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BALANCING INNOVATION AND DELIBERATION: THE HISTORY OF ELECTRONIC VOTE RECORDERS

Recent technological advances have increased the speed and efficiency at which legislatures perform many of their routine daily tasks. As technology has permeated state Capitols, legislatures have struggled to balance added efficiency and value with time-honored traditions inherent to the workings of the deliberative process.

The first electronic vote recorder was rejected because legislative leaders feared the faster automated system would eliminate the opportunity to lobby their colleagues to switch their positions while a vote was in progress.

Today, electronic voting systems are common in legislative chambers throughout the United States and across the world. Even in chambers where the members do not cast their votes electronically, staff may use an electronic system to record votes for publication to the legislature's website or inclusion in the body's Journal of Proceedings.

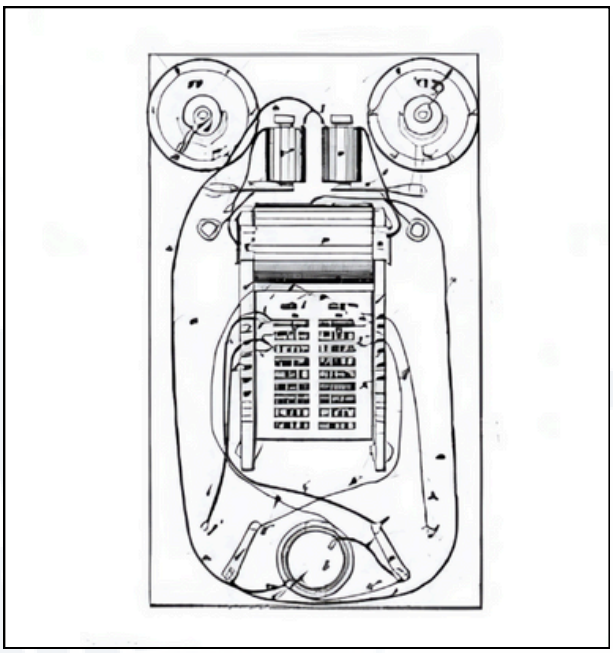
THE CREATION OF THE ELECTRONIC VOTE RECORDER

The story of the first electronic vote recorder dates back more than 150 years to the year Ulysses S. Grant was elected President of the United States. Concurrent to this invention, the states of Mississippi, Texas, and Virginia had yet to be readmitted to the Union following the Civil War; the first transcontinental railroad in North America was completed at Promontory, Utah, by the driving of the "golden spike"; and the Cincinnati Red Stockings became the country's first fully professional baseball team. The first college football game between Rutgers and Princeton, Jesse James' first bank robbery, and the Wyoming Territorial Legislature's passage of the first law giving women the right to vote were still months away.

Thomas Edison had yet to patent either the light bulb or the phonograph. In fact, Thomas Edison was just 22 years old and had recently been fired as a telegraph operator by Western Union for tinkering with a lead-acid battery (which leaked sulfuric acid onto the floor, irreparably damaging it) on the job. Meanwhile, newspapers were reporting that both the New York state legislature and the city council of Washington, D.C., were investigating means of automating their voting process.

Instead of clerks writing down a member's vote as legislators called out "Yea" or "Nay", Edison envisioned an automated system that would be faster and more accurate. This led to the development of his very first patent: the electronic vote recorder.

Edison's "electrographic vote-recorder" had the names of all the voters listed twice: once in a "Yes" column on one side, and again in a "No" column on the other side.



Each legislator would move a switch to either a "Yes" or "No" position, sending an electric current to a device at the clerk's desk. The machine would transmit the signal through an electric current and mark their name in the corresponding column, while keeping track of the total tally of votes on a dial.

