

J.P. Morgan, Sybase, and Numerix team up to form Cygnifi, a premier provider of online risk management tools for the derivatives market

# Taking SIGNIFICANT RISKS

**H**is is a résumé Wall Street can love: impressive degrees from MIT; senior IT posts at one of the world's wealthiest banks; and the first patent ever filed for by his employer, J.P. Morgan, which allowed it to grow even richer in the 100-trillion-dollar global derivatives market.

It is no surprise when a titan of a bank such as Morgan offers perks to retain a top performer such as Mike DeAddio. But the perk Morgan dangled was for DeAddio to leave. And leave he did, although not alone. With him went Morgan execs Jay Helvey, Vlad Torgovnik, Joseph Gentile, and a retinue of 35 Morgan employees. Harder still to fathom was Morgan's farewell gift: a multimillion-dollar investment in Cygnifi—the new firm Helvey, Torgovnik, Gentile, and DeAddio formed—and rights to software in whose development Morgan had invested a decade and tens of million of dollars.

Are the heirs to J. Pierpont Morgan's 150-year-old bank crazy, or does Morgan—a company that helped bankroll America's railroads in the 1800s—know something the rest of us don't about cultivating new markets, investing in friends, and reaping a windfall from risk.

Risk is at the heart of what Cygnifi, the nine-month-old Morgan spin-off, does: sell online risk management tools for the derivatives market. "Morgan's stake in Cygnifi is a win for Morgan and a win for Cygnifi," says DeAddio, the company's chief technology officer. "Morgan realized that it could make more money by bringing new clients into the derivatives



market online than by keeping its software proprietary.”

With an initial investment of \$22.3 million, Cygnifi is a joint venture with Sybase and Numerix, a derivatives analytics company.

### A Different Species

Despite explosive growth in the derivatives market in the past 20 years, the market has begun to level off, and Morgan—



sometimes derided as a bank “ruled by the elite to bankroll the privileged”—realized that it would need to attract more clients. Suddenly, the House of Morgan, bank to bluebloods and industrialists, began actively wooing the business of African Americans, women, and technology startups and started encouraging employees to submit plans for their own businesses. This about-face explains how DeAddio teamed up with Cygnifi Chairman and CEO Helvey, a former Morgan managing director and global head of derivative counterparty risk management, and Torgovnik, Cygnifi president and COO, who had played a key role in developing Morgan’s derivatives technology.



*Mike DeAddio*


Splintering off businesses once handled in-house can be a sound business model. Darrell Duffie, a professor of finance at Stanford University’s Graduate School of Business, points out that “the stock market has a hard time figuring out what a large company’s worth” and that large corporations often “sell at a discount off what they’re worth.” Many companies, says Duffie, elect to rid themselves of any business outside their core competency.



*Jay Helvey*

In spite of all the Morgan influence, Cygnifi, whose main office is a single floor of a building on Rector Street, around the corner from Morgan’s Wall Street headquarters, is a wholly different species. Jeans and polo shirts have replaced the de rigueur charcoal or gray suits that DeAddio and Helvey wore every day at Morgan. DeAddio’s office—dubbed the Cygnifi dorm room—has a couch, refrigerator, and basketball hoops. Ping-Pong and pool tables, Foosball, and a dartboard are as much a part of Cygnifi’s startup look as oil paintings of eighteenth-century tycoons with thick mustaches and rolltop desks defined Morgan.

Then there are the fees. Morgan’s clients paid upwards of six figures for access to the bank’s proprietary risk management services. Cygnifi’s niche is analytic tools based on a more affordable, pay-as-you-go model, a business plan it hopes will attract droves of midsize companies to the derivatives market. As tough as the market is on startups right now, DeAddio says new mandatory accounting regulations that took effect on



January 1 make Cygnifi's analytic tools an even hotter item, because companies and asset managers are now required to keep daily track of the value of their derivatives positions.

Until recently, says DeAddio, the only option was a route affordable to only the biggest players: purchase multimillion-dollar, enterprise-wide software applications. Cygnifi's application service provider (ASP) delivery model makes Cygnifi's software available to anyone with an Internet browser, for fees that start at about \$20,000. DeAddio calls this fee structure Cygnifi's "pay as you grow" model, and Helvey refers to it as "pay by the slice." Cygnifi has already signed up with Morgan, PricewaterhouseCoopers, a Western European derivatives company, and a London hedge fund. These companies will offer Cygnifi's valuation tools via portals on their Web sites.

Perception and transparency are two other reasons why Morgan gave Cygnifi its blessing. A company that itself makes

## The Ancient Origins of OPTIONS

In Book 1 of *Politics*, Aristotle tells the story of Thales the Milesian. He was a poor philosopher, and others viewed his poverty as proof that philosophy was of no practical use. Thales was determined to demonstrate the foolishness of this reproach.

Thales had exceptional skill in reading the stars. One winter he foresaw that the autumn olive harvest would be much larger than normal. He took the little money he had saved up and paid quiet visits to all the owners of olive presses in the area, placing small deposits with each of them to guarantee him first claim on the use of their presses when fall arrived. He was able to negotiate low prices, for the harvest was still nine months off, and anyway, who could know whether the harvest would be large or small. "When the harvest time came, and many [presses] were wanted all at once and of a sudden, he let them out at any rate he pleased, and made a quantity of money. Thus, he showed the world that philosophers can easily be rich if they like but that their ambition is of another sort."

Aristotle's anecdote about Thales and his financial scheme is the first recorded mention of the instrument that has come to be known as an option.

trades in the derivatives markets would not be viewed as entirely objective. Helvey told *The New York Times* that "there would be walls around" the derivatives information Cygnifi reviewed for its clients. But if clients ask for help in managing a derivatives position, Helvey said it would be natural for Cygnifi to refer clients to J.P. Morgan.

