Opportunity Beckons

The rise of biosimilars is driving demand for greater manufacturing capacity in Europe, offering untapped potential for CMOs that remain at the forefront of technology and innovation.

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The biopharmaceutical industry in Europe is facing challenges with regard to funding issues at three basic levels: structural funding issues owing to the great deal of risk and time involved in commercial manufacturing of biopharmaceuticals, making it the least attractive sector for investors; inadequate capital supply due to the poor performance of the venture capital industry in Europe, resulting in greater allocation of capital to the US than Europe; and the long-prevailing economic crisis in Europe that restricts the flow of investors.

In addition, the increasingly stringent regulations with regard to manufacturing of biologics pose a significant challenge to contract manufacturers in Europe, leading to pricing pressure due to the high costs involved in the setting up of compliant manufacturing facilities. Besides, increasing competition from countries such as India and China, which offer contract manufacturing services at about 50 per cent less cost than European contract manufacturers, further surmounts pressure on the pricing strategies of European CMOs.

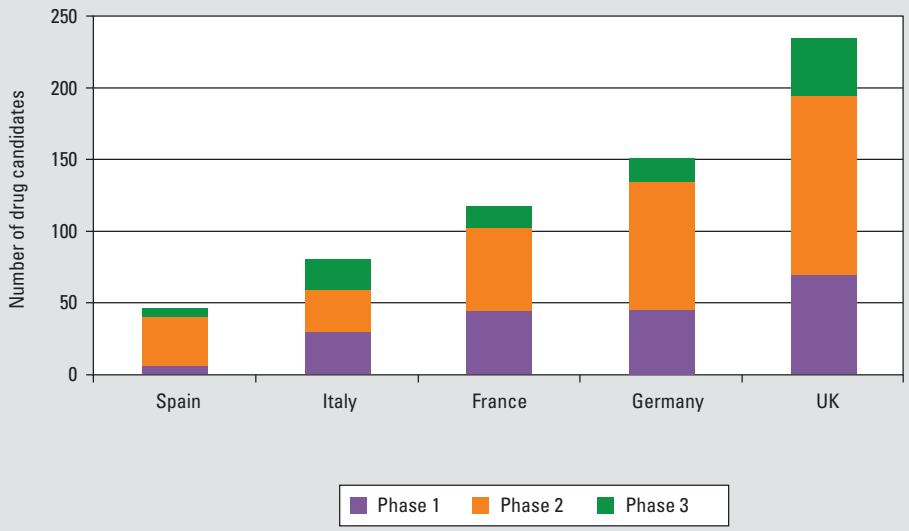
What Drives the Demand for Contract Manufacturing?

For most biopharmaceutical companies, outsourcing has become a strategic move rather than a mere cost-cutting tool, significantly contributing to the growth of contract manufacturers. Across the world, around 35 per cent of the drugs in development stage represent biologics. In Europe, more than 1,200 biologics were in the pipeline as of 2011, and are likely to be approved shortly. In the recent past, the track record of biopharmaceutical approvals has been commendable. In addition, blockbuster biologics worth $30 billion are due to lose patent protection in Europe between 2011 and 2018, propelling the need to outsource the manufacture of these biologics, owing to decreased capacity utilisation rates of plants, and the subsequent erosion in profit margins for the innovator companies. The increasing interest of Big Pharma in entering the biopharmaceutical market will foster consolidation in the form of strategic alliances between CMOs and large pharmaceutical/biotechnology companies. This implies greater flow of investment and access to cutting-edge manufacturing technologies for CMOs. As the biopharmaceutical market in Europe is witnessing increased outsourcing of mammalian cell culture activities, a significant expansion of capacity is expected in their manufacture. Almost every aspect of the manufacturing and development of monoclonal antibodies and recombinant proteins can currently be outsourced.

What's in the Pipeline?

