THE MODERN SOFTWARE ANALYTICAL PLATFORMS FOR STOCK MARKET MANAGEMENT

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Abstract - Modern business environment, in combination with information technologies creates a need for new ways of managing. Software solutions now represent the standard for a wide range of activities of business users. Gathering the information at any time, and from any place in the context of the characteristics of each platform, should provide high-quality and reliable customers. This is especially true in stock market operations where changes occur on a daily basis and when accessibility and ways to display data directly affect the outcome of business. Identified world level quality data and charts in real-time, the scaling up of informing clients, enhancing liquidity and profitability, attracting a large number of new customers and connect them in the country and the world, are the main features of modern software professional platform. In this paper we analyzed the possibilities to create the main indicators for the modern software analytical platform that allows monitoring and analysis of market data around the world.

Index Terms- Stock Market, Software Analytical Platform, Main Indicators.

I. INTRODUCTION

One of the main needs for a financial institution engaged in investment activities, as well as individual investors who need the information is analytical software for making investment decisions [1]. Certainly, not less important, this market segment is also represented by the educational institutions that are oriented towards contemporary multimedia contents. The professional software analytical platform has to become an integral part of the teaching faculty subjects, social orientation, and the tendency is to extend its use in the primary and secondary schools.

The large volume of traffic and high levels of liquidity contribute to platforms better positioning in the market, but dominance is not the main purpose of this kind of software. It is its use value, which makes it accessible even in less developed countries. There are competing companies offering software solutions, but the main advantage of this idea are the sophisticated tools of technical analysis that the investor can help to determine price trends and determining the optimal position for the purchase or sale [2]. The specificity has to be reflected in automatic updating data in Excel. Professional server should enable communication with Excel, which gives the investor the ability to make its own portfolio in Excel which is updated in real time. This eliminates the need for daily physical input data, and therefore the possibility of errors is reduced to zero [2,3].

II. ANALYTICAL PLATFORM VOLUMES

Analytical platform for the monitoring stock market is usually done in the manner of a objected oriented programming language, and the software is organized into a number of logical volumes.
Commands toolbar (Fig.1) should be located in the top of the main window, to enable investors to benefit various options such as opening a new document; search symbols; send images, documents, work space and virtual page by e-mail; insert analytical tools (indicators and signals) with detailed explanations of their meaning; format charts…



Fig 1. The Graphic User Interface (GUI) with the example of commands toolbar.

Framework for navigation (Fig.2) should appear on the top of the main window displaying a list of icons that contain a group of securities. It represents a good starting point for making your own workspace because it allows instant access to the most liquid and most important securities.



Fig 2. GUI Example Of Framework For Navigation

Desktop (figure 3) is a logical entity that enables visualization of market data through a variety of documents and the ability to use various analytical tools that these documents contain.

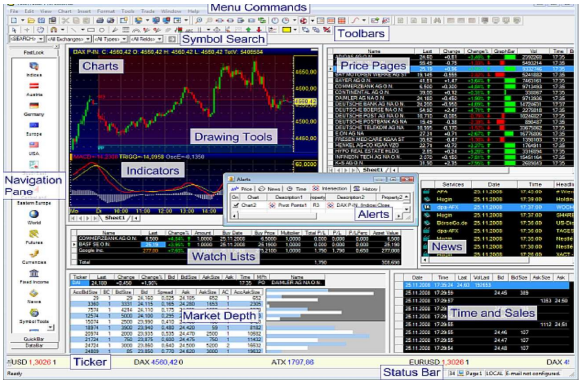


Fig 3, Desktop and Its Features Depending On The Particular Request

Table is the most commonly used document which provides complete insight into market information for the selected security such as a symbol, trade date, the current market price, percentage and absolute change in price compared to the previous day, volume and time of trading, the highest bid price, quantity the highest price of demand, the lowest selling price, the amount of the lowest selling price.

Table is specific with the possibility of adding a column containing additional information on the price (the highest and lowest price, the price at the opening, traffic, average weighted price ..), symbol (ISIN, WKN, Type, ..), corporate information (classification, management, contact, IR, listing, IPO, calculate financial ratios), as well as numerous financial data relevant for fundamental analysis, which relate to the entire history of the company's business from the time of listing on the stock exchange. From the table it is possible to open other documents for the selected security such as market depth, time and sales (overview of all scheduled orders and transactions concluded at affordable prices), the chart - the main tool of technical analysis on which an investor can analyze the paper in different time horizon, with the use of numerous indicators and signals, all with the possibility for visual adjusting its own need and personal taste. Not less essential element, which can be opened from the table, is the profile of companies that all investors want to know before they decide on the monitoring and analysis of specific companies. It contains basic information about the company, financial data and company calendar. If investors need to monitor the growing number of selected companies, the right choice is the watch list in which the investor can enter symbol of company that wants to monitor or already owned in its portfolio. The data is updated in real time so you can monitor real and virtual portfolio depending on the needs of investors. Of course, given the fast pace of life and not the possibility of continuous monitoring of trading, the investor can set a price alarm or alarm the news that will be activated according to the parameters given in three possible ways: by means of a notification by e-mail, sound or displaying news [4,5].

