

# Will Mediocre Social Network App Incorporated Ever Bounce Back?

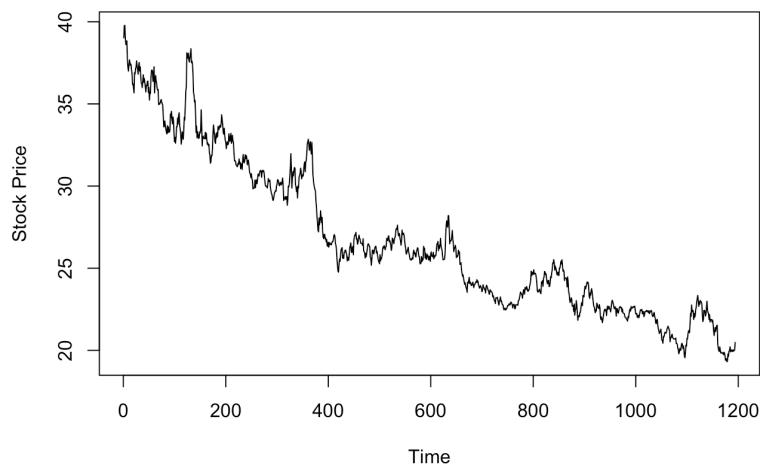
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The stock price of Mediocre Social Network Incorporated has been on the decline for the past four years. Many are speculating whether the company is on its way toward an inevitable bankruptcy or if it still has an opportunity to turnaround its business. In a recent study performed by Richard Jin, he used time series analysis to forecast the stock price of the company over the next ten trading days. We will summarize key findings of that study and shed light on the current condition Mediocre Social Network Incorporated.

In order to determine which model would best fit the data, the study first examined the plot of stock prices over time to identify trends.

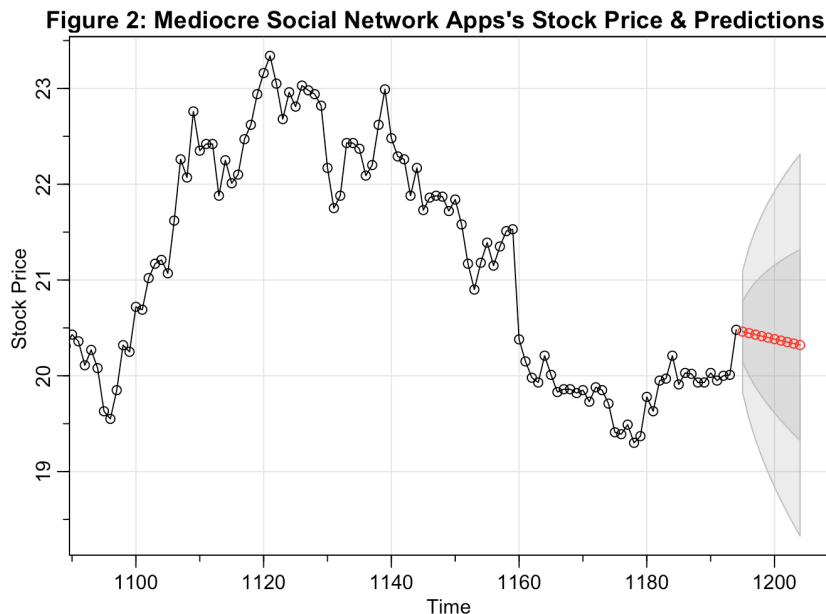
**Figure 1: Time Series of Mediocre Social Network Apps's Stock Price**



The study concluded that the stock price of Mediocre Social Network was clearly on the decline. More importantly, the study noted that the rate of decline of the stock price was actually slowing down, evident from the flattening of the curve at more recent stock prices. The flattening of the decline in stock price makes sense from a business perspective. After a company notices its stock price is rapidly declining, it will likely make rapid adjustments to its business, such as restructuring, to prevent stocks from plummeting to zero. These measures can delay bankruptcy and help the company's stock price stay above zero for a prolonged period of time. Hence the change in rate of decline can be explained by changes in the company's underlying operations. When the stock price just begins to decline, the business is operating normally and not addressing the stock price specifically. When the stock price has already declined for a while, the business turns to survival mode in hopes of slowing down the decline.

The changing rate of decline means that more recent observations are significantly more valuable than older observations when it comes to forecasting future values. The rapidly declining stock price at the beginning of the series clearly has different implications compared to the slowly declining stock price toward the end of the series. To account for this, the study adopted an Exponential Smoothing Model. At its core, the exponential smoothing model puts more weight on recent observations compared to past observations when it is making predictions. This perfectly captures the nature of the company's stock price: more recent observations are especially stronger predictors than older observations.

Now that we have settled on an appropriate model, we can make predictions with the model. The outcome of the predictions is plotted as follow.



We observe that for the next 10 trading days, the stock price of Mediocre Social Network App's is still expected to decrease. We see that the red circles, which represent the average forecast of the stock price, continuously decreases for the next 10 trading days. This is not a surprising conclusion, as throughout the entire series, the stock price has been continuously decreasing with almost no evident signs of a turnaround. Therefore, it is not surprising that future stock prices follow the trend and decrease further. However, we should note that the company still has the opportunity to make a turnaround. The red shaded area represents other possible outcomes of the next 10 trading days given the inherent uncertainty of the forecast. The darker shaded area represents a higher probability and the lighter shaded area represents a lower probability. We see that a significant portion of the darker shaded area will lead to an increase in stock price over the next 10 days.

This implies that while stock prices will, more likely than not, continue to decline, there is a significant opportunity that the stock price will be able to increase. Hence, we can conclude that Mediocre Social Net Work App's stock prices are expected to decline in the next 10 days, but there is a non-negligible chance that the stock prices will be able to bounce back. We say that it is non-negligible because while the chance is less than 50%, it is significantly larger than 0%.