Illumina’s secret to success now its greatest genetic defect

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Fears that rapid breakthroughs in genetic sequencing will lead to unintended consequences surfaced in a surprising way this week.

Shares of genome-sequencing giant Illumina plummeted 25 percent after the company, which has risen 600 percent in the past five years, shocked the market with a weak sales forecast. With no quick rebound in sight, analysts are pointing to a unique problem for Illumina. Its dominance in the genetic sequencing market was the cause of its decline.

"Illumina has cannibalized themselves," said Bryan Brokmeier, director and senior equity analyst at Cantor Fitzgerald. "That tends to happen a lot more when you have 80 to 90 percent market share, as they've had for a while now."

San Diego-based Illumina trimmed its revenue estimates in a third quarter pre-announcement to $607 million in revenue from $625 million to $630 million. The company also indicated fourth-quarter revenue will be flat to slightly up sequentially. Illumina attributed the decline to a decrease in sales of its high-speed genetic-sequencing instruments that are used to analyze large genomes.

The market has struggled to figure out exactly what is going on at Illumina, and the company hasn't provided an adequate explanation, based on the reaction from investors. It has also missed at least one type of Wall Street expectation in three out of the last four quarters.

Analysts say the real story is that Illumina's technological breakthrough with its newest genetic-sequencing platform, HiSeq X, hurt sales of its older platforms, like the HiSeq 2500, 3000 and 4000. At the same time, the company has sold so many high-end sequencers in recent years, the market is now saturated. Illumina's product cycle is too fast, and customers don't have the capital to continually buy new high-end machines.

After Illumina went public at $96 million in 2000, it quickly grew to dominate the genomics market, recently boasting a market cap above $20 billion. Forbes ranked it in the top 25 of the
world's most innovative companies, and with few other companies in the genetic sequencing space, Illumina became its own greatest competitor — a situation that is causing problems for it today.

During the summer of 2015 shares, reached an all-time high near $240. Now Illumina shares are trading near $136, and this week's stock crash shaved more than $5 billion off its valuation.

Labs with older Illumina products are having a harder time competing with labs that have the HiSeq X. The new system can sequence a whole genome for less than $1,000. That is considerably less than the older HiSeqs, Brokmeier said. Many labs are choosing to send out samples for sequencing to facilities that have the HiSeq X and discontinuing use of their own older systems, Brokmeier said.

Many labs don't see the incentive in buying their own HiSeq X when they just bought the older model a few years ago, said David Westenberg, senior equity analyst at C.L. King & Associates. The new platform is more expensive than its predecessors, costing $6 million for a five-system configuration or $10 million for a 10-system configuration. The older HiSeqs ranged in price from $690,000 to $900,000.

Westenberg said Illumina is creating new technology at a rate faster than customers are able to spend on it. "Illumina is a victim of its own success," he said. "Their product cycle is too fast."

Illumina does not release the exact cost of each system to sequence a whole genome.

Amanda Murphy, senior equity research analyst at William Blair, wrote in a recent note that Illumina has cited weakness in HiSeq 2500 and 4000 shipments in the Americas. It also had a HiSeq X order fall through, resulting in 26 HiSeq X shipments in the third quarter instead of the expected 30 plus.

Illumina has sold so many high-end sequencers since 2013 that there aren't any new consumer markets to tap into. "You're hard-pressed to find anybody right now, a genomics center or research academic center, that doesn't have one of these pieces of equipment," Westenberg said.

Illumina's problem is unique to it, according to analysts covering the genome sector. While its surprise sales shortfall caused trouble for some other companies in the genomics industry, analysts said it is difficult to compare Illumina with others.
Shares of Pacific Biosciences declined about 5 percent October 11 but were trending up again the next day. Brokmeier said researchers rarely use Pacific Biosciences equipment to sequence a whole genome. The company's newest sequencer, the Sequel platform, is used more for microbiology and examining the genetics of a certain virus.

"It's not a perfect replacement for the HiSeq X, but that's really what researchers like," he said. "They like to be able to do an experiment on the Sequel with something like bacteria, plant or a certain microbe that can't be done on the HiSeq X."

If people don't have the capital allocation dollars to spend on high-end Illumina products, it might make sense to purchase a $350,000 Sequel system instead, Westenberg said, if it lines up with the research purposes.

But no other genome product can replace the HiSeq models, Westenberg said. With the HiSeq and HiSeq X systems bringing in about 40 percent and 20 percent of Illumina's total revenue, respectively, that means more than half of the company's revenue has no competition, he said.

*Online version with visuals: [http://www.cnbc.com/2016/10/12/illumina-manufactures-a-genetically-designed-market-disaster.html](http://www.cnbc.com/2016/10/12/illumina-manufactures-a-genetically-designed-market-disaster.html)*