

# Social Market Analytics



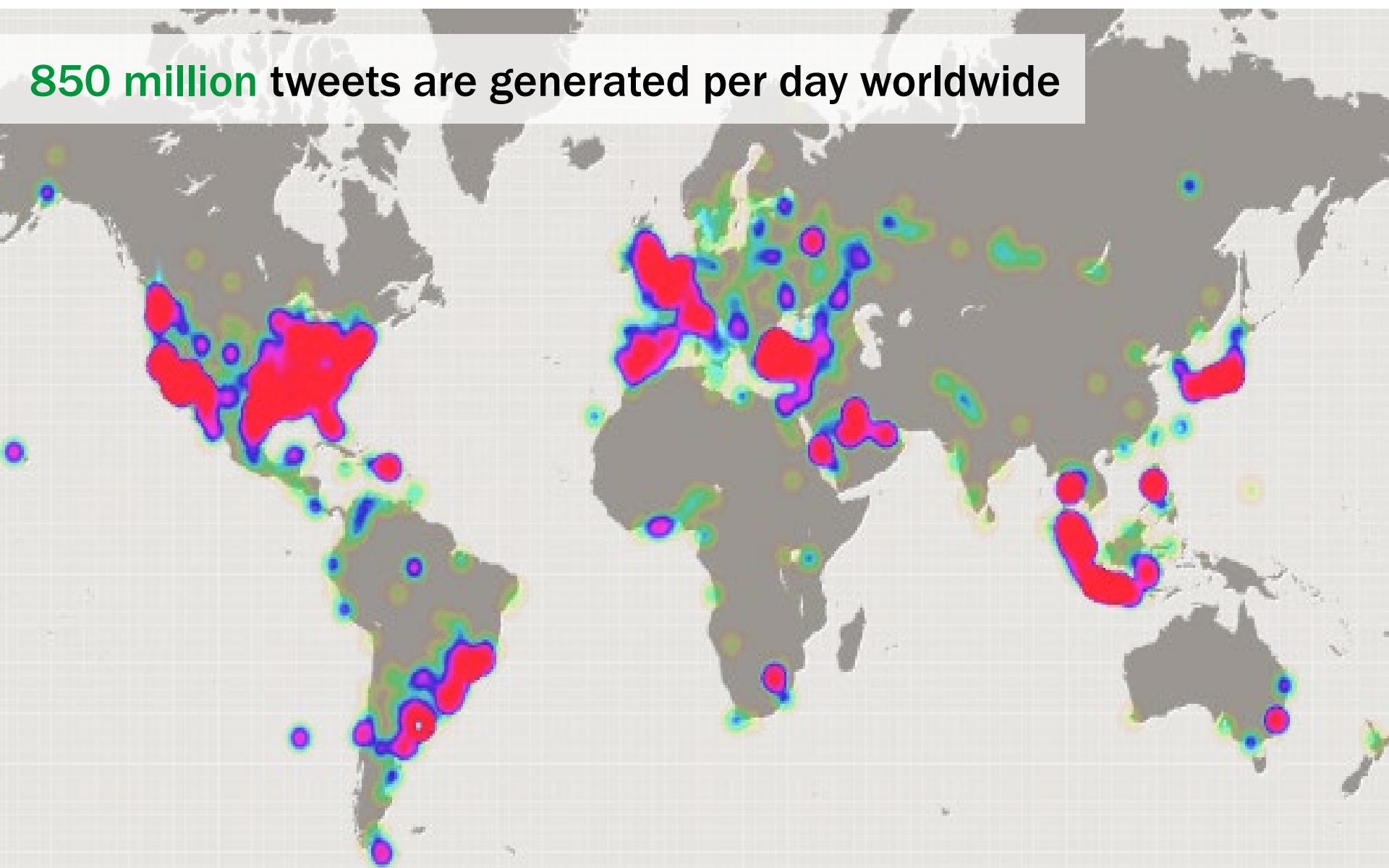
An Uncorrelated Source of Predictive Data

