Features

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Black-box research

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Is equity research the next profit-challenged business that will be automated by Wall Street?

Odds are, you've never heard of John Brush or the research firm he runs. Based in Colorado Springs, Colorado, Columbine Capital Services publishes recommendations on every publicly traded stock in the world -- more than 24,000. Over the past two years, it also has been, by some measures, the best stock-picking outfit in the U.S. And Columbine does it all with a total of six employees -- plus one very powerful computer system.

"Our current clients don't want us to get too well known," says Brush, who holds a master's degree in engineering from the Massachusetts Institute of Technology and a Ph.D. in economics from University of California, Los Angeles. The firm's core customers are mostly value-oriented mutual funds, he says. "They kind of want to keep us to themselves."

They may not be able to keep the secret for long. At a time when big Wall Street firms are paring back budgets and covering fewer stocks with smaller rosters of less-experienced analysts, research firms that analyze shares using algorithms and computers rather than armies of humans are rapidly pushing to the fore. Located in most cases far from the canyons -- and conflicts -- of Wall Street, they are also proving to be among the best prognosticators in the business. According to rankings prepared by Investars, a New York-based research performance measurement company, the stock recommendations of little-known firms such as Columbine; Ford Equity Research of San Diego; and Market Profile Theorems of Seattle are outperforming those of the big brokerage houses that have long dominated the equity research game (see table). Investars calculates, for example, that by following Columbine's ratings over the past two years, investors would have posted an annualized gain of 24.15 percent, compared with 7.74 percent for the best-performing big firm, Banc of America Securities, and a loss of 0.75 percent for Morgan Stanley.

Much of this new wave of analysis -- call it black-box research -- has been around for quite some time. Columbine, for instance, was founded in 1976. But only during the past few years, as concerns have arisen about the conflicts of interest plaguing traditional research and as the rise of hedge funds has fostered wider acceptance of quantitative analysis, have these firms entered the spotlight.

Their ascent, of course, means additional competition for old-line Wall Street. But it may also portend more-sweeping long-term change. The big investment banks have spent much of the past several years automating many of their more mature, less profitable activities. Much of the institutional brokerage business has shifted from garrulous block traders shouting into phones to "intelligent" automated systems. Computer programs now execute more than half the volume of the New York Stock Exchange. Will equity research, in the wake of new regulations that prohibit firms from using it to woo and stroke investment banking clients, follow suit?

"It's possible that Wall Street one day will decide that spending a billion dollars a year on research doesn't make much sense if you can get the same results, or better, with a computer," posits Kei Kianpoor, CEO of Investars. He quickly adds, "But the disappearance of complimentary Street research is probably the most undesirable outcome possible for small investors."

To be sure, good research isn't all about stock picking. Big institutions, especially, often make their own investment decisions and rely on analysts less for ratings than for their specialized knowledge of industries, individual corporate strategies and broad competitive dynamics. And big brokerage houses actually have become better stock pickers in the two years since regulatory scrutiny of the industry peaked, notes Kianpoor. Three of the firms that took part in a $1.5 billion settlement of research-related charges that was finalized in April 2003 are among the top ten stock pickers over the past two years, according to Investars (Citigroup/Smith Barney, Merrill Lynch & Co. and Goldman, Sachs & Co.). None makes the top ten for four-year returns.

BLACK-BOX FIRMS COME IN MANY SIZES -- AND varieties. Some outfits, like Columbine, rely almost solely on automated quantitative models and issue recommendations on most publicly traded stocks. These firms include Chicago-based Callard Research, Miami's MarketGrader, Price Target Research of Chicago and Weiss Ratings of Jupiter, Florida. Such firms typically have developed sophisticated mathematical models and employ a handful of individuals who are responsible for gathering and continuously updating the data that powers them. Company fundamentals may be considered in evaluating stocks, but more often they are overshadowed by purely quantitative or technical factors.

Columbine's model, for one, focuses mostly on the fact, which Brush says has been proven in academic studies for more than a decade, that stocks tend to have price momentum. That is, once they start moving in one direction, they tend to keep going that way for a time, like so many Newtonian objects in motion. U.S. and European stocks, he says, tend to exhibit positive price momentum for six to nine months;

Japanese stocks, on the other hand, are more likely to demonstrate momentum while moving downward.

"The people who know the most about the companies often have a rotten ability to forecast future stock prices," says Brush. "We know a little bit about 20,000 stocks every week. But we don't know a whole lot about any one of them."

There are also hybrid firms, which attempt to draw on the best of both fundamental research and quantitative models. One such firm, New York-based Rochdale Securities, employs ten analysts to cover 500 stocks. Rochdale has long been in the institutional brokerage business but only began producing its own research about three years ago. Its analysts keep track of company fundamentals, competitive dynamics and other factors that may affect valuation. Their recommendations are based primarily on a proprietary algorithm that calculates the difference between companies' return on capital and their cost of capital and uses that figure as a basis for present-day and future price targets. Analysts may develop hunches and hypotheses after talking to CEOs and other sources, but if these don't check out with what the computer says, they're ignored.

"The machine doesn't get emotional and fall in love with stocks for the wrong reasons, like people often do," says Nicholas Colas, Rochdale's director of research. (The firm's recommendations would have yielded a 1.37 percent average annual gain during the past two years, according to Investars, ranking Rochdale 18th, ahead of firms such as Lehman Brothers, Morgan Stanley and Bear, Stearns & Co.)

