Streamsheets
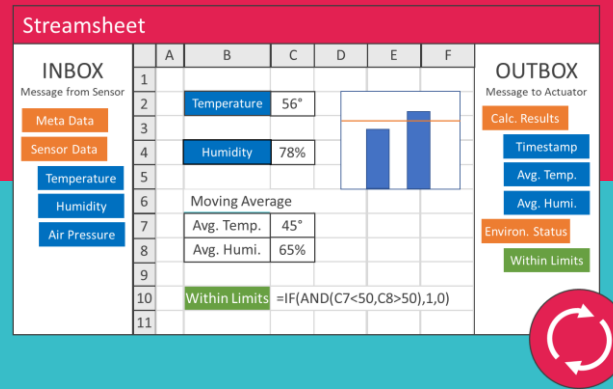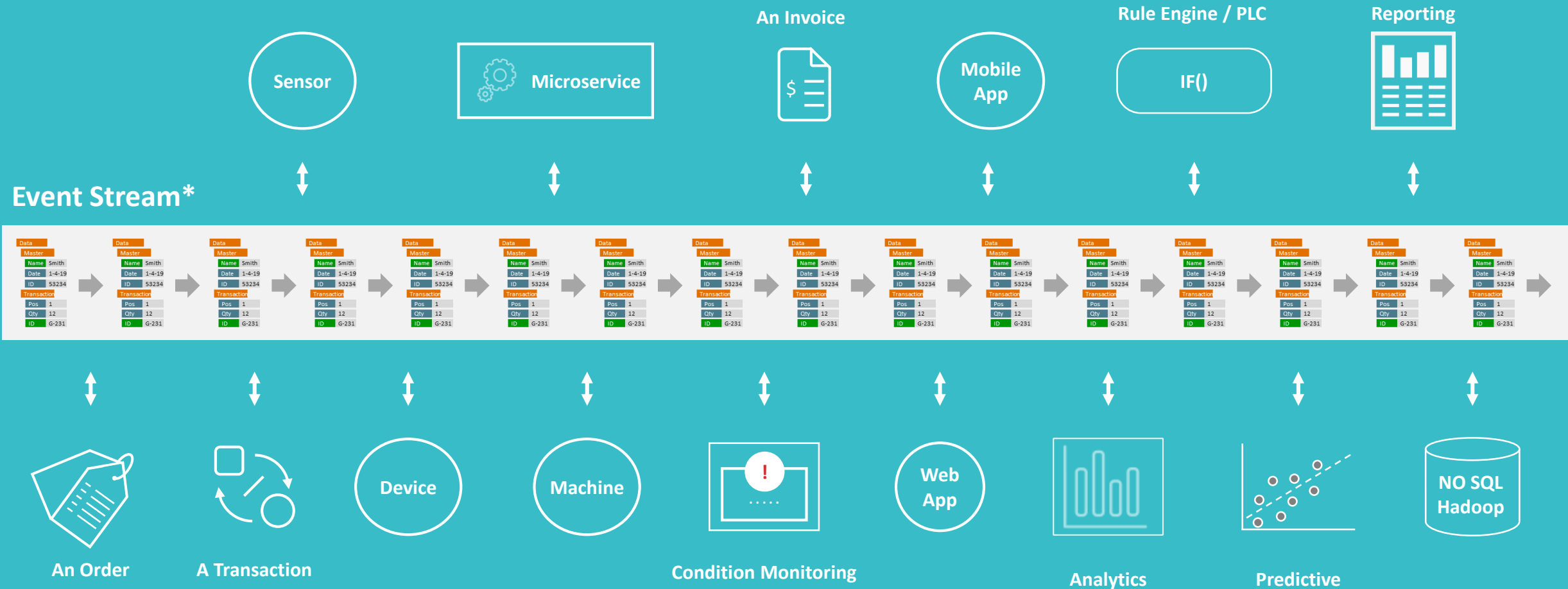
Spreadsheets that talk to machines, apps and services

Use your Spreadsheet skills to control data streams and build microservices

cedalo

A **process or** even a whole **business is a stream of events…**
… and reacting to these events

