

Dear EAC Commissioners:

I am CEO of a small voting systems company, Open Voting Solutions, Inc., focused on the application of Open Source and open standards to voting systems. We at OVS believe that there is a great need for transparency and trust in voting systems, that scarce public funds are best spent on economical Open Source-based voting systems, and that the use of data standards such as Election Markup Language (EML) from OASIS provide the best approach to interoperability among voting systems and to provision of election data to the general public. We believe this for the following reasons:

Why Open Source?

The assumption that the public has no option other than to choose among the oligarchy of private company voting machine vendors leads to secret operation of questioned machines, loss of trust in a government, altered ballots, missing ballots, and a huge expenditure on largely untested voting equipment. And, of course, the tests and the test results are proprietary secrets, too. Want comparative information on the relative performance of the several leading voting systems? You can't have it. When voting results are questioned, there frequently are no answers given that the voting systems in question are proprietary secrets of the voting system companies. Open Source voting systems change that balance of power towards the voting public and the general public good.

Transparency is Good

Open Source is just that: open. It is open to scrutiny, open to test by anyone, and provides the public with the ability to see what is happening to their vote, how it is interpreted, and how it is counted. Even if not every voter understands the Open Source software, there are many voters who do and there are experts available to all of the contending parties to U.S. elections. Also, open public standards such as OASIS' Election Markup Language (EML) can help standardize a complex process.

Many Hands

Open Source means that many hands may be available to work on various parts of a voting system application. Some may be paid workers at companies who volunteer their services, while others are unpaid technically proficient volunteers who donate their time, efforts, and creativity. Together, they make up the Open Source community.

Many Eyes

Even more volunteers are available to read and critique the Open Source programs, which (unlike private or proprietary code) are available both in the human readable source code and the machine-readable compiled versions. Thousands of volunteers in the Open Source community have the ability to read code and look for problems, errors, and even mischief.

The Price is Right

Open Source code, distributed under the GPL license, may be shared, copied, distributed, used, but not sold. In short, it is free of cost and may not be converted into a product sold for money. This dramatically changes the cost structure of voting machines, which may be built from Open Source software and commodity hardware (PCs and scanners and other peripheral equipment). Ideally, states and counties could build their own systems using free Open Source software and inexpensive, off the shelf, computer equipment. Needed services can be provided by Open Source providers: consulting, testing, training, service, and support.

Service Businesses Enabled

Open Source in voting systems will actually shift the paradigm and business models of the industry, away from product sales to provision of needed services, thus giving local and state authorities far more needed services and substantially less investment in quickly obsolete specialized hardware.

Assumes Open Test

Open Source, which any person could compile and test with any PC and peripheral devices, assumes that test results are open to public scrutiny. There is no proprietary secret to protect and no reason not to know how voting systems function under test. So far, the public has been kept in the dark about how voting machines perform under test, since private companies consider such test results none of the public's business. Open Source and Open Test can change that around completely. Note: anyone wishing to know the bugs filed against the FireFox browser can easily find out; anyone wanting to know the defects in Microsoft Internet Explorer has to ask Microsoft, who is usually not telling.

Adequate advance testing of voting software and publication of test results is the necessary missing link between voting systems and voter assurance that the machine in front of the voter has some basis in fact to be trusted.

How Does That Change Public Service?

Public participation in the execution elections now is limited to poll watching and part time work at election sites to supplement full time election workers. Open Source provides yet another venue for the public to become involved in code development, code review, and code testing.

Brings Public into Process

The Open Source voting application brings the public into the process of handling ballots. Most Open Source systems feature a paper ballot, rather than a summary paper trail. The difference is subtle but very important; the ballot shows all of the choices available to the voter, but the paper trail summary documents only the choices made (supposedly) by the voter and not the choices from which the voter selected the ones for whom to vote.

Public participation in election technology is good, both for the Open Source community members and for the general public. There is every expectation that the commitment to the common good is enhanced by the visible participation of ordinary citizens in the process.

Builds Trust as People Participate

The trust of people in election results should not be taken for granted. We have just enjoyed an election for president with unquestioned results; this follows two elections when voting machines themselves had notorious problems and may well have determined the outcome of the election. It would be a very serious problem indeed to ignore voting machine problems until the next questioned election. The largest benefit, in fact, of Open Source is to add trust to the process of handling the peoples' ballots.

No Secrets, No Necessary Barriers

There need be no secrets as to how Open Source software works, no barriers to understanding how the count of ballots is done by the machine. It is a good thing to combine machine counts of ballots with a sampled hand count in order to provide a final assurance that the election results are correct.

