwell p32-34

Rogers, E (2003) *Diffusion of Innovations 5th ed* New York: Free Press p5,12,15,233,342,404

Rowntree Charitable Trust and the Rowntree Reform Trust (RFT) (2006) *Power to the People: An independent enquiry into Britain's democracy* London:The Power Inquiry p 118-121,158

Rubin,A (2001) *Security Considerations for Remote Electronic Voting over the Internet* in ;login Vol 26, number 1, p20

Standards Committee (CSPL) (2007) *Eleventh Report* [online] www.public-standards.gov.uk

The Electoral Commission (a,2003) *The Shape of Elections to come* London: Electoral Commission p5, 7,62

The Independent Commission Alternative Voting Methods (2002) *Elections in the 21st Century*: *from paper ballot to e-voting* London: Electoral Reform Society p16

Travers, M. (2001) *Qualitative Research Through Case Studies* London:Sage p11

Yin, R. (2003) *Case Study Research Design and Methods* London:Sage p13