Sensor

Microservice

An Invoice

Mobile App

Rule Engine / PLC
IF()

Reporting

Event Stream*

An Order

A Transaction

Device

Machine

Condition Monitoring
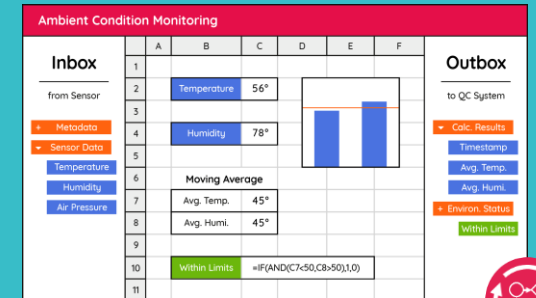
Web App

Analytics

Predictive

NO SQL Hadoop

* Managed by Stream-Processing Platforms like Apache Kafka, Amazon Kinesis, Azure Event Hub, Google Pub/Sub, OPC UA Pub/Sub, MQTT, AMQP, …

cedalo

But until now you needed to be a programmer
to orchestrate and control Data Streams
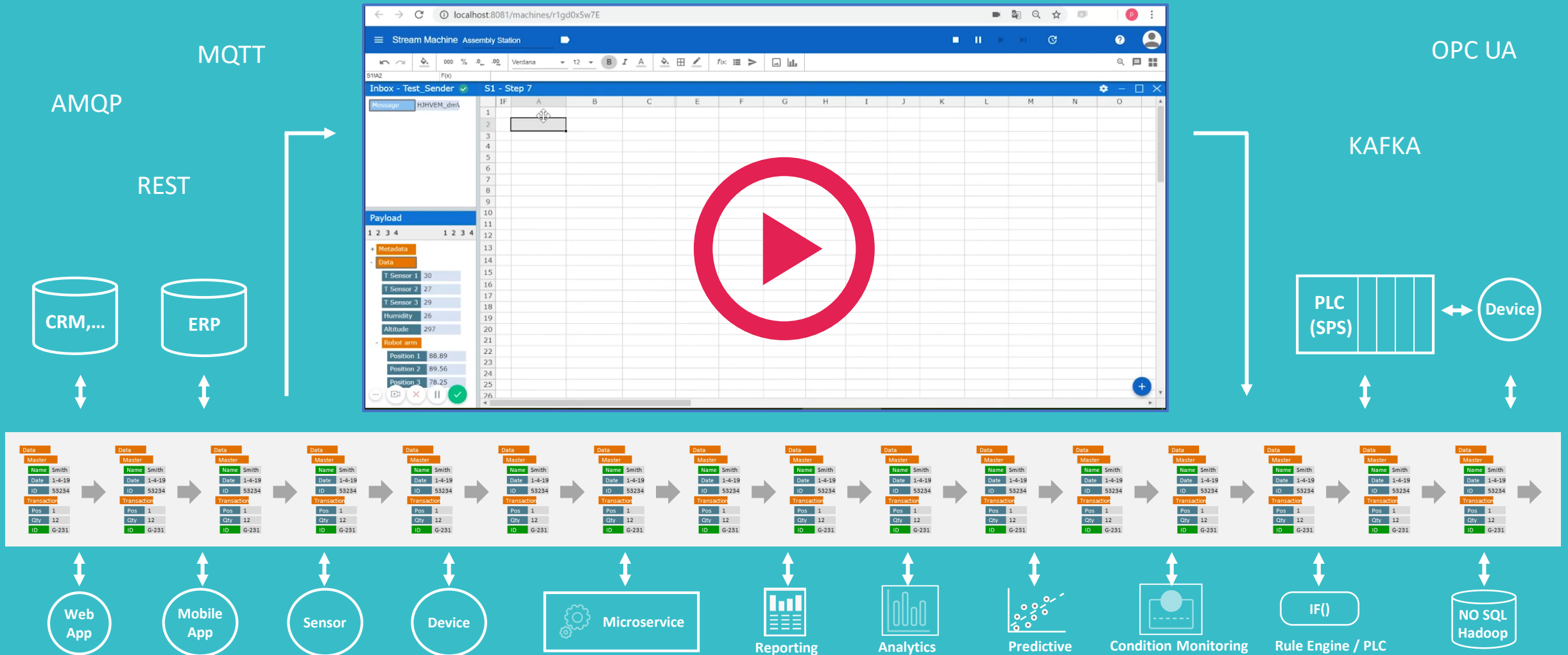and create Apps or Services

```
var client = EventHubClient.fromConnectionString();
    .then(client.getPartitionIds.bind(client))
    .then(function (partitionIds) {
        return partitionIds.map(function (partitionId) {
            return client.createReceiver('$Default',
            partitionId, {
            startAfterTime:
            });
        });
    })
    .catch(printError);
```