The enormous scope and potential of the biopharmaceutical market in Europe resulted in increasing R&D investments, which grew by five per cent from 2009 to 2010. Currently, Europe has a robust pipeline with more than 1,200 biopharmaceuticals, and more than 50 per cent of the drugs are represented by the major five countries, namely Germany, France, Italy, the UK and Spain. Although the UK (234)

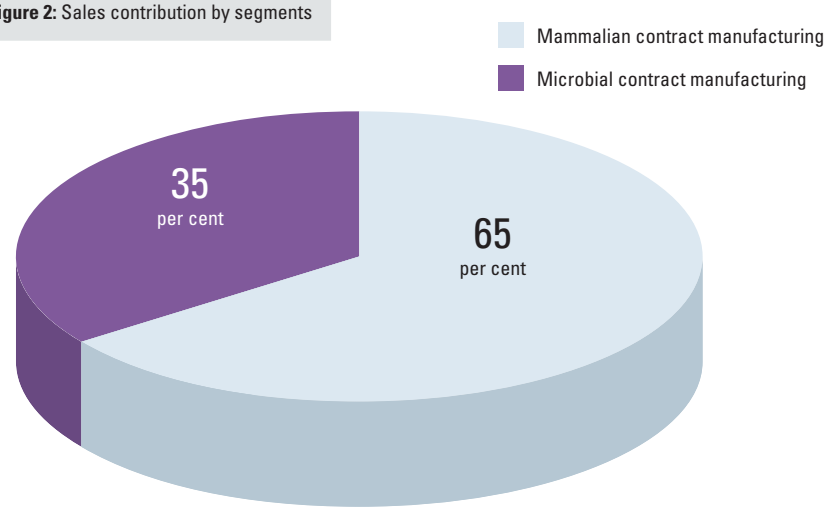
Figure 1: Number of drugs in various stages of clinical pipeline, by country, 2011



Images: Frost & Sullivan. All figures are rounded; the base year is 2011

and Germany (150) have the highest number of drugs in the pipeline, it is noteworthy that countries such as Spain showed a significant increase of 30 per cent in 2010 from their 2009 pipeline. Moreover, it is interesting to note that therapeutic monoclonal antibodies account for more than 50 per cent of the biopharmaceuticals in the pipeline in Europe. However, the venture capital firms in Europe are interested in investing only in late stage biopharmaceutical companies, which requires start-up biopharmaceutical companies to gain access to financial support predominantly through the venture capital firms based in the US.

Figure 2: Sales contribution by segments



A Snapshot of the Market

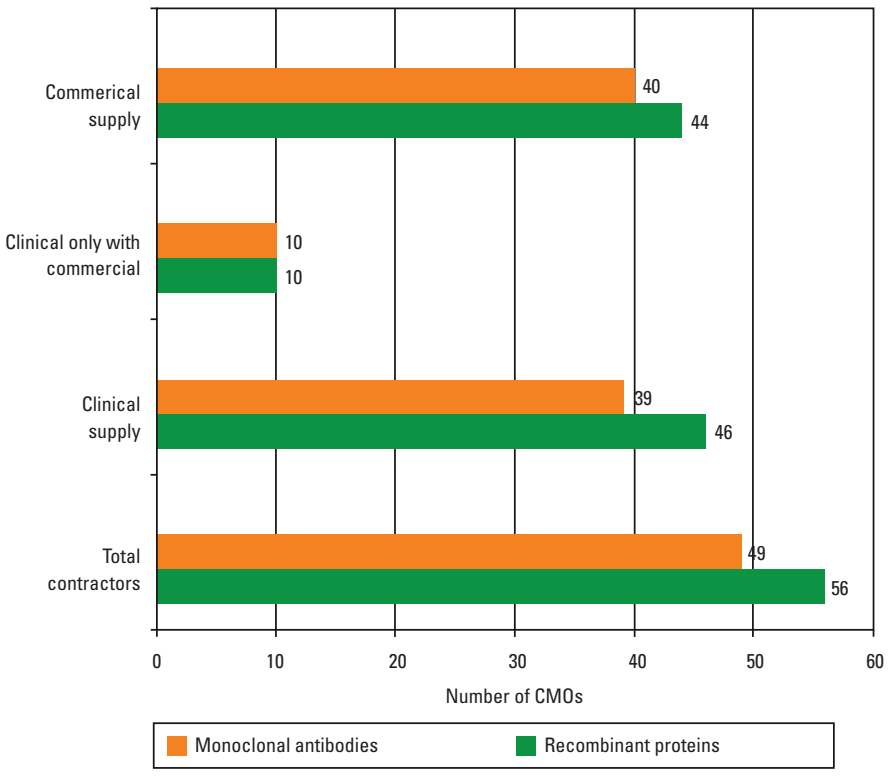
Europe is the second largest biopharmaceutical contract manufacturing market trailing behind the US, constituting nearly 40 per cent of the global biopharmaceutical contract manufacturing market. The European market was valued at $1.21 billion in 2011, growing at a rate of 11 per cent over the previous year. The mammalian contract manufacturing market contributes nearly two-thirds of the sales revenue of the total market and is expected to grow at a significantly higher growth rate than the microbial contract manufacturing market over the next seven years. Driven by well-established technology platforms for the production of complex glycosylated molecules, the remarkable success rates of existing monoclonal antibodies and being a relatively newer system, mammalian contract manufacturing seems to attract greater investments and capacity additions. On the contrary, microbial contract manufacturing is traditionally considered as an 'older' technology, and CMOs have already captured significant shares in this market, resulting in sluggish growth rates.