But how do you encourage customers to get their feet wet in a market that has had several well-publicized drownings.

"People are afraid of the D word—derivatives," says Helvey. "This stuff is highly leveraged, and you can lose a lot of money." Well-known disaster examples abound. In mid-1998, Long Term Capital, an investment pool for institutions and wealthy individuals, suffered steep losses on many of its trades. Using only \$4 billion of equity, the hedge fund had made leveraged bets on more than \$125 billion of transactions. A consortium of Wall Street dealers came up with a rescue package of \$3.65 billion rather than face the risk of liquidating its positions. Proctor & Gamble suffered devastating losses; Barings banks failed.

Not that risk in the markets is limited to derivatives. The stock market crash on October 19, 1987, wiped out \$600 billion of wealth in six and a half hours. But then, DeAddio would argue, this is why sophisticated valuation tools are mandatory for monitoring portfolios. With the notional value of the derivatives market pegged at \$100 trillion and growing, DeAddio says Cygnifi's challenge is to "reach the midlevel companies that are afraid of derivatives because they lack the tools to understand them."

For DeAddio, who holds a master's degree in electrical engineering and computer science from MIT, letting the market decide what it thinks of software he helped develop is a thrill he never experienced at Morgan. "At a bank, a tech center is a cost. It doesn't make money," he says, "although it's a tool for generating revenue." Referring to the risk management software he helped develop, DeAddio says, "I know that the market is going to eat this stuff up."

Although DeAddio saw the move to Cygnifi as a way to escape the "meetings, reports, and senior management drudgery" he reluctantly endured at Morgan, his role as chief technology officer at Cygnifi has thrust him into unforeseen roles. "Mostly I'm a translator," he says. "The idea that you build it and they will come is rubbish. Translating technobabble into business solutions may be more important than building the



technology in the first place.”

Now his chief occupation is soothing concerned prospective clients, or new ones, such as Regions Bank of Birmingham, Alabama, that Cygnifi can deliver. “Clients want to know what you’re going to do to keep the site up and reliable,” says DeAddio. Security is clients’ other big worry. “If the financial data flowing out of a client’s firm ended up in a rival’s hands, the rival could use it to trade against them.”

The software Cygnifi relies on is critical. “Our databases and application servers are the glue that hold our entire ASP infrastructure together—and it’s made by Sybase,” DeAddio says.

### **Tulips, Rice, and Mathematical Models That Measure ‘Cruel Truths’**

The global derivatives market was up and running millennia before 24x7. The term *derivatives* comes from *derived from*, and even Aristotle spoke of such transactions (see sidebar). At the height of tulip mania in Holland in the mid-1600s, Amsterdam traders sold “time bargains” on tulip bulbs. In seventeenth-century Japan, merchants at the Osaka Rice Exchange speculated on rice futures. If anyone doubts that traders and markets have not always been unruly and difficult to fathom, Susan Orlean writes in her book *The Orchid Thief* of a tulip bulb named Viceroy, sold at auction in 1637 for a farm’s worth of goods, including 6 loads of grain, 4 oxen, 8 hogs, 12 sheep, wine, beer, and a thousand pounds of cheese.

The Chicago Board of Trade opened in 1848, and thus began a formal domestic options market in commodities such as wheat, corn, and pork bellies. Today, numerous participants, from airlines seeking to lock in a price for jet fuel to Japanese conglomerates seeking to hedge their trades in U.S. dollars, have entered a robust and increasingly complex options market. Options now come in flavors: vanilla and exotic, and under various names, put and call. At their most basic, however, they are still contracts that obligate the holder to deliver assets to another party by a specified date. A put option covers situations in which asset values are likely to fall; a call option covers situations in which asset values are likely to appreciate.

But the days when an option’s value was calculated on paper or determined by seat-of-the pants negotiations ended

decades ago. Beginning in 1973, a revolution occurred in the world of derivatives that made it more interesting; more complicated; and, within a few years, astronomically more lucrative. The radicals who launched this revolution were two young economists, Fischer Black and Myron Scholes. What they did that helped ignite today’s 100-trillion-dollar derivatives market was to submit a research paper to a Chicago University economics journal.

Their “Capital Asset Pricing Model,” or Black-Scholes formula, provides an estimate of a stock’s volatility, allowing an investor to judge whether the market’s expectations about volatility look too low, too high, or about right. Black told Bernstein that his model revealed a “cruel truth” about markets. “To get higher than expected gain, you must take more risk. If you want to climb a tall mountain, you must be prepared to suffer some pain.”

Maybe so. But DeAddio is confident that sophisticated valuation tools provide the best Band-Aid available. □

## *What is an* **OPTION?**

**A**n option is a contract that gives its owner the right to take a stipulated action under conditions specified and agreed to in advance. Options contracts do not oblige the owner to act unless he wants to do so.

People who use options are either risk takers who are seeking a high return or are more conservative types who are seeking to hedge their risks. People such as Thales the Milesian, says Aristotle, “who believe they know what the future holds, use options to speculate on the future. They are willing to run the risk of losing a small amount in return for the hope of making a much larger gain.”

In his book *Capital Ideas*, Bernstein cites car insurance as an example of an option. “When you insure your car against collision, you are buying an option from the insurance company. That option is worthless if you never have an accident—you pay the premium and collect nothing. But if your car is totaled, you have the right . . . to collect a check for the insured amount.”

FROM *CAPITAL IDEAS: THE IMPROBABLE ORIGINS OF MODERN WALL STREET*, BY PETER L. BERNSTEIN.