With Cedalo's new Streamsheet technology
you use your spreadsheet skills
to build Stream processors and IoT Apps
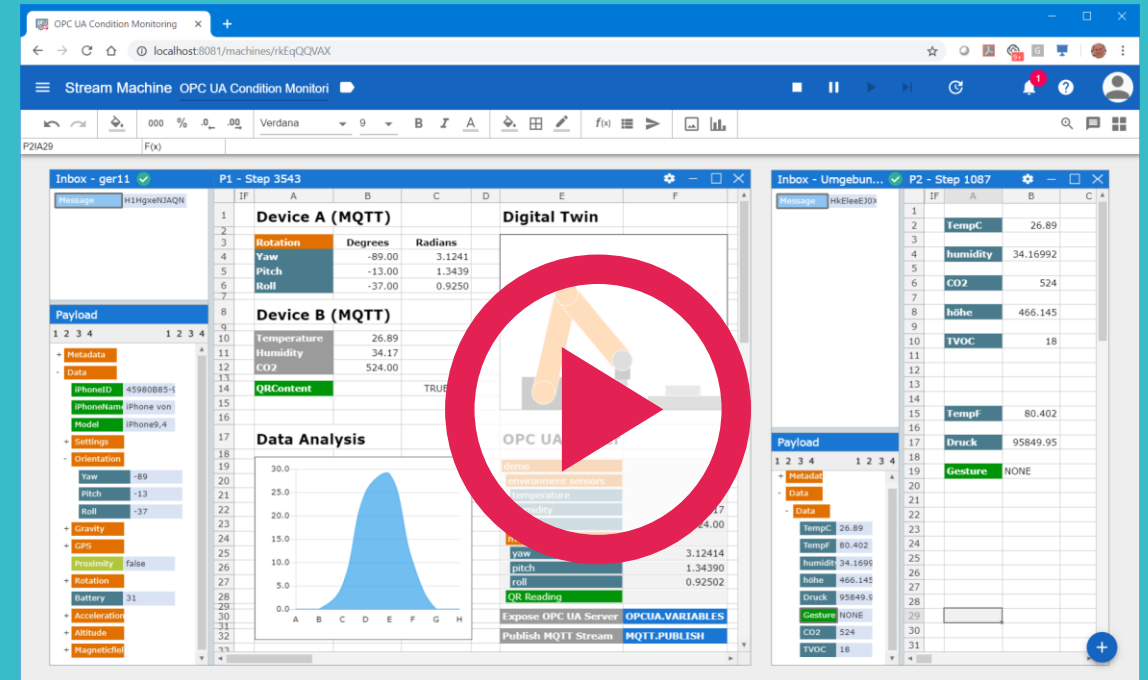by simply linking cells and entering formulas.

cedalo

Streamsheet = Server-Based Real-Time Spreadsheet for Stream Processing

Typical **Use Cases** for Streamsheets in IoT and **Industry 4.0**

- **Stream-Analytics** and Predictive Statistics
- **Condition Monitoring**
  (Real-Time Dashboards, SCADA)
- **Rule Engine** / Conditional Alert & Actions / Soft PLC
- **On the edge Pre-Processing** and **Data Pooling**
- **Simulation** of IoT Data Sources and IoT Devices
- **Protocol and Semantic Mappings**
  (e.g. MQTT ↔ OPC UA)
- **OPC UA Cloud Proxy**
  (Tunneling via MQTT, REST, AMQP)
- **Pre-Processing** for Blockchains and **AI-Systems**
- **Many more** use cases...

