HedgeChatter
Case Study: *Stock Price Manipulation Detection*

HedgeChatter

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Who is HedgeChatter?

Co-Founders & Team Members have backgrounds in:
Tech development, DOD, Military Decision Algorithms, Big Data NASA,
Yahoo, Zynga, Swiss & Spain Based Hedge Fund Portfolio Management

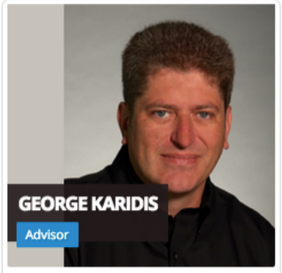
James Ross | CEO & Co-Founder
10+ Years Startup Experience, Co-Founder IPTel Direct & Stratum Global Networks, Technology / Vision / Sales, UX

Ben Benoy | CTO & Co-Founder
US Marine, 6 Years Command Control Experience, Warfare Decision Analytics, Intelligent collection & distribution systems, Georgia Tech Masters in Applied Systems Engineering

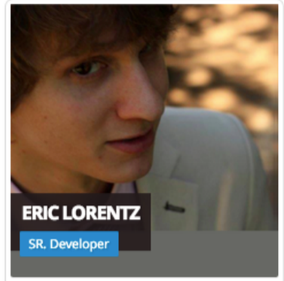
Rob Turkel | COO & Co-Founder
10+ Years Startup Experience, Broadriver, Orion Network Projects, Project Management and People Connector, Georgia State BBA Management and Finance

Omar Syed | Chief Technical Architect & Co-Founder
Big Data NASA, Yahoo, 5 Algorithmic Patents, Zynga Architect, AI Research Scientist, Trading Platform Development

Mr. Parsi is the Founder at Parsi Capital and past Hedge Fund Manager in Switzerland & Spain. Credentials: CFA, MBA, CFE



Mr. Karidis, COO of Softlayer(sold to IBM for $2.2B) is directly responsible for managing and overseeing the company's strategic growth and international expansion efforts.



Sixteen years of experience designing content for web delivery.The Economist,Bob Seger,CTK Entertainment,Reverb Publishing,7sixty Games.

- 2009 R&D Started
- 2012 Beta Released v1.0
- 2013 Company Established
- 2014 HedgeChatter v2.0 Released
- 2015 Became Cashflow Positive

Entrepreneur names **HedgeChatter**
as one of the *100 Most Brilliant Companies*

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Our Purpose

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Social Media Predictive Analytics

The 8 Primary Factors:

1. Data Aggregation
2. Noise Filtering
3. Reputation Indexing
4. Influence Rating
5. Key Word Tagging
6. Sentiment Analysis
7. Manipulation Detection
8. Price Correlation

Succes Equals:

1. Determine Stock Price Move
2. Determine Market Move / Overrides Stock Direction

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SEC Investor Alert: Social Media and Investing

* Investor Alert: Social Media and Investing -- Stock Rumors **July 25, 2014**

The U.S. Securities and Exchange Commission's (SEC) Office of Investor Education and Advocacy ("OIEA") is issuing this Investor Alert to warn investors about fraudsters who may attempt to manipulate share prices by using social media to spread false or misleading information about stocks.

Social media and the Internet in general have become important tools for investors. Investors may use social media to research particular stocks, look up background information on a broker-dealer or investment adviser, find guidance on investing strategies, receive up-to-date news, and discuss the markets with others.

While social media can provide many benefits for investors, it also presents opportunities for fraudsters. Through social media, fraudsters can spread false or misleading information about a stock to large numbers of people with minimum effort and at a relatively low cost. They can also conceal their true identities by acting anonymously or even impersonating credible sources of market information.

One way fraudsters may exploit social media is to engage in a market manipulation, such as spreading false and misleading information about a company to affect the stock's share price. Wrongdoers may perpetuate stock rumors on social media, as well as on online bulletin boards and in Internet chat rooms.

The false or misleading rumors may be positive or negative. For example, in a "pump-and-dump" scheme, promoters "pump" up the stock price by spreading positive rumors that incite a buying frenzy and they quickly "dump" their own shares before the hype ends. Typically, after the promoters profit from their sales, the stock price drops and the remaining investors lose money. In other instances, fraudsters start negative rumors urging investors to sell their shares so that the stock price plummets and the fraudsters take advantage of buying shares at the artificially low price.

Investors should be aware that fraudsters may use social media to impersonate an established source of market information. For example, fraudsters may set up an account name, profile, or handle designed to mimic a particular company or securities research firm. They may go so far as to create a webpage that uses the company's logo, links to the company's actual website, or references the name of an actual person who works for the company.

