Adaptive Stock Tracker For Personalized Advice

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Abstract — With the advent of the Internet, a wealth of information awaits anyone within the touch of a few keystrokes. Unfortunately, the desired content is often buried in massive amounts of irrelevant information and each user must cull through the extraneous material. The Stock Tracker is an adaptive recommendation system for trading stocks that automatically acquires content-based models of user preferences to tailor its buy and sell advice. It also takes into consideration the different types of users and their characteristics with respect to the trading strategy that a certain user possesses. This paper describes literature review, comparison of existing system with proposed system, Section I describes introduction about Adaptive Stock Tracker; Section II briefly the review of literature; Section III presents the proposed system; Section IV provides System Architecture; Section V highlights technologies and concepts used; Section VI describes working of proposed system.

Keywords — adaptive, content based, recommender system.

I. INTRODUCTION

Information altering systems address the problem of information overload by factoring out irrelevant content and reducing the amount of information that the user must examine. Such systems could give an investor more opportunities to examine potentially profitable stocks by eliminating obviously non-profitable ones. This task of separating interesting from uninteresting information can be viewed as a classification task. However, since different people have individual tastes, information altering should be personalized. This can be achieved through user models or profiles that embody the preferences of a user or group of users. Moreover, such profiles can be learned from traces of interactions with individual users. The main function of the stock market is the dealings of stocks between investors. Stocks are grouped into industry groups according to their primary business focus (e.g., IT, Banks, Manufacturing). Core intension of the Stock Market Analyzer while performing stock market transaction is to get the maximum benefit out of it. But due to less knowledge about stock market, investors loose a lot of money in stock transaction. In order to get a satisfactory solution for this problem, we are proposing a tool that will help the investor in stock market transaction. Stock Tracker & Analyzer will help the investors by predicting stock prices with amount of profit that can be earned.

Our goal is to help the investor to make maximum benefit from the stock transaction & also prevent the user from performing risky stock market transaction.

II. REVIEW OF LITERATURE:

A. Existing System:

The Market Analysis System (MAS) is an open-source software application that provides tools for analysis of financial markets using technical analysis. MAS provides facilities for stock charting and futures charting, including price, volume, and a wide range of technical analysis indicators. MAS also allows automated processing of market data applying technical analysis indicators with user-selected criteria to market data to automatically generate trading signals and can be used as the main component of a sophisticated trading system.

Some of the features of MAS are:

- Includes basic technical analysis indicators, such as Simple Moving Average, Exponential Moving Average, Stochastic, MACD, RSI, On Balance Volume, and Momentum.
- Includes more advanced indicators, such as Standard Deviation, Slope of EMA of Volume, Slope of MACD Signal Line, Bollinger Bands, and Parabolic SAR.
- User can create new technical analysis indicators, including complex indicators based on existing indicators.
- User can configure criteria for automated trading-signal generation.
- Creation of weekly, monthly, quarterly, and yearly data from daily data.
- Handles intraday data.
- Handles stock and futures data.
- Accepts input data from files, from a database, or from the web. (Includes a configuration for obtaining end-of-day data from yahoo.com.)
- Can be configured and run as a server that provides services for several clients at a time running on remote machines.
• The current version of MAS runs on Intel machines, on both the Linux and Windows operating systems. Additionally, it has been ported to Sparc/Solaris, though it has not yet been officially released for that platform. MAS is free software (freeware).

B. Disadvantages Of Existing System:

1) Misidentifying Market Needs: One of the elements of your marketing analysis is identifying the needs of each market segment. It also identifies other businesses and products that are attempting to satisfy the needs of this segment. The disadvantage of doing this is twofold. You may overestimate how well your competition is meeting the customers' needs and quit before you even try to market. You also may misidentify the need that is being met. Don't overlook the uniqueness of your own offering. Just because competition wants the same customer you do, that doesn't mean you are satisfying the same need.

2) Evaluating Market Growth without Market Share:
Your marketing analysis will include a look at how the overall market is growing, which can give you some idea of your range of opportunities. If your analysis discourages you, however, it can be a disadvantage. You can successfully compete in a limited market if you capture market share. An analysis of the market size alone is not enough to indicate your opportunities. Improved market share can compensate for a slow-growth market.