Highlights & Advantages

- **Time savings:** No lengthy briefings → instant start and deployment
- **Cost savings:** Process owner does not need to hire a programmer
- **Little training required**: Accepted and familiar user interface
- **Interactive development**: Instant discovery of errors and logical flaws
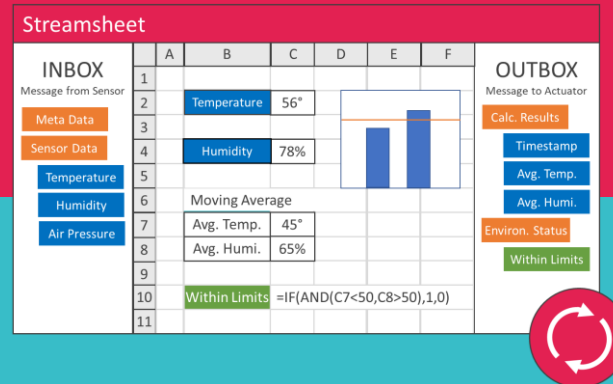- **One united team:** OT and IT integrate seamlessly and digitalize together
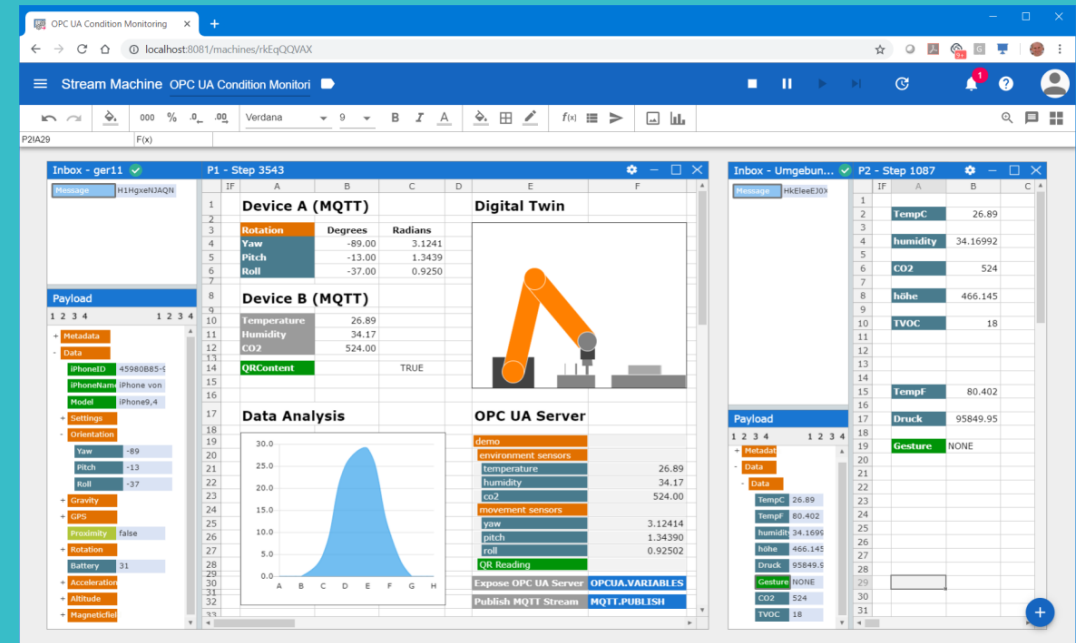
| save money | save time | empower people | be agile |