* Source: http://www.sec.gov/oiea/investor-alerts-bulletins/ia_rumors.html#.VMgDFWR4opM

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Stock Price Manipulation and Malicious Intent

Abstract:

Stock manipulation, ie. “pump and dump”, has been around for decades. Novice and experienced investors alike have been caught in these types of scams resulting in small financial losses to complete bankruptcy.

There are many different methods and approaches to which this scheme can take shape. One method commonly used consists of Company A buying a low value stock then hiring Company B to distribute large amounts of positive and/or misleading information to the investor community in hopes of driving the price of the stock up and then Company A selling out thus leaving the last informed investors “holding the bag.”

With the advent of social media, millions of people can be reached in an instant. Since a traditional “pump and dump” scheme success depends on enticing a large number of people into buying a particular stock, it’s no wonder that companies have taken to social media to seek out their next victims.

In today’s fast paced information driven trading environment, investors and traders need new tools to help mitigate their exposure to potential “pump and dump” schemes.

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Stock Price Manipulation and Malicious Intent

Core Strategies

There are three core social universal strategies utilized to achieve different results in market manipulation. We will examine each one further in detail to learn how to combat them in an active trading environment.

Market & Stock Manipulation
Pump / Dump

1. **Global Perspective Market Manipulation** - This is an attempt to manipulate the market as a whole to achieve ill gotten gains in either a single security or across multiple securities.
2. **Global Perspective Equity Manipulation** - This is an attempt to manipulate the market as a whole to achieve ill gotten gains in either a single security or across multiple securities.
3. **Single Perspective Equity Manipulation** - This is an attempt to manipulate a single stock either as a one time trade play or a continual set of trades in hopes of riding the stock both north and south thus generating alpha in both directions and for a sustained amount of time.

Global Perspective Market Manipulation

Global Market Manipulation:

1-Global Perspective Market Manipulation: **Attack**

We all remember April 23rd 2013, when the AP Twitter handle was hacked sending the Dow down 140 points.

The Dow plunged more than 140 points and bond yields fell. Within six minutes, the Dow recovered its losses and was trading with triple-digit gains. Reuters estimated that the temporary loss of market cap in the S&P 500 alone totaled $136.5 billion.

In a closely linked trade, dollar/yen also plunged temporarily to about 98.60, before recovering to a level above 99.

The false tweet comes at a time of hypersensitivity in the markets toward terrorism, following the Boston Marathon bombings. It also highlights the vulnerability of social media and follows on the hacking of media sites and just Sunday, CBS' '60 Minutes'Twitter account.

The Federal Bureau of Investigation, Secret Service and Securities and Exchange Commission were all investigating the tweet.

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Global Perspective Market Manipulation

Global Market Manipulation:

1-Global Perspective Market Manipulation: **Resolution**

Intel Warning: All Public Facing Online Information should be fact checked from multiple sources for accuracy.

Online information can easily be manipulated and since we consume such vast amounts daily, we must remember to verify that it:

1) **Originated from a Trusted Information Source(TIS).**
2) **The TIS has not been compromised.**
3) **Multiple TIS's have confirmed the validity.**

Without extending this due diligence investors can easily make a trade mistake or mishap by attempting to secure a position quickly vs. taking the necessary time to check the trusted source of its validity.

In todays Social Information Age, simply taking information at face value, and not extending a bit of due diligence, is a risky proposition

Note: This fake content piece was created for illustrative purposes only. To our knowledge Twitter is NOT considering buying NASA

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Global Perspective Equity Manipulation

Global Equity Manipulation:

2-Global Perspective Equity Manipulation: **Attack & Resolution**

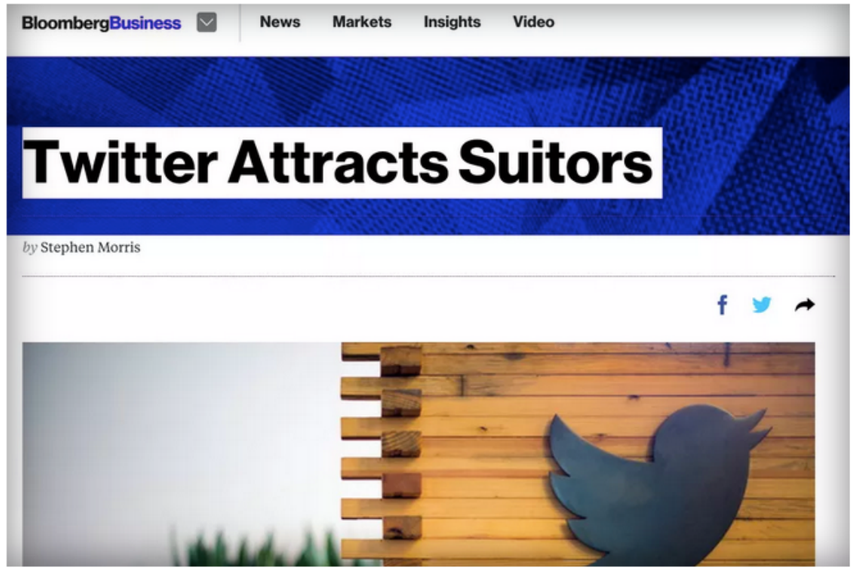
The fake Bloomberg page was an attempt to elevate Twitters stock price.

