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The biotechnology industry needs to grow up

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EVERY industry has its big conferences, but biotechnology must host one of the largest. Some 18,000 scientists, businessmen, financiers and hangers-on descended upon Chicago recently for the annual Bio conference. The gathering boasted plenty of posh parties, high-flying political visitors and boozy nights out at blues bars. To judge by this expense-account fiesta, biotech certainly seems to enjoy a lot of easy money just now.

By some measures the industry is indeed booming. Its American stockmarket value is up tenfold over the past decade, to about \$500 billion. Burrill and Company, an industry investment bank, estimates that \$350 billion has been invested in biotech, nearly half of that in the past five years. Global revenues have risen from \$23 billion in 2000 to more than \$50 billion last year.

And what of profits? Best not to mention those. Thirty years after the biotechnology revolution began, the industry has yet to turn an aggregate profit (see chart). Take away the huge profits of a few success stories such as Genentech and Amgen (two Californian firms which together make up a third of the American industry's stockmarket value) and the picture darkens further. David Beier of Amgen estimates that the industry as a whole has lost \$100 billion since its creation in the 1970s.

Gary Pisano, a professor at Harvard Business School, argues that biotech needs a radically different business model. He thinks its problems arise because "this is the first time that science is the actual business." Traditional industries, such as aeronautics or pharmaceuticals, are in business to make products and science merely serves that end. By contrast, most biotech firms are start-ups that have no products and little clue about how to convert their wizardry into things they can sell.

Few would deny that biotechnology has the potential to produce plenty of breakthroughs. Decoding the human genome has helped unlock some of the mysteries of the human body that biotechnologists are striving to turn into products. Optimists speak of drugs targeted to genetic subpopulations, and perhaps even personalised medicine. Firms such as Monsanto, Dow and DuPont are looking to biotech for better catalysts and enzymes, and working with food companies

to produce healthier oils and tastier foods.

The trouble is that, after the bursting of a “biotech bubble” on the stockmarket a few years ago, investors are now understandably more discerning. Today's way of financing biotechnology, chiefly through the venture financing of start-up firms, looks unsustainable. On one plausible estimate, such early-stage investors are “holding the bag on 500 to 600 biotech firms they can't unload via public offering” on the stockmarkets. Frederick Frank, a vice-chairman of Lehman Brothers is convinced that there will be a slow but sure shakeout in the industry in the coming years. Up to half of today's 1,500 or so biotech firms (fewer than 400 of which are public) will disappear, aided by mergers.

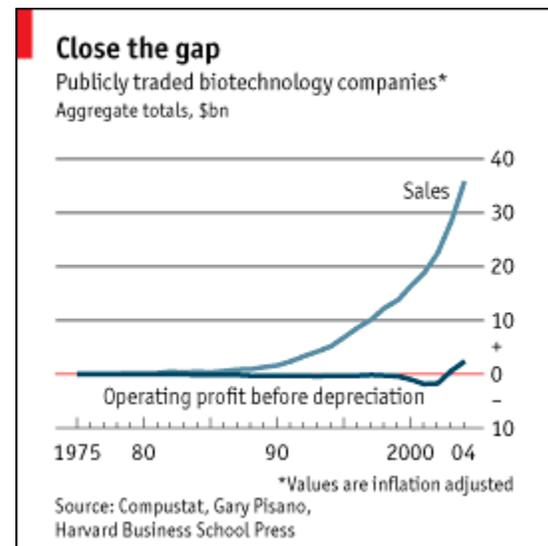
But if biotech companies are so far from breakthrough products, why will anybody buy them? The answer is that there is an industry in bigger trouble than biotechnology: conventional pharmaceuticals. Big drugs firms are hugely profitable today, but they fear for the future. Their product pipelines are often weak, tens of billions of dollars' worth of drugs will lose patent protection in the next few years, and generics are already eating away at margins.

So the big drugs firms are looking for the next big blockbuster drug under every possible rock—and the most promising rock is biotech. A new report by Ernst & Young, a consultancy, says that 2005 saw a big upsurge in mergers involving biotech firms, with Europe alone seeing 66 deals. Just this week, Novartis won final approval for its \$5.4 billion takeover of Chiron, a biotech firm known for its cancer drugs and its blood-testing expertise. Novartis also runs its own start-up fund that invests in biotech firms. Daniel Vasella, the drug giant's chief executive officer, wants to keep his “hand on the technology edge” by keeping a close eye on, and acquiring, biotech companies. He reckons only a portfolio approach makes sense, since “there are 10,000 failures for each success—but when you win, you win big.”

Biotech firms sometimes sneer at big pharma as slow, bureaucratic and even stupid: “They're just barely smart enough to recognise genius,” sniffs one biotech man. But such posturing looks self-indulgent. The future may lie in a convergence of these industries with famously clashing cultures. John LaMattina, head of research and development for Pfizer, the world's largest drugs firm, insists that there is no big difference between biotech and pharma: “Molecules are molecules—I just don't buy this cultural argument.”

The convergence of big pharma and biotech also makes sense to Harvard's Mr Pisano, who sees a fundamental problem with the old financing model for biotech. Venture funds like to see quick returns, usually within five years, but the science involved often takes 15 to 20 years to come to fruition—if at all. He argues that biotech firms, which often pride themselves on their small size and freewheeling culture, need to grow up: “Size is key to integration of science, to learning and to manage risk.”

In the end, despite its paucity of profits, the biotechnology industry offers too much promise to be starved of funding. Burrill, the investment bank, estimates that it will attract some \$35 billion in fresh investment in 2006. About \$10 billion will come from joining up with big drugs firms and other integrated firms in alliances. The rest, reckons the bank, will come from the public equity markets.



Big Pharma plainly needs biotechnology, so those alliances make sense. But why would biotech be able to earn so much money on the stockmarket given its pitiful returns? Shreefal Mehta of Rensselaer Polytechnic Institute, an American engineering school, observes that there are always punters willing to gamble on very risky stocks in the hope of hitting the jackpot. The secret to biotech's future finances, he sums up, lies in "need and greed". And perhaps, one distant day, in profits too.

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