Transparency Assures the Public is Served

The ability to see the process working beneath the surface, to see what is happening in the basic democratic process, is the only real assurance the public has that the right things are being done. The press, a powerful agent of information for the public, functions best when transparency is standard. The inability of either press or public to determine what happened in questioned elections is almost entirely due to a lack of the transparency available through Open Source. Of course, the design and execution of Open Source voting systems is also important. A poor design, a badly built Open Source system is not good simply because it is Open Source. Transparency and the ability see, know, criticize, and correct, however, is at the heart of the Open Source option.

Service Businesses Enabled

The growth of competitive service businesses is enhanced with Open Source, simply because the information on which it is based is open to all. Universities and other public institutions have full access to Open Source for research and teaching; there is no private company with an exclusive lock on knowledge about a given voting system when Open Source is selected. A company providing services for an Open Source voting system could readily be replaced if it did not perform adequately as to services. On the other hand, with the present reliance on private company products, once you buy the product, you are stuck. You buy a voting system from Brand X and you must buy support from Brand X, who is the sole source of support services for that product.

Pitfalls and Benefits?

Pitfalls

The biggest pitfall for Open Source voting systems is the need for funds to prepare for and participate in the legally mandated testing and certification which all voting systems must do. Private companies charge prices adequate to compensate for these costs; Open Source contributors do not propose to sell voting applications and thus are at a disadvantage. New York State has a regulation relieving Open Source of some testing expenses and other states may do likewise. The best solution is to have a state or county commission an Open Source voting application and then pay for testing themselves. The net result is much lower cost than simply buying private election systems from vendors. The best bridging of this pitfall is for counties and states to combine to commission an Open Source voting application and then share in its testing costs.

Benefits

The benefits of Open Source voting systems include transparency, quality, and cost. There is a virtue in having many eyes look over code, not to achieve 100% certainty of no errors but to increase the chances of spotting an error before it becomes a problem. The availability of free software to test allows thousands of citizens to test the voting application before it is ready for use.

What Difference Does It Make in Elections?

The ability to use, examine, test, and experiment with Open Source software prior to elections is the key to a trouble-free election. Since the software is free, there is no reason not to use it extensively in training and teaching exercises for both voters and officials alike. With a reduced cost for machines, long lines at voting sites need no longer suppress the vote; all jurisdictions should be able to afford any reasonable number of voting machines.

Transparency

Transparency, the ability to know what is happening in the code, how the count is done, and to learn from test results the expected behavior of the voting application in an actual election, makes all the difference.

Enhances Trust

Trust is not engendered by keeping secrets and asking the public to “trust us to do the right thing.” Only the bright light of public scrutiny, only the complete openness to the press, allows real trust in the most important of our democratic institutions, the means by which we choose to govern ourselves.

Improves Quality and Reliability of Election Procedures

Open Source voting applications enhance the quality and reliability of election procedures, since volume use and testing by the Open Source community can reduce errors and increase reliable operation on election day.

Allows for Full Use of Paper Ballots

Most Open Source architectures allow full use of the paper ballot as a standard expression of both the choices open to the voter and the choices actually made. No one need be denied the benefits of a paper ballot just because a vendor does not have that option available.

Lowers Cost of Elections

Lowering the cost of elections is perhaps the biggest benefit of Open Source software. There is no premium that must be paid for proprietary gear; all components are standard and available off the shelf.

What Difference Does It Make in Government?

Lowers Cost of Elections

The cost of elections is a major expense for county government, and one that is difficult to control. By law, elections must be held. It does not make sense to purchase expensive, dedicated and specialized voting machines which may quickly become obsolete. Open Source software is usually coupled with off the shelf hardware available at commodity prices. With precinct scanner voting systems built with Open Source software and commodity hardware, the price of a voting system drops under \$1,000 for each unit.

Increases Public Support of Government and Lessens Distrust

Since we are a government of, by, and for the people, it is important that government processes such as elections have the support and trust of the people. Even those who do not choose to vote have more confidence in a government which provides transparency and open process in its operations. Open Source increases the support of the public for government and lessens distrust. This is important in the United States and, arguably, even more important in elections held in the developing world.

Increases Public Involvement in Government

Finally, the biggest difference Open Source makes in government is to increase public involvement. The vast Open Source community of code readers, testers, and developers can lead the way towards more citizen participation in government processes, not just in elections, but across the wide range of government activities. The market place in ideas

can be organized to affect how government works, the software used by the government, and how the government interacts with the citizen. Open Source voting applications are just one of many instances where the Open Source model is suitable for increasing the public involvement in government.

Please do not hesitate to call me at the numbers below should you have any questions about the above public testimony. Thank you for the opportunity to comment.

Sincerely,

Richard C. Johnson, Ph.D.
CEO Open Voting Solutions, Inc.

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