Similar to Market Manipulation, Global Equity Manipulation falls into the same classification. The following still holds true.

1) **Originated from a Trusted Information Source(TIS).**
2) **The TIS has not been compromised.**
3) **Multiple TIS's have confirmed the validity.**

Without extending this due diligence investors can easily make a trade mistake or mishap by attempting to secure a position quickly vs. taking the necessary time to check the trusted source of its validity.

In todays Social Information Age, simply taking information at face value, and not extending a bit of due diligence, is a risky proposition



http://www.theverge.com/2015/7/14/8962433/fake-bloomberg-news-twitter-stock-scam

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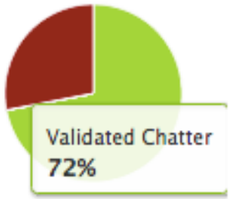
Single Perspective Equity Manipulation

Direct Social Equity Manipulation:

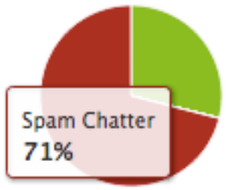
3-Single Perspective Equity Manipulation: **Attack**

Stock Manipulation
Pump & Dump

How it Works - Strategies based on a fictitious username AlphaStock007:



- **Less Sophisticated**: AlphaStock007 generates msg, with 1 username, across MULTIPLE channels multiple times per day.
- **Enhanced Sophisticated**: AlphaStock007 generates msg, with DIFFERENT usernames, across a single social channel, multiple times per day.



- **Advanced Sophisticated**: AlphaStock007 generates msg, with DIFFERENT usernames, across MULTIPLE social channels, multiple times per day.
- **Extremely Sophisticated**: AlphaStock007 generates DIFFERENT social messages, with DIFFEREN usernames, across MULTIPLE social channel, multiple times per day.

Single Perspective Equity Manipulation

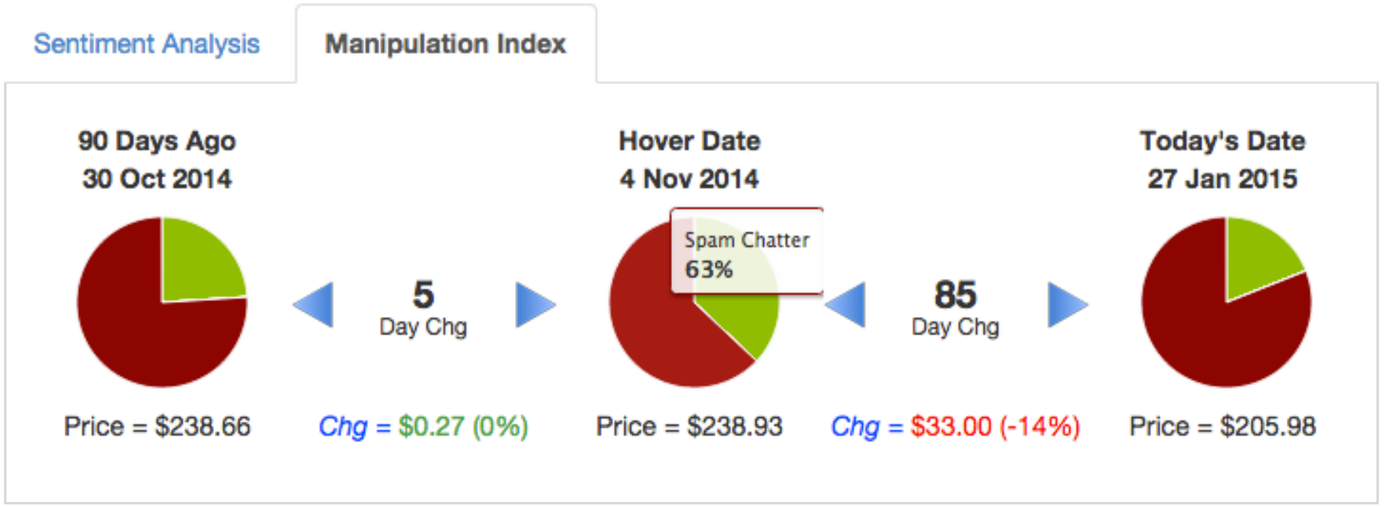
Direct Social Equity Manipulation:

3-Single Perspective Equity Manipulation: **Resolution**

HedgeChatter - Manipulation Index

HedgeChatters algorithms have found numerous instances of schemes attempting to inflate /manipulate sentiment on stocks.

