Blockchain-Based Online Election System

Polys
What is Polys?

Polys is an online voting system based on blockchain technology that allows anyone to vote from anywhere using an electronic device. It is a tool that increases the trustworthiness and transparency of elections while also simplifying the voting process. To this day, holding a vote is an expensive and complex process that takes a lot of time and effort, both for the organizers and the voters. We designed Polys to change the way people vote. It’s easy to set up and use and provides maximum safety and transparency for its users. We believe Polys is what elections should look like in our digital world.

Where Polys can be used?

Polys can be used for elections at different levels and for a variety of purposes. First, the blockchain and crypto algorithms that we use make voting extremely secure and, as a consequence, it is suitable for elections at the highest level. Secondly, it’s much faster. If before it took a month to conduct a large-scale vote, now thanks to Polys it’s possible to create a vote and publish the results in the space of just a few hours.

Polys comprises an Organizer panel for vote deployment and a voter app for casting votes. No specific training or IT skills are necessary. Polys is a flexible application and can be easily customized to your needs.

Political parties

Polys promotes efficiency within a party; thanks to online voting, you can encourage thousands of members to vote in debates or hold an intra-party referendum in a matter of hours.

Student government bodies

Polys helps student councils, unions and associations save time and effort when organizing elections, involving the whole university in just a few hours.

Participatory budgeting

Polys is an extremely effective tool for municipalities and state governments when it comes to local participatory budgeting elections, allowing them to increase the number of people making decisions.

Businesses

Polys offers a solution for corporations, firms and industry communities in matters of shareholder voting, board voting, partner elections or deciding on the best project.

Communities

Polys can be used for voting by trade unions, non-profit organizations, sports clubs, cooperatives, homeowner organizations, and so on.
This is not just a concept. PolyS is a finished product. Here we present some of our unique experience we are proud of.

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Election of Student Councils for faculties, dormitories, and foreign student associations, as well as the appointment of a new ombudsman.

In 2015-2016, HSE conducted similar elections offline, with traditional paper ballots. It was clear that busy student schedules meant not everyone could get to a polling station during election time. Switching the elections to an online format via Polys allowed every student to participate in the voting, regardless of their schedule or the location of polling stations.

This was the second election at HSE using the Polys platform. A pilot project in 2017 saw 25,000 people participate in voting. These elections consisted of two rounds, each lasting six days. The election commission created approximately 1,000 votes in the Polys system, with a total of 328 candidates and 30,000 voters.

There were also changes to how the election commission prepared the elections – instead of the time-consuming paperwork that used to accompany these elections, the organizers could spend more time distributing information about the elections to students. As a result, turnout increased from 15% to 22%. The results were also calculated automatically, which also saved the electoral commission from having to manually count the ballots.

### Elections held

<table>
<thead>
<tr>
<th>People voted</th>
<th>Overall turnout</th>
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<tr>
<td>30,000</td>
<td>22%</td>
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Higher School of Economics

The Higher School of Economics is a leader in Russian education and one of the foremost economics and social science universities in Eastern Europe and Eurasia. The HSE has four campuses, 7,000 teachers and researchers, and over 30,000 students.

"Polys is a system that allows you to organize online elections quickly and safely while saving voters the hassle of going to a polling station. The main reasons for using Polys for a second year in a row were that it saves time and resources (for both the organizers and voters) and it’s open and transparent."
Yabloko political party

The Russian United Democratic Party Yabloko is in favor of a socially oriented market economy, equal opportunities, the inviolability of private property, competition in politics and economy, the strengthening of democratic institutions, and the rule of law. The party comprises over 28,000 members, has 76 regional branches and over 600 local organizations.

Nikolay Rybakov, Vice-chair and the head of the organizing committee of the Yabloko party primaries.

“"The Polys online voting system made it possible to carry out an important party procedure at a perfectly decent level without the need for complex organization and additional investments.”

Yabloko party primaries to select a candidate for Moscow mayor

Traditional voting would not have been capable of providing a representative vote over the five days of voting. It certainly wouldn't have offered a convenient way to vote for those who couldn't attend the event. Therefore, it was decided to conduct online voting on the Polys platform.

The debates lasted 11 hours a day for six days and were broadcast over the internet. There were 58 votes, 21 candidates, and 8,000 voters.

