

## Nokia Helps Spearhead Electronic Voting Evolution

<b>Customer:</b>	Clackmannanshire Council
<b>Industry:</b>	Government
<b>Challenge:</b>	Provide an end-to-end mobile electronic voting solution to correctly count votes and reduce costs for the Clackmannanshire Council election
<b>Solution:</b>	Nokia Digital Pen, Nokia E61, and Sysnet (collaborator) software applications
<b>Benefits:</b>	Nokia and Sysnet provided an enhanced e-voting solution that recorded votes using a Nokia Digital Pen and then transferred the ballots to a Nokia E61 device via Bluetooth, helping to reduce time and costs while maintaining the reliability of election results

“Elections have become more complex as new management standards and enhanced security measures are being enforced. We wanted a truly twenty-first-century solution that mirrored the existing voter processes, but captured voter choices at source. This e-voting method proved acceptable to voters and candidates, and it clearly has potential to become a sustainable and secure process.”

**Rod Richardson**  
Principal Administration Officer  
Clackmannanshire Council

Clackmannanshire Council is one of 32 Scottish unitary local authorities, serving a community of more than 48,000 citizens in central Scotland. The council is tasked with providing government, corporate, environmental, and community services to citizens.

### The Challenge

Clackmannanshire Council was seeking a way to save time and costs with regard to its local elections. Counting votes in an election is time-intensive and costly, especially in the case of a tight race or when a recount of the votes is needed. The council wanted to determine if mobile technology could be used to reduce time and costs while maintaining the reliability of election results.

### The Solution

The council evaluated different technologies and determined a digital pen and paper solution was the most logical choice, given that a paper voting slip would still be needed as a safety net to measure the success of the e-vote.

Clackmannanshire Council turned to mobility solutions specialist Sysnet, who in turn collaborated with Nokia to deliver an end-to-end e-voting solution. The system consisted of a Nokia Digital Pen connected via Bluetooth to a Nokia E61 device, as well as digital ballot paper and an electronic portal with the security and functionality necessary to process the votes for adjudication.

### How It Works

Voters use a Nokia Digital Pen to mark the ballot paper in the usual way, by checking the box for the candidate of their choice. Votes are recorded and stored in the digital pen by an internal camera and memory processor. Once the ballot paper is completely filled out, the voter then marks a final box to confirm their choices.

The marking of this box transfers the votes via Bluetooth from the pen to an electronic ballot box using a Nokia E61 device situated in the voting area. The voter then places their votes into a standard ballot box to be counted by the usual method.

The fact that voters are still presented with the traditional pen and ballot paper helps reduce concerns inherent with using a new technology. Unlike other electronic voting methods, the digital pen and paper solution provides a physical record of the votes to compare against if needed.

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# Customer Profile

- **Company:** Clackmannanshire Council
- **Headquarters:** Clackmannanshire, Scotland, U.K.
- **Founded:** 1995 (unitary authority status)
- **URL:** [www.clacksweb.org.uk](http://www.clacksweb.org.uk)
- **Primary Business:** Government, education, social, environmental development, regulatory, and democratic services (including elections)

Nokia and Sysnet adopted different approaches to help ensure that the e-voting system adhered to all aspects of standard security at a normal election.

In order to maximize the safe transfer of data, the Bluetooth connection between the digital pen and Nokia device was encrypted, and the GPRS network was enabled with built-in security features.

To ensure that voters could not vote more than once, a voting officer marked a cross on the corner of the ballot paper with the digital pen, which was cut off before handing the materials to the voter. The cross was stored in the pen and the electronic ballot box would only accept a ballot sheet if the cross was present. A ballot sheet without the cross was rejected and was not forwarded to the ballot portal for counting, maximizing reliability over the normal pen and paper method.

## The Benefits

Voters were able to confidently use familiar voting methods, without having to understand the technology behind them. Voting officers were allowed to view ballots online, enabling them to check election results within a few minutes as opposed to hours. The resulting electronic count was exactly the same as the final manual count, indicating that the e-voting system can reduce the margin of error in manual counting for future elections.

Clackmannanshire Council was pleased with the design of the voting system and hardware provided, and the solution was implemented in a matter of weeks. "This was our first association with Sysnet and our first exposure to the Nokia technology. We were impressed with both, and certainly could not have achieved our objectives without their commitment and enthusiasm," said Richardson.

"With the help of Nokia, we delivered a complete electronic voting system at a very attractive price and in a short timescale," said Peter Burtwistle, managing director of Sysnet. "The superior hardware provided by Nokia worked flawlessly, and the feedback from both voters and election officials was extremely positive. There is no doubt that e-voting helps dramatically reduce the time and costs associated with elections and we believe the digital pen approach is poised to play a significant role in future elections."

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