



# Modernizing Elections

Improving election integrity  
through technology

## Introduction

Key public sector agencies, including election management bodies, are attempting to leverage technology to efficiently manage resources while meeting citizens' needs in many service areas – including elections. The election technologies must align to stakeholders' demands, be a cultural fit, and align with available resources. It should also support the EMB's most basic challenges, such as increasing participation, improving election auditability and speeding results reporting.

Around the world, technology is being implemented across the entire voting process. According to International IDEA's Information and Communication Technologies Elections Database (as of November 2021), 65% of 184 surveyed countries use some sort of technology solution to tabulate votes. Today, out of the estimated 3.1 billion voters in the world, around 1.1 billion (35.5%) in more than 27 countries cast their votes using some form of automated voting system.

While voting machines are the most visible election technology, there are an array of other devices and systems beyond voting machines that can improve the accuracy, speed and integrity – even for countries that want to maintain manual voting.

This article looks at technologies available across different phases of elections and how they can benefit both voters and election management bodies (EMBs).

## The Benefits of Modernizing Elections

An increase in the use of digital tools generally leads to an increase in the availability of data to audit election processes. Digital transformation, thus, can make elections more transparent and more efficient. Adopting a well-designed technology solution can help solve some of the most pressing issues EMBs face:

- **Increased efficiency.** Technology increases the speed of critical election processes, such as voter authentication, voting, counting and results publishing.
- **Guaranteed vote secrecy and security.** Technology can help protect sensitive information. Automated voting offers strong safeguards against fraud and cybersecurity threats. In a well-designed system, any attempt to alter results will become evident immediately.
- **Improved accuracy.** Digitalization minimizes opportunities for human error – intentional or involuntary – which is the most common type of election mishap. Using electronic voting machines can also lead to increased accuracy in capturing voters' intent.

- **Reduced per-voter cost.** The investment in e-voting has been proven to reduce cost per vote in countries with larger electorates, such as the Philippines, India, and Brazil. Internet voting is particularly cost effective regardless of the size of the electorate.
- **Convenient experiences.** Biometrics are speeding registration and authentication, reducing queues and wait times. Electronic poll books and the internet are enabling forward-looking jurisdictions to allow voters to participate whenever and wherever they want. Electronic management and tallying tools speed the publication of results.

## **Modernizing Election Processes**

The most crucial processes that benefit from the implementation of technology include:

### **Voter registration & authentication**

Biometric technologies and e-Poll books can be used at polling stations to facilitate voter registration and authentication. Today, these technologies are smaller, more reliable and less costly than ever before, putting them within reach for many election organizations. When used to build a voter registry biometrics provide an immutable basis for future authentication, regardless of changes that might occur in the voter's lifetime. Biometrics are a proven-effective, secure tool to deter voter impersonation, multiple voting, and other forms of election manipulation. Electronic poll books (e-Poll books) allow poll workers to connect to digital voter rolls in real or near-real time during voter check in, assuring the most current data is used.

These tools add security for EMBs, simplify registration and check-in for poll workers, and speed these processes for voters.

### **Automated Tally**

Authorities are increasingly relying on technology to help poll workers and consolidation center operators collect, transmit, and consolidate paper tally reports, digitalize recounts or provide faster results. Technology may include mobile and desktop apps for updating results transcriptions or capturing results digitally.

Processing election results accurately and swiftly is crucial for election integrity. They can be used in conjunction with manual balloting processes. These tools do just that. Further, they add data points to the audit trail to help build trust.

### **Electronic counting**

EMBs can streamline vote counting of hand-marked ballots using high-speed scanners at centralized consolidation centers, or precinct scanners where ballots are fed in as voters complete their ballots. Counting votes and processing results are some of the most sensitive and scrutinized election activities. They're also the ones that are most susceptible to human error.

Scanners guarantee auditability, maximum accuracy, and efficiency, allowing EMBs to publish results faster. They are flexible enough to fit into almost any voting system, even manual ones.

### **Electronic voting**

Electronic voting includes different options for casting a vote in-person via an electronic device.

- Optical Mark Reader (OMR). Voters fill in an oval next to the candidate's name, and the ballots are scanned and tallied by an optical mark reader or scanner. Ballots are generally scanned by the voters themselves.
- Electronic voting machines with paper trail. Formally known as Direct Recording Electronic voting machines (DREs), these devices capture voters' intent electronically. It is now a standard that DREs print a paper copy of the electronic vote to enable voters to audit their ballot.
- Electronic Ballot Marking Device (BMD). BMDs allow voters to mark their options on the device's touchscreen, then print a paper ballot from their selections. The voter reviews the printed ballot for accuracy, then submits it into the ballot box or scanner.

Electronic voting has numerous benefits. It can reduce the need for officials to make subjective guesses about a voter's intent when pencil marks are imperfect. It can speed voting and ensure suffrage for voters with disabilities. It can create paper and digital audit trails to ensure accuracy and transparency.

### **Internet voting**

Internet voting, also known as i-voting and online voting, allows voters to cast their ballot from any location using an internet-enabled device. The internet works as a conduit between the voter and the electronic ballot-box. For EMBs, the challenge is to offer voters the ability to cast their vote remotely via a convenient, secure, and verifiable channel while also being able to identify and confirm voter eligibility.

Internet voting has been shown to be highly cost effective for EMBs as an additional voting channel. Its convenience and flexibility have been linked to increased participation. Internet voting can assure the suffrage of voters with disabilities who are unable to vote in person.

## Conclusion

Election management bodies must set clear objectives and develop implementation roadmaps when modernizing their elections. To ensure the transformation is purposeful and well guided, EMBs need to always keep in mind the issues they are trying to solve, the legal framework conditioning their efforts, stakeholder demands and all the options the market provides to meet their need.

Introducing election technology incrementally via pilot projects builds trust and familiarity and enhances opportunities for success and acceptance. By including political parties, civil society, and nongovernmental organizations in the decision-making process, governments can build a wide base of support, knowledge, and familiarity with the proposed technology. Launching a robust public education and awareness campaign is an essential component to inuring support for successfully transitioning to automated elections.

From voter authentication and automated tally to electronic counting, e-voting, and internet voting, EMBs have a myriad of options in today's election technology market to digitally transform their processes and keep the pace with voters' expectations and needs.

Citizen demands for more convenient voting experiences, more secure processes, and more inclusive elections should help EMBs define the next steps in their modernization plans. The future of elections is, without a doubt, more digital.