

Open Publish 2008

Real-time Data Syndication Using XML

(I Want an Update and I Want it Now!)

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Acknowledgments

- Data and images used in this presentation have been taken from the *Report on the 2007 State Election*, produced by the New South Wales Electoral Commission, 26 November 2007
- The Electoral Management Application (EMA) was provided by LogicaCMG



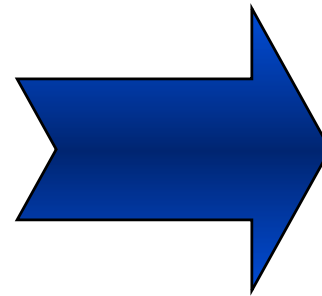
Expectations

- The public and the media expect instant access to information
- Share prices
- Sports and competitions
- Election results



2007 NSW State Election

- Getting the numbers: from the polling place to the media





About Elections

- In NSW, rules are defined by legislation, and are subject to change at short notice
- Legislation differs for each state
- Federal, state, and local elections all operate differently
- 93 State Electoral Districts
- Candidates and groups must register prior to the election
- All the “action” happens on one night, but final counts can take several weeks
- Results are compiled and submitted as they become available.
- Media frenzy on election night



It's Like a Sporting Event

- Elections have a lot in common with sport
- But all the competitions occur simultaneously on one night
- Teams and individuals competing
- Results are accumulated until winners emerge
- Punters enjoy crunching the statistics
- Intense media interest in the outcome



Data Outputs



- NSW Electoral Commission official website - Virtual Tally Room (VTR)



- Acer Stadium Electronic Tally Board



- Australian Broadcasting Corporation



- Other print and news media



→ VTR Home

→ Legislative Assembly Results By District

District Summary

Election Night

Post Election Night

Notional Distribution of Preferences

Preferential Count

→ Legislative Assembly Status Results By District

→ Legislative Council Results By District

→ Legislative Council Summary

→ Guide

Print Page

LA Results By District > Baulkham Hills > District Summary

Date:05:04:2007 Time:16:34:11 Status: Final Published Results

State Electoral District of **BAULKHAM HILLS**

Summary of First Preference Votes Polled for Each Candidate

Electors Enrolled on 5 March 2007: 48,840
 Voter Turnout: 94.33%
 Informal Rate: 2.49%

Candidate	Party	Election Night		Check Count		Check Count & Dec		Recount (if required)	
		%	First Pref Votes	%	First Pref Votes	%	First Pref Votes	%	First Pref Votes
GOH	CDP	5	1,723	5	1,740	5	2,173	N/A	N/A
LI	UP	3	1,046	3	1,051	3	1,251	N/A	N/A
HAY	ALP	32	11,670	31	11,588	31	13,940	N/A	N/A
PIOL	AAFI	2	784	2	788	2	1,046	N/A	N/A
MERTON	LP	51	18,840	51	18,957	52	23,153	N/A	N/A
RODOWICZ	GRN	7	2,686	7	2,702	7	3,359	N/A	N/A
Total Formal Votes Counted			36,749		36,826		44,922		N/A
Informal			969		935		1,147		N/A
Total Votes Counted			37,718		37,761		46,069		N/A

MERTON was declared elected on the 04:04:2007

MERTON achieved a majority vote in count 1



Data Outputs: VTR

- Results updated every 5 minutes
- 2 million hits an hour on election night
- 60 pages per second
- 5,000 unique visitors per hour
- Many times estimates based on 2006 Vic State Election
- Double the hit rate to which VTR was tested

