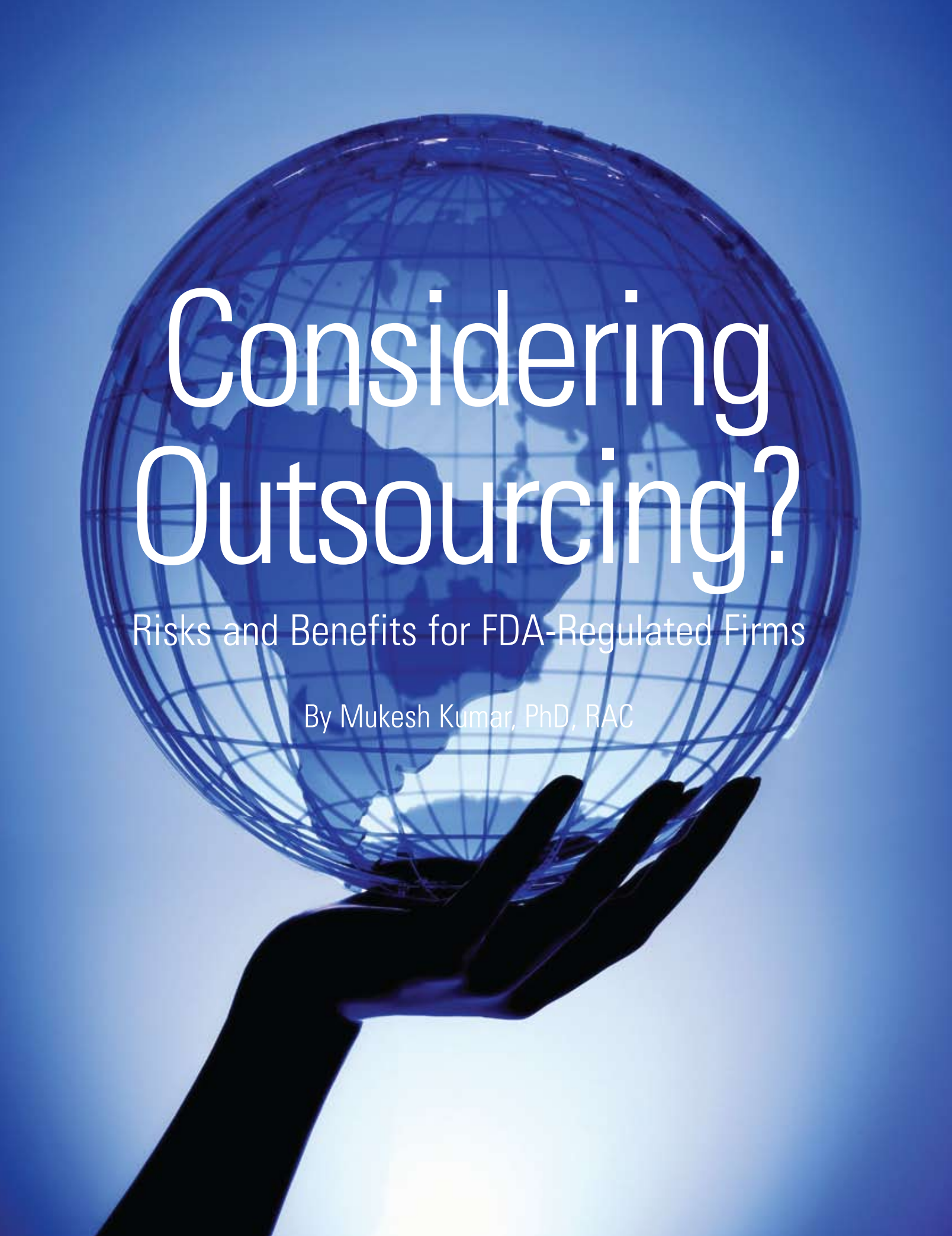

Considering Outsourcing?

Risks and Benefits for FDA-Regulated Firms

By Mukesh Kumar, PhD, RAC

From its modest start about 30 years ago as an alternative to academic institutions for laboratory and clinical work, outsourcing has grown into a $16 billion industry in the US alone. It spans all aspects of drug development, from discovery to clinical development to product approval, and even includes commercialization and post-marketing support. With more than 90% of the biopharmaceutical industry comprised of small businesses with limited resources,[1] many firms outsource product development to either reduce expenses or compensate for lack of core competencies. Contract research organizations (CROs) offer an excellent outsourced resource to guide firms through the risky, costly and time-consuming myriad of drug development pathways.

The cost of drug development has risen steadily over the last two decades, partly as the result of increased operational expenses, but primarily due to the need for increased knowledge of complex biological processes and the capability to monitor and understand safety-related aspects of drugs. The last decade has also seen high-profile cases where approved drugs were withdrawn due to unexpected safety issues not identified during development phases and promising therapies that failed at late stages of development. These have led the US Food and Drug Administration (FDA) to require increasing amounts of data to support new drug applications. Coupled with the drying up of product pipelines and loss of revenue due to several blockbuster drugs going off patent within a short span of time, this FDA requirement has exacerbated financial and operational problems for biopharmaceutical companies, both large and small. Changing industry dynamics have led to extensive, across-the-board cost-cutting measures.

