Rethinking e-democracy.
Would it be feasible in our societies?

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Abstract— This paper deals with the technological and decisional improvements aiming to apply e-democracy and e-vote. These advances are not enough to correctly implement these new ways to understand the participation of citizenship in politics. We analyze the software for these applications and its possible errors. Factors intended to change voter decisions are also analyzed in the context of these proposed systems. Potential solutions to this kind of problems are also commented. Finally we question the feasibility of e-democracy.

Index Terms— e-democracy, security, e-vote

INTRODUCTION

Democracy is a form of government with free and equal members, in which decisions are taken by the collective as a whole, through mechanisms of direct or indirect participation. After the popularization of ICT (information and communication technologies) a new concept of democracy emerged. It has begun to take hold for insertion: electronic democracy.

Electronic democracy or e-democracy, originally called teledemocracy [1], is the use of new information technologies [2] in order to encourage and make the plural direct citizen participation. It was created to fill a need, given the demand and need for greater citizen participation in decision-making that is concerned.

The advancement of this new vision of governance by several countries has generated a number of problems, which are currently slowing their implementation. Several nations have already declared it infeasible. Among the problems pointed out we can highlight the renovation and modernization of existing legislation and public administration, the different types of security breaches and no universal access to all kinds of information technology, and the approval of this new concept of governance by the legislators of the current representative democracies.

The goals of electronic democracy are that every citizen can contribute, learn and decide. Thus a number of decisional issues common with representative democracy have to be taken into account: party politics (influence of a group on the class representatives), ochlocracy (disinformation disturbs the correct decision making process of citizens), plutocracy (excessive influence of members who hold wealth), and the bias of the media and information with the aim of supporting a group of representatives.

The corresponding decision making process for electronic democracy, is the electronic voting method or e-vote. This technology is used not only in government, but in large companies too. It has a number of similar problems to e-democracy, both at technological and security level that prevent its correct use.

This article discusses in detail the problems of new technologies under development related to e-democracy and e-vote and how these question could be solved.

PROBLEMS

From a technological point of view E-vote has two different ways: physically and remotely.

In the first one, a citizen who decides to vote goes to a place designated for that purpose, where a computer has a special log-in identification of the citizen with an interface that shows the candidates for whom they can vote.

In the second one, the citizen can vote anywhere, from home or even broad, thank to the Internet applications created for that purpose. The vote is effective without the need to go to the polling place.

The interface created for a voting session offers several options such as voting, seeing the vote, modifying it and deleting it [3]. When at least one of these variables is deliberately modified by a third part, the integrity of the decision maker who has used the system for voting is broken. The amendment can be translated into a null vote, or a vote for a different option.

The exercise of the electronic voting involves a priori trust in the honesty of the manufacturer of the electronic interfaces and procedures used by the system, and the electoral authority that can interfere in the process in multiple ways to avoid a non-biased decision.

Several groups of researchers have made great progress as far as encryption of electronic voting is concerned. Without proper information security, this innovative new system is not viable. So far, tests in several countries have not been totally successful. Currently privacy and personal integrity of the voter cannot be completely guaranteed [4].

Anyone knows how to verify that a physical ballot box is empty or a seal has not been tampered. However, an electronic voting machine prints messages according to its internal
records. Optimum security verification by computer experts would take even days. This issue is one drawback of e-vote. In order to be as good as the traditional vote the count should be faster.

The technological complexity of electronic voting is similar to that of a software application created by developers. It is associated with testing and debugging phases, along with a targeted verification that the source code has not been tampered.

Comparing the physical and the electronic voting according to fraud detection, it is easier to bribe a group of developers in charge of the application and interfaces of electronic voting, that each representative in each electoral office.

These difficulties and disadvantages can be dismissed and omitted if there are hidden motivations. It can be argued that this technology has been tested in many countries and it has already been used. Electronic voting could be prepared to be effective and valid in testing and emulation phases, and then it can be manipulated in the real elections.

At all times it must be assumed that no relationship or transmission between the vote and the voter is recorded in order to preserve the privacy of voters. So that it is possible to create electronic voting systems but it is never feasible to verify for sure that these votes were effectively produced.