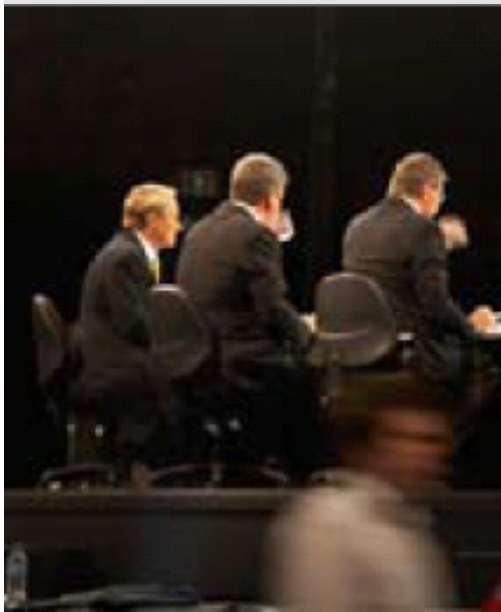
The NSWEC website was an important source of information and was frequently accessed by journalists during the election period...

Report on the 2007 State Election.



Data Outputs: Tally Board

- Acer Arena – central results location
- Attended by major media organisations including:
 - ABC, ATN 7, TCN 9, Network 10, SBS TV and Sky TV;
 - 2GB, 2UE, SBS radio; and
 - NSW and national print media organisations.





Data Outputs: Tally Board

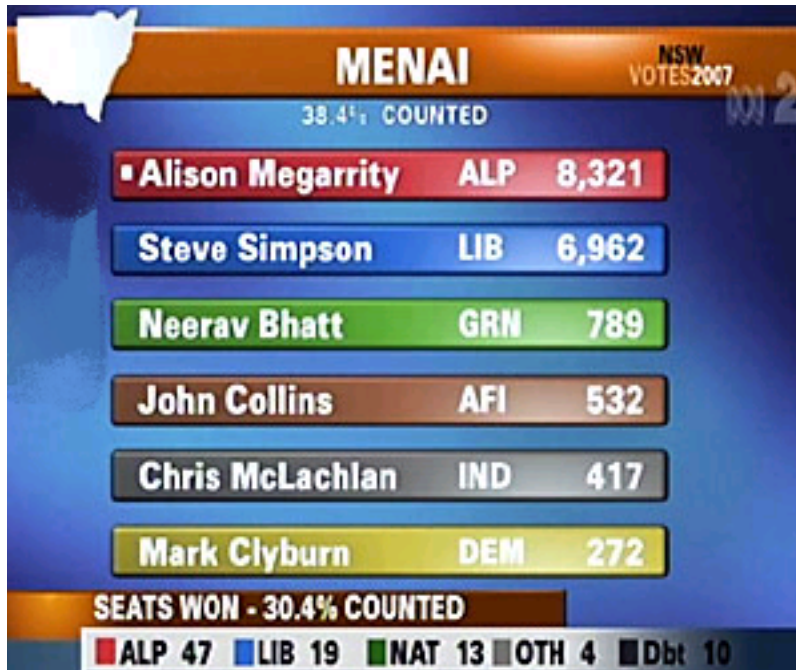
- Results also updated every 5 minutes

The tally room was not well attended by registered political parties, political leaders or the media on election night, and the increasing use of the internet as the primary source of election results calls into question the need for an expensive central results location. Consequently the NSWEC proposes not having a tally room at the next State election in 2011.

Report on the 2007 State Election.



Data Outputs: Other Media



- Results files updated every 5 minutes
- ABC and other print and news media



XML Integration



- Results input by Returning Officers.
- Data stored in EMA (Election Management Application). SQL Server DB



