



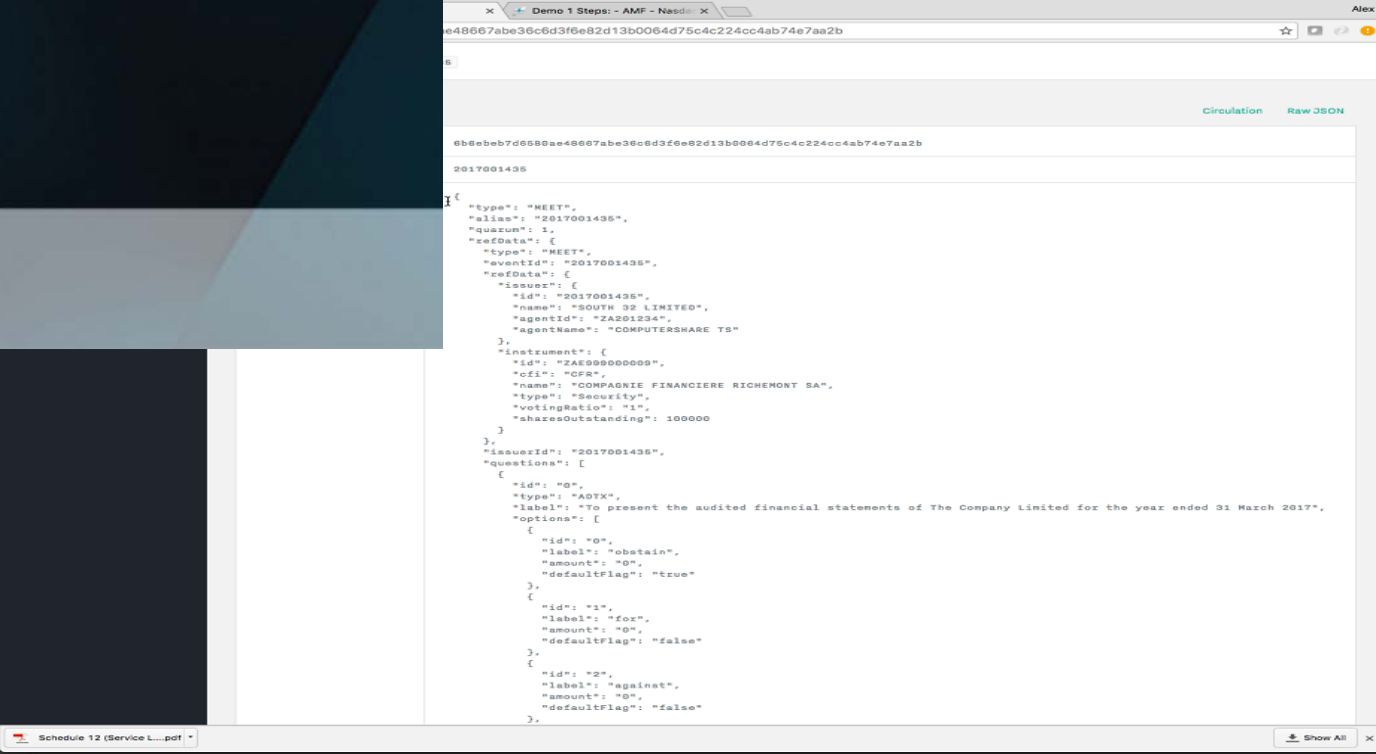
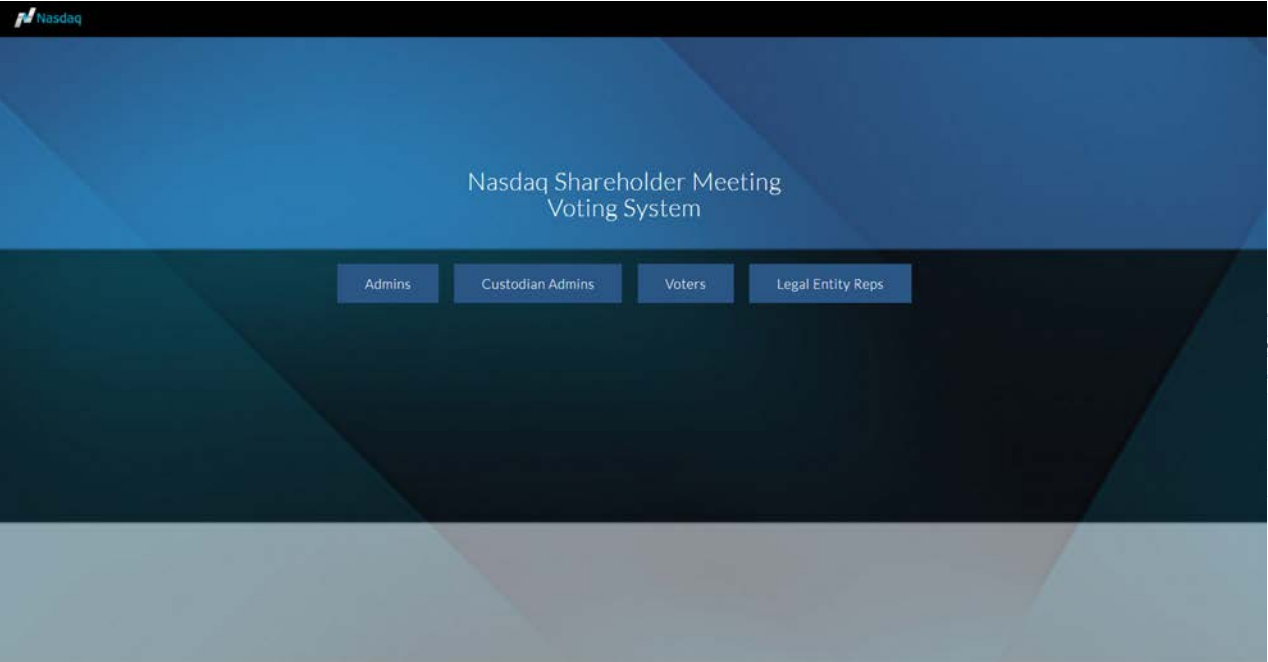
Nasdaq eVoting