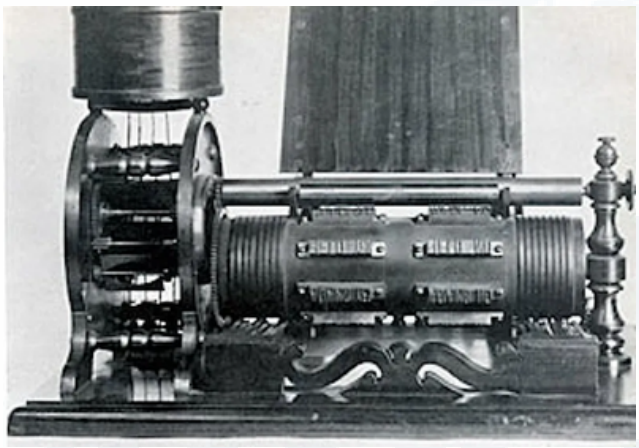
After the legislators had voted, the clerk would place a sheet of chemically treated paper on top of the metal type and press down on it with a metallic roller, imprinting the paper with the results. As the electric current passed through the paper, the chemicals decomposed, leaving the imprint of the name of the legislator in a manner similar to that of the chemical recording of automatic telegraphs. "Yes" and "No" wheels kept track of the vote totals and tabulated the results, eliminating the need for manual tallying and thus preventing human errors associated with manual vote counts.

Edison's electronic vote recorder was made of brass, steel, glass, and wood and measured 14.625" (height) x 10.25" (wide) x 15.5" (length). On June 1, 1869, Edison was granted a patent for the Electric Vote Recorder, U.S. Patent No. 90,646.

THE ELECTRONIC VOTE RECORDER GOES TO CONGRESS

Dewitt Roberts, a telegrapher and Edison's colleague, purchased an interest patent for $100 for the invention, equivalent to about $2,321 in 2025. Roberts took it to Washington, D.C. to showcase it to members of Congress. Congress wanted no part of any device that would increase the speed of voting. Legislators preferred a slower voting process, which allowed for lobbying and persuasion during roll calls. Deliberate delays in voting were often seen as valuable for political maneuvering, making a rapid system undesirable.
The chairman of the committee responded to Roberts' showcase by saying "if there is any invention on earth that we don't want down here, that is it."

Edison's vote recorder remains a testament to his inventive genius. Though it was never commercially successful during his lifetime, the patent marked his formal entry into the world of innovation and the formative ideas behind the vote recorder. Speed, efficiency, and automation continue to inspire advancements in legislative technologies.



In 1916, another effort was made to persuade Congress to adopt an electronic vote recorder by Bornett L. Bobroff of Milwaukee, Wisconsin, who also patented the first automobile turn signal. Bobroff's machine would allow each member to vote from their desk with the press of a button. Unlike Edison's model, Bobroff's model relied on batteries and resembled a form of telegraph with many keyboards. One press of the button and the red light with the word "Yea" flashed out opposite the congressman's name on the board. Pressing the button twice displayed the white light with the word "No". Bobroff's machine also provided for recording a member present and not voting and even allowed members to change their votes after they had been cast. Instead of having to wait and ask to change one's vote, members could, with the press of a button reverse their vote.

The machine could automatically record member votes in a second and, at the conclusion of the vote, allowed for the Clerk to have before him a complete count and a photographic record showing how each member voted on the particular question within 24 seconds.
For two months he demonstrated the use of the machine in the Ways and Means Committee room and recorded more than 5,000 demonstration votes – equivalent to 10 years of votes – without a single malfunction.

"Efficiency is the modern gospel of accomplishment and success, without hardship to anyone and with rewards for all" (Bornett L. Bobroff)

FROM THEN TO NOW

Like Edison, Bobroff estimated Congress could save both time and money with the use of electronic voting. Bobroff estimated his machine would save thousands of dollars in time, cost of light, heat, telegraphic and telephone charges. Advocates noted that the 62nd Congress took 368 roll calls, each of which consumed 45 minutes – the equivalent of 55 legislative days. Thus, he estimated Congress could finish its work two months earlier and save $50,000 in staff salaries by use of his electronic voting machine.

"Efficiency is nothing more or less than the elimination of all waste – waste of production, energy, waste of time, whether it be in a factory, a legislative assembly, the kitchen or an office building" (Bornett L. Bobroff).

Congressman William Howard of Georgia introduced a resolution to appropriate $125,000 to install the machine, but as with Edison's machine, Bobroff could not overcome congressional fears that electronic voting would eliminate filibusters and destroy the deliberative nature of Congress. In 1967, Louisiana Representative "Speedy" Long introduced an amendment directing Congress to install electronic voting.

1916

On 1 March 1916, a contract with the Universal Indicator Company for push-button boxes at each member's desk, a display board, a small display on the chief clerk's desk, electrical connections among all the parts, and a "photographic apparatus" to make a permanent record of the vote. The work was completed January 1, 1917 for $11,600 making the Wisconsin House of Representatives the first state to install an electronic voting system.