XML Integration

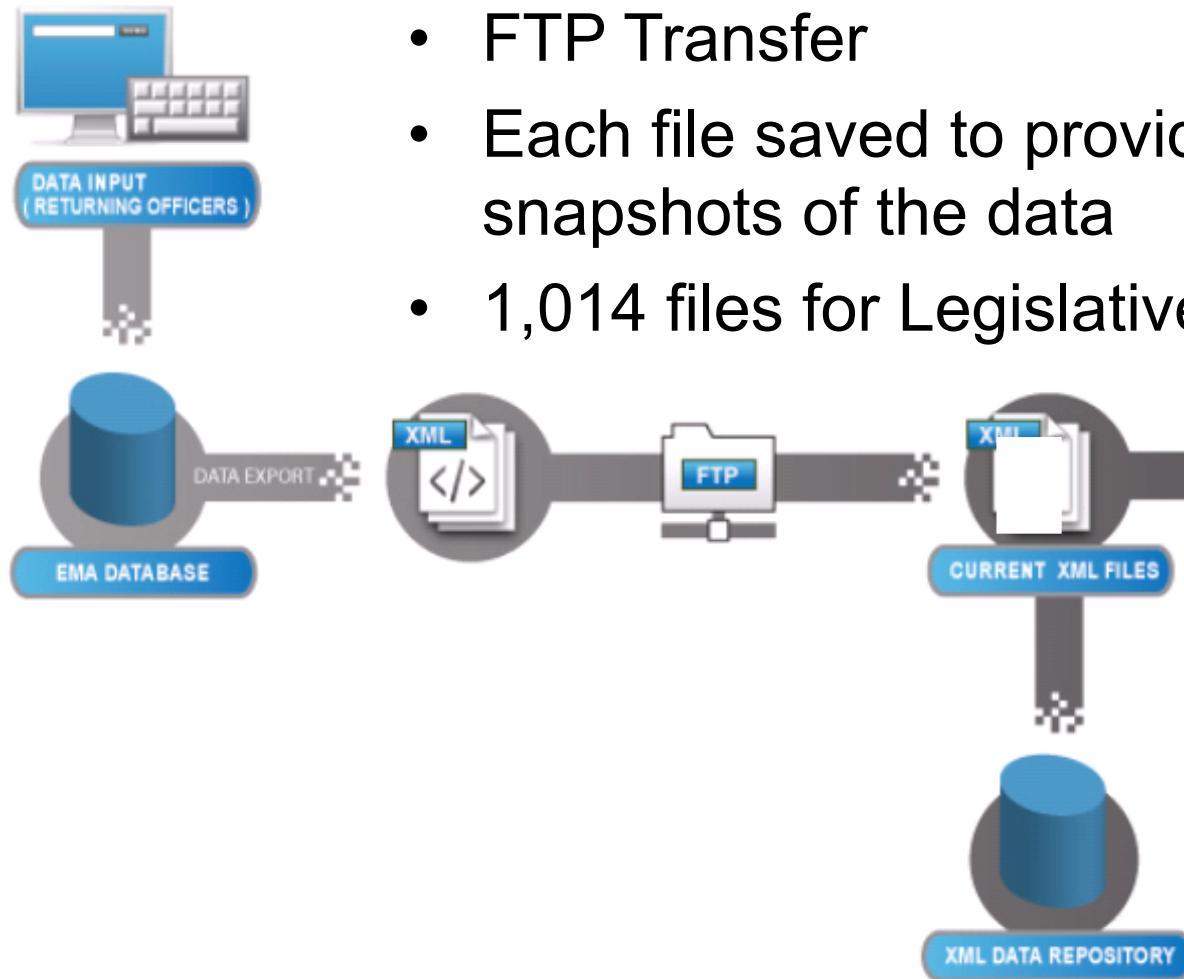


- Data exported to XML
- Custom XML Schema
- Why not use EML (Election Markup Language)?