Biopharmaceutical CMOs are classified in Figure 3, based on the type of manufacturing service they provide. In Europe, a sizeable number of CMOs offer services for manufacturing of biological compounds used in clinical trials.

Manufacturing Capacity Demand – Excess Capacity or Capacity Crunch?

The biopharmaceutical contract manufacturing market in Europe has constantly been through alternating cycles of excess and inadequate manufacturing capacities, since the

Figure 3: Distribution of CMOs by manufacturing services offered, 2011



establishment of CMOs in the mid-1990s. Besides being a capital-intensive and technically challenging market, the most crucial factor in the development of biopharmaceuticals is the accurate prediction of manufacturing capacity requirements during the initial stages of product development. The current scenario in Europe indicates a marginally excessive supply of capacity over demand. In the future, surplus supply is expected in the short term (the next three to four years), while in the long term (seven to 10 years), a slight shortfall in supply is anticipated, especially for mammalian cell culture systems. However, as of 2011, a few CMOs (approximately 23 per cent) were on the verge of capacity expansions for specific projects. The demand for the outsourcing of biopharmaceutical manufacturing was growing at a rate of 15 per cent in 2011.

Key factors that are likely to affect the growth of biopharmaceutical contract manufacturing in Europe include:

- A gradual shift in the outsourcing of biotechnology companies from the traditional European and US CMOs to the low-cost Asian CMOs
- The poor performance of the European venture capital industry and financial crisis in Europe, resulting in inadequate funding
- Technological advancements such as the use of transgenic animals and plants (plant molecular farming) for the production of biopharmaceuticals, stem cell technology and gene therapy, all of which are gaining increasing acceptance and approval

Competitive Landscape Analysis

The European biopharmaceutical contract manufacturing market is highly concentrated, with the top two market participants – Lonza and Boehringer Ingelheim – controlling nearly 70 per cent of the shares, both in terms of sales revenue and manufacturing capacity. A majority of the leading market participants had their major share of revenues generated from mammalian contract manufacturing, while a few companies such as Sandoz generated two-thirds of its revenues from the microbial contract manufacturing segment in 2010. With increasing demand for biopharmaceutical contract manufacturing and significant scope for new business opportunities, the larger CMOs are entering into strategic alliances with biopharmaceutical companies, generic companies and technology providers, and are expanding their manufacturing capacities to cater to the growing demands of their customers.