To mitigate risk from fictitious and malicious parties, HedgeChatter developed the Manipulation Index to show the percent of messages, on a given day, which are classified as **Validated Chatter** or **Spam Chatter**.



Example: Stock Price Manipulation - ONVO

Sat. Dec 13th, 2014:

1-2 days leading up to the "Buy" Signal, Manipulation is well over 50% at 71% with heavy manipulation after which the stock price soars.

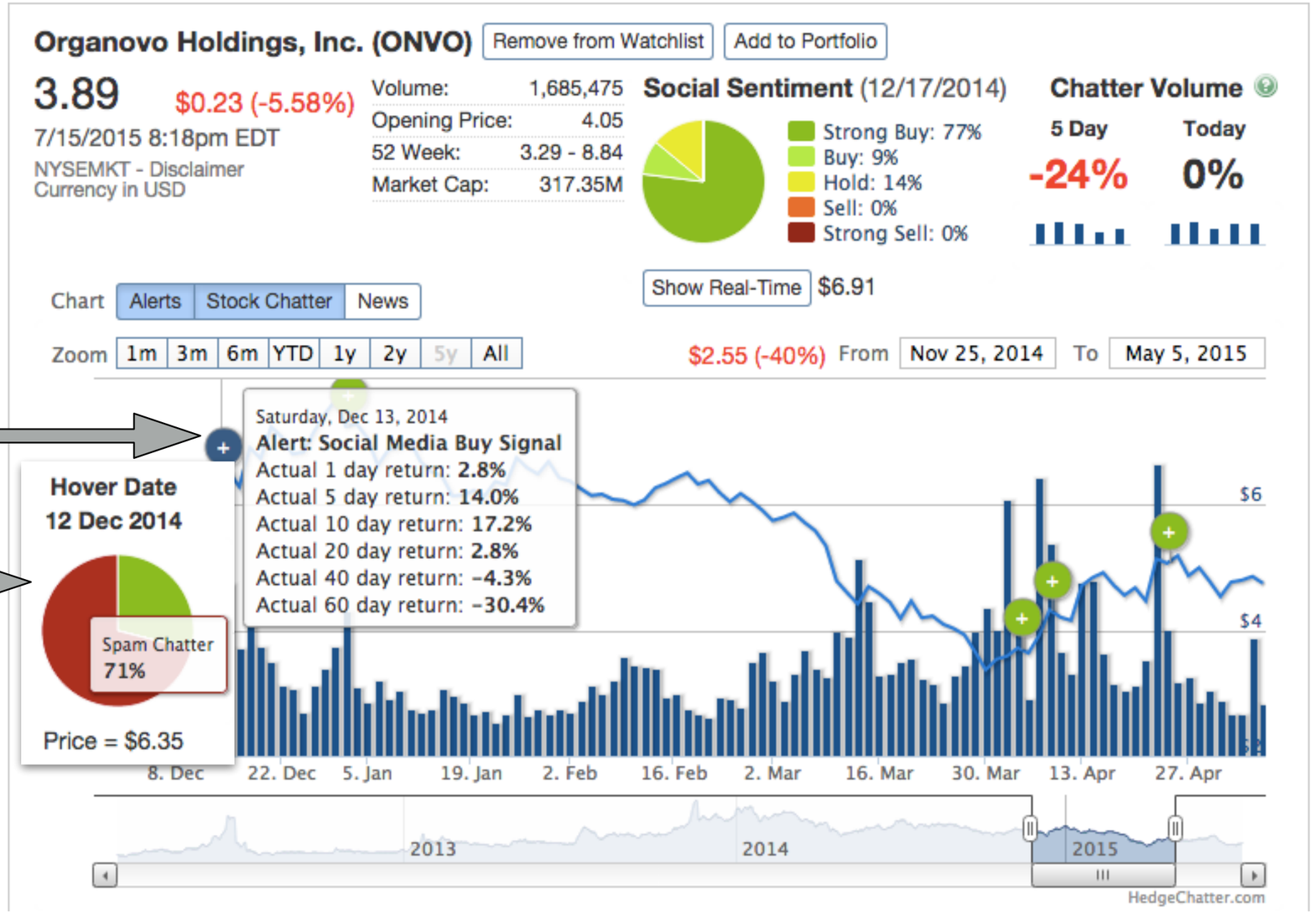
Social Media Buy Signal

+

Greater Than 50% Manipulation

=

Upward Stock Price Move



Example: Stock Price Manipulation - ONVO

Wed. Dec 31st, 2014:

1-2 days leading up to the "Buy" Signal, Manipulation is under 50% at 48% after which the stock price tanks.

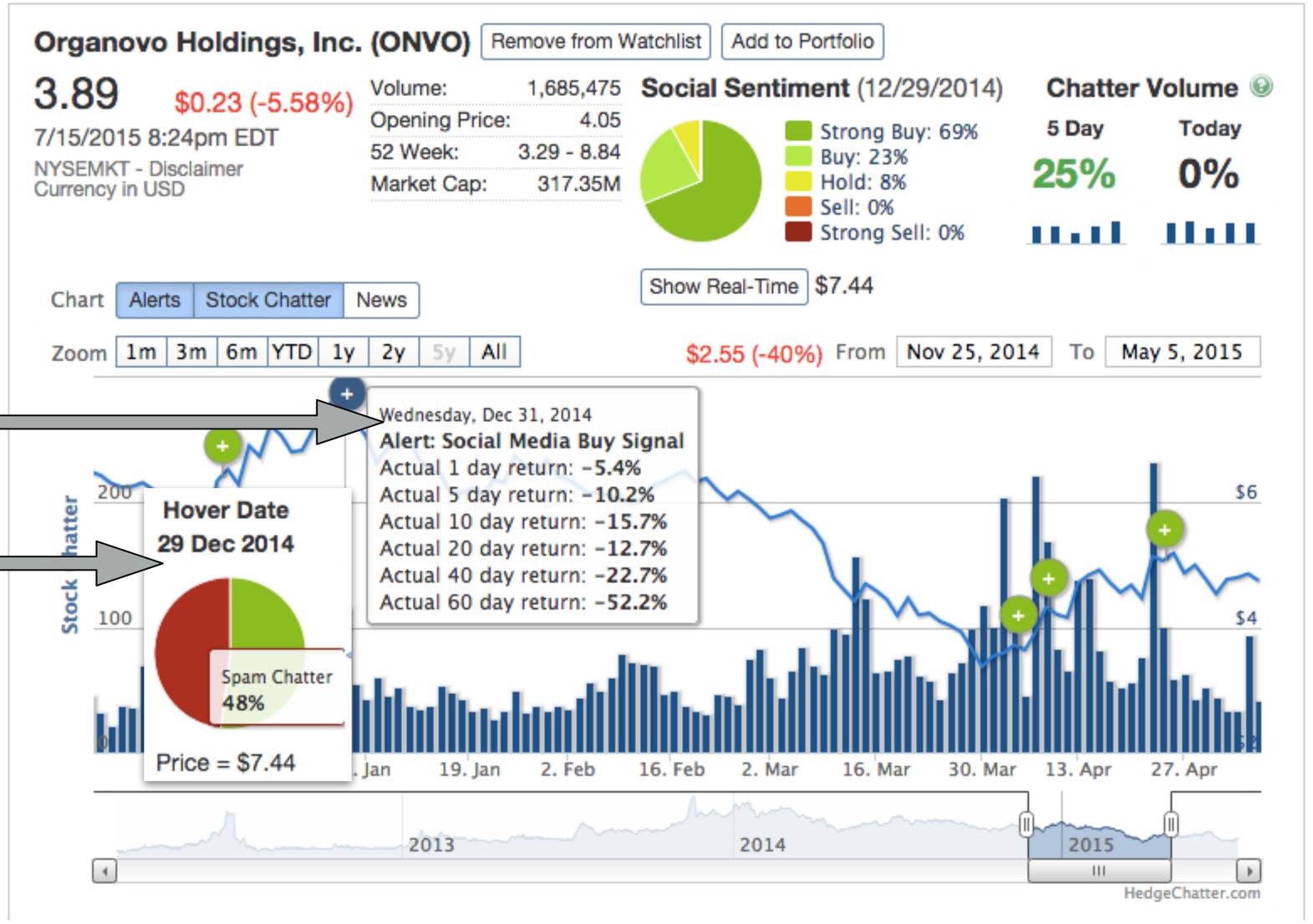
Social Media Buy Signal

+

Less Than 50% Manipulation

=

Downward Stock Price Move



Example: Stock Price Manipulation - ONVO

Fri. April 3rd, 2015:

1-2 days leading up to the "Buy" Signal, Manipulation is over 50% at 79% indicating heavy manipulation after which the stock price soars.