XML Integration

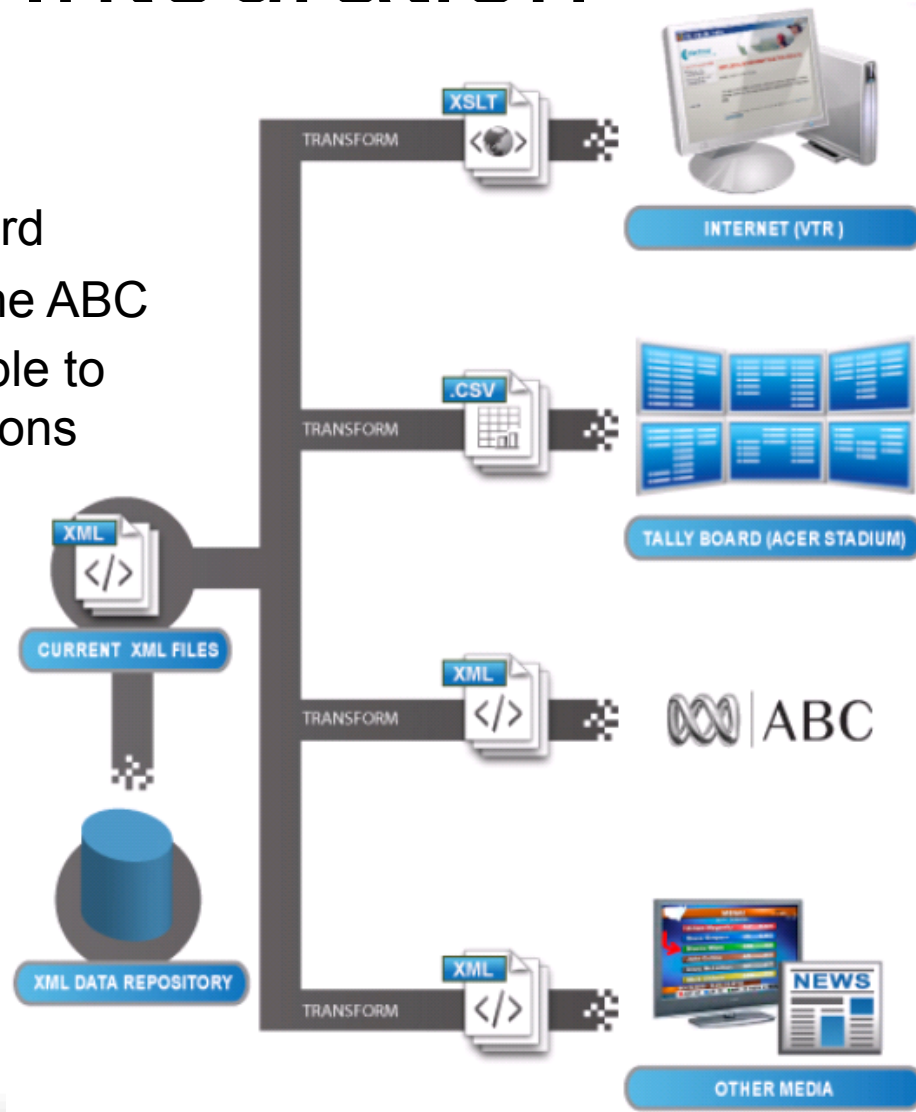
- FTP Transfer
- Each file saved to provide “point-in-time” snapshots of the data
- 1,014 files for Legislative Assembly results