In The Netherlands this technology stopped from being used in 2008. Radio signals of an electronic ballot box can be decoded being 25 meters away [5]. It was possible to obtain data about the voting and voter identity, violating the privacy law. Another problem is the loss of votes by the electronic counting system [6]. It affected the attitude of the judiciary on this sensitive issue.

With respect to e-government and e-democracy, a number of consulting firms and government agencies have proposed models that integrate development and technology strategy. Deloitte Research designed a six-phase procedure that includes dissemination, bidirectional official transactions, multipurpose webpages, personalized sites, service clusterization and the complete integration of involved the processes. Other approaches have less stages and put the light on the complexity of integration activities and communication strategies. [7]

In order to implement an e-government is not sufficient to simply follow a model step by step. Several forms of e-participation and e-forums, e-meetings and e-voting mentioned earlier are a valuable complement to the main path to develop the e-government. The Internet helps to bring this extended model to the citizenship, but we still are not capable to foresee the scope of effects of this new approach on politics.

However, citizens in most nations have decreased their political participation in the last decades. This is not a symptom of the lack of support of democracy, but some institutions and methods of communication are failing with respect to the communication with citizens. The information and communication technologies are a necessity in the political arena to promote a more effective democracy, so they can be seen as a link in e-government and e-democracy as a mechanism for preparing citizens to their possibilities, promoting decision making. [8]

Ideologists of e-democracy seek a deliberative democracy that is currently not possible to be implemented correctly. Social networks promote mobilization of citizens willing to participate, but does not develop the appropriate negotiation process that requires an intelligent decision-making. The basis of deliberation lies in the existence of neutral, objective and high-quality information, but politicization makes information a quasi-unidirectional process that does not involve a sufficient level a communication [9]

Another major drawback is the non-possession by all citizens of the technologies needed for the successful practice of the electronic democracy. Discrimination is almost unavoidable for small towns, where technologies such as high speed internet have not arrived yet. In addition a portion of senior citizens do not understand the operation of digital information and they would not be able to take advantage of e-democracy.

Theorists like Kuklinski [10] comment that a competent citizen is one who has all the information on the subjects of public debate, thus being able to make a consistent decision. Similarly, Bartels [11] argues that if people are not rational based on the information available, the question is to know if they are rational in how to handle the information they have.

If one argues citizens are not rational in their way to obtain and analyze information the theory of political responsibility would be broken. Thus, experts do not tend to add deliberative participation to the characteristics of a genuine democracy. However, deliberation and high participation in decisions is one of the key characteristics of e-democracy. Then, further mechanisms of a most effective participation are needed in order to achieve a good enough result.

PROPOSED SOLUTIONS

In the technology field, a lot of work is being developed to improve security of e-democracy solutions. Innovations such as electronic signature increase the reliability and credibility of this new system of electoral votes.

While it is true that in the past these systems had quite striking security holes, currently a new generation of reliable timestamp is being implemented, with a triple hash, making much more difficult handling and modification time for malicious purposes. The recent scandal in Texas Senate approving a new abortion law after the deadline shows the potential and trustworthiness of this technology.
In the case of procedures that collect votes of citizens to carry them to an electronic ballot box testing is still under progress to prevent remote access by hackers that can achieve the breach of security that involves the set of computer-programmed functions for correct, reliable and secure transmission of electoral votes.

Currently there is no nation capable to ensure a complete privacy of the e-vote due to the incomplete optimization of their security systems that involve the aforementioned procedures. A team of computer experts with the promise of money or the correct incentives would be able to commit fraud or at least execute a good attempt. Organizations such as big corporations or political parties have the financial means to prepare those attacks.

As critics point, at the decisional level mechanisms to improve the resolution of the deliberative process in a correct manner are needed. New technologies, used in a correct way, could help the participants getting the most information possible. This possibility depends on the participation and willingness to obtain proper training in its use.

Keeping existing democratic practices and exploiting network technologies such as the Internet electronic deliberative democracy and closer decision citizen can be increased. Network dynamics increases its democratic potential due to great opportunities of information dissemination exceeding the traditional role of newspapers, magazines and online journals.

From an empirical point of view, the requisite of foster participation implies the needing of an institutional framework that maximizes citizens representation by including as many different opinions as possible, allowing a diverse exchange of points of view.

