Market Sensing Using a Graph Database
Sensing the Effect of News Media on Financial Markets

WSJ reported on 09/30 at 2:19 EDT that Eastman-Kodak hired Jones Day for restructuring advice.

By 2:24 pm, it was off by 28%.

By end of trading, it was off by 54%.
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Market Sensing is a large-scale graph analytics problem.
Current Big Data approaches are based on SEARCH…

**SEARCH:** Needle-in-a-Haystack

- We know what we’re looking for
- We can break up the problem

**Current Big Data Approaches:**
Partition and Scale out
YarcData focuses on DISCOVERY – not search

Needle-in-a-Needlestack

We do not know what we are looking for

We cannot break up the problem

“….when the purpose of the system is discovery of relationships, not extracting information from already known interrelations, achieving satisfactory performance is difficult.”

“When the relationships among data are mysterious, and the nature of the inquiries unknown, no meaningful scheme for partitioning the data is possible.”

(Source: Gartner Report, YarcData's uRiKA Shows Big Data Is More Than Hadoop and Data Warehouses, September 2012)
“In the amount of time it takes to validate one hypothesis, we can now validate a 1000 hypotheses – massively improving our success rate and systematizing serendipity.”

(YarcData Govt Customer)
YarcData technology enables Big Data Graph Analytics

“Employing a single systemwide memory space means data does not need to be partitioned, as it must be on MapReduce-based systems like Hadoop. Any thread can dart to any location, following its path through the graph, since all threads can see all data elements. This greatly reduces the imbalances in time that plague graph-oriented processing on Hadoop clusters.”

“A unique approach to processor design, YarcData's Threadstorm chip, shows no slowdown under the characteristic zigs and zags of graphoriented processing... the data is held in-memory in very large system memory configurations, slashing the rate of file accesses.”
Market Sensing is a Large Graph Problem

- Company
  - Positive Earning Results
  - Patent Award
  - Got Bid/Contract
  - Lost Bid/Contract
  - Analyst Downgrade
  - IPO
  - Industry
  - Investment Guru
  - Going ExDividend
  - Adverse Event for Company
  - Negative Earning Results
  - Stock Split Announcement
  - Dividend Announcement
  - Stock Buyback Announcement
  - Top100HedgeFund
    - Buys Stock
    - Sells Stock
  - Product Release/Expansion
    - Meets Or Exceeds
    - Fails To Meet
  - IPO
    - Positive Outlook
    - Negative Outlook
    - Meets Or Exceeds
    - Fails To Meet
  - Industry
    - Meets Or Exceeds
    - Fails To Meet
  - Investment Guru
    - Meets Or Exceeds
    - Fails To Meet
  - Analyst Downgrade
    - Meets Or Exceeds
    - Fails To Meet
  - Going ExDividend
    - Meets Or Exceeds
    - Fails To Meet
  - Positive Outlook
    - Meets Or Exceeds
    - Fails To Meet
  - Negative Outlook
    - Meets Or Exceeds
    - Fails To Meet

Positive Indicators

Negative Indicators
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Bankruptcy filing rumors; trading halted several times.
YarcData: Big Data Appliance for Graph Analytics

Gain business insight by discovering unknown relationships in big data

- Graph analytics warehouse supports ad hoc queries, pattern-based searches, inferencing and deduction on dynamic data sets

Achieve competitive advantage with scalable real-time graph analytics

- Purpose built to solve big data graph problems with large shared-memory and massive multi-threading

Ease adoption with subscription pricing and industry standards support

- Data center ready appliance with open interfaces enables re-use of in-house skill sets, no lock-in and simplified integration