BUSINESS BRIEFING: PHARMA OUTSOURCING

Outsourcing Clinical Trials in the Pharmaceutical Industry

a report by
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Introduction

Clinical trials are a vital step in bringing new drugs to market. This is demonstrated by the industry’s US-based clinical trial activities increasing by 6% in 2001 – the greatest rise since 1990. Many trials are plagued by delays and setbacks that can cost pharmaceutical companies millions of dollars in missed sales, making the maximisation of research and development (R&D) efforts a top priority. It has been estimated that such problems in getting a drug to market cost companies around US$1 million a day.

Companies that are successful in their R&D are those that not only have the right systems in place to take advantage of scientific breakthroughs, but also have the right environment for innovative processes downstream to flourish in. This can be difficult given the fact that R&D is a costly and risky exercise and one that has to be balanced with commercial considerations.

Success also involves knowing when to rely on in-house capabilities and when to take advantage of skills that exist externally. Making use of external partners such as contract research organisations (CROs) can go a long way towards expediting drug development because pharmaceutical and biotech companies can then concentrate on their core competencies.

Challenges for the Pharmaceutical and Biotech Industries

Over the last 30 years, the biopharmaceutical industry has been successful in launching nearly 1,400 new chemical entities as human therapeutics and achieving strong sales as a result. However, this has been at the cost of major investments of financial resources and time in the face of considerable risk.

As R&D costs are so high, few companies can operate successfully without significant financial backing. For example, according to Recombinant Capital and Signals’ Stock Report of May 2002, only 16% of biotech companies have sufficient finances to survive for more than five years, and 69% may not be able to carry on for more than a year. Nevertheless, the pharmaceutical industry continues to invest heavily in R&D in the hope that this investment will translate into new drugs. As an industry, it is generally regarded as being more R&D-intensive than others in the technology sector, such as the electronics, communications and aerospace industries. In 2000, the global pharmaceutical industry invested around US$58 billion in R&D (see Figures 1 and 2).

Rising Costs and Greater Risk

The costs of drug development have increased steadily over the years, with the latest estimates being around US$800 million. This figure includes a significant contribution from the costs of all compounds that fail during the R&D process.

The majority of the R&D expense occurs at the stage when clinical trials are required. As trials become more complex, the proportion of industry R&D expenditure allocated to clinical development has increased steadily. For example, the proportion of industry R&D expenditure allocated to clinical studies increased between 1996 and 1998 from 32.5% to 39.5%, respectively.

In addition to cost, the considerable failure rate makes the drug development process highly risk-intensive. The chances of a new drug in development reaching the market increases with each stage of the R&D process, but the route is still far from straightforward. Despite the strenuous efforts made by companies, it is estimated that only 15% of new drugs entering development will subsequently reach the market. Even at the later stages of development, the failure rate is considered by many in the industry to be too high. Success rates from Phase III to market can range between 50% and 70%.

Clinical is Key

The pharmaceutical industry has made a concerted effort to restructure and reorganise its functions and processes in order to maximise the efficiency of its R&D operations, thereby achieving fast development times and a prolonged competitive advantage in the marketplace. Activities that ‘remove risk’ from the R&D process are the ones that confer greatest value on a new chemical entity or
Completion of each stage of the clinical trial process (from Phase I to III) brings greater value to the company’s compounds or technologies. Clinical development also represents the most expensive part of the drug development process, accounting for around 40% of R&D expenditure in many companies.

With the increasing pressure on pharmaceutical and biotech companies to get their drugs successfully through clinical trials, and considering the expense involved, it is not surprising that outsourcing has become a popular option. Outsourcing to CROs allows companies to benefit from the CROs’ ideas and expertise yet retain overall control of their products. It has been estimated that pharmaceutical and biotech companies are now using CROs on more than 60% of their clinical projects and that the annual industry spend on contract clinical services rose to nearly US$10 billion in 2001.

**Pharmaceutical Outsourcing Trends**

Though relatively young at just over 20 years, the contract research industry has proven to be indispensable in developing new pharmaceutical products. One of the most critical factors in determining the growth of the CRO market is the percentage of R&D spending that pharmaceutical companies elect to outsource. CROs now account for about 20% of the pharmaceutical and biotechnology R&D budget, and the market for contract research services is growing (see Figure 3).

In recent years, a volatile period brought about by the mergers of large pharmaceutical companies has challenged CROs to sharpen their business focus, strengthen their balance-sheets, refine internal practices and become more efficient in the drug development process.