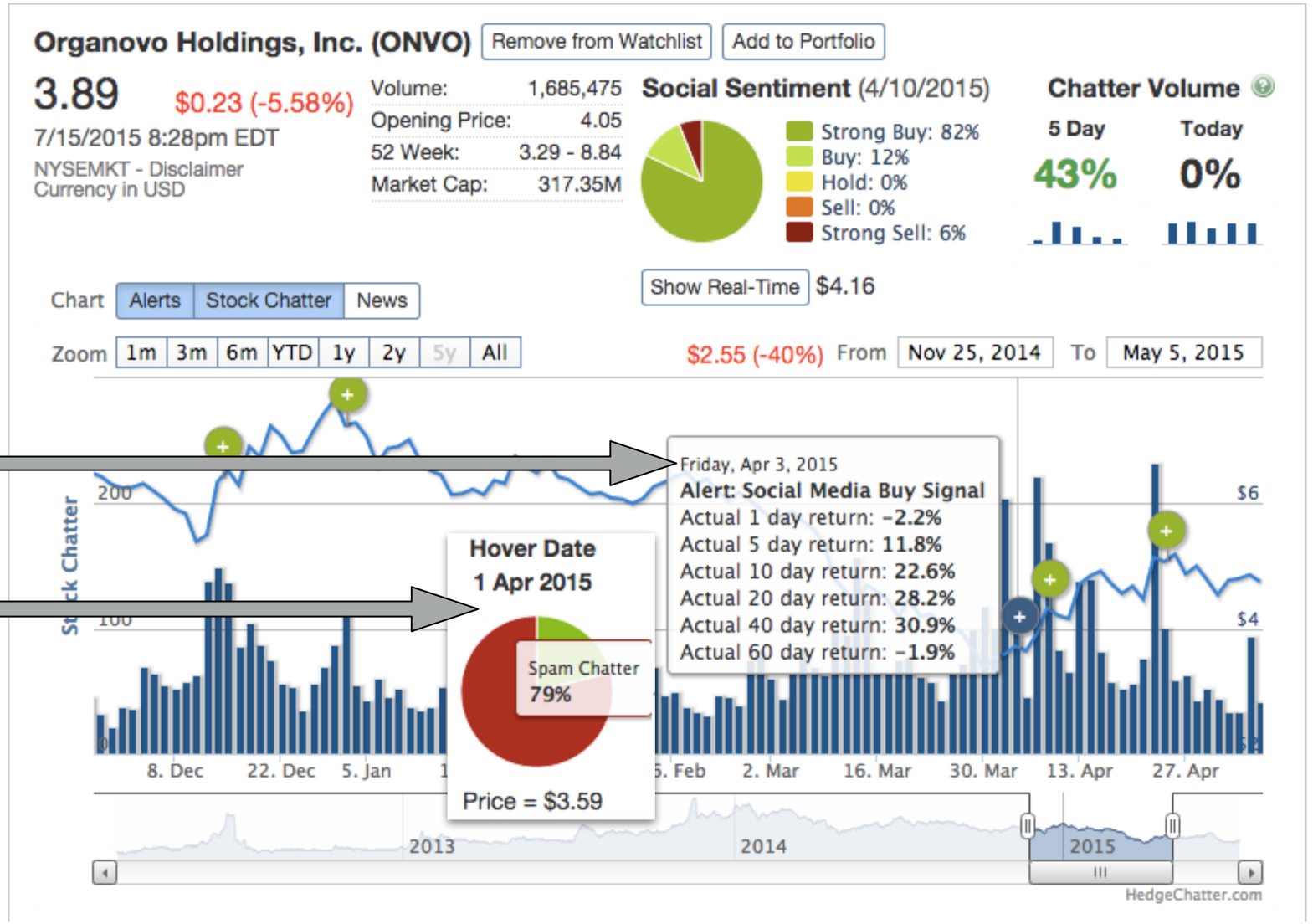
Social Media Buy Signal

+

Greater Than 50% Manipulation

=

Upward Stock Price Move



Example: Stock Price Manipulation - ONVO

Wed. April 8th, 2015:

1-2 days leading up to the "Buy" Signal, Manipulation is over 50% at 79% indicating heavy manipulation after which the stock price soars again.

