

United States Election Assistance Commission

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Managing Election Technology Series #1

A large, stylized graphic of a circuit board pattern, consisting of numerous white lines and dots on a light gray background, resembling a complex network or data flow. The pattern is oriented diagonally from the top-left to the bottom-right.

Ten Things to Know About Selecting a Voting System

The EAC's Managing Election Technology Series

"The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency."

--Bill Gates

Overview

The Election Official of today is an Information Technology (IT) Manager – whether they think they are, whether they want to be, or whether they were trained to be. IT Management requires a unique set of attitudes, knowledge and skills in order to plan, direct, and control contemporary election administration. This series of guides to managing election technology identify the primary areas in which the effective Election Official must recognize their role as an IT manager and provides ideas and best practices to assist in accommodating the demands of the modern election's office.

1. What is a Voting System?

Before you select a one, you need to know how your state's statutes and rules define a voting system. The Help America Vote Act (HAVA) defines voting systems as: (1) the total combination of mechanical, electromechanical, or electronic equipment (including the software, firmware, and documentation required to program, control, and support the equipment) that is used—

- (A) to define ballots;
- (B) to cast and count votes;
- (C) to report or display election results; and
- (D) to maintain and produce any audit trail information

Voting systems are certainly more than voting machines. A system is a collection of unified components, that when functioning properly, covert inputs to outputs. Systems consist of subsystems and systems interface other systems. This means that your voting system is a large collection of things – not just a casting/tabulation device (like a DRE or an optical scan unit). All of these subcomponents have to be carefully designed, tested and managed as a single system. Your voting system also interfaces other systems in your elections office. It has to integrate with your vote-by-mail\ absentee system, your UOCAVA ballot delivery system, electronic pollbooks, and election night reporting system.

Look at your voting system in the context of your total election systems. Understand its dependencies on outputs from other systems and other system's dependencies on inputs from the voting system.

A voting system is the core technology that drives and integrates the election system. It is the flagship of your election systems:

- It is the most visible component of the election system – it's what the media and public think of, when then think of elections
- It's the part the voter touches – it is tangible to the voter
- It's the part that produces results and determines outcomes of elections – candidates and parties focus on voting systems on election night through recounts and contests
- It's the part that receives most of the testing and auditing in elections – the EAC tests and certifies voting systems. Most states have protocols for assessing voting systems but not necessarily all election systems.
- It's the least understood part of the system – a very complex machine that does a very simple thing: it counts by one.

2. Know the roles and responsibilities of all stakeholders in the decision making process

At a minimum, the contemporary voting system selection process may involve scores of stakeholders. Your jurisdiction may have statute or rule that requires the involvement of various stakeholders:

- State Election Commission
- Secretary of State
- State Elections Office
- State Procurement
- State Attorney General
- Legislature
- County election officials

- Municipal election officials
- Project Manager(s)
- Voter advocacy groups
- Vendor(s)
- Political parties
- Academic researchers
- Citizens
- Testing Authority/Lab
- Other

Without clearly defined roles and responsibilities, the project will experience confusion regarding these roles, gaps in effort resulting in unmet deliverables, duplication of effort resulting in cost overruns, turf wars without methods of resolution, missed deadlines, lost momentum and damaged credibility of participants, and finally an ineffective voting system.

Make sure all appropriate stakeholders are identified early on in project planning. Map and validate the roles and responsibilities of each stakeholder or stakeholder group. Identify how efforts will be coordinated and corrected (if need be). Expectations for communication among stakeholders must be clearly stated. Institute an effective record keeping process. Finally, look for unintended consequences in all decisions.

3. Determine the true cost of ownership of a voting system.

Determining the cost of ownership of a voting system is not easy. *The true cost is the cost to purchase or lease, operate, and maintain a voting system over its life span.* It's probably more than you think. It is probably more than you have in the budget. Contemporary pricing structure for voting systems may shift costs

around – they may be front-loaded into the purchase, back-load, or deferred. They may shift costs of operation and maintenance of the system onto third-parties. Know how the vendor(s) plan to be profitable on this contract. Vendors need to make a profit on the sale of your system so that they will be around to maintain it after the sale. Know your options for leasing the system and determine the cost benefits of leasing compared to purchasing.