cedalo

Streamsheets

Spreadsheets that talk to machines, apps and services
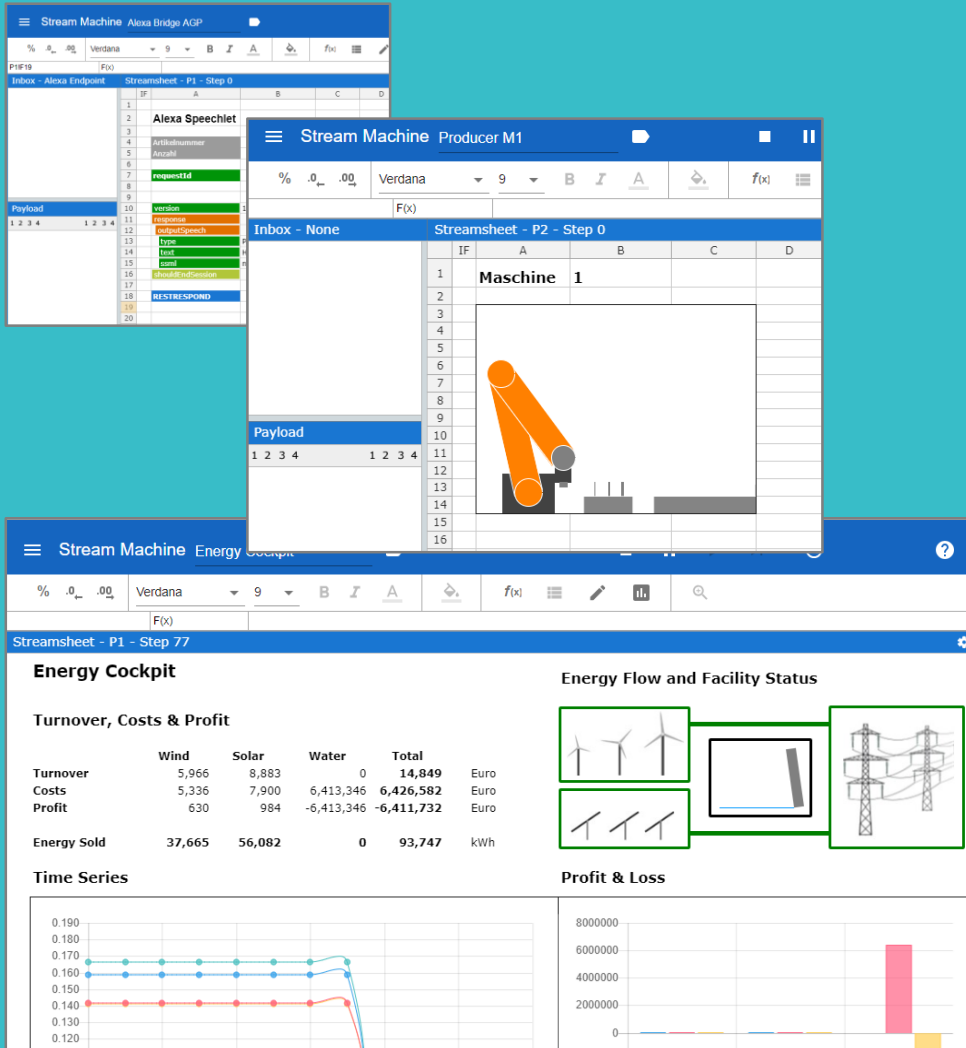

Philipp Struß – Co-Founder
philipp.struss@cedalo.com

cedalo

Important Streamsheet capabilities (1)

- **Drag-&-Drop** between cells and JSON

- Several recalculation modes such as:
  Event driven and **cycle driven** (up to ~ 4 ms)

- Streamsheets cells **maintain state** by design

- Combine and synchronize data streams

- **See** what your logic is doing **while creating it**
  - Build formula by formula
  - No compiling necessary
  - Not selective insight but full overview

Important Streamsheet capabilities (2)

- **Build templates** and **customize** them **individually**

- **Custom charts** and **data-dynamic drawings**

- Available **on-premise** and **cloud-based**

- Support for **all modern APIs** and **IoT protocols** via simple Spreadsheet functions:
  - OPC UA Server and OPC UA client
  - MQTT Subscriber, Kafka consumer, REST client
  - MQTT Publisher, Kafka Producer, REST Server
  - Mails and Messaging (SMTP, POP3, Slack)

cedalo