In addition to analytical and informational opportunities software should offer a choice of on-line brokers and direct trading on the exchanges, which they cover. This points to the possibility that investor can from one place monitor trade, analyze, run its own portfolio and give orders to trade. Of all the documents, the chart is most appropriate for this activity due to issue an order to properly visualize the chart and provides a clear picture of the current state of the position in relation to the movement of stock prices. The user has to have a clear overview of the allocation of resources that are in the account to trade securities.

III. PLATFORM FUNCTIONALITIES AND INDICATORS

As part of the software platform for monitoring and analyzing market data other than the mentioned functionalities, there is a need for introduce the calculated indicators with an explanation of their using value. Those indicators are used as a secondary tool at a price to confirm a trend, or to generate signals - to buy or sell. They are divided into two basic groups: a leading (leading) and trailing (lagging) indicators. Leading indicators are previous to the market activity giving a forecast, while following indicators check tools because they follow the trend of late for the market activity.

The most commonly used indicator is the trailing moving average. The moving average represents the essentially simple arithmetic mean. The only difference is that the arithmetic mean is the average value of all available data, and a moving average - only one (elected) portion of this data. There are several types of moving averages: simple, weighted and exponential. For short-term forecasts used moving averages for shorter periods of time, and to analyze long-term trends apply pro cut with a wider range. The greater the time period of calculated average, the curve, which represents average on a graph, have a greater delay line for the actual movement. Chose the time period in which will be counted average, one should bear in mind that too short interval can give false signal, and the one which is too long - is sufficiently sensitive and gives small signal. This problem, in practice is solved in two ways: (1) changing the length of the period for calculating the average in each specific case, and (2) using multiple moving averages on the same chart. An example of using multiple moving averages is illustrated by the following price chart (Figure 5), where (except for the actual price movements), moving averages of 5 and 20 periods are shown [4,5].



Fig 5. Example of using multiple moving averages. Vertically axis represents the changes of the price values, horizontally axis represent s the time periods.

Another indicator type is the oscillator. The main characteristic of the oscillator consists in the fact that it is indicator for future events, with the on-time signaling a reversal of the market. That is their fundamental difference from the moving averages, which always are delayed compared to event developments. The most commonly used oscillators are the Relative Strength Index - RSI, Stochastic and MACD. RSI is a momentum oscillator that measures the speed and change of price movements. RSI oscillates between zero and 100. Traditionally, and according to Wilder, RSI is considered overbought when above 70 and oversold when below 30.

The Moving Average Convergence/Divergence oscillator (MACD) is one of the simplest and most effective momentum indicators available. The MACD turns two trend-following indicators, moving averages, into a momentum oscillator by subtracting the longer moving average from the shorter moving average. As a result, the MACD offers the best of both worlds: trend following and momentum. The MACD fluctuates above and below the zero line as the moving averages converge, cross and diverge. Traders can look for signal line crossovers, centerline crossovers and divergences to generate signals. Because the MACD is unbounded, it is not particularly useful for identifying overbought and oversold levels [5].

In the case of one of the most liquid companies on the Serbian capital market one can see the signals given by the RSI - Relative Strength Index with an explanation - how to apply it to the chart of the selected company (Fig. 6)



Fig. 6. Relative Strength Index. Sell when RSI crosses below the overbought line. Buy when RSI crosses over the oversold line. Vertically axis represents the changes of the price values, horizontally axis represent s the time periods.

Besides mentioned indicators it is necessary to introduce a very simple tool called a trend line. By dragging the trend lines in the minimum and maximum prices, one can obtain different formations that indicate whether the trend will continue or will reverse.

Basic formations that indicate the trend are: Symmetrical triangle, Ascending triangle, Descending triangle, Banners, flags and pins.

In the following example it can be seen how, with a simple pullout trend line in the price chart (Figure 7), it can be recognized a descending triangle by whom trend has continued to fall, which is the main characteristic of this formation.



Fig. 7. Descending triangle on the trend line price chart. Vertically axis represents the changes of the price values, horizontally axis represent s the time periods.

CONCLUSION

Stock markets traders and investors and their success business depend on information and technical analysis tools.

The modern software analytical platforms should provide access to stock market prices, real time stock quotes, fundamental data, news, and technical indicators for the best decision in sense of good business movement. Development that kind of software depends on the number of .reliable, fast, streaming, real-time indicators and functionalities imported in the software platform. Thanks to highly developed software structures, the investor will able to, determine in which direction the market trend will continue, and to make the right decision about investments and business program.

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