

DSL for stock market

Filip Plata



Introduction

What are stock markets?



Shop for people to trade financial instruments

Most popular instrument is a small part of a company's ownership called stocks

People can buy and sell stocks

Investors in Poland

100,000 people in Poland

Technical analysis



Technical analysis

Set of tools used to predict future prices of shares/stocks, based only on the past values

Technical analysis



- **Popular with investors in Poland** DOI: 10.33119/KKESSIP.2015.3.3.11
- **Relatively easy to automate**
- **Requires stock data**
- **Requires tools to visualize the data**

Problems with TA

What is wrong with market in Poland?

- **Data is hard to obtain**
- **Tools are inflexible, expensive and often outdated**

**TA in Poland is at mercy
of highly overpriced
tools from high street
brokers**



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Problem with data in Poland

- **Getting it from stock exchange directly costs 24000 PLN per year, and requires agreement with exchange**
- **Website scrappers get broken by frequent changes of html**
- **Data available in form of files for download often has it own special format, and always it is prohibited to use it commercially**
- **For a private person to work with this data, it requires solid programming skills**

Inflexibility of tools

If a technique cannot be performed with the tool, then investor is out of luck

Tools receive little maintenance for years

Experimenting is very hard in such environment



Aim

Providing a flexible service of stock data at a fair price in Poland

Having 5000 MAU in a year



- Flexible means user can extend the tool itself
- Fair price means having it proportional to the users demands, no high barriers and large monthly subscriptions

Novelty of approach

Core idea is creating a DSL for stock and an execution environment for it - with data attached

This solves both data and inflexibility problem

The tool should be engine for execution of a DSL, not a premade set of buttons and charts

Providing DSL execution on cloud would also allow for easy pricing based on resources used by user

What we omit

~~omit~~

The tool will not execute trades itself, only drive the process

Executing trades in somebody's name poses legal and technical challenges

Challenges and quality

Will Polish stock exchange will agree to sell data for such project

Will a high street bank or fintech will not start creating their own tool

The core of the tool, which will process data must be stable and of high quality

Rest of the project needs only not to deter people from using it

Approaches



Buying technology in Poland

Outdated technology will be a hindrance, user bases are insignificant

Creating a product from scratch

Would require money and time

Due to quality requirement necessary for the core

Trying to partner with high street broker after having working MVP

Huge risk that we will not find partner, much smaller risk of getting kicked out of business

Partnership with high street broker

High risk of getting kicked out of business
Easier access to data and customers

Selected approach

Partnership with broker like BOSSA as the first necessary step

Mitigates risk of competition and gives foot in the door of stock exchange people

In case of failure, no huge losses

Overview of the solution

- **DSL + execution engine - core of the project**
- **Web service for the language execution**
- **Desktop interface**
- **Simple mobile app for notifications**
- **Space for people to share their ideas**



VectorStock

VectorStock.com/22891309

Financial aspects

- **We expect a few thousand requests per user per month, and target 5000 users - ~10,000,000 requests per month**
- **For initial target, two servers for CPU would be enough ~ 300\$ per month**
- **For the database, also two servers ~ 150\$ per month**
- **One of the tools in basic version is priced at 5 PLN per user**

Financial aspect

To make it work, development costs have to be carefully controlled and a reasonable share of users achieved

- **Assumming 3 PLN per user per month, for a limited operation we need around 5,000 users**
- **Because costs of running software per user are low, crucial would be to obtain user base**

Why?

Casino never loses money