Other firms don't make recommendations at all but provide raw data that clients use to formulate their own investment decisions. San Francisco-based Revere Data, for example, maintains a database on approximately 8,000 U.S. companies, organized so that clients can see the relationships among them. That can be a big help for money managers seeking second-order analyses of major events like bankruptcies or disasters. A company that becomes insolvent, for instance, may have several publicly traded suppliers whose shares suffer as a result.

Revere contracts out the gathering of information from regulatory filings, press releases and other sources to a small group of researchers and employs about ten experienced stock analysts to perform quality checks on the data and to dream up new and profitable ways that clients can use the database.

"The dynamics of Wall Street research are just completely different than they used to be," says Revere CEO Glen Wolyner, who points out that his firm avoids conflicts of interest because it doesn't make stock recommendations. "We are giving people the best, cleanest, most usable data we can. What they do with it is up to them."

Revere, which counts about 80 hedge funds and other money managers among its clients, is also in talks, sources say, to supply search engine Google with data for a planned finance portal (see People, page 7). Wolyner won't comment on the matter.

MUCH OF THE AUTOMATED RESEARCH, BECAUSE it doesn't depend solely on company fundamentals, has been looked down upon by the thousands of analysts trained in the decades-old tradition of Benjamin Graham and David Dodd. Slowly but surely, that is changing, as an increasing number of mathematics Ph.D.s infiltrate Wall Street and achieve stunning success -- particularly hedge fund whizzes like Renaissance Technologies Corp.'s prizewinning geometrician James Simons, who has yet to post a down year since founding his firm in 1988. (Simons' Medallion fund was up 13.66 percent net of fees for the first half of 2005.)

Some fundamental analysts, as well as cutting-edge investors, are gradually warming up to black-box research. Consider Columbine's value-oriented clients, who use the firm's models both to affirm their own deductions and to eliminate ideas that they're not entirely sure about.

Investors have good reason to rethink computer-driven research. In an Investars ranking of the best stock pickers for the past four years, black-box outlets occupy eight of the top ten positions. (Third-place Columbine rises to No. 1 when firms are ranked according to the previous two years' recommendations.) Among more traditional brokerages, only Banc of America Securities cracks the top ten. Investars ranks firms according to the estimated profitability of their recommendations, by adding the gains -- or losses -- from both buy and sell recommendations, assuming a baseline investment of $10,000.

Still, it's far from clear that these upstart firms will ever dominate equity research. Columbine's Brush, for one, says that business hasn't taken off the way he and others expected it to in the wake of the 1990s bubble and regulators' investigations of conflicts of interest afflicting Wall Street research. One reason is that money managers are themselves hiring talented in-house mathematicians to write proprietary stock-picking algorithms. Hedge funds can pay far more for these people than independent research firms can.

Another threat may come from Wall Street firms. Credit Suisse First Boston, for instance, in 2002 acquired black-box firm Holt Value Associates, which uses a database of historical information about company fundamentals and market performance to help analysts and investors value stocks. Holt is operated as a separate division from CSFB's research department; CSFB analysts, however, can use Holt in much the same way that Rochdale analysts use their firm's computer system. In some cases the arrangement allows analysts to cover more stocks than they would be able to without the technology. But adoption has been informal and sporadic, and CSFB continues to adhere to a fundamental analysis model. Holt also offers its services directly to some 650 buy-side clients and employs more than 100 support staff to help customers get the most out of its database and analytical services.

"It's a tool people can mine to draw their own conclusions, but with a lot of help from us," says Timothy Bixler, co-head of CSFB's Holt division.

Morgan Stanley is testing an automated system called ModelWare that is designed to aid comparisons across industry sectors and countries; ModelWare will assist the firm's equity analysts and will be offered to certain institutional clients. (Morgan Stanley declines to comment on its plans.)

All this suggests a similar evolution to that which has transformed equity trading in recent years. In the 1990s a flurry of small, technologically savvy firms such as Archipelago Holdings, Hull Group and Spear, Leeds & Kellogg led the drive to automated algorithmic trading. Big firms acquired many of the innovators or built automated systems of their own, coopting the technology once it became clear that the old human-intermediated model wasn't going to survive on its own.

Maybe those tiny, automated research firms you've never heard of will have a big impact, after all.

Top stock pickers

Quantitative, computerized research firms have done a better job of picking winning stocks over the four years ending September 1 than big brokerage houses have.

Rank	Firm	Annualized % gain**
1*	New Constructs	16.62%
2*	Ford Equity Research	14.4
3*	Columbine Capital Services	13.15
4*	Callard Research	10.7
5*	Channel Trend	8.17
6*	Weiss Ratings	6.46
7*	Thomas White International	6.14
8	Standard & Poor's	–2.56
9	Banc of America Securities	–5.14
10*	Market Profile Theorems	–5.18
11	Prudential Equity Group	–7.29
12	UBS	–9.22
13	Merrill Lynch	–11.37
14	Citigroup/Smith Barney	–16.30
15	Piper Jaffray	–16.52
16	Morgan Stanley	–20.48
17	Bear Stearns	–21.14
18	J.P. Morgan	–25.85
19	Goldman Sachs	–26.56
20	Credit Suisse First Boston	–32.00

*Quantitative/computer-driven firm.

**Based on combined performance of positive and negative ratings.

Source: Investars.

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