# Agenda

- Use of Alternative Data In Finance
- Social Market Analytics Social Media Framework
- What Social Media Can Offer Every Investor
- Best Practices
- Availability on Fidelity Platform
- Questions

# Use Of Alternative Data In Finance

**850 million** tweets are generated per day worldwide



# SOCIAL MEDIA IS DISRUPTING CAPITAL MARKETS

**Twitter impacts the price performance of all securities and creates investing opportunities on a global basis**

**We harness these Twitter signals to deliver real-time social sentiment to hedge funds, Fidelity traders, investor relations and risk managers**





**So how do we do it?  
And what does it mean  
for how you analyze social  
data for your businesses?**

# SMA - Patented Technology

SMA has patented technology across four main FinTech verticals. SMA uses its source agnostic proprietary Parsing Engine to output baselined textual data. SMA's Sentiment NLP uses supervised and unsupervised machine learning techniques. SMA's Complex Topic Model Engine uses elastic synonym search for any desired topic. SMA's Source Rating identifies credible sources.

## Technology

### SMA Sentiment NLP

SMA started with Stanford Tokenization and discovered that we would have to build our own Machine Learning Natural Language Processing platform. SMA uses a multi-pass approach combining techniques like stemming and lemmatization. SMA's environment is supervised and unsupervised, and uses programmatic regression analysis

### SMA Parsing Engine

SMA has built a general document parser to produce structured data in the form of machine-readable JSON. Algorithms and historical baselines can be built to generate Alpha and actionable Market Intelligence

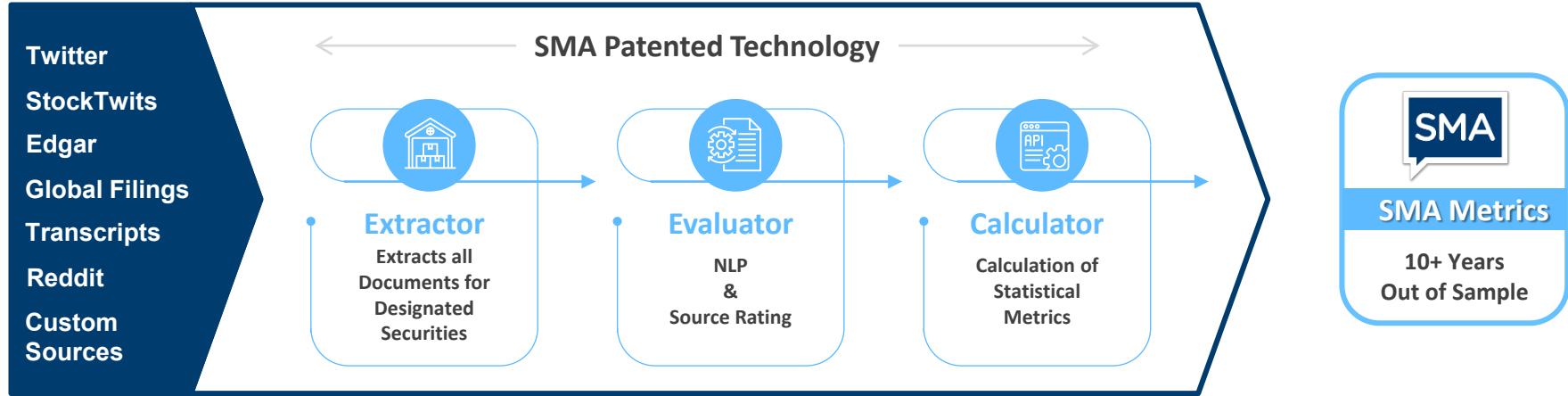
### SMA Complex Topic Model Engine

To capture information related to a Security, Private Company, Thematic Investing, or Custom Topic, SMA built a Real Time Machine Learning Topic Model Engine that uses Collocation to identify Inclusions and Exclusions. SMA's Synonym NLP captures all relevant identifiers. Topics are constructed using a rules-based system grounded in qualitative knowledge

### SMA Source Rating

It is not just what is being said in Traditional and Social Media, it is who is saying it. SMA has developed a twelve-factor algorithm to score each source before inclusions in sentiment and volume metrics. The ability to eliminate spam, bad bots, bad actors produces a pure data set

