

## BioMedical Outsourcing Report Re-Engineering the Pharmaceutical Company: Outsourcing and the Emergence of the Virtual Company

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### Editor's Note

During the 1980s and 1990s, the pharmaceutical industry responded to productivity, cost and regulatory pressures through the fully integrated organizational structure. The traditional big pharmaceutical company consists of internal drug discovery and development departments that are all housed in one site. Substantial infrastructure, integration, and coordination costs are associated with such organizations. As such, this internal infrastructure has become heavy and inflexible and cannot rapidly adapt to a changing scientific environment.

The emergence of new technologies, low research productivity within the integrated company, and patent expirations have encouraged the pharmaceutical company to adopt a network structure. The network structure is changing the traditional pharmaceutical value chain as pharmaceutical companies work on the basis of alliances and other partnership models including outsourcing.

Pharmaceutical clients have increased their outsourcing expenditures dramatically over the last decade with an anticipated 40% of pharmaceutical drug development expenditures presently committed to outsourcing. Globally, the pharmaceutical outsourcing industry will rise to over \$60 billion US in 2005. Industry experts claim that while most outsourcing partnerships have involved the later stages of drug development-Phase I, II or III, early drug discovery partnerships are on the rise. Improving the drug discovery process would mean reducing the time spent in development, improving the hit-to-lead conversion, expanding the number of high quality compounds that do enter the preclinical and clinical stages, and the early elimination of compounds that are likely to fail.

Virtual companies rely almost exclusively on outsourced activities. Virtual companies are in essence project management specialists-managing the drug discovery and development process through the use of multiple specialized outsourcing service providers. Virtual companies promise lower pharmaceutical development costs by virtue of reduced infrastructure overhead costs. Virtual drug development can enable biotechnology and pharmaceutical companies to keep pipelines full and allocate resources more effectively. Outsourcing provides access to expertise and resources as they are needed. As outsourcing service providers are increasingly providing a full breadth of services, biotechnology and pharmaceutical companies are increasingly relying on the virtual drug development model to manage initial risks and costs, as well as shorten the time to market.

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