

But before the release of the new algorithm in May, not much was going right. In January, just as Affymetrix's customers were grappling in frustration with the 500K's problems, Illumina released its competitor, the single-chip HumanHap 300K, which was soon followed by 550K- and 650K-SNP versions. Illumina's chips — with 'beads' that carry short DNA snippets, each matched to a particular SNP — had the advantage that knowledge obtained during the HapMap project was fed into their design.

### Open market

In April, Affymetrix took the unusual step of withdrawing the guidance on its expected 2006 earnings that it had offered investors three months earlier — a sign that management was facing such difficulties that it was no longer able to forecast revenues. Affymetrix's problems coupled with Illumina's new releases spelt trouble for the more established company. Jay Flatley, Illumina's chief executive, claims it has won up to three-quarters of the market for chips used in high-density genotyping.

George disputes that assertion. And in the past few months, Affymetrix seems to be recovering somewhat. In the summer, it halved the price of its 500K chip set, to \$250, anticipating the introduction early next year of a new 500K product that runs on just one chip. Illumina's competing chip remains 30–50% more expensive. Affymetrix's move got the desired results: customer orders for the current 500K chip set surged by 90% in the third quarter, helping its stock climb from a 1 August low of \$17.50 to \$26 on 10 November.

In September, the company landed a deal to analyse more than 9,000 samples from the Framingham Heart Study, in search of SNPs associated with heart, lung and blood disorders. At the same time, Illumina has been landing contract after contract, most recently being chosen by Amgen to genotype 28,000 samples as part of the Women's Genome Health Study.

Affymetrix aims to follow the new 500K with a million-SNP chip by mid-2007. And in the spring, it is due to confront Illumina in a Delaware courtroom, where Affymetrix will try to persuade a jury that its arch-competitor is infringing five of its patents. A loss in the case would be a serious blow to Illumina: Flatley concedes that three-quarters of the company's revenues — \$124 million so far this year, compared to Affymetrix's \$251 million — could potentially be deemed as infringing one or more of the five patents at issue.

In the meantime, neither company will be standing still. They'll be looking to exploit another nascent gene-chip market in the diagnosis of specific diseases, an annual market some analysts think could one day top \$1 billion. ■

## IN BRIEF

**SHANGHAI BOUND** Novartis says it will build a \$100-million research centre in Shanghai, specializing in infectious causes of cancer. The lab will start operations next May in temporary premises and then build a larger facility, which, the Swiss drug company says, will eventually house 400 scientists. The centre will be part of a network of eight strategic labs that Novartis operates around the world, and represents one of the most determined efforts yet by pharmaceutical companies to establish a research foothold in China (see *Nature* 440, 990–991; 2006).

**AIRBUS DIP** The parent company of Europe-based aircraft manufacturer Airbus reported sharp losses in the third quarter, caused in part by continuing delivery problems with the A380 superjumbo (see *Nature* 443, 385; 2006). Aerospace group EADS reported an operating loss of €239 million (US\$308 million), against profits of €559 million in the same period last year. Airbus suffered another serious blow on 7 November, when FedEx cancelled an order for ten freight-carrying A380s and said it would buy from Boeing instead.

**TRANSLATION PUSH** The University of Tokyo has announced that it will launch a Translational Systems Disease Biology initiative, which will try to use proteomic and epigenomic approaches to seek disease cures. It aims to work across departments and with outside companies to develop new drugs within ten years. The initiative is seen as part of a push by the medical school at Japan's leading university to break with its 'ivory-tower' image and forge closer links with patients and with business.

## MARKET WATCH



This week Wood Mackenzie, an Edinburgh-based research and consulting firm, reviews recent trends in biotechnology stocks. Boosted by a better investment sentiment and a clutch of eye-catching acquisitions, the Nasdaq biotechnology index is up 11.5% over the past eight weeks — but is still less than 4% up from where it started the year.

Celgene of New Jersey was a prime mover in the biotech index, with its shares up almost a third after it reported strong sales of the anticancer drug Revlimid, as well as news that the company is to be listed on Standard & Poor's 500 index.

On 2 October, Californian drug maker Gilead agreed to buy Colorado cardiovascular company Myogen for \$2.5 billion, impressed by strong clinical results for Ambrisentan, a treatment for pulmonary arterial hypertension. Myogen's shares jumped 47% on the news. And later that month, Stiefel

Laboratories of Florida agreed to pay \$640 million for Connetics, a Californian dermatology company, whose share value rose 46% on the news.

Then, in perhaps the most prominent of the purchases, Merck said it would pay \$1.2 billion for Californian RNA interference company Sirna Therapeutics. Sirna is attempting to develop an RNAi drug to treat age-related macular degeneration. Sirna's shares almost doubled on the announcement.

And on 6 November, Illinois-based Abbott Laboratories bought Kos Pharmaceuticals of New Jersey for \$3.7 billion, with an eye to its cholesterol-lowering drug Niaspan. Kos's shares were up by more than half on the news. Like the other deals, this served to remind the markets that drug companies are ready and willing to pay a healthy premium to get their hands on novel biotech products. ■