

Polling Place Traffic Monitoring and Measurement System

Background

The amount of voter traffic at a polling place can vary greatly. At times, it might be minimal, with only a few or no voters present. At other times, the polling place can be very busy, crowded and packed with voters. The traffic can be steady or sporadic, arriving in bursts and waves. Some elections have relatively low turnout and the polling places are nearly empty. During such elections, voters can quickly check in at the check-in desk, obtain their ballot, go to a voting booth, privately mark their ballot, deposit their ballot in the ballot box, get their “I Voted Sticker” and quickly be on their way.

But not always. Elections with highly charged, visible races, or controversial referendums can bring out the vote in a big way. Presidential elections always bring higher turnout. Some elections keep polling places busy all day, characterized by long lines and long waiting times. We have seen elections where voters fill parking lots, are in long lines surrounding the polling place, become backed up at the check-in desk, are waiting their turn for an open voting booth, and are further held up waiting to deposit their marked ballots into the ballot box or ballot scanner. These scenarios are frustrating to both the voting public and those officials responsible for conducting and administering the election. In the worst cases, some voters have abandoned the voting process entirely, and such counties or states have become the subject of national headlines and attention.

Presidential Commission on Elections Administration (PCEA) Report Recommendations¹

- No citizen should have to wait more than 30 minutes to vote.
- Recommendation: Jurisdictions should develop models and tools to assist them in effectively allocating resources across polling places.
- Best Practice: Election officials should keep track of wait times at individual polling places using simple management techniques, such as recording line length at regular intervals during Election Day and giving time-stamped cards to voters during the day to monitor turnout flow.
- Best Practice: In polling places with a history of long lines, local election officials should analyze the reasons for excessive wait times and develop plans for avoiding the problem in the future.
- Best Practice: Voters should be given better information on line length before they go to the polling place, such as providing an internet feed from individual polling places.

Solution Concept

Almost every citizen now carries a cell phone. The presence of such cell phones is detected by today's wifi access points. These access points (APs) are used to provide wifi network connectivity for cell phones and other devices, if signed on with the appropriate credentials (passwords, etc.). But, even if such devices are not signed on, the AP detects the presence of a wifi enabled phone for as long as the phone is in the immediate area and range of the AP. Our idea is to use this detection capability to sense arrival, presence and departure of cell phones in a polling place, and extrapolate data that would be extremely useful for administering and managing election polling places. Such data could be captured effortlessly, efficiently and economically. While every voter may or may not have a cell phone that is wifi enabled, a very high percentage of voters would. From that, a very good approximation of voter presence at any one point in time, as well as how long voters are in a polling place could be created. Calculations could be determined such as overall traffic volumes, the relative volumes across times, and identification of the peaks and valleys of voter traffic patterns.

Such information could be captured and stored for later analysis. It could even be captured and presented for real time tracking, alerting and management during the election.

Plan

Our plan is to conduct a pilot trial of our technology in the 2020 Primary Election. We would like to use the Lancaster County central early absentee polling place, and possibly an election day polling place or two for this trial.

The purpose of the pilot:

- Prove that we can capture and accurately record cell phone arrival, presence and departure data.
- Determine if such data is a good representation of voter traffic and voter timings.
- Create and refine the calculations, reporting and information that would be most useful for election administrators and the management of election polling places.

This pilot would come at no cost to Lancaster County. We would require a minimal amount of support from the Lancaster County Elections staff. ElectionTek would supply our own AP hardware equipment, and software. We would request Lancaster County provide network access from the AP hardware to the Internet to access the ElectionTek servers.

We would then use this pilot experience to finalize our technology development, with the goal of making it commercially available for the 2020 General Election.

Source Reference

1. The Presidential Commission on Election Administration (PCEA) was established by Executive Order on March 28, 2013. It was comprised of distinguished election administrators and representatives of successful customer service-oriented businesses who bring experience drawn from the private and public sectors to help identify best practices in election administration. The PCEA's mission was to identify best practices in election administration and to make recommendations to improve the voting experience. In January of 2014, the PCEA produced a report of its conclusions and recommendations. That report can be found at this link:

<https://www.eac.gov/election-officials/pcea>

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