From DLT innovation to market implementation

NASDAQ EVOTING – SECOND OFFICIAL BLOCKCHAIN PROJECT AT NASDAQ

“We are going to put proxy voting on the blockchain, on the immutable ledger and obviously enable people to do that with their cell phone and have that record with them forever.”

- Nasdaq CEO Bob Greifeld in Bloomberg, Oct 2015



NASDAQ EVOTING – PILOT IN ESTONIA

- **Know-how**
over 15 years of experience in providing general meeting service
- **Loyal customer base**
communication with different stakeholders
- **1-tier CSD**
access to beneficial ownership data
- **Supportive environment**
Estonia's open-minded attitude towards IT & FinTech innovation
- **Secure remote identification/authentication**
Estonian ID solutions for citizens & foreigners, cooperating with e-Residency initiative



NASDAQ EVOTING – MOVING BEYOND A PILOT...



- Agreement signed with Strate (Pty) Ltd late 2017 related to implementation of Nasdaq eVoting as the technical platform for the general enhancement of the voting process in South Africa.
- The solution aims to service our clients' needs across the market from transfer secretaries to issuers, custodians, asset managers and those holding shares in listed companies. Given that it is an **end-to-end solution** – from the time a meeting is announced and all the way through the voting process to the publishing of results – it means that **all stakeholders** will truly **benefit** within the process," said Tanya Knowles, Managing Executive of Fractal Solutions, a division of Strate (Pty) Ltd."
- "By leveraging blockchain, we are able to **reduce friction** in the voting and proxy assignment process and also ensure that all information is **transparent** to stakeholders when required and with the **proper security, governance and risk procedures in place**," said Lars Ottersgård, Executive Vice President and Head of Market Technology, Nasdaq.

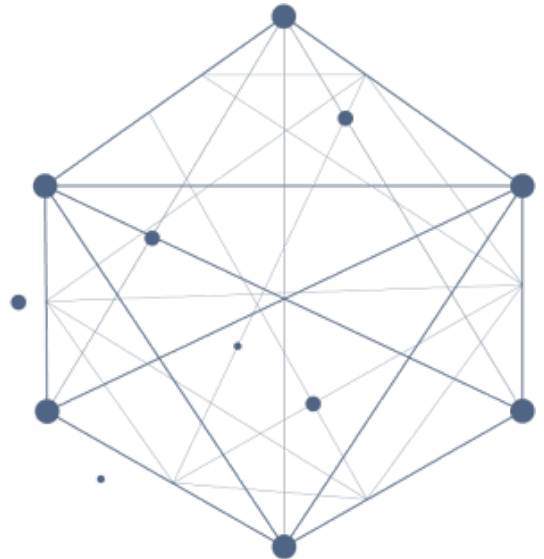
NASDAQ EVOTING – WHY BLOCKCHAIN?

Makes the voting and proxy assignment process more **seamless** and removes dependence on manual processes.

Enables the use of a single, **cryptographically secure transaction ledger** that empowers multiple parties with access to one point of truth.

Blockchain's **immutable nature** ensures that, records cannot be tampered with and all data points are stored and timestamped as they happen.

Eliminates reconciliation requirements.



Allows for **efficient audit processes** by third parties (such as regulator, auditor, etc.).

NASDAQ EVOTING – BENEFITS FOR ISSUERS

Reliable and real-time channel for information distribution, access to securities holders and holdings, and voting data.