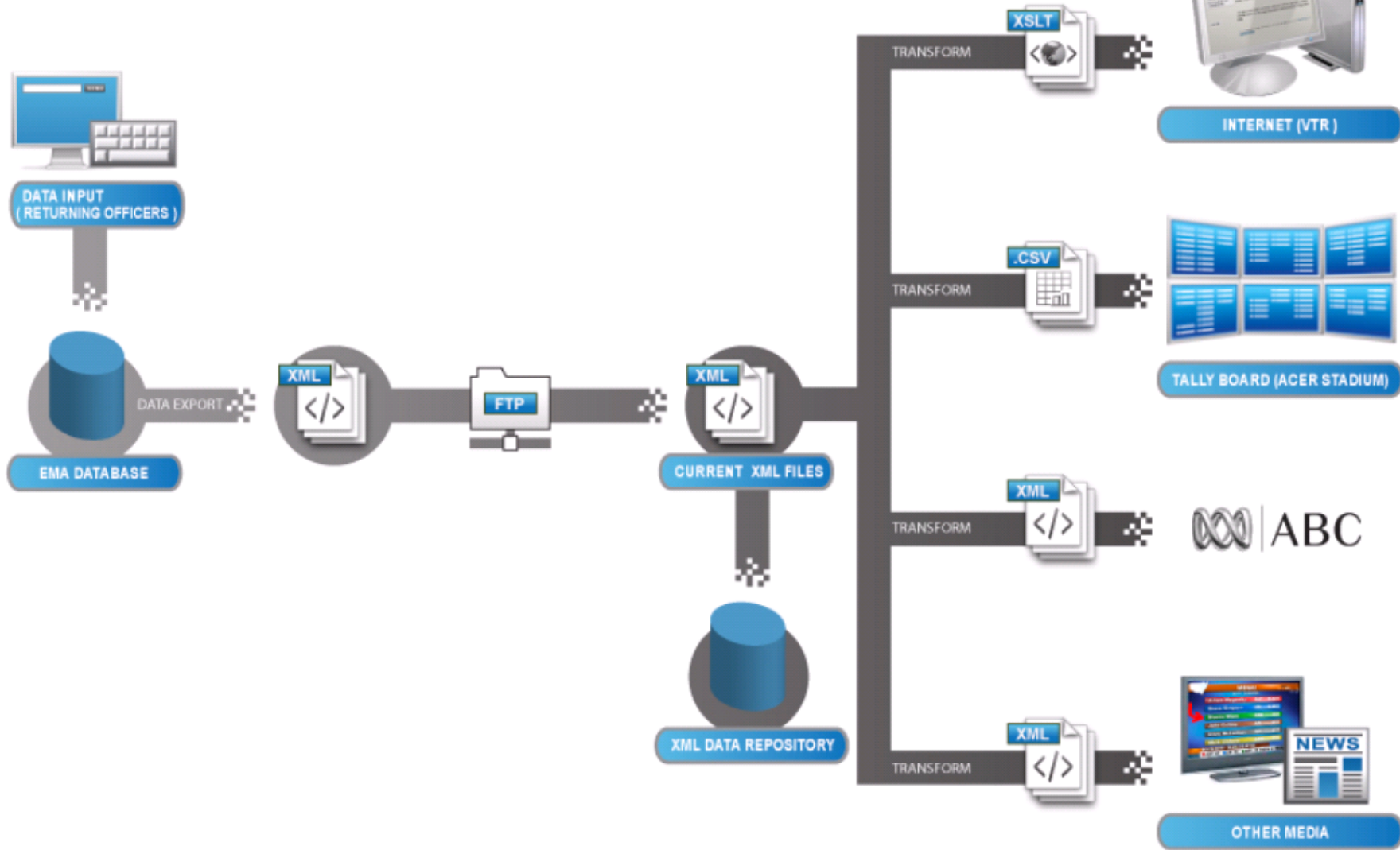
XML Inteegration

- XML fed to VTR via XSLT
- Transform to CSV for Tally Board
- Transform to MFLite XML for the ABC
- All of the above formats available to other news and print organisations





XML Integration





Significant Points-in-time?

- First Preference Votes counted on election night
- Two candidate preferred count on election night
- Check count takes place on Sunday
- Declaration Votes – postal votes, absent votes etc - are counted
- Distribution of preferences; a count is recorded for each distribution
- Rarely, a recount may be ordered
- The results are declared to be finalised



Why Points-in-time?