These two prerequisites, the extent of the representation and the intensification of the exchange of diverse opinions; shows deliberation as the optimal proposed decision-making process in politics [12], explained in the following diagram.

This theoretical model divides types of discussion depending on the number of people involved and the quantity of argumentation. Quadrant 1 belongs to the discussions that attract more groups of people with the highest number of interactions between them. In quadrant 2 debate continues as intense as in the quadrant 1, but with very few users. By contrast, in quadrants 3 and 4, the debate is minimal. Quadrant 4 is successful than 3 due to the greater participation of citizens.

Internet forums can be a good mechanism to implement argumentations in an ordered and effective way. An internet forum is an online discussion site where people hold conversations via messages. They differ from chat rooms in that messages tend to be longer and at least temporarily archived. Also, depending on the access level of a user or the forum set-up, a posted message might need to be approved by a moderator before it becomes available to the remaining users.

A discussion forum can be hierarchical or tree-like in structure. They can contain a number of subforums, and each of them can have several topics. Depending on the forum's settings, users can be anonymous or have to register with the forum in order to post messages. On most forums, users do not have to log in to read existing messages.

This type of forums, where the variety of ideologies is intensified, supports electronic deliberative democracy. Although moderation appears as the most difficult issue, the main advantage of internet forums is they are available to everybody, or at least those who know how to use them properly.

Computer skills are a major issue in the application of e-democracy. Those individuals without the required abilities to use ICT would be excluded of the decision mechanisms. The percentage of retired individuals in developed societies is around one fifth of the population. In most countries councils of small municipalities promote the use of ICT in older citizens with introductory workshops of Internet, thus they impact on the right of every person to participate in virtual discussions. Instructors should be strictly technical, and they should provide a completely unbiased training.

In addition to the training it is necessary to have the technical infrastructure in all the locations so all citizens have the chance to participate in the deliberative process if they wish. It also is expected that these on-line discussions would attract a great portion of teenagers, whose interest in conventional decision-making in politics went down in the last decades.

In the area of information dissemination, is inevitable to have a bias [13]. In most cases the information is already manipulated at the original source, a faithful observer report only what she has seen, or what she wanted to see. This comes to news agencies and social networks and then to television stations and interactive media where it is further modified.
There is no solution to this respect because people involved in the dissemination of news will only transmit what it is beneficial to their interest.

This lack of impartiality has a solution in the exchange of opinions offered on internet forums has no room for any public or private organization dedicated to communication, because any potential reward would hardly overpass the cost of the group dedicated to write comments favorable to the interest of the group that hires them.

CONCLUSIONS

After this brief discussion of the main issues involved in electronic vote and democracy, our conclusion is that the first one needs further technical development to be implemented while the second one is almost impossible to be putted in practice in our societies. Computer security is a very sensitive issue, and it is even more sensitive when something as the election of the rulers of a country is involved. Even with the design of new technologies such as public-key cryptography, electronic ID cards, biometrics, and advanced digital signature, attributability and integrity of the identity of a citizen cannot be completely assured.

Electronic votes need several actions after the citizen decision. Any of them: the procedure for recounting or the storage of the vote are processes than involve a set of actions that can be violated in order to change the vote or break the security of the system.

In countries where political corruption exists, the introduction of this technology can develop new forms of fraud. Although the traditional physical vote either ensures proper use [15], the likelihood of fraud could be as high as in paper ballot elections or even higher as the potential fraud could be committed with a lower number of involved persons.

Regarding the concept of e-democracy, we disagree on its close application, thanks to the fact that older people do not make use of new technologies, even after they take courses to promote the involvement of this group in ICT use. If the concept of democracy is defined as a system of government by the whole population who are voting their representatives, it would be unfair to leave out people who do not understand this new way of deliberative decision-making process.

The politicization of information is even more important if a deliberative decision-making is undertaken. The more powerful organizations, major political parties and private groups are the ones who benefit most in the dissemination of information, not only under e-democracy schemas, but also in the current representative democracy systems. The fact that citizens obtain somehow biased information from every media can provoke a change in the decision-making of the undecided citizens. Therefore, we consider citizens would need training and less biased information in addition to the implantation of correct e-forums in order to be able to implement progressively e-democracy in our societies.

REFERENCES