The best examples for this are the market leaders. Lonza acquired Vivante GMP Solutions Inc in 2010 to gain access into the viral-based manufacturing market, thereby expanding its custom service to vaccines and gene therapy markets. The company also expanded its capacity by the inclusion of a new large-scale mammalian biopharmaceutical manufacturing facility in 2011. Boehringer Ingelheim is another key player which expanded its capabilities and capacities in the fill and finish operations for biopharmaceuticals, with the inclusion of a new line isolator technique for contract filling of liquid and lyo vials from 0.5ml to 100ml. It also acquired the Amgen Fremont facility in California with two 12 kilolitres in 2011, which contributed to an increase in Boehringer's capacity share, globally. Additionally, these companies focus on the research and development of new biological entities and have a well-defined in-house biologics pipeline in order to grow sustainably in the long-term future.

Figure 4: Manufacturing capacity demand analysis, 2011-2020

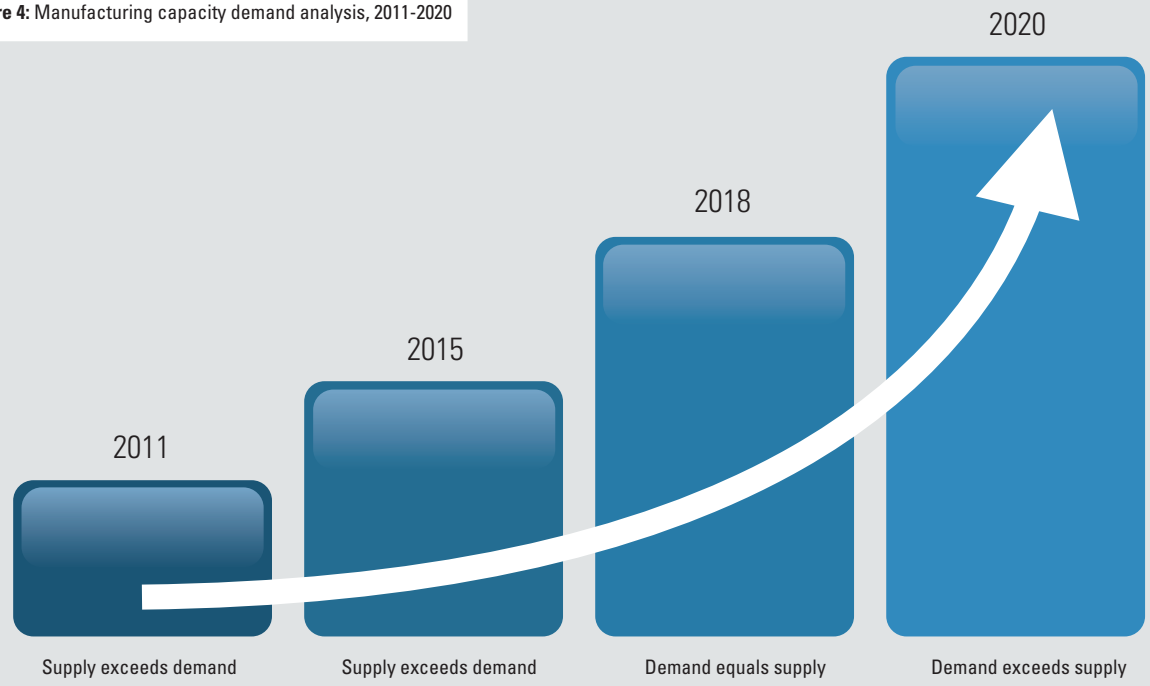
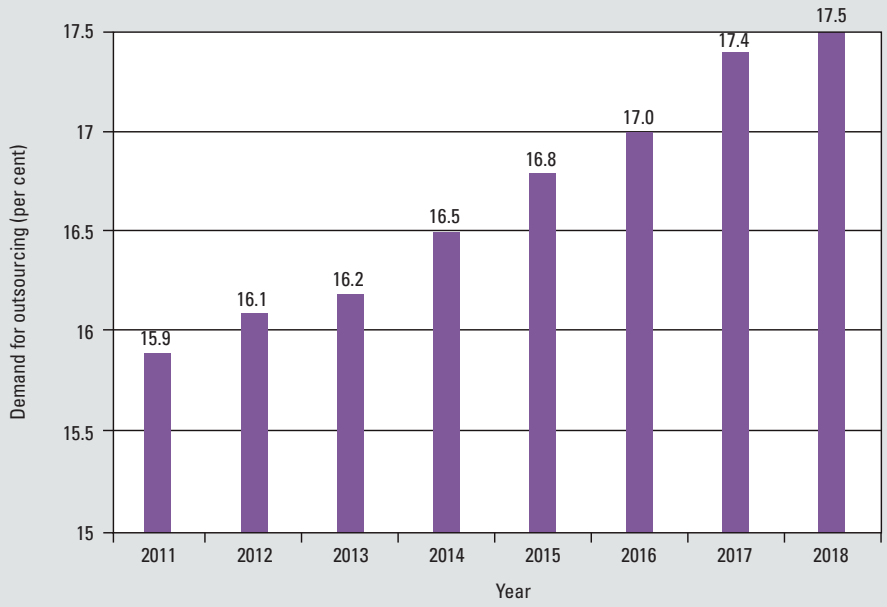


