

# Wall Street's Digital Bloodhounds

A NEW BREED OF STOCK-MARKET RESEARCHERS IS SNIFFING IN UNFAMILIAR PLACES FOR CLUES TO COMPANY PROSPECTS



By Ed Cohen

For many years the only way to buy an Apple product was directly from Apple, at a company store or on the company's website.

Finally, in the early 2000s, after the hugely successful introduction of the iPod digital music player, Apple struck a deal with Best Buy. All Apple products would soon be available for purchase in the electronics retailer's stores.

What effect this would have on the companies' earnings, Wall Street hadn't a clue. Neither company's stock price budged when the agreement was announced.

Instead of waiting for the next quarterly reports to see sales figures, the financial services firm Morgan Stanley decided to try something new. Barry Hurewitz, a managing director and chief operating officer of the firm's research arm, told the story at the annual conference of Notre Dame's Center for Accounting Research and Education or CARE in Leesburg, Va., in early April.

Hurewitz said Morgan Stanley decided to utilize its expertise in data mining and analysis. Specialists in research built online computerized models to access public information about how well the items were selling. What Morgan Stanley had done was give its stock analysts—and ultimately Morgan Stanley clients—a new way to analyze information. The research group was able to tap into what Hurewitz called "unconventional data sources" that were in the public domain.

The use of technology to ferret out such potentially money-making information was a major focus of the CARE conference. Titled "Impact of Emerging Information Technology on Capital Markets," the event attracted 139 people, mostly academic accounting and finance researchers.

The 42 presenters included a Securities and Exchange Commissioner, the current chief economist of the SEC as well as a former one, a recent chair of the Financial Accounting Standards

## DIGITAL BLOODHOUNDS



Board, the editor of the top-tier *Journal of Accounting Research*, and executives from several companies hoping to profit from the ever-more-sophisticated parsing of business news and information. The dinner speakers were a pair of U.S. Army majors who described how the military learned to use images captured by drones and other data as actionable intelligence in Iraq. Videos of many of the presentations can be viewed online at [bit.ly/13U6sty](http://bit.ly/13U6sty)

Although it had been planned for nearly two years, the CARE conference happened to be held three days after a landmark ruling by the SEC on information disclosure. Last July, the CEO of the video rental and streaming service Netflix posted a message on his personal Facebook page. The post said Netflix had just streamed a billion hours of content in a month for the first time. When word got around (the page had more than 200,000 followers), shares of Netflix stock rose.

The SEC investigated whether that post violated long-standing federal rules against disclosing information to selective audiences. The commission decided that it's now acceptable for companies to disclose information using Facebook, Twitter and other social media channels as long as they inform investors ahead of time about which channels they plan to use.

As conference attendees heard, the dissemination of business information has come a long way from the days when messengers wearing synchronized watches would stand outside of newspaper offices waiting to deliver a press release. The synchronization was necessary so no outlet could be said to have gotten the information before anyone else.

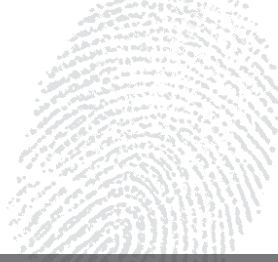
Nowadays, stock trades are executed in microseconds on electronic exchanges, and media companies such as Thomson Reuters and Bloomberg don't just report business and economic news, they provide continually updated trade analytics and data visualizations.

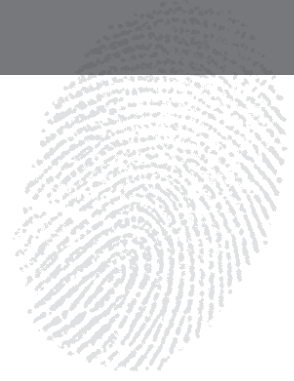
Since 2009, the Securities and Exchange Commission has required all publicly traded companies to submit their 10-Ks and other performance reports in a machine-readable programming language called XBRL. The reports are made available 24 hours later at the SEC's free Electronic Data-Gathering, Analysis and Retrieval website, or EDGAR.

That ready access to official company information has helped spur efforts such as Morgan Stanley's to examine less traditional clues to future performance, conference presenters said. Several firms represented at the conference use algorithms to detect and aggregate the prevailing sentiment about companies. Their computers sift through not only news reports and analysts' recommendations, but tweets and other comments on social media from the general public.

Darrell Heaps, CEO and co-founder of Q4 Web Systems, a company that builds investor-relations websites and advises companies on social-media issues, mentioned that some hedge funds have taken to tracking company job postings on the business-oriented social networking site LinkedIn. More hiring suggests that management is optimistic about revenue growth.

Several Notre Dame Finance faculty have taken a magnifying glass to what one conference presenter termed "digital droppings," electronic traces of trading activity or investor intent. Finance faculty Zhi Da and Pengjie (Paul) Gao have discovered that spikes in the number of Google searches for a company that are made using its stock ticker symbol can predict an uptick in purchase of the company's stock by less-sophisticated retail investors.





Tim Loughran, the College's C.R. Smith II Professor of Finance, and Bill McDonald, Thomas A. and James J. Bruder Professor of Administrative Leadership, have conducted computer-assisted textual analyses of 10-Ks. Among their findings: Certain phrases describing aggressive accounting practices increase the likelihood of fraud charges later being filed.

A presenter at the CARE conference, Bill Mayew, an associate professor of accounting at Duke University's Fuqua School of Business, explained how he uses software to analyze the voices of CEOs during conference calls with stock analysts. He said he's found that measurable negative "affect" or emotion was followed by an immediate decline in stock price and vice versa. Another paper in press shows that CEOs with deeper-pitched voices tend to work for larger firms, have higher salaries and enjoy longer tenures.

Speaking at the CARE conference, SEC Commissioner Troy A. Paredes prefaced his remarks, as regulators routinely do, by saying they represented his own views and not necessarily those of the SEC or any of his fellow commissioners. He discussed the SEC's basic philosophy of promoting better investor decision making through disclosure, and he said he thought having more sources and more timely ways to disseminate information can help advance that goal. He stated that regulators need to be mindful of the impact technology and emerging media may have on the disclosure regime. He also stressed that people should not assume that more disclosure is always better than less, citing the potential for information overload.

Other presenters voiced concerns of their own.

Erik Gerding, an associate professor of law at the University of Colorado Law School, reminded attendees that, no matter what form future disclosures take, anti-fraud rules still apply. He recalled that when he was a young lawyer, the firm he worked for would invite in a "crusty old partner" to explain the facts of business representation to him and other newcomers.

"His message was pretty simple: Your (stock) registration statement is my Exhibit A,' so now I guess your tweet is my Exhibit B," Gerding said. "If I were still in practice, I would be very worried about my clients using most forms of social media."

Several other presenters talked about how the galaxy of new data that is being generated often creates more confusion than clarity.

"It's not about access to the information, it's about being able to interpret it," said Richard Brown, global head of the Elektron Analytics division of Thomson Reuters. Thomson Reuters is the world's largest news and information company with more than 60,000 employees, he said.

As an example of a potential hazard of having computers conduct vast amounts of text analysis, he noted that "good" usually means good to a human, and "terrible" means terrible, but "terribly good" is high praise. A machine might misinterpret that.

Whatever concerns may exist about the quality of data, the search for information that can give investors a leg up on the market figures to continue or even accelerate. Morgan Stanley's Hurewitz noted that last October's *Harvard Business Review* declared "data scientist" to be the Sexiest Job of the 21st Century.