

continued to struggle with intense, enduring emotional pain from the sudden death of his son, Nicholas. A few years earlier, Simons had seemed eager to retire from the trading business; now he was desperate for distractions.

Simons had no interest in shaking up Medallion's operations. Once a year, the fund returned its gains to its investors—mostly the firm's own employees—ensuring that it didn't get too big. If Medallion managed much more money, Simons, Henry Laufer, and others were convinced that its performance—still tied to various short-term price fluctuations—would suffer.

The size limit meant Medallion sometimes identified more market aberrations and phenomena than it could put to use. The discarded trading signals usually involved longer-term opportunities. Simons's scientists were more confident about short-term signals, partly because more data was available to help confirm them. A one-day trading signal can incorporate data points for every trading day of the year, for instance, while a one-year signal depends on just one annual data point. Nonetheless, the researchers were pretty sure they could make solid money if they ever had a chance to develop algorithms focused on a longer holding period.

That gave Simons an idea—why not start a new hedge fund to take advantage of these extraneous, longer-term predictive signals? The returns likely wouldn't be as good as Medallion's, Simons realized, given that a new fund wouldn't be able to take advantage of the firm's more-dependable short-term trades, but such a fund likely could manage a lot more money than Medallion. A mega-fund holding investments for long periods wouldn't incur the trading costs that a similarly sized fast-trading fund would, for example. Relying on longer-term trades would also prevent the new fund from cannibalizing Medallion's returns.

Researching and then rolling out a new hedge fund would represent a fresh challenge to galvanize the firm, Simons concluded. There was an added

bonus to the idea, too. Simons was thinking about finding a buyer for Renaissance. Maybe not for the entire firm, but for a piece of it. Simons was approaching seventy years of age and he thought it wouldn't be a bad idea to sell some of his equity in the firm, though he wasn't willing to tell anyone. A giant new hedge fund generating dependable, recurring income from its fees and returns would carry special appeal for potential buyers.

Some at Renaissance didn't see the point of such a venture. It likely would disrupt their work and lead to an influx of nosy investors traipsing through the hallways. But Simons had the last word, and he wanted the fund. His researchers settled on one that would trade with little human intervention, like Medallion, yet would hold investments a month or even longer. It would incorporate some of Renaissance's usual tactics, such as finding correlations and patterns in prices, but would add other, more fundamental strategies, including buying inexpensive shares based on price-earnings ratios, balance-sheet data, and other information.

After thorough testing, the scientists determined the new hedge fund could beat the stock market by a few percentage points each year, while generating lower volatility than the overall market. It would produce the kinds of steady returns that hold special appeal for pension funds and other large institutions. Even better, the prospective fund could score those returns even if it managed as much as \$100 billion, they calculated, an amount that would make it history's largest hedge fund.

As a newly hired sales team began pitching the fund, named the Renaissance Institutional Equities Fund, or RIEF, they made it clear the fund wouldn't resemble Medallion. Some investors ignored the disclaimer, considering it a mere formality. Same firm, same researchers, same risk and trading models, same returns, they figured. By 2005, Medallion sported annualized returns of 38.4 percent over the previous fifteen years (after those enormous fees), a performance that RIEF's sales documents made sure to note. The new fund's