Electronic Balloting Experts Switch to Windows Azure to Improve Election Efficiency

Overview

Country or Region: United States
Industry: Public sector—Software engineering

Partner Profile
Democracy Live has 15 employees and offices in Washington, Colorado, California, and Nebraska. The company's flagship product, LiveBallot, provides electronic voter information and balloting tools.

Business Situation
Democracy Live developed its LiveBallot software for the Amazon Elastic Compute Cloud platform, but the company felt that Windows Azure from Microsoft would be a better fit.

Solution
Working in the Microsoft Visual Studio 2010 development system, Democracy Live ported LiveBallot to Windows Azure, and 250 electoral jurisdictions used the system in the 2010 elections.

Benefits
- Powerful built-in features and seamless interoperation
- Substantial election cost savings
- Increased voter participation

"A local precinct typically spends three to five dollars per voter to prepare and mail election materials. We can cut that to approximately 50 cents per voter with LiveBallot and Windows Azure."

Bryan Finney, President, Democracy Live

Democracy Live helps make ballots and election materials available electronically for all American citizens, including military and overseas voters and voters with disabilities. After initially building its LiveBallot software on the Amazon Elastic Compute Cloud platform, Democracy Live switched to Windows Azure from Microsoft. The company found that Windows Azure programming is well supported by the robust Microsoft Visual Studio 2010 development system, and Windows Azure offers security and stability features that simplify development. In the 2010 elections, 250 local jurisdictions used LiveBallot, and they were able to markedly increase the participation of voters who live overseas or who have disabilities, while simultaneously reducing the cost of distributing voter materials and conducting elections.

Situation

Voting is a cornerstone of twenty-first-century democracy, but voting technology can seem antiquated. Election information packets typically are mailed as hard copies, and many jurisdictions deliver paper ballots by mail. The cost of printing and mailing these materials can be several dollars per voter, and information is presented only as static text that cannot be easily updated. Independent software vendor Democracy Live, based in Issaquah, Washington, delivers dynamic electronic balloting and voting information tools to substantially reduce costs and increase voter participation.

Updated technology is particularly important for voters who have been disenfranchised by existing systems. "More than 6 million American voters live and work overseas, including military personnel, and it can be hard for them to get timely access to voting materials," explains Bryan Finney, President of Democracy Live. "I spoke with one soldier who was stationed in Afghanistan, and he told me that at election time he felt like he was fighting two battles: one against the enemy and one just to be able to vote."

To assist these overseas voters, the U.S. government passed the Military and Overseas Voter Empowerment (MOVE) Act, which requires all 7,000 electoral jurisdictions in the country to provide electronic access to election materials by 2012. In addition, the Federal Voting Assistance Program (FVAP)—part of the United States Department of Defense—helps encourage voter participation by educating U.S. citizens worldwide about their voting rights. The FVAP also administers the Uniformed and Overseas Citizens Absentee Voting Act, which guarantees absentee voting access to

members of the military and Americans living overseas.

There are also many domestic voters who are disenfranchised by current voting systems as a result of physical disabilities, developmental disabilities, or literacy issues. To assist them, the Help America Vote Act and the Americans with Disabilities Act mandate that individuals with disabilities be given access to appropriate technology to participate fully in elections. "There are also 35 million disabled Americans who may be unable to access voter information and ballots due to visual or physical impairment or other limitations," says Finney. "Ideally, we would like to give them the ability to independently access and mark their ballot from the privacy of their own home, rather than requiring a voter who is blind or paraplegic to go to a central voting location."

In response to the laws and programs mandating improved electoral access, Democracy Live developed LiveBallot, a hosted suite of tools that electronically delivers voter-specific balloting information. LiveBallot initially ran on the Amazon Elastic Compute Cloud (EC2) platform, but after Microsoft released its Windows Azure, Democracy Live decided to switch hosts. "Microsoft has a lot of experience in the public sector, and its name carries a lot of weight with public officials, many of whom still think of Amazon as a book seller," says Finney. "And we trust the security, stability, and scalability that Windows Azure offers. Comparing the two environments, Windows Azure was a much better fit for our requirements."

Solution

Beginning in August 2010, two Democracy Live developers completed the transition to

Windows Azure in two months, using the [Microsoft Visual Studio 2010](#) development system. The process went very smoothly, and developers were happy with the tools. "Windows Azure works seamlessly with Visual Studio 2010, so we can utilize our existing programming skills, rather than learning a new environment," says Island Pinnick, Technology Lead at Democracy Live. "And [Windows Azure](#) middleware services make it easy to stage and fully test a build before pushing it live."

LiveBallot includes a web-based front end, which election officials use to upload voter information, and which candidates use to upload their statements and endorsements. In addition to text, candidates can add a video statement to their page, and online information is easily updated, unlike printed booklets. The system is designed to be easy to use, so even non-technical users can perform their tasks without extensive training or technical support.

When voters access the system, a Windows Azure application pulls data from a database managed by the [Microsoft SQL Azure](#) cloud database service, verifies that the voter is registered, and determines his or her precinct. The application then assembles that voter's ballot from the appropriate pieces in Windows Azure Storage and presents the ballot to the voter as a PDF file that can be filled out online, or printed and filled out manually. The voter then sends the ballot to the elections office by post or email, depending on the rules of their jurisdiction. Elections officials review and verify online ballots using the same process as standard absentee ballots, and ballots can be tracked throughout each step of the process, so the voter can confirm that the ballot gets counted. Given the sensitive nature of elections data, and the fact that system demand is high for a brief period around elections and then

quiet for long periods, [a high level of security](#) and scalability are crucial for LiveBallot. "We absolutely can't afford to have a server go down during an election, and one of the advantages of Windows Azure is that we don't have to worry about that," says Finney. "We've had 100 percent uptime so far, and the built-in security features were a big deciding factor when we switched platforms."