A potentially significant cost of acquiring a voting system is the cost to modify other systems within the elections space to accommodate a new (or modified) voting system. Make sure you evaluate the potential impact of a new voting system on all existing systems.

4. RFIs, RFPs, and Contracts are your best friend.

The Request for Proposal (RFP) (and related Requests For Information, [RFI]) is your first, last, and best chance to get the system requirements right. Systems are rarely better than the RFPs used to define the requirements for that system. A good RFP gives you the legal leverage to ensure the system does what you need. RFPs are widely available – ask other states or check with the EAC's State Information page of their web site http://www.eac.gov/testing_and_certification/state_information/ for examples from other states. Don't feel like you have to invent the wheel. Learn from other jurisdiction's experience. Don't be afraid to start over if you get it wrong.

5. Changing voting systems has to occur while you are conducting elections on your old system

Changing a voting system is like changing tires on the bus...without stopping. We know that every election has a six-month run-up and a one-month follow-up. If you change voting systems, at some point you will be running two or more systems concurrently. A transition plan will allow the seamless migration from the old system to the new system, with minimum disruption.

Vendor roles may change once their system is no longer in use. Jurisdictions that are heavily dependent upon their vendor may find that relationship changed if they are not favored with the order for the new system. You may be managing two vendor relationships concurrently.

Retiring the old system will require you to unfreeze every procedure related to the preparation, operation and maintenance of your voting system, change those procedures, and then refreeze them. Look for opportunities to improve direct and supporting processes in the deployment of the new system.

You will need to evaluate new space, security requirements, and operating requirements of the new system. Do not assume that new systems can be effectively and securely stored in existing storage spaces. You will need to plan for the delivery and acceptance testing of the new system – while still storing the old system.

Finally, consider the legal and security requirements for disposing of the old system's data and media. Many old systems will have archived election data stored internally or on

media. Most vendors will not permit the sale of used equipment that contains their proprietary or licensed software.

6. The largest investment you will make is education and training.

Consider how you will duplicate or improve the levels of efficiency and effectiveness in your election officials, poll managers, poll workers, system maintenance specialists, election programmers, and voters, with the new system. Have clearly defined learning outcomes and demonstrated skill levels for each stakeholder impacted by the new system. Budget for training and evaluate the effectiveness of the training.

7. What is the life span of the new system?

The selection process should reveal how long the system is expected to last and what is required to achieve that longevity. Commercial Off-The-Shelf (COTS) components may impact the longevity of the voting system – both negatively and positively. COTS components may be acceptable substitutes for obsoleted system components. COTS components may also have an accelerated obsolescence schedule and may not be forward and backward compatible with other components of the system.

Identify circumstances that can shorten the life of the system: changes in statute and rule that require the system to do something it cannot, supply chain issues, an under-capitalized vendor or inexperienced vendor, a poorly structured contract, and a rigid system architecture that resists updates and needed modifications.

8. All voting systems are multi-modal.

All modern voting systems are capable of central count vote-by-mail solutions, precinct count solutions, election system integration and all have accessibility (vision-, hearing- and mobility-impaired voter) solutions. Over the life span of the system it may shift its emphasis from one mode to another. Make sure that your new voting system is not constrained to a single mode of operation. It will shorten its life.

Evaluate any candidate voting systems against known and potential requirements for that system. Don't build obsolescence into the system.

9. Have a vendor management strategy.

Elections are complex events that require the coordination of multiple vendors: voting system providers, ballot printers, voter registration system providers, electronic pollbook providers, etc. If you do not manage the vendors, they will manage you. If you have multiple vendors working in the same space, they will naturally attempt to prioritize their system's requirements and force compromises and blame for failure on the other vendors. Manage the vendors (and their systems) like a portfolio. The goal is find the best outcome for the aggregation of systems.

10. Know the Known Unknowns.

There is a large and growing body of knowledge about emerging trends in election administration and the risks and threats to the integrity of elections. Many of these risks are emerging and few are quantified to the extent that they can be plugged into risk mitigation

models. Know the key issues and know their relevance to your jurisdiction and its circumstances. Set your priorities for making tradeoffs if necessary. A short list of these issues include: security, accessibility, auditability, usability, voter convenience, transparency of process, and testing and certification practices.

The EAC, NIST, NASED, and other organizations regularly publish information on these topics and more.