# SMA Patented Social Media Framework



**SMA has 3 U.S. Patents behind our process:**

Aggregates the intentions of professional investors as expressed on Twitter and StockTwits and other inputs such as Edgar Filings and International Reports

Calculates Sentiment metrics characterizing the current conversation relative to historical benchmarks

# SMA Intellectual Property

## Out of Sample History

- › SMA has 10+ years of out-of-sample data
- › Twitter's ability to delete accounts and Tweets can lead to survivorship bias in other datasets. SMA has full Twitter history
- › Account and dictionary changes are applied on a point in time go-forward basis



## SMA Sentiment NLP

- › SMA Proprietary machine learning phrase and word financial dictionary built over 10 years
- › Scores calculated in real-time 24/7
- › Fine grain scoring -1.000 to +1.000 at the Textual or Tweet level
- › Multi pass approach used in evaluation of each Tweet increases scoring accuracy

## Complex Topic Modelling

- › SMA's Machine Learning Topic Modeling drills down at the Security or Topic level identifying only relevant Topics or Tweets. SMA Topic Modeling covers both Listed and Private Companies and any Macro Topic



## Independent Research

- › External and Internal Research
- › S&P, IHS Markit, Deutsche Bank, ITG, MIT, Rutgers, CBOE, Illinois \*partial list