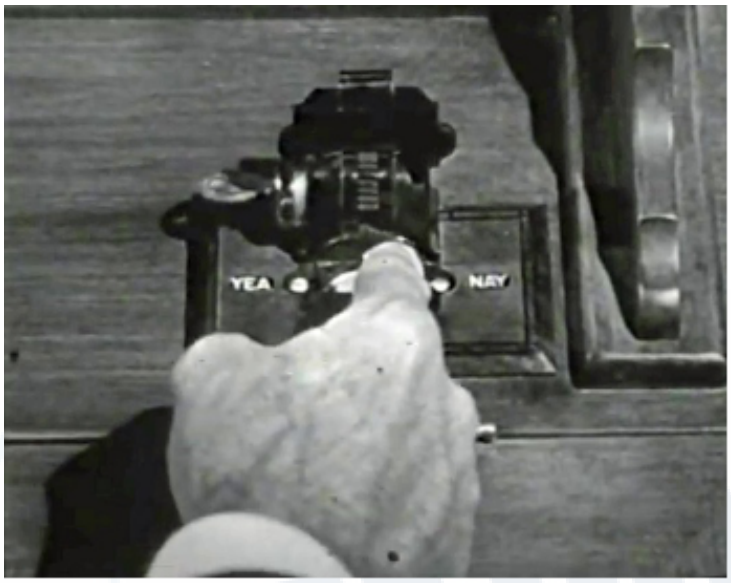
1921

Iowa became the second state to install an electronic voting system.
That same year the Universal Indicator Company approached the Louisiana House of Representatives with an offer of a 10-day, no obligation trial of their electronic vote tabulating system. If satisfied, the legislature would pay 10% of the machine price per year, payments not to exceed $25,000 ($300,700.00 in 2010 dollars) with the added option to buy out the contract at any time, which they did with the payment of $25,000 in 1924.
On November 16, 1921, the House voted 48-46 to adopt House Resolution 30 agreeing to conduct the voting machine trial. The trial began during the 1922 Regular Session and Louisiana official became the fourth state to install an electronic voting system (after Wisconsin, Iowa and Texas).

1922

International Roll-Call® founder, Marshall Thompson, demonstrated the first electromechanical voting system to the U.S. Congress in 1922.

1923 First electromechanical, perforating voting system installed in the Virginia House of Delegates.



1926 International Roll-Call® founder, Marshall Thompson, demonstrated the first electromechanical voting system to the U.S. Congress in 1922.

Early Thompson (American Signal), La.—1931

Over the next 30 years, 30 more chambers installed electronic voting systems (Eight installations in the 1930s, 10 during the 1940s; and 12 in the 1950s).

Today, International Roll-Call® Corporation is the industry leader in providing electronic voting and legislative management solutions for state legislatures, city councils, and other governing bodies. IRC offers both member voting consoles and virtual voting consoles tailored to each legislature's specific needs and unique legislative processes. Some of the most common functions for IRC consoles are voting (YEA and NAY), Request to Speak, Page-call, IT assistance, USB power ports, and proximity card or biometric voting security.

Other input methods can include mobile devices such as tablets, phones, laptops, or even "voice" systems where members call out their votes, which are manually entered into the system.

Many consoles also have certain AV system functions integrated into the consoles, such as member microphones, individual speakers, headphone jacks, volume controls, and LEDs that indicate certain sound system functions.

OTHER KEY FEATURES OF IRC'S LEGISLATIVE SOLUTIONS INCLUDE:

- Electronic Voting Boards: Display real-time vote counts, speaker information, and bill summaries.
- Secure Data Transmission: Modern encryption ensures the security and accuracy of legislative votes.
- Integrated Legislative Management: Seamless connections between voting, bill tracking, and public information systems.

Ultimately, Edison's vision of automation and efficiency lives on, proving that innovation, even when initially resisted, can shape the future of governance. The evolution of legislative technology, from Thomas Edison's pioneering electronic vote recorder to modern electronic voting systems, highlights the ongoing tension between efficiency and tradition in governance. Today, legislative bodies have embraced electronic voting to enhance accuracy, speed, and transparency. IRC has spent decades further refining these systems by integrating customized security, accessibility, and legislative management features.

For more information on how IRC can support your legislative technology initiatives, please contact us at info@roll-call.com.

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