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DEMAND DRIVERS FOR AGRICULTURAL COMMODITIES

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Abstract: The system developed will continuously crawl various sources on the web to monitor parameters that might affect the prices of agricultural commodities. This shall be achieved by analyzing historic data coupled with real time data extraction from major business websites such as Forbes, business insider, Bloomberg and so on. Given a certain parameter, our system will crawl through social media to perform sentiment analysis and determine if the general public and/or a few specific people have a positive or negative opinion regarding a topic that might affect the parameter. Our system automatically creates a thread for every new parameter that it deduces. Major events that have a significant impact on the market will alert the user. All this logged data can then later be used for further analysis. It will eliminate the need for tracking numerous sources of information for intelligent trade moves and will provide a one stop solution to be ahead of the competition.

Index Terms - **Market information system, agricultural commodity price.**

I. INTRODUCTION

The commodities market is one of the most volatile markets as the commodities have an immense impact on the economy of a country and the quality of life of a human being. Typically, the commodities market is subject to a lot of fluctuations and therefore, in order to make a profit, it is important to understand the various parameters that create an impact on the prices of the commodity. Our system will continuously crawl various sources on the web to monitor parameters that might affect the prices of the commodities.

Examples of the factors that will be monitored include

1. Government and economic policies
2. Storage and transportation factors
3. Supply and demand
4. Weather conditions and so on

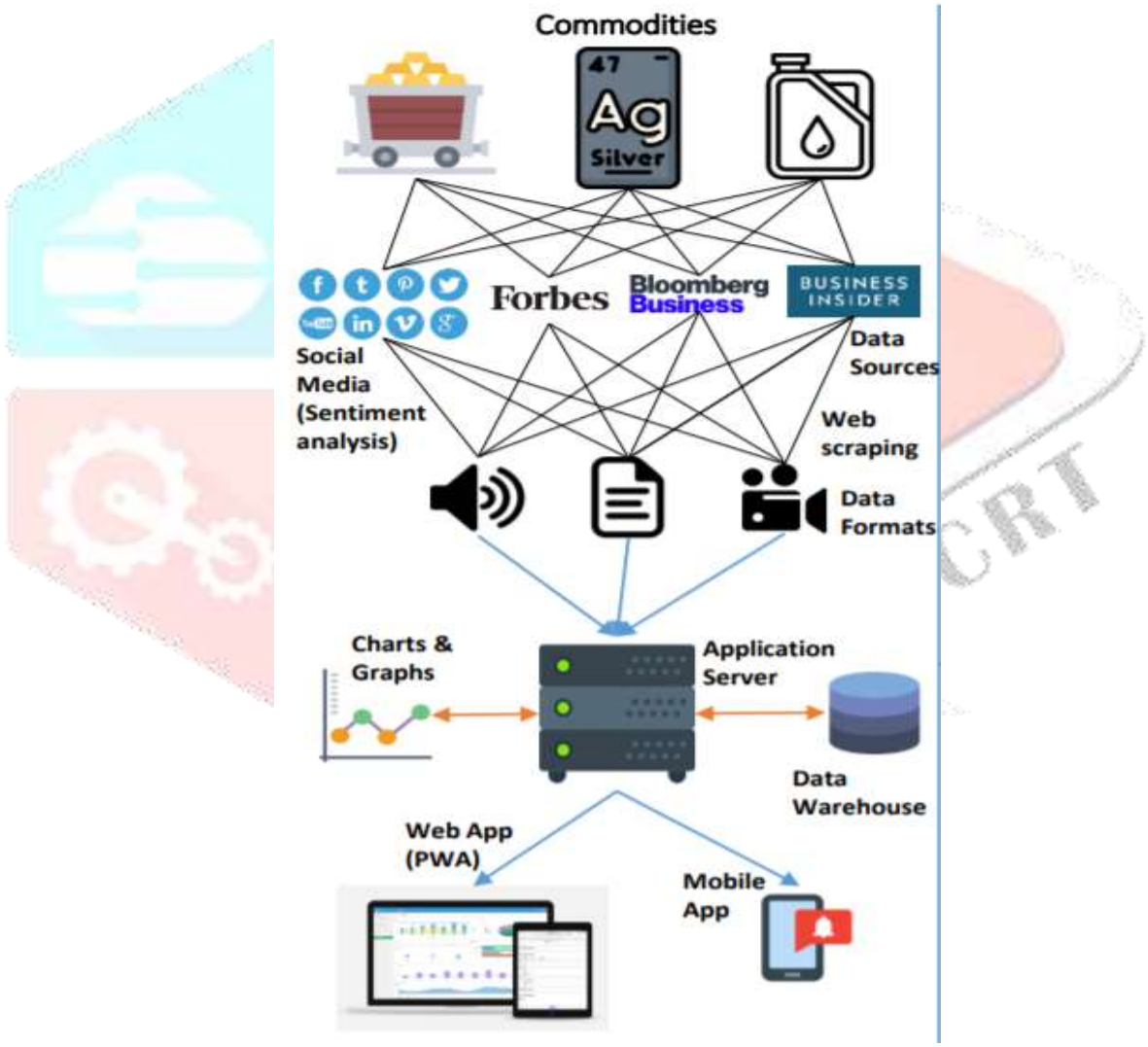
1. LITERATURE SURVEY

Commodities are raw material that has not been processed and can be traded. These raw materials can be classified according to their quality based on international trade standard, such as wheat, rubber, coffee.