In the 2010 elections, 250 jurisdictions across the United States used LiveBallot and participated in the FVAP to assist oversees constituents with electronic balloting. Elections officers have noted increased participation by both military voters and voters with disabilities, and voting and accessibility experts have praised the system. "LiveBallot is a marvelous example of a universal design," says Deborah Cook, Director of the Washington Assistive Technology Program. "It provides a valuable voting resource for all citizens, including those with disabilities who often lack access to critical information about candidates and issues."

Democracy Live is working on the next version of LiveBallot, which is due in mid-2011. The new version makes some changes to the underlying architecture, while also adding new functionality and further refining accessibility features and the user experience.

Benefits

With its LiveBallot application and Windows Azure, Democracy Live has made it possible for states to offer overseas voters, including military personnel, a convenient, safe, and secure way to participate in elections from anywhere in the world. Election officials can easily comply with federal voting laws designed to increase voter participation while reducing election costs. Developers were able to quickly and easily port the

system from Amazon EC2 to Windows Azure, thanks to the powerful features built into Windows Azure and the way that the company's various Microsoft products work seamlessly together.

Powerful Built-In Features and Seamless Interoperation
Democracy Live found that the security and scalability built into Windows Azure simplified the process of developing its new version of LiveBallot. "A balloting system requires a high level of flexibility to account for demand spikes at election time, and developing for Windows Azure in Visual Studio made it easy for us to build that scalability into our application," says Pinnick. "And knowing that the service is hosted by Microsoft gives us confidence in security, which is important to us and to our customers."

Given that Democracy Live is familiar with Microsoft technologies, Windows Azure was a good fit for the company's development infrastructure. "Having more Microsoft products as part of our development process was one reason we moved to Windows Azure," says Pinnick. "The different components work together seamlessly, and I expect it will get even better over time. I would definitely encourage other development shops to look into Windows Azure."

Substantial Election Cost Savings
At a time when many local governments are struggling to balance budgets, LiveBallot offers a chance to dramatically reduce election expenses while also complying with the regulations mandating ballot access. "Local election officials can't afford to purchase expensive new computers to provide electronic ballots," says Finney. "Using a cloud-based application enables them to offer sophisticated and robust functionality

without a big up-front investment in hardware and IT staff."

"In addition, delivering election materials in hard copy is just not cost-effective," adds Finney. "A local precinct typically spends three to five dollars per voter to prepare and mail election materials. We can cut that to approximately 50 cents per voter with LiveBallot and Windows Azure. That's a very strong business proposition."

Increased Voter Participation
LiveBallot has been certified by the Department of Defense as MOVE Act–compliant, and it meets the version 2.0 Web Content Accessibility Guidelines established by the World Wide Web Consortium. "In the 2010 General Election in Kitsap County, Washington, 88 percent of users said LiveBallot made voting easier, and a full 50 percent said they would not have voted if LiveBallot was not available," says Finney. "The mother of one disabled voter wrote to tell us how happy she was that her son was able to vote on his own for the first time ever, and that's why we do this. Voting is the engine of our democracy, and we want to make sure that everyone can participate."

Newcastle County, Delaware, found that LiveBallot noticeably improved the return rate of overseas ballots. "Normally we get about 70 percent of ballots returned," says Howard Scholl, Deputy Director of Elections for Newcastle County. "In the 2010 elections, that increased to 80 percent. We've given our citizens a solution that makes it very easy to get their votes in on time."

For More Information

For more information about Microsoft products and services, call the Microsoft Sales Information Center at (800) 426-9400. In Canada, call the Microsoft Canada Information Centre at (877) 568-2495. Customers in the United States and Canada who are deaf or hard-of-hearing can reach Microsoft text telephone (TTY/TDD) services at (800) 892-5234. Outside the 50 United States and Canada, please contact your local Microsoft subsidiary. To access information using the World Wide Web, go to:
www.microsoft.com

For more information about Democracy Live products and services, call 425-557-5950 or visit the website at:
www.democracylive.com

Windows Azure

Windows Azure provides developers the functionality to build applications that span from consumer to enterprise scenarios. The key components of Windows Azure are:

- **Windows Azure.** Windows Azure is a development, service hosting, and service management environment. It provides developers with on-demand compute, storage, bandwidth, content delivery, middleware, and marketplace capabilities to build, host, and scale web applications through Microsoft data centers.
- **Microsoft SQL Azure.** Microsoft SQL Azure is a self-managed, multitenant relational cloud database service built on Microsoft SQL Server technologies. It provides built-in high availability, fault tolerance, and scale-out database capabilities, as well as cloud-based data synchronization and reporting, to build custom enterprise and web applications and extend the reach of data assets.

To learn more, visit:
www.windowsazure.com

Software and Services
- Windows Azure
  - Windows Azure
  - Microsoft SQL Azure
- Microsoft Visual Studio
  - Microsoft Visual Studio 2010

- Technologies
  - Microsoft .NET Framework

Microsoft®