in the short term, the essence of long-term survival in pharmaceuticals is innovation", says Charles Wheeler of the Boston Consulting Group.

A certain size is required for investment in platform technologies such as bioinformatics, combinatorial chemistry, HTS and pharmacogenetics, which can generally be shared across different programmatic research areas. The counter-argument, he says, would be that the days of hierarchical owning-it-all organizations are numbered — many innovative drugs are now coming from companies "that can be flexible and nimble and can move from relationship to relationship". He says some companies, such as Eli Lilly, maintain that research is a "critical-mass business, not a scale business", and that above critical mass, scale is not a factor.

The challenge, says Wheeler, will be creating an efficient research organization on a large scale. Research scientists may find such big organizations unappealing, unless the companies set up structures that foster a creative culture such as that characteristic of the biotechnology industry. There are also alternative models that can be used, such as the recently formed Genomics Institute of the Novartis Research Foundation in La Jolla, California.

The merger of Glaxo Wellcome and SmithKline Beecham will create a company with an estimated global market share of 7.3 per cent. Nevertheless, this is still a fragmented industry, with ample room for further consolidation. Adkins says that he would be surprised if there wasn't at least one more deal in the next 12 months. The PricewaterhouseCoopers report went further, in predicting significant industry restructuring, with perhaps as few as 13 top companies remaining by 2005. ■

What are you worth to your employer?

A 1998 salary and employment status survey carried out by the American Association of Pharmaceutical Scientists (AAPS; http://www.aaps.org) of Arlington, Virginia, outlines the demographic and economic characteristics of the association's membership.

The survey is based on a questionnaire filled in by 1,538 of its members. The majority were men (73%) and the average age of respondents was 42. Most (84%) were employed in industry, 12% in academia and fewer than 2% in government jobs.

In 1998, average salaries were $89,100 in industry (up 3% from the previous year), $81,900 in academia (down 1%) and $79,500 for those in government jobs (up 5%). Overall, the best paid had degrees in pharmacy administration (average salary of $119,900), clinical pharmacology ($117,300), clinical pharmacy ($109,200) and pharmacology ($106,000). At the lower end of the scale came those with degrees in chemistry ($71,400), inorganic chemistry ($70,900) and microbiology ($70,700). The highest salaries in industry were paid for managerial positions, such as general management ($127,000, down 6% on 1997 figures) and R&D management ($117,500, up 3%), followed by clinical researchers ($102,100, up 7%) and those in regulatory affairs ($98,400, up 5%).

For people embarking on their career in 1998, the average starting salary was $53,300, a drop of 13% from the previous year. **D.G.**

Partners resolve their differences and unite at the second attempt

Glaxo Wellcome and SmithKline Beecham's announcement, in February, of their intention to join forces was met with an air of inevitability: the companies had been there before. Talks in 1998 broke down reportedly because of disagreements between top executives.

On the face of it, the reasons for this merger and for Glaxo's takeover of Wellcome in 1995 seem very different. Glaxo enjoyed significant growth during the 1980s, thanks to its anti-ulcer drug Zantac, which, at its peak, represented almost half the company's sales. But the expiry of Zantac's patent was looming. Glaxo's answer was to acquire UK-based Wellcome plc, a company one-third its size, with a similarly strong R&D tradition but with less of a commercial edge because of its charitable origins: it was almost 40 per cent owned by the Wellcome Trust.

By contrast, Glaxo Wellcome faces no major patent expiries over the next few years. The current merger "is fundamentally about R&D and really harnessing and having the [scale and] resources available to take advantage of all the new technologies," says Martin Sutton, head of Glaxo Wellcome's corporate communications in London. The company could have gone along without merging, "but it provided the opportunity to create what we think is going to be a terrific R&D powerhouse in the industry".

Combined harvesters in the drug field

	Glaxo Wellcome 60,000 employees	SmithKline Beecham 47,000 employees
Top-selling drugs	Flixotide/Flovent: inhaled corticosteroid for asthma Imigran/Imitrex: migraine Zantac: anti-ulcer, reflux (sales now slipping)	Seroxat/Paxil: anti-depressant Augmentin: anti-infective
Strengths	Antiviral (HIV), respiratory and CNS therapeutic areas Affymax Research Institute: high-throughput drug synthesis and screening technologies	Newly launched diabetes drug Avandia Vaccines business Consumer healthcare and over-the-counter business Bioinformatics
Sales*	$13.7 billion	$13.6 billion
R&D spending*	$2.06 billion	$1.6 billion

* 1999 figures

Billed as a merger of equals (although Glaxo Wellcome and SmithKline Beecham shareholders will hold 58.75 per cent and 41.25 per cent, respectively, of share capital), Glaxo SmithKline will have a combined market capitalization of $189 billion, pharmaceutical sales of $20.9 billion (based on 1998 pro forma information) and a current annual R&D budget of about $4 billion.

The merger is expected to provide annual savings of $1.7 billion after three years, of which a quarter will be re-invested in R&D. Job losses are inevitable, the companies say. However, unlike the Glaxo Wellcome merger, which closed Wellcome's site in Beckenham, the companies do not anticipate the closure of any major R&D sites. When the merger is complete, the company will move its operational headquarters from Britain to the United States, although London will remain as Glaxo SmithKline's corporate HQ. Based on combined 1998 sales data, Glaxo SmithKline would have derived about 45 per cent of its revenues from the United States and 33 per cent from Europe (of which the United Kingdom represents about 6 per cent).

The merger, contingent upon regulatory and shareholder approval, is expected to be completed by summer. ■

Diane Gershon is Assistant Editor, New Technology, at *Nature Medicine*.