The cause of commodity price fluctuations is rooted in the development of a world market that is not yet adept in anticipating global fluctuations in demand. Price fluctuations are actually being exacerbated by the availability of information and the speed of communication. One may think that better information would reduce volatility, so this result seems counterintuitive. When commodity markets were more localized in nature, market participants had a much better feel for demand levels. This proximity to supply and demand factors allowed prices to follow more predictable patterns. However, the fact remains that the global market has been permanently opened, and this, in turn, has caused tremendous volatility. The unpredictability of price levels has led developing countries that understand their own long-term raw material shortages to enter and exit markets as prices reach certain levels. This activity, while it has increased the frequency of price movements, has actually decreased volatility in the sense of dampening highs and lows. Thus, while market participants see more frequent price movements, the end result is actually a certain level of price stability (i.e., move movements but within a narrower band), which lends itself well to hedging activity.

2. IMPLEMENTATION

The commodities market is one of the most famous markets for traders. It is a volatile market as the commodities have an immense impact on the economy of a country and the quality of life of a human being. Typically, the commodities market is subject to a lot of fluctuation and therefore, in order to make a profit, it is important to understand the various parameters that create an impact on the prices of the commodity. Our system will continuously crawl various sources and diverse forms of media on the web to monitor parameters that might affect the prices of the commodities. Examples of the factors that will be monitored include government policies, economic policies, storage and transportation factors, demand and supply, weather conditions and so on. This will be performed by analyzing historic data coupled with the real time data extraction from major business websites such as Forbes, business insider, Bloomberg and so on. Most of the times, the price of a commodity is determined by what actions the competitors are taking on that commodity. Not only do we mine data from various news articles, audio and video clips but we also perform sentiment analysis of a given parameter on social media. Given a certain factor, our system will crawl through various social media sites to determine if the public or a few specific people have a positive or negative opinion regarding a topic that might affect the parameter. It can track changes in the attitude of a set of targeted people towards a certain topic on social media thereby indicating signs of market fluctuation. All this historical data coupled with the real time data from various sources are fed into our machine learning model that eventually will give us insights in data that we might have not considered initially. With more data, the model gets more intelligent and monitors every new parameter that it infers. Our system automatically creates a thread for every new parameter that it deduces. Major events that have a significant impact on the market will alert the user. All this logged data can then later be used for further analysis. We will have a web and mobile client to interact with our intelligent server. These applications will make access to data privileged and easier. They will provide a robust environment with a wide variety of features such as thread views, charts for comparison, real-time push notifications and so on. It will eliminate the need for tracking numerous sources of information for intelligent trade moves and will provide a one stop solution to be ahead of the competition.



USE CASES:

Case 1: With predefined default parameters our system will crawl the predefined data sources for diverse forms of data and then create a thread of each of the predefined parameters. (e.g. - government policies, economic policies, storage and transportation factors, demand and supply, weather conditions etc.) these parameters will be monitored on various business sites and social media be it in text, audio or video

format. Sentiment analysis will be performed on these parameters across social media to find the bias of the public or a targeted audience towards a certain topic and the respective threads will be updated and a push notification will be delivered via the mobile application.

Case 2: Learning new influencing parameters once there is enough data logged in our server, all this data will be fed into our machine learning model that will find various insights in data and eventually determine new parameters that influence the prices of commodities. These new parameters are then monitored on the various sources along with the predefined set of parameters thereby getting more intelligent and accurate with time. A new thread will be created for this new parameter and will alert the user of significant events that might affect this parameter. This will help in making educated decisions when it comes to the commodity market.

3. RESULTS

We realize that a commodity has hundreds of dependent parameters that drive its demand. The parameters have been crawled and a thread has been created on each of these parameters for regular tracking. These alerts were then fed into the model for further analysis

4. ACKNOWLEDGEMENT

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5. CONCLUSION

The mobile application has been developed successfully with the proposed methodology. We are trying to move towards implementing such an online platform for regional languages. With this we must also identify more sources from which we can procure more data from, so that we can deduce richer patterns and make this information available in a suitable form in our mobile application.

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