Wisdom of the Crowds –
What to make of web-based sentiment?

Ulli F. P. Spankowski
Stuttgart Financial / Boerse Stuttgart
March 29th 2012
The Challenge
"The best newsreaders may soon be computers"
21.06.2007

Trading On Sentiment Analysis - A Public Relations Tool Goes To Wall Street
28.11.2011

"Computers that trade on the news"
22.12.2010

"The computer-savvy traders known as quants are paying attention. According to Aite Group, a financial services consulting company, about 35 percent of quantitative trading firms are exploring whether to use unstructured data feeds. Two years ago, about 2 percent of those firms used them."

"Paul Tetlock, an associate professor at Columbia University who did research that was used to create the news algorithms, worries that technology has skewed the playing field."
Current Trends in Finance Research and Applications in Finance
Current Trends in Finance Research and Applications in Finance

Market for semi-structured information matures

Trend towards unstructured information

- Commercial applications mainly focus on institutional investors
- The main goal is to collect and analyse unstructured information for algorithmic trading
- However the area of applications is much larger than just institutional investors. This growing technology is also helpful in many other areas
Predicting election results

National share of the vote
Vote share fluctuated by a few percentage points over the six weeks but the final Tweetminster prediction was:
- Conservatives 35%
- Labour 30%
- Liberal Democrats 27%
- Others 8%

The actual results were:
- Conservatives 37%
- Labour 30%
- Liberal Democrats 24%
- Others 10%
Predicting revolutions - Egypt

- On 25 January 2011, popular dissent with the Egyptian state culminated in mass protests that continued through President Mubarak’s resignation on 11 February.
- The Figure shows the average tone by month from January 1979 to March 2011 of all 52,438 articles captured by SWB mentioning an Egyptian city anywhere in the article.
- Only twice in the last 30 years has the global tone about Egypt dropped more than three standard deviations below average: January 1991 (the U.S. aerial bombardment of Iraqi troops in Kuwait) and 1–24 January 2011, ahead of the mass uprising.
- The only other period of sharp negative moment was March 2003, the launch of the U.S. invasion of neighboring Iraq.

Source: Leetaru, Kalev (2011): Culturomics 2.0: Forecasting large-scale human behavior using global news media tone in time and space
Geographical detection of earthquakes via twitter

Figure 4: Number of tweets related to earthquakes.

Source: Sakaki, Takeshi et al. (2010): Earthquake shakes Twitter users: real-time event detection by social sensors.
Application in Other Areas

Geocoding – Tracking Osama Bin Laden with twitter

Source: Leetaru, Kalev (2011): Culturomics 2.0: Forecasting large-scale human behavior using global news media tone in time and space
FIRST Vision

Financial Resources

Structured

Unstructured
Blog, analysis, bulletin boards...
Unreliable, poor quality, noisy...

AUTOMATION

Acquisition
Processing
Analysis
Decision support
Acknowledgement

The research leading to these results has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n°257928.

Ulli F. P. Spankowski, Associate Director
Stuttgart Financial / Boerse Stuttgart
Börsenstr. 4, 70174 Stuttgart
Germany