RISK MINIMIZATION THROUGH CAREFUL CDMO SELECTION

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Prior to joining HGS, Greg spent two years as a validation engineer consultant. He holds a BS in chemical engineering from Drexel University.

ABSTRACT

The pharmaceutical industry is experiencing a period of significant change. Cost-cutting, downsizing, thinning pipelines, a lack of blockbusters, and the move to more biopharmaceutical – and in particular biosimilar – development, are leading many manufacturers to increase their reliance on contract development and manufacturing organizations (CDMOs). At the same time, because uncertainty creates risk, manufacturers are very careful about selecting CDMOs that are financially stable, have an established track record for on-time delivery of quality products, can offer services across the spectrum from discovery to commercial production, and are willing to form strategic partnerships.

INTRODUCTION

Due to the rapidly changing pharmaceutical industry landscape, both the branded biologics and biosimilars markets are predicted to continue on a rapid growth trajectory. Outsourcing of traditional manufacturing activities – as well as many other aspects of the drug development process, from discovery through to commercial production – is also on the rise. As pricing pressures increase, many biopharmaceutical companies are turning to custom service providers to avoid the very high capital expenditures and long lead times needed to construct, equip, and validate manufacturing facilities.

Branded and biosimilar drug manufacturers are also partnering with CDMOs that have the specialized expertise needed to manufacture the increasingly complex biologic drug candidates in their pipelines. With governments, payers, physicians, and patients all expecting real value in terms of significant, positive health outcomes, the most successful biopharmaceutical companies are developing novel products based on innovative new technologies and forming partnerships with reliable contract manufacturers that have advanced technical capabilities and an established track record of excellent performance across numerous metrics.

NEED FOR TRUST

Uncertainty, which is prevalent in the pharmaceutical industry today, creates risk. Outsourcing, while offering the opportunity to reduce costs and gain access to unique technologies, also introduces risk into biologics development. Companies that outsource traditional core and lower-value activities generally have fewer physical assets and a lower level of in-house expertise, and thus must adopt a long-term strategic approach. Biopharmaceutical manufacturers therefore seek to establish partnerships with CDMOs that will mitigate any risk attributable to outsourcing and potentially allow for distribution of the general risks associated with new drug development. To do so requires willingness on the part of

both parties to enter into a true partnership based on trust and commitment.

Such trust and commitment can only be realized with CDMOs that have repeatedly demonstrated performance attributes that consistently meet the expectations of the biopharmaceutical company. Beyond the obvious need for operational, methodological and therapeutic experience and expertise; the capacity and equipment; and the ability to rapidly meet changing requirements, CDMOs seeking to be true partners for biopharmaceutical manufacturers must also have a strong quality record, a positive regulatory compliance/audit history, the demonstrated ability to meet project deadlines, and clear commercialization successes. Underlying all of these issues is the need for financial stability, which has become increasingly important as a risk mitigation factor due to the turbulent conditions in the pharmaceutical market.

Trust between CDMOs and sponsor companies is also built when there are clear pathways for communication and a high level of transparency. No project is without setbacks and unexpected issues. Successful CDMOs collaborate closely with biopharmaceutical manufacturers and continually share information through open lines of communication, allowing for the identification and resolution of any problems before they become serious, thus avoiding disruptions and project delays. Effective CDMOs also blend their technical expertise with a facility-centric, flexible, and agile approach to relationships that focuses on the fundamentals that are important to each customer.

INTEGRATED OFFERINGS

Supply chain security is another important issue in the pharmaceutical industry today. Manufacturers of both small- and large-molecule drugs, including sponsor companies and CDMOs, must have a thorough understanding of their supply chains for all ingredients that end up in formulated products. Outsourcing does not alleviate the responsibility of biopharmaceutical manufacturers. Therefore, many sponsor companies are reducing the number of outsourcing partners and developing more strategic relationships with a few CDMOs that can provide truly integrated services and have clear supply chain management systems in place.

These CDMOs are typically integrated in multiple ways. First and foremost, they support all aspects of the drug development process, from discovery through to commercial production, and including lifecycle management activities for off-patent products. They also have the necessary expertise to support biologics production using both advanced mammalian and microbial fermentation technologies with multiple host organisms (different yeasts and CHO, mouse myeloma, and insect cell cultures),

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and multiple process platforms (batch, fed-batch, multiple harvest, and perfusion).