Figure 5: Forecasts of demand for outsourcing of biopharmaceutical manufacturing to CMOs 2011-2018



Future Trends and Directions

- An increasing demand for outsourcing of biopharmaceutical manufacturing to CMOs is anticipated in Europe, especially for crucial operations like upstream and downstream processing, and fill and finish activities
- The future of biopharmaceutical contract manufacturing will be largely driven and sustained by the mammalian contract manufacturing market, which is expected to grow at a compound annual growth rate of 14.2 per cent between 2011 and 2018
- The significant growth of biosimilars in Europe and the increasing attention of generic companies towards biosimilars are expected to have a huge impact on the biopharmaceutical contract manufacturing market
- Increasing adherence of CMOs to an integrated end-to-end business model that would serve as a one-stop shop option for clients is expected, offering a comprehensive range of services from pre-clinical to commercial supply
- Large CMOs are likely to focus on the niche areas of biopharmaceutical manufacturing
- Differentiation and consolidation strategies, such as formation of strategic alliances with pharmaceutical/biopharmaceutical companies, technology providers and generic companies, are likely to be increasingly adopted by biopharmaceutical CMOs, as it would result in a win-win situation for the CMOs as well as the companies
- It is also expected that the capacity shares of captive manufacturers are likely to decline in the future, with CMOs adding capacities and taking away shares from captive manufacturers in the European biopharmaceutical market
- Although the demand for biopharmaceutical manufacturing capacity is on the rise, careful weighing of benefits and risks is required by CMOs while planning for capacity expansions, lest they be hit by over capacity, which would in turn lead to acquisition of small CMOs by the larger ones
- Given the immense potential and growth opportunities in the European biopharmaceutical contract manufacturing market, increase in public awareness, acceptance and approval of biopharmaceuticals, and the rapid development of virtual pharma, CMOs which are properly aligned are likely to emerge successful and stay ahead of their competitors

Conclusion

The biopharmaceutical contract manufacturing market in Europe is largely dependent on a number of structural issues including: the performance of the companies with regard to cost, capacity, R&D and technical expertise; the venture capital industry; and establishment of mutual understanding between the CMOs, companies, investors and policy-makers. Although the cost and time saving benefits offered by CMOs are enormous, the complex regulatory guidelines make the sector less attractive to investors and new entrants. However, the market opportunities and growth potential are abundant for those CMOs which remain at the forefront of technology innovation and are properly aligned to cater to the dynamic needs of their customers. They are sure to emerge as winners in the market.

About the author

Aiswariya Chidambaram is a Research Analyst within the Healthcare Practice of Frost & Sullivan. She has authored syndicated and customorised market research reports on key therapeutic and service areas for both the European and global pharma and biotech markets. Besides the healthcare inudstry, she has also identified and awarded companies demonstrating excellence in specific market segments and technologies. Aiswariya has a BTech in Technology form Anna University. **Email: aiswariya@frost.com**