- Human error – especially on election night
- An XML data feed containing errors can be overridden by an earlier correct file
- Record of progress of the election at 1,014 points-in-time
- Record of the state of the EMA DB at 1,014 points-in-time
- Any data entry error can be precisely pinpointed
- Post election statistical analysis for points-in-time



Challenges

- State general elections happen only every 4 years
- Legislative changes are common
- New technology
- Some out-dated technology still in use
- Not being ready on time isn't an option
- Only one chance to get it right



More Challenges

- Developing systems based on the gradual accrual of data over time
- Need to cater for possible but unlikely scenarios
- Sample data based only on the final published results (in HTML) of the 2003 state election
- No point-in-time data
- Hence need to manually reverse engineer sample data for all points-in time



Testing

- Live count tests
- All Returning Officers involved
- Combined training and system testing
- Simulation of whole election process
- Effective test of what *should* happen
- Difficult to test what *could* happen



Election Night

- Data integrity was monitored by various parties. Primarily by “prowling” the VTR website.
- There were no problems or incidents.
- Data feeds to the Tally Room were discontinued at midnight.



Post Election Night

- Data feeds to VTR continued until April.
- XML files continued to be available to the ABC and other media outlets.
- Several data anomalies occurred, which required programmatic changes either to the XML data, or to VTR



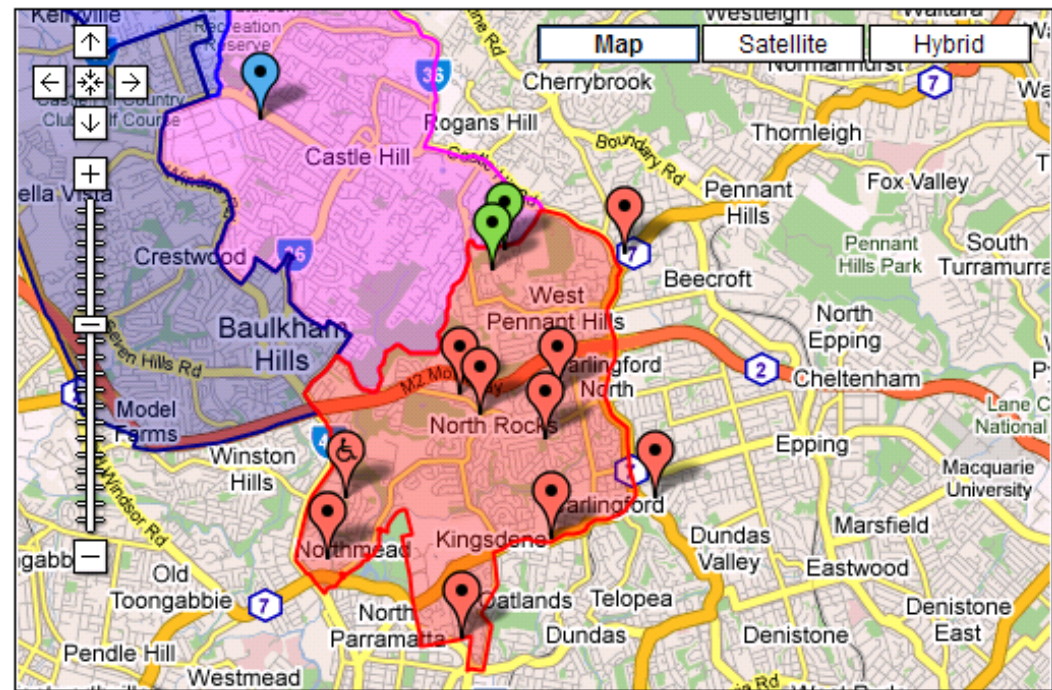
Final Published Results

- Results were finalised around 10 April
- Analytical data extracted from XML data files for several points-in-time
- Analytical and summary data extracted for inclusion in the *Report on the 2007 State Election*
- Final data converted to static HTML, and remains as a permanent record on the EC website.



2008 NSW Local Gvt Election

- A version of VTR will be available for the 2008 NSW Local Gvt election
- Local Gvt elections are much more complex than State elections
- XML integration with KML GoogleMap data
- First time Local Gvt results will be published to the internet





Conclusions

- Level of demand for instant access to updated results and statistics is difficult to gauge
- Demand is typically under-estimated
- Supply stimulates demand
- If you build it, they *will* come