- ✓ **Identify** shareholders.
- ✓ Monitor **chain of proxies**.
- ✓ Reach **quorum** faster by engaging more investors.
- ✓ Receive voting results instantly.
- ✓ **Vote & proxy transactions** are stored in an **immutable** blockchain **ledger** (auditability).
- ✓ **Engage** investors in leading the company.



NASDAQ EVOTING – BENEFITS FOR INVESTORS

- **Easy online access** to General Meetings via **single** General Meeting account.

- **Decreased complexity.**

Information about meetings, agenda items and management proposals is easily reachable.

Track record of assigned proxies (i.e. chain of proxies) and casted votes.

Access to voting results.

- **Remote participation and proxy assignment.**

Voting before and/or during the general meeting.

- **Secure identification** of shareholders and their representatives via national / market specific ID solutions.

- **Data is saved in an immutable ledger.**

The screenshot shows the Nasdaq Voter Console interface. At the top, there is a navigation bar with the Nasdaq logo, 'Voter Console', and tabs for 'Meetings' and 'Voting Rights'. The user's email 'hedu.uustalu@eesti.ee' is visible in the top right.

The main section is titled 'Meetings' and contains a table with the following data:

Issuer	Meeting Type	Record Date	Pre-Voting Date	Meeting Date	Status
Linda Nektar AS	Annual General	Oct 7, 2016 12:15 PM	Oct 8, 2016 12:00 AM - Oct 14, 2016 12:00 AM	Oct 17, 2016 12:00 AM	Not started
Linda Nektar AS	Extraordinary General	Oct 2, 2016 12:00 PM	Oct 3, 2016 12:00 AM - Oct 6, 2016 12:00 AM	Oct 8, 2016 12:00 AM	Completed

Below the table, there is a detailed view of an account with the following information:

- ALIAS:** STRATE_ZA201234
- TAGS:** A JSON object containing account details:


```
{
        "type": "account",
        "uid": "ZA201234",
        "alias": "STRATE_ZA201234",
        "refData": {
          "entityId": "STRATE",
          "accountId": "ZA201234",
          "accountShortName": "COMPUTERSHARE TS"
        },
        "entityId": "STRATE",
        "accountId": "ZA201234"
      }
```
- KEYS:** 1
- QUORUM:** 1

At the bottom, there is a section for 'Key 1' with the following data:

ROOT XPUB	6aa59bbee090a684e3e2f7132ff2d4007f1c738e2f5e9d6b3bd694403abcbf4879e7176dd6a1d101a04fa00c9b2d50860712ba54cc956a056b73d5d a13caae70
ACCOUNT XPUB	282122c61137489d37329d3ff0dfe4dc8aa88816e751d8a0794a74b6f22d6c7b614bce5ec4212731821d085fa41578c01937aaddbaa3d731a2ec15 e2bc9a80a
ACCOUNT DERIVATION PATH	["0107000000000000"]

NASDAQ EVOTING – BENEFITS FOR CUSTODIANS

- Single solution to exchange information with sub-custodians and end-beneficiaries.
- Hassle-free proxy Management.
- Decreased cost and complexity through STP.
- Reliable and secure authentication processing.
- Ability to add on services for clients.

The screenshot displays the Nasdaq Voter Console interface. At the top, there is a navigation bar with the Nasdaq logo, 'Voter Console', and user information including 'Meetings', 'Voting Rights', and 'hed1@ee.com'. The main content area is titled 'Voting Right Summary' and contains a table with the following data:

Issuer	Nasdaq Tallinn
ISIN	EE3100001835
Shareholder	Hedi Uustalu
Proxy	Jeff Davis

Below this is the 'Chain of Proxy' section, which shows a table with a 'Proxy' column and a 'RECALL' button. The table contains one entry for 'Jeff Davis' with the note 'Proxy can delegate'. To the right of this table are links for 'Balances' and 'Raw JSON'.

At the bottom of the interface, there is a sidebar menu with categories like 'ASSETS', 'SERVICES', and 'DEVELOPERS'. The main content area below the sidebar shows a table with columns for 'ALIAS', 'TAGS', 'KEYS', and 'QUORUM'. The 'TAGS' column contains a JSON object:

```
{
  "type": "account",
  "uid": "ZA201234",
  "alias": "STRATE_ZA201234",
  "rowData": {
    "entityId": "STRATE",
    "accountId": "ZA201234",
    "accountHostName": "COMPUTERSHARE TS"
  },
  "entityId": "STRATE",
  "accountId": "ZA201234"
}
```

The 'KEYS' column has the value '1', and the 'QUORUM' column has the value '1'. Below this table is a section for 'Key 1' with a table containing fields like 'ROOT XPUB', 'ACCOUNT XPUB', and 'ACCOUNT DERIVATION PATH' with their respective values.



Thank you!

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