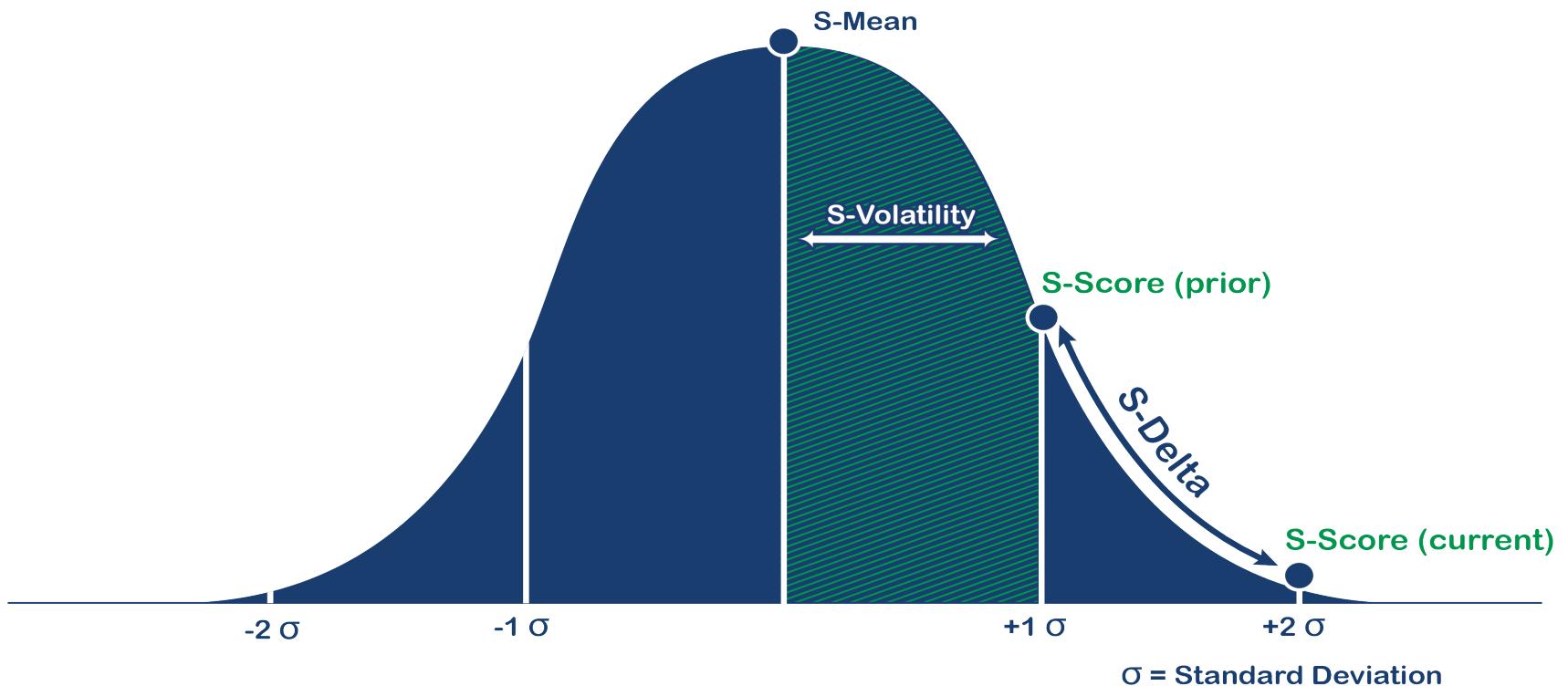
## Source Rating

- › Proprietary algorithm rates every Twitter Account and identifies professional investors
- › Account accuracy metrics at the Security level

## SMA Parsing Engine

- › SMA built Processor to format any textual or tabular data (txt, html, pdf, etc.) into Machine Readable text in a JSON API format

## S-FACTOR METRICS VISUALIZED



# SMA S-Score API Provides 17 Data Fields

## S-Score™

- The Normalized Representation Of A Security's Sentiment Time Series Over A Look Back Period

## S-Mean™

- The Average Level Of A Security's Sentiment Time Series Over A Look Back Period

## S-Delta™

- The Change In A Security's S-Score™ Level At An Observation Time Relative To An Earlier Time

## S-Volume™

- The Volume Of Indicative Tweets Contributing To A Security's S-Score™ At An Observation Time

## SV-Score™

- The Normalized Representation Of A Stock's Indicative Tweet Volume Time Series Over A Look Back Period

## S-Volatility™

- A Measure Of The Variability Of A Stock's Sentiment Time Series Over A Look Back Period

## S-Dispersion™

- A Measure Of The Diversity Of Twitter Sources Contributing To A Security's S-Score™

## Daily S-Score : Open-to-Close Annualized Returns and Avg. Security Counts by Nasdaq Sectors

Price > \$5 Universe

9:10 am ET Sentiment (20 mins before Market Open)

Sector	S-Score > 2	All Stocks	S-Score < -2*
Basic Industries	16.13%	-5.99%	-34.12%
Capital Goods	16.65%	2.72%	-3.79%
Consumer Durables	9.48%	2.44%	-10.88%
Consumer Non-Durables	14.15%	2.33%	-18.10%
Consumer Services	10.96%	1.59%	-11.77%
Energy	7.68%	-7.03%	-17.76%
Finance	16.31%	4.95%	-3.84%
Health Care	2.52%	-2.83%	-13.73%
Miscellaneous	29.12%	-0.29%	-28.67%
Public Utilities	6.35%	2.69%	-13.02%
Technology	18.40%	7.68%	-9.01%
Transportation	10.42%	-3.07%	-20.95%
SMA Universe	12.79%	1.37%	-13.10%
SPX		7.76%	

S-Score > 2	All Stocks	S-Score < -2
10.1	110.2	5.2
14.2	149.1	7.3
5.5	53.4	3.0
7.5	86.2	4.0
28.8	323.0	14.6
6.6	82.0	3.8
26.5	266.5	14.5
20.5	232.2	8.5
3.0	29.5	1.8
7.1	79.3	3.9
24.6	266.0	10.3
3.6	36.9	2.2
156.6	1714.2	75.9

(\*) negative return indicates positive alpha on shorts

# What Social Media Can Offer Every Investor

- Social Media is a leading indicator of security performance.
- Securities being discussed more positively on Twitter have tended to outperform. Securities being discussed more negatively on Twitter have tended to underperform
- Indicator of securities that are likely to move

# Things to look for when following someone

- Is this person using overly extreme language?
- Is this person posting the same thing repeatedly?
- Absolute tweet volume may be misleading.
- Watch for bots.
- Don't be fooled by number of followers.
- Is there new insight in the Tweet?
- Is there interaction with their Tweets?

# QUESTIONS





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