2011 Professional Practices Program

Use of Structured Data in Election Results Publication

Washington, DC

Submitted by:
District of Columbia
Board of Elections and Ethics
441 4th Street NW, Suite 250 North
Washington, DC
(202) 727-2525
director@dcboee.org
http://www.dcboee.org
Background

Each Election Day, candidates, voters, public interest groups, and the media anxiously await publication of official results. Media outlets race to collect results by calling local and state officials, sending reporters to gather printed results in person, and scouring the Internet and any other sources available to be first in line with the freshest results.

The District of Columbia Board of Elections and Ethics has historically presented its election results on its website as compiled from all 143 precincts. Results were collected from vote tabulation equipment and delivered to the internet via a web launched application.

For the April 26, 2011 special election, the Board also provided results in a real-time data feed. The Board not only made this data available to the media, but also developed a Google Gadget that allowed any voter to see election results on their Google home page.

Board staff has worked with national entities including the Voting Information Project and the National Institute for Standards and Technology and at this time there is no single nationally accepted standard for the collection and distribution of election results data. Staff developed an ad hoc XML schema loosely based on the internationally accepted EML (election markup language) standard. XML provides an online method for transmitting and accessing data through computer software.

For this special election, the Board generated XML data files, an XSL rendering file (a simple software application that allows humans to read XML data), and a redistributable Google Gadget to simplify the presentation of election results and provide a real-time feed of updated results. The Board developed a series of database applications, web applications and ETL packages that regenerated these files regularly.

About XML

The eXtensible Markup Language (XML) is a method of “tagging” information in a commonly accepted format so that it is easily readable by other electronic systems across various computer platforms. Common data formats permit the creation of these machine readable files by any system and sharing and reproducing data from disparate systems. The process of creating an accepted common data format for the elections sphere has been ongoing for several years and as of this writing the IEEE (Institute of Electrical and Electronic Engineers) has taken the lead in developing data interchange specifications for voting systems to include information used to define and create ballots, as well as reporting of voting activity and results.

About Google Gadgets

Gadgets powered by Google are small, redistributable software packages that can be programmed by any user and can be placed on any page on the web. Gadgets can add be added by non-programmers to iGoogle, a computer desktop, blogs, websites and social
media sites. Board staff developed a redistributable Google Gadget that synchronized city-wide election results real-time for all contests in the April 26, 2011 special election.

**What the Board Developed**

Media outlets and other reporting entities have yet to develop standard presentation logic for formatting and delivering election results. Many smaller media outlets, blogs, candidates and interest groups lack the technical resources to develop applications. In response to the inconsistency of data presentation methodologies, the Board developed a simple XSL rendering of election results to display city-wide results on any site. Additionally, the distribution of the Google Gadget permitted non-technical users with a simple method of incorporating unofficial results in a timely fashion on election night.

Given the current lack of a single national standard, the Board developed its own terminology to refer to election results data objects. When examining the prospect of producing XML results city-wide, the relationship of election districts to voting precincts added layers of complexity. The Board of Elections and Ethics settled on providing a single data stream that included all precinct level data and an XSL sheet to demonstrate the process of recompiling data from an XML feed.

**Conclusions**

Despite the fairly ad hoc methodology followed by the Board for the presentation of election results data in the April 2011 special election via an XML stream, consumers of the data appreciated and used the results for online presentation. In fact, the additional load on the Board’s web servers will lead to changes in server configuration for future elections. However, until data standards are adopted, each state/reporting entity will need to coordinate its efforts with media outlets independently. Additionally, the scarcity of public sector technology resources familiar with the development and implementation of XML schemas presents a challenge for the maintenance of these efforts.
XML Schema Used

Schemas describe the data fields, data types and default values used in XML data.

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    xmlns:xs="http://www.w3.org/2001/XMLSchema">
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        <xs:element name="election">
          <xs:element maxOccurs="unbounded" name="CONTEST">
          <xs:element maxOccurs="unbounded" name="CANDIDATE">
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<tr>
<th>Candidate</th>
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<tr><td class="precinct">Candidate</td><td class="precinct">Party</td><td class="precinct">Votes</td></tr>
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</xsl:for-each>
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</body>
<table>
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<tr>
<th>Candidate</th>
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<tr>
<td>Arkan Haile</td>
<td>NO PARTY</td>
<td>137</td>
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