Social Media Buy Signal

+

Greater Than 50% Manipulation

=

Upward Stock Price Move

Example: Stock Price Manipulation - ONVO

Thur. April 23rd, 2015:

1-2 days leading up to the "Buy" Signal, Manipulation is under 50% at 40% indicating light manipulation after which the stock price tanks again.

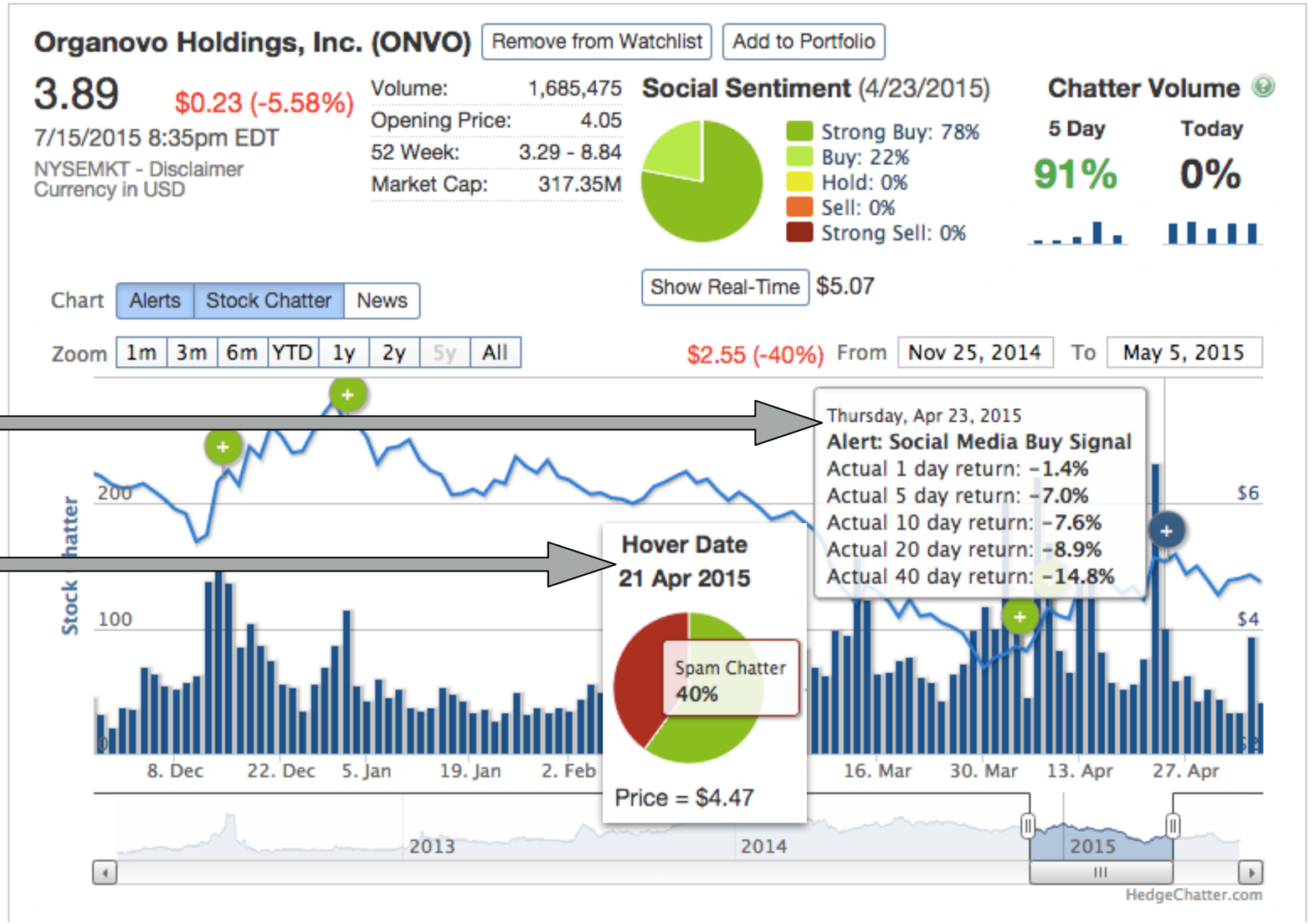
Social Media Buy Signal

+

Less Than 50% Manipulation

=

Downward Stock Price Move

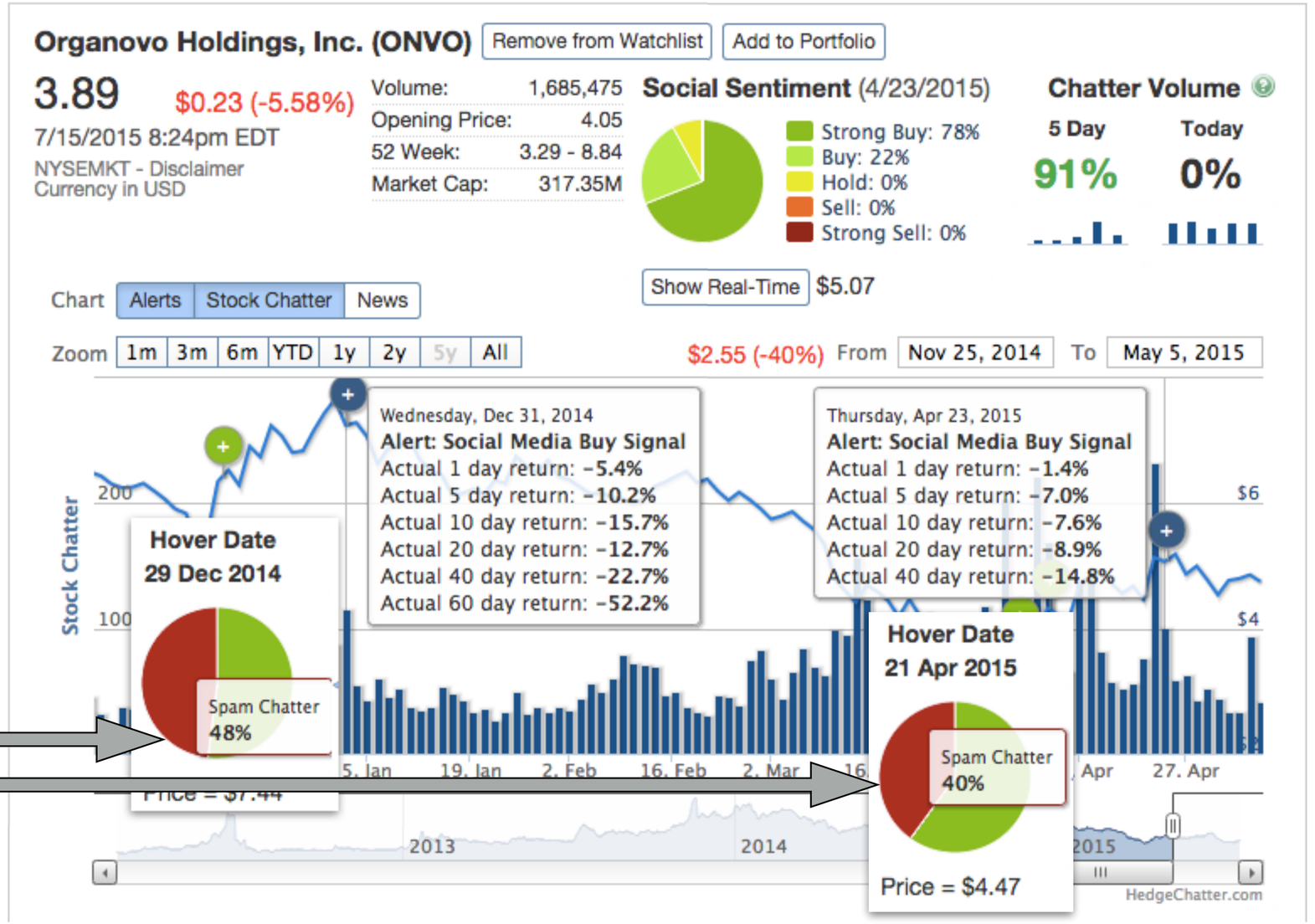


Example: Stock Price Manipulation - ONVO

Conclusion:

You will notice that when the Spam Chatter is less than 50% preceding a "Buy" Signal the stock price tanks. This clearly shows this stock is primarily head up by pure manipulation.

Less than 50% Manipulation - Results in Price Drop



Disclaimer

***DISCLAIMER:**

HedgeChatter can neither confirm or deny the identity of the responsible party or parties involved with the social media manipulation or attempted manipulation of ONVO stock. HedgeChatter can also neither confirm or deny if any employee, director, officer, management, or anyone affiliated either directly or indirectly withONVO had any intentional or unintentional interest or involvement with the social media manipulation or attempted manipulation of ONVO stock.

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Social Media Analytics for the Stock Market

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Co-Founder & CEO
James@HedgeChatter.com

HedgeChatter - Contact

For additional information, including pricing for our Retail Investor and HedgeFund platforms or API's, please contact us at 1-678-744-9720 or by visiting www.HedgeChatter.com