Due to the downturn that lasted from the late 1990s to the early 2000s, many companies endured project delays and cancellations by customers who were discouraged by mergers and acquisitions that temporarily shifted their focus from bringing new drugs to market. Now that the merger and acquisition activity has slowed, pharmaceutical companies are moving into a steadier stream of business, whereas biotechnology companies are spending more money on R&D. According to a 2001 study conducted on the CRO market by UBS Warburg, “a growing percentage of outsourced pharmaceutical R&D and higher biotech demand is expected to drive the CRO sector growth ahead of the 10% or 12% norm.”

Many CROs are reporting significant signs of sector recovery, citing new record business awards, backlogs and verbal contracts. Overall, CROs seem poised to take advantage of two significant trends: the anticipated biotech growth and efficiency gains, and margin improvement given a return to normalised late-stage trial volume.

As a way of dealing with the pharmaceutical company mergers and acquisitions that have slowed decision-making and delayed clinical trials, CROs have had to revise their business strategies and costs and restructure and cut certain costs. For instance, in order to make their R&D efforts more efficient, pharmaceutical and biotech companies have followed the heavy merger period by refocusing their R&D strategy. Most of them have resumed outsourcing a substantial portion of their development component, focusing their resources on research efforts.

Given time, cost and pipeline pressures in pharmaceutical manufacturers and a lengthening and
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complicated US Food and Drug Administration (FDA) approval process, this outsourced portion is predicted to expand by 1% (of pharmaceutical R&D spend) per year throughout 2005. This increased use of outsourcing is also shown by the nature of the projects that CROs are undertaking. For example, outsourcing the total development programme to bring a new drug to market is now a service offered by a number of these CROs. Smaller pharmaceutical and biotech companies have outsourced their development work to CROs in this way in order to retain overall control of their products following successful drug development.

A report conducted by Pharma Business in late 2001 showed that, although most public CROs reported increased revenue, most also reported decreased earnings. This can, in part, be blamed on the dismal state of the economy; however, outsourcing solutions are expected to gain share as drug companies depend more and more on these vendors for speed to market and flexibility.

Room for Optimism

When it comes to clinical development, some companies appear to be making substantial progress. A 2002 survey suggested that, during the past five years, the top quartile of pharmaceutical companies had developed their new chemical entities almost 50% faster than their peers in the bottom quartile. Companies that were particularly highlighted for being successful in moving drugs from investigational new drug approval to new drug application approval status were Roche, Schering-Plough, Merck, Novartis, Johnson & Johnson, Pharmacia and AstraZeneca.

There is now a greater use of outsourcing in the pharmaceutical industry than ever before. It can be argued that some of the improvements in clinical development have come about through a more strategic and proactive approach in using the services of CROs, rather than simply using them as a tactical measure on projects. Outsourcing trends indicate a strong future. Outsourcing expenditures have grown at a 21% compound annual rate since 1995 to an estimated US$5.1 billion in 2000. For 2002, the CRO industry exceeded US$6 billion.

Advances in genomics and proteomics are revolutionising the way drugs are being discovered by pharmaceutical companies and this will lead to an increased demand for clinical trials. The leading pharmaceutical companies have set aggressive goals for drug development in the coming decade.

Interestingly, Dr John Stageman, Global Vice-President of Enabling Technologies at AstraZeneca, recently concluded that, if AstraZeneca could ‘turn the clock back’, it would be far more proactive in outsourcing areas of its R&D. Furthermore, these statements were made in a panel discussion on whether biotechs should emulate large pharmaceutical companies in the same way that they approach drug development.

Making the Choice

In the past, many pharmaceutical companies turned to the largest CROs to carry out trials for them and, as a result, these CROs grew at a rapid rate. However, the latest company figures show that the largest CROs have grown at a slower rate in the last year than was predicted a few years ago. For example, a survey carried out in 2000 found that the top five CROs were growing at only 8.5% per year, whereas many CROs below them in terms of size were growing at over 20%. This has led to the view that pharmaceutical companies are becoming much more selective in their choice of CRO. Whereas the largest CROs were often an automatic choice for major projects, pharmaceutical companies are turning increasingly to medium-sized CROs, which can be more responsive and flexible. These CROs have good geographic coverage, broad therapeutic coverage and years of experience in running large-scale international trials, CROs can provide companies with valuable advice and feedback so that they can get the best out of the clinical development process.

The skills of a CRO should complement those within the pharmaceutical and biotech company, thereby ensuring continuing innovation for new drug development. Due to their experience in running large-scale international trials, CROs can provide companies with valuable advice and feedback so that they can get the best out of the clinical development process.

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