But companies must innovate to survive. While they are striving to control costs, they also need to increase spending on R&D to create profitable new proprietary products. CROs offer a solution to this dilemma: they can develop drugs faster than pharmaceutical companies with comparable quality and lower overall cost. Large companies such as GlaxoSmithKline, Pfizer and Wyeth have unveiled strategic shifts in new product development policies, relying increasingly on CROs for R&D and subsequent development.[2,3]

CROs are uniquely capable of addressing these issues because of their diverse product experiences (even within the same indications), infrastructural capabilities and high concentration of human resources. Approximately 500 CROs compete around the world.[4] Large CROs offer a wider range of services while smaller ones specialize in specific areas, from strategic consultancy to clinical or preclinical services. While large pharmaceutical companies still account for about 70% of the total revenue for the outsourcing industry, the share of the smaller companies is steadily increasing and is expected to continue growing over the next few years. Also, due to the globalization of drug development, there is a trend toward increasing revenue from outside the US. Currently, about 40% of CROs' revenues are generated outside the US and that figure is expected to rise to more than 60% by 2010. The CRO industry is growing at an annual rate of 12.6% and is expected to reach about $30 billion by 2011, with one of the highest earning rates per employee in any industry.[4]

Almost all biopharmaceutical companies need to consider outsourcing all or parts of their operations to CROs. The CRO industry has evolved from the tactical or transactional outsourcing model to the role of a strategic partner. And as in any partnership, the biopharmaceutical company needs to consider several factors before deciding which CRO to work with. Among these are potential supply chains and markets, the risks and benefits of outsourcing operations to particular contractors (whether down the street or overseas), alternatives to outsourcing, and how to maintain an effective relationship with contractors and suppliers in producing safe, effective and compliant products for the marketplace. The main issues companies should consider before outsourcing are discussed below.

Harnessing Technology Assets: Building Core Competencies

CROs offer ready availability of core competencies that may be hard for the biopharmaceutical company to develop internally in a cost- and time-effective manner, but outsourcing could be considered as stunting the development of internal capabilities for conducting strategically important research at a later time. This is of particular concern for small and medium-size enterprises that look at working with more-experienced and technically advanced CROs as a means of training their personnel for future projects. Companies need to identify potential areas

for building internal core competencies early on. Most small and medium-sized biopharmaceutical companies focus their core efforts on discovery, strategic planning and conducting smaller clinical trials locally; however, certain areas—such as animal testing and conducting research in countries where the biopharmaceutical company has little or no native expertise—are better left to the CROs. By targeting the areas for building core competency, a biopharmaceutical company can collaborate with the CRO to train its people on the job. This hands-on training must be complemented by training and education programs available in the public domain because interaction with the CRO cannot replace education.

Long-Term Interests

Companies with one or a few products rely heavily upon positive relationships with a few opinion leaders. These could be the individuals who discover the technology they are developing, or key investigators and consultants. Hence, developing long-term relationships with these individuals and organizations is critical for the company's survival. CROs might not be aware of the strategic importance of a particular investigator or site to the company. Since the CRO's job is to assure timely and high-quality project execution, they might get into a negative relationship with the key investigator on compliance-related issues. To avoid that, the CRO must be made aware of the logistical role of key investigators. Training and mentoring programs for key investigators can be built into the project to ensure higher compliance. This is particularly important for global trials where each country in which trial sites are located might have local high-profile investigators who are critical to the current project's completion and future company plans.

Risk Mitigation

A key component of the decision to outsource usually is the desire to reduce the risk of failure in developing desired products. Companies seek strategic advice from the CRO about the best regulatory pathways, preclinical and clinical studies, safety monitoring and marketing research. A good consultant can help a company avoid costly mistakes, identify issues before they become concerns, and help develop contingency plans in case things do not happen as predicted. Companies tend to hire strategic consultants with whom senior managers feel comfortable sharing confidential information. Additional factors to

consider are the CRO's operational experience: specifically, depth and width of expertise, technological advancement and global reach.

Strategic Partnership

The outsourcing industry has a come a long way from being used primarily for transactional or tactical services for specific tasks in the 1980s and 1990s, to serving as strategic partners participating in all aspects of drug development. As a result of their increased experience and technical capabilities, most CROs feel comfortable sharing development risks with their clients by working for equity or using deferred compensation models. CROs have developed highly skilled global teams that provide valuable global reach, not only for development steps but also access to new markets.

Discovery, which traditionally resided with the innovator company, is the latest activity to be added to the list of outsourced functions. The top biopharmaceutical companies lead in this new strategic shift in policy, where dedicated facilities are created by partners catering to the new molecule discovery needs of the client firm.

Most of the world's top pharmaceutical corporations have started reducing their in-house R&D budgets and increasing outsourcing to new regions of the world such as Asia—primarily India, China and Singapore—and Latin America.[3] Small biopharmaceutical companies, similarly, can tap into this resource by outsourcing early-stage development steps to CRO partners, while concentrating their limited resources on high-end product management. There is a trend toward companies concentrating on senior management while outsourcing practically the entire development process to CROs. Of course, such extensive outsourcing poses an increased risk to small companies because of intellectual property concerns for mutually developed technologies, particularly when combined with strategic partnership agreements and equity or deferred compensation contracts. Such partnerships need extensive trust-building efforts and good legal contracts.

Conclusion

Outsourcing is commonly misunderstood as unidirectional flow of contract work from the developed countries to emerging regions in Asia and Latin America. However, the bulk of pharmaceutical contract research is done by CROs headquartered in the US and Europe. Rising operating costs worldwide, particularly in China and India, have led some analysts to predict a

slowing of outsourcing to these areas, and even reversal of activities to the West. For biopharmaceutical firms, the need for strategic outsourcing and international localization of development steps cannot be emphasized enough. The place to start in developing an overall outsourcing strategy is with an honest appraisal of the contribution of all parties, including developers and the CROs, to the drug development value chain. The four keys to an effective outsourcing strategy are:

- identifying the appropriate tasks to outsource
- developing a rationale and process for CRO selection
- committing to managing CROs
- periodically reviewing deliverables

It is well accepted that outsourcing offers key advantages to biopharmaceutical companies of all sizes. However, for small and medium-size business, it could define the difference between being profitable and going out of business.

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