3) Market Segmentation Versus Target Markets:
You must identify the segments of the market that have potential customers for your products or services. This will help you understand the varied approaches you may need to take to reach different types of customers. The downside is that you may spread yourself too thin. Few businesses can afford to market to every single potential customer. Identify a target market that you can focus on among the available segments, and go after that target market in a focused manner.

4) Improper Interpretation of Data: A marketing analysis is only as good as the analyzer. You can collect a lot of data in market surveys, but interpreting that data correctly is vital.

You will be at an extreme disadvantage if you misinterpret facts and make decisions based on that misinterpretation. Run your analysis past a trusted adviser or two. Make sure your analysis is not wishful thinking.

III. PROPOSED SYSTEM
The Stock Tracker is an adaptive recommendation system for trading stocks that automatically acquires content-based models of user preferences to tailor its buy and sell advice. Stock Tracker & Analyzer” will help the investors by predicting stock prices with amount of profit that can be earned. Our goal is to help the investor to make maximum benefit from the stock transaction & also prevent the user from performing risky stock market transaction.

A. Comparison With Existing System:
1) Proposed system is more secured in comparison to existing system:
The proposed system is more secure in comparison to existing system. It could not be cracked without the login details. No unauthorized user is supposed to log on to the system, in case they may start editing their balances. However the weakness of the networked tollgate system is that it is prone to the spread of viruses and leaking of information to the outside world.

2) Proposed system is more accurate in comparison to existing system:
The existing system records entries accurately. The system manages to identify all the stock. Proposed system gives more accurate result then existing one. Proposed system also include features like if internet connection time out or may be breakup. Even then system is never going to crashed.

3) Proposed system is operates at higher speed in comparison to existing system:
Proposed system operates in very high bandwidth and in very high internet speed. Proposed system is even compatible with new featured generation of Operating system. Like windows 8 have IP v6 it is not going to harm to proposed system.
IV. SYSTEM ARCHITECTURE[1]:

As Shown in the Figure 1, The architecture of Adaptive Stock Tracker is based on client-server model. The system consists of 5 main components. The main components are:

1) Trading Information Manager (TIM) gathers and manages necessary data for managing stocks and storing historical trading information.
2) User Modeler (UM) models user interactions with the system.
3) Knowledge Manager (KM) manages decisions on how to make decisions.
4) Personalized Recommendation Agent (PRA) makes appropriate suggestions for a company’s stock based on individual user profile and trading environment.
5) Presentation Module (PM) dynamically generates the information presented to the user.

A. Recommender System And Adaptive Recommender System[2]:

Recommender systems or recommendation systems (sometimes replacing "system" with a synonym such as platform or engine) are a subclass of information filtering system that seek to predict the 'rating' or 'preference' that user would give to an item (such as music, books, or movies) or social element (e.g. people or groups) they had not yet considered, using a model built from the characteristics of an item (content-based approaches) or the user's social environment (collaborative filtering approaches).

Adaptive Recommender System rapidly adapts to different user characteristics.

B. Content Based Recommender System:

Content-based filtering methods are based on information about and characteristics of the items that are going to be recommended. In other words, these algorithms try to recommend items that are similar to those that a user liked in the past (or is examining in the present). In particular, various candidate items are compared with items previously rated by the user and the best-matching items are recommended.

C. Sequence Mining[3]:

Sequential Pattern mining is a topic of data mining concerned with finding statistically relevant patterns between data examples where the values are delivered in a sequence. It is usually presumed that the values are discrete, and thus time series mining is closely related, but usually considered a different activity. Sequential pattern mining is a special case of structured data mining.

In stock trading, it is observed that not only the events of buying & selling stocks are interesting but also the sequence of them. It is considered that the fluctuation of a stock price is the result of the previous stock transactions. Different events could lead to different prices. Subsequently, the idea is to predict such behaviours in order to help the to optimize the management of their portfolios.

VI. WORKING OF PROPOSED SYSTEM

This section presents the current main capabilities of the proposed system. After logging onto the system the user is directed to the main form. There is a main form where the user can see stock prices (imported from Yahoo Finance Web Service) and perform a number of operations using either the menu bar or the tabs. The user can create portfolios that contain stocks belonging to many different business sectors of the stock market.
VII. CONCLUSION

Adaptive Stock Tracker is thus a personalized recommender system which assists investors in their buying and selling advice. The system can efficiently adapt to different types of users. In this paper we presented the proposed system and gave a comparison with the existing system. We also presented the technology and concepts used and system architecture.

REFERENCES

