White Paper

Characteristics and Models of Statewide Voter Registration Systems

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15-December-2002

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InfoSENTRY has been working with States to analyze and implement statewide voter registration systems for over a decade. We have no affiliations with hardware and software vendors, many of whom are only now rushing to get into the statewide voter registration system market. We have assisted in providing vendor-neutral consulting services such as preparing detailed needs assessments and requirements analysis, writing RFPs for statewide systems, preparing independent verification and validation of vendor efforts to meet state needs, carrying out project quality assurance reviews, and designing user acceptance tests for our state customers to apply to vendors' proposed systems.

We have developed a database of profiles on statewide voter registration systems. Rather than categorizing each state's current statewide voter registration system, InfoSENTRY has reviewed data on a number of state implementations and created a series of "models" for these systems. We hope this basic categorization will help you assess your state's capability--and where you need to go in order to comply with the Help America Voter Act (HAVA) of 2002.

The models range from no statewide system at all to a highly integrated, centralized system. This White Paper provides a brief description of each model system along with a brief description of selected elements of each model.

We welcome election officials' questions and comments about our model systems and the elements. We will be updating this information from time to time and adding additional elements to our descriptions.

Please contact glenn_newkirk@infosentry.com for additional information.

Rev: 1.1

MODEL	BRIEF DESCRIPTION
No central file	The State has no formal structure or process for compiling basic voter registration data elements such as name(s), address(es), date of registration, and date of birth.
Occasional statewide VR file	The State periodically collects basic voter registration data from the local election jurisdictions and stores the data on disk files, CD-ROMs, tapes or other data storage devices.
Statewide VR database; periodic updates	The State periodically collects voter registration data from the local election jurisdictions and stores the data in a database format for routine report production and inquiries. Typically these databases include additional data on voter history other voter registration transactions.
Statewide VR database and network	The State periodically (as often as weekly) collects voter registration data from the local election jurisdictions and stores the data in a database format for routine report production and inquiries. Typically these databases include additional data on voter history and other voter registration transactions.
Statewide VR system-Type 1	The state collects standardized voter registration data and additional data on voter history and other voter transactions from the local election jurisdictions each day in batch file transmissions or in real-time transmissions. The State stores the data in a database format for routine report production, inquiries, and other election administration functions. The States purchases (or develops) and maintains the software used by many jurisdictions. Other jurisdictions have specialized software capabilities for their particular needs. The State typically distributes software updates to many counties through the network. The State often transmits voter registration applications from NVRA agencies to the Counties for data entry and verification/confirmation activities. Counties have the ability to inquire on the statewide database.
Statewide VR system-Type 2	Data entry occurs in the Counties, with all voter registration data and all other data on voter history and other voter transactions being transmitted and stored in real time in the statewide database. The State stores the data in a database format for routine report production, inquiries, and use in election administration functions. The States purchases (or develops) and maintains the software used by all jurisdictions. The State typically distributes software updates through the network to the Counties. The State often transmits voter registration applications from NVRA agencies to the Counties for data entry and verification/confirmation activities. Counties have the ability to inquire interactively on the statewide database to check for all information relating to any registered voter's record.