In addition, truly integrated CDMOs have experience with numerous types of harvesting technologies and flexible downstream operations, and offer customers the ability to implement processes using disposable and/or stainless steel equipment. The most integrated CDMOs have facilities and protocols designed to minimize any risk of cross-contamination, and invest in automation and process analytical technology. They also have the capability to provide downstream process development services, and ideally have experience using design of experiment (DOE) and quality by design (QbD) approaches. The implementation of such an array of advanced upstream and downstream technologies provides more consistent product quality, and often increases manufacturing efficiencies.

BIOSIMILARS PRESENT OPPORTUNITIES

The potential of biosimilars is significant, and therefore many branded biologics manufacturers are also developing products to serve this growing segment of the market. This trend will likely have a very positive impact on CDMOs, given that sponsor companies where possible prefer to manufacture the highest-value products in house and thus will be more likely to outsource the production of their biosimilar portfolio.

However, given that growth of the biosimilar market will be largely driven in the near future by monoclonal antibodies, CDMOs that hope to win these projects must still have very advanced capabilities. In addition to modern manufacturing facilities and technologies, CDMOs that want to compete

GlaxoSmithKline Biopharmaceuticals
Manufacturing Your Products Like Our Own

As a CDMO that operates as an independent business within a large pharmaceutical company, GlaxoSmithKline Biopharmaceuticals offers many advantages to manufacturers looking for a strong, stable partner with extensive experience in biologics development and commercialization and access to expansive resources, including a wide range of analytical capabilities and in-depth regulatory expertise.

GlaxoSmithKline Biopharmaceuticals serves as a manufacturing knowledge center, enabling the launch, supply, and management of GSK biopharmaceutical products around the world. We leverage these capabilities to provide contract manufacturing services with market-leading quality, cost, and timeliness.

We have the proven history, technologies, facilities, systems, people, and corporate support you need to get your biologics products into development and out to patients efficiently and with maximum quality and safety.

+ Independent business of GlaxoSmithKline
+ Support GSK and external customers with drug substance (DS) and drug product (DP) manufacturing
+ Two facilities in the US for biologics DS production (fermentation and cell culture)
+ Two facilities in Europe for formulated DP manufacturing
+ Fully integrated supply chain support

CDMO PARTNERSHIP SELECTION TRAITS

in the biosimilar space must have access to state-of-the-art analytical techniques for biologic structure determination, the ability to use advanced simulation tools and complex algorithms, and achieve process development and scale-up at an accelerated pace in order to get products to the market in advance of the (significant) competition.

BENEFITS OF BIG BIOPHARMA BACKING

As mentioned above, financial stability is crucial for the success of CDMOs today. Biopharmaceutical companies looking to outsource for cost control or to gain access to needed expertise are only interested in partnering with reliable third-party service providers that are committed to the industry and have the financial wherewithal to offer long-term supply security and partake in risk-sharing. Achieving that level of security can be a challenge in today's industry.

CDMOs that have a direct connection to an established world leader in the development and scale-up of biologics do have the financial strength and stability demanded by sponsor companies. They are also committed to contract development and manufacturing and continually invest in state-of-the-art technologies. Of course, in order to allay any concerns regarding potential competitive issues, this type of CDMO must operate sufficiently independently of the parent biopharmaceutical company, with appropriate controls in place to ensure that the work it does for its customers remains confidential and separate.

Even so, a CDMO connected with a large biologic drug producer can offer its customers many advantages over independent service providers. In essence, such a partner can offer the flexibility of a small, nimble company combined with the financial stability, depth of technical (upstream, downstream, analytical regulatory) expertise, and development and production capabilities generally expected only from a large global manufacturer.

These CDMOs also tend to offer the most comprehensive integrated services – from early-stage development to commercial production using world-class, state-of-the-art equipment and facilities – and thus are in the best position to minimize the risks associated with outsourcing of biologics development and manufacturing in general, and challenging and complex products and processes in particular.

CONCLUSION

Numerous trends in the biopharmaceutical industry are driving sponsor companies to increase their outsourcing activities. They are, however, very selective when choosing CDMOs as outsourcing partners in order to mitigate the risks they face. CDMOs that are financially stable, offer truly integrated services, and have a demonstrated track record of high performance when rated against several different metrics (quality, on-time delivery, audit history, technical expertise, investment in innovation, etc.) are attracting the most attention. CDMOs like Glaxo SmithKline Biopharmaceuticals that operate as an independent business within a large pharmaceutical company can serve as strong, stable partners, with the breadth and depth of expertise and capabilities to provide contract development and manufacturing services with market-leading quality, cost, and timeliness. P

Biopharmaceutical Contract Manufacturing

GSK leverages its resources and expertise as one of the world's premier science-led global healthcare companies in providing contract manufacturing services to companies seeking to outsource development and manufacturing of biopharmaceutical products.

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