The main goal of online voting with Polys was to enable every voter to support a candidate at any time during the primaries over the five days.

If traditional paper-based voting had been used, it would have been necessary to print out and manually count the ballot papers for 58 separate votes. If two or three people had been responsible for organizing the elections, printing and counting would most probably have taken an average of one hour for each vote, meaning approximately 145 man-hours were saved.

<table>
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<tr>
<th>People voted</th>
<th>Man-hours saved</th>
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<tr>
<td>8,000</td>
<td>145</td>
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Elections of deputies to the Youth Parliament under the local Duma

Organizing, conducting and counting a traditional vote at this level would have taken several weeks for the election commission and cover only a small number of voters.

On the Polys platform, the whole process took just seven hours, including the counting of votes. The results were announced immediately after voting ended. The election was conducted in over 45 constituencies of the Saratov region with 110 polling booths, in which almost 15,000 of the 40,000 eligible voters cast their ballots. Participants voted via Polys on their own mobile devices or on devices installed at polling stations. Average online turnout was 36%.

Voters were given a special ticket with a link to the vote (in the form of a QR code) and a personal password for authorization. After authorization, a voter could cast their vote for a candidate, while the interim results remained unknown to both the voters and the election commission.

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<thead>
<tr>
<th>Elections</th>
<th>People voted</th>
<th>Average turnout</th>
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<tr>
<td>45+</td>
<td>15,000</td>
<td>36%</td>
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“Thanks to Polys, we simultaneously held votes in more than 45 electoral districts. The use of online voting resulted in a significant increase in young people interested in participating in the project. As well as electing deputies, we held a referendum on the use of online voting based on blockchain technology for future elections at all levels – it was in favor.”

Youth Election Commission of the Saratov region

The Youth Election Commission of the Saratov region is a permanent advisory body to the electoral commission of the Saratov region.

Victoria Belikova, Chairperson of the youth election commission of the Saratov region.
Participatory budgeting

Initiative budgeting is part of a global trend. It is a set of practices for solving local issues based on civil initiatives. Residents of the Volgograd region, in the south of Russia, chose which projects would receive money from the municipal budget.

Dmitry Zavyalov, Chairman of the Finance Committee of the Volgograd region

“Our goal was to gather the opinions of as many people as possible. That’s why we organized online voting on the Polys platform, which is based on blockchain technology and guarantees complete anonymity. We’re very pleased that the citizens were so active in the program to support local initiatives – more than 80 thousand people voted. That exceeded all our expectations.”

Voting for the best projects within participatory budgeting in the Volgograd region

The largest vote based on blockchain technology at the time of publication (June 2019).

The main problem was the difficulty of conveying the idea of participatory budgeting to a large number of people. The authorities had previously held general meetings in the administration buildings of cities and towns, but no more than 200 people at a time participated in them. Online voting would make it possible to increase the number of people involved in the decision-making process, raise awareness of participatory budgeting and help choose the most suitable projects.

Voting lasted 14 days and saw 82,500 people take part. A total of 112,600 votes were counted. Voters logged in to the system using a phone number. Each voter could cast one vote for a project in each district of the Volgograd region (a total of 45), not just for the district where they lived.

In the past, conducting a meeting for 200 people required approximately one day of work; doing so for 82,500 voters would have taken more than a year.

<table>
<thead>
<tr>
<th>People voted</th>
<th>Votes held</th>
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<tr>
<td>82,500</td>
<td>45</td>
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Polys advantages

Save time and resources
With Polys you don’t need to print election materials, manually register participants or count results. Polys does it all for you, making it much easier to conduct a vote.

Keep your election safe
The main advantage of the blockchain technology used by our system is its immutability. No one can influence the voting process or manipulate the results. In addition, all votes are completely anonymous – it’s impossible to find out how people voted.

Increase voter turnout
People will be able to vote from anywhere, without visiting polling stations, but with confidence that it’s safe. As a result, voter numbers and engagement will increase.

Additional Polys features

Flexible voter identification
Polys can connect to any system for identifying users, for example, via emails, SMS or ID cards, or we can develop a new system from scratch.

Integration with your own site
It’s also possible to integrate Polys functionality into your website or app by using the Polys interaction software interface.

Customized to your needs
If you require additional functions such as SMS notification for voters, technical support via chat, a new voting method or something else, we’re ready to discuss your needs.