ELEMENT	BRIEF DESCRIPTION
County file structure	This element refers to the structures of the voter registration files and records. Variations might exist in the number of files in the system, the number of records in the various files, the number of fields in each record, and the length/type of fields in each record—to name a few variations. In some states there are disparate file structures across the counties, with individual counties determining their own file structures. In a fully uniform SVRS, the data files, records, and fields are largely consistent.
Hardware	This element is the familiar element of "iron." Not referring jusT to the ferrous component of voter registration systems, this element refers to the servers, client workstations, printers, disk drives, tape drives, and other pieces of peripheral equipment.
Software	Typically, counties in any given state have different software from each other. In only a few states do all counties use the same software to carry out voter registration and election management functions.
Network	Many states offer counties dialup access to e-mail and the Internet—at best. Other states offer "network on demand," providing access to higher speed network connections only as needed. A few states offer county election offices high-speed, "real-time" network access.
Typical Update Frequency	The update frequency for voter registration information (from the counties to a statewide database) varies from not at all to instantaneous. In some states the update frequency is through a daily, weekly, monthly, or quarterly file transfer. The most "instantaneous" frequency typically is through "replication" or "mirroring" in distributed systems where a data entry action in a county occurs almost immediately in the state database. In states using mainframes, data entry activity in a county actually records the results only in a central state database.
Typical Update Transmission Technology	States have several methods by which counties send voter registration data to the central state system. The most common of these methods has been by diskette or tape. Transmission by Internet File Transfer Protocol (FTP) is increasingly popular. In some states, transmission is in "real-time" or nearly simultaneous—on a data record-by-record or character-by-character basis.
Official Voter Registration Record Location	In most states, the "official" voter registration record is the paper document provided by the voter to the local registrar. The "official" electronic record of voter registration is in the local jurisdiction. Most people interpret the Help America Vote Act of 2002 as requiring the "official" electronic voter registration record to reside in the state database.
System Management complexity	If there is no real statewide system, there is no statewide system management complexity. A full-blown, real-time, interactive statewide network that links a central database and all local election offices will require management of widely distributed hardware, software configuration, network connections, and people to operate all the components.
Implementation cost	The implementation cost for a statewide system will range from virtually nothing (where there is no current statewide file or network) to very high (where there is a uniform data structure, hardware configuration, network configuration, and operational procedures).
Maintenance cost	Similar to the implementation cost characteristic, the central maintenance cost of having no central system is relatively low. A uniform central system will have a higher central maintenance cost.
Statewide Data Quality Potential	Statewide data quality is likely to be low—or at least variable—in a state without controls over the hardware, software, and data structures that are inherent in a more uniform statewide system. Some counties might have excellent data quality, while others have lower data quality. A high level of central control has the potential of enforcing, and monitoring, statewide data standards and procedures.

	County File structures	Hardware	Software	Network	Typical Update Frequency	Typical Update Transmission Technology	Official Voter Registration Record Location	System Manage-ment complexity	Imple-menta-tion cost	Mainten-ance cost	State-wide Data Quality Potential
No central file	Disparate among the counties	Disparate	Disparate	None	None	None	County	Low	Low	Low	Poor
Occasional statewide VR file	Disparate among the counties	Disparate	Disparate	None	Quarterly	Disk, CD, Tape, Transmission	County	Low	Low	Low	Poor
Statewide VR database; periodic updates	Some common data elements among the counties	Disparate	Disparate	Disparate	Monthly	Disk, CD, Tape, Electronic File Transmission	County	Medium	Medium	Medium	Medium
Statewide VR database and network	Common data elements; County customiza-tions	Disparate	Disparate, but with common file formatting capabilities	"Network on Demand" connections	Weekly	Electronic File Transmission	County	Medium	Medium	Medium	High
Statewide VR system-Type 1	Identical common elements; County customiza-tions	Disparate	Disparate, but with common file formatting capabilities	Continuous, high-speed connections for most; on-demand connections for others	Some real-time; some daily updates	Data replication or mirroring; Electronic File Transmission for some counties	County	Very High	High	Very High	Very High
Statewide VR system-Type 2	Identical data structures in counties	Uniform architecture, varying in capacity	Uniform architecture, varying in capacity	Continuous, high-speed connections	Real-time updates for all counties	Data replication or mirroring	State	Very High[1]	Very High[1]	Very High[1]	Very High

[1]The management complexity, development cost, and maintenance cost rankings of "Very High" for this model apply only to those systems that are implemented in a distributed computing or "n-tier" client-server architecture. If implemented on a mainframe, as are the systems in Kentucky, Louisiana, and Georgia, the complexity and cost of this model tend to be substantially lower.