



Bio-Outsourcing Trends

A new study explores capacity and production issues

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OUTSOURCING BIOPHARMACEUTICAL PRODUCTION has become increasingly common during the past decade, with more than half of biopharmaceutical manufacturers outsourcing at least some of their production. In fact, according to our recent study, *5th Annual Report and Survey of Biopharmaceutical Manufacturing Capacity and Production*, we're seeing a 5% increase in the number of companies beginning to outsource annually, both for mammalian and microbial systems.

At the same time, many new clients are learning that their selection of a CMO is far from an off-the-shelf process; it can be one of the most momentous and complex decisions they will make. And while client-CMO relationships have matured and become more complex, the issues that matter in these relationships have also been shifting.

Each year, my company prepares a survey of global biopharmaceutical manufacturing capacity and production, in order to try to track how these issues are changing and to offer a tool to predict future shifts in global production to avoid surprises. In this year's study, we had responses from 434 executives at biopharma developers and CMOs around the world.

In the Outsourcing Section, our biopharma developer respondents were asked to identify the issues of greatest importance as they consider outsourcing to prospective CMOs. Their answers offer insight not only into the usual checklists that any potential manufacturing outsourcer would have, but into their current worries and frustrations — and how those have been changing over the years.

Here are a few highlights of our results:

Offer a Secure Supply

The most important issue this year was a CMO's ability to offer a secure supply (control of capacity), identified by about 44% of our respondents. This appears to reflect a rising concern. In our 2005 survey, only about 32% of respondents ticked supply security; in 2006 the figure moved to 36%. In neither of those previous years was this one of the top five concerns of our respondents. CMOs should take note that they may need to allay concerns about the security of their clients' capacity. More clients will expect their CMOs will have taken steps to secure sufficient capacity to ensure timely production.

Establish a Good Working Relationship

This year about 41% of our respondents noted this, making it the second most important requirement. It is essentially unchanged from last year, when 40% of our respondents checked it, although in 2005 it was the largest concern, as indicated by 53% of our respondents. This may suggest that the standards for

CMO-client relationships have been improving in the past few years. Some see that as a sign of a maturing industry segment.

Consistent with this finding, a CMO's "being able to stick to a schedule" is far down this year's list: 5.6% in 2007 vs. 58.7% in 2006. This de-emphasis may indicate the industry is maturing in its expectations of CMOs, with the understanding that there will be delays, tech transfer issues, and other ancillary business issues as part of the outsourcing experience.

Demonstrate a Track Record with Products Similar to Mine

This requirement came in third in our current survey, having been ticked by 41% of our respondents. It was ranked second in our 2006 survey, at 50%, and tied for third at 47% in 2005. This factor appears to have stabilized over time, and showing a 'track record' may be considered the ante for most CMOs simply to get into the game.

Demonstrate Cost-Effectiveness (ROI) of their Services

The requirement that a prospective CMO demonstrate cost-effectiveness placed fourth in this year's survey, ticked by 35% of our respondents. That's only slightly down from 42% in 2006 and 38% in 2005. Geoff Hodge, vice president Technology at Xcellerex, finds this surprising, "As a CMO, we are not asked to [demonstrate cost effectiveness] per se." This may be an opportunity for some CMOs to show that their services don't simply "provide the lowest cost," but rather provide the greatest value.

Have Production Platforms that are Relevant to My Product

Placing fifth in our current survey, the concern that a prospective CMO should have relevant production platforms was noted by 32% of our respondents. That appears to represent a downward trend, from 36% in our 2006 survey and 50% in our 2005 survey, the latter tied for second place. This may be because clients do not include CMOs without explicit expertise in their platform areas in their decision sets. CMOs should expect to differentiate themselves based on their technical niches.

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Survey Methodology: This fifth in the series of annual evaluations by BioPlan Associates yields a composite view and trend analysis from 434 responsible individuals at biopharmaceutical manufacturers and contract manufacturing organizations in 32 countries. The methodology also encompassed an additional 126 direct suppliers of materials, services and equipment to this industry. This year's survey covers issues such as: *current capacity, future capacity constraints, expansions, use of disposables, trends and budgets in disposables, trends in downstream purification, quality management and control, hiring issues, employment and training.* The quantitative trend analysis provides details and comparisons of production by biotherapeutic developers and CMOs. It also evaluates trends over time, and assesses differences in the world's major markets in the U.S. and Europe.

Fig. 5.10

Table: Comparison of top five issues, 2006-2008

Issue	2008 Study	2007 Study	2006 Study
#1	Offer a secure supply (Capacity Control)	Stick to a schedule	Establish a good working relationship
#2	Establish a good working relationship	Demonstrate a track record with products similar to mine	Have production platforms that are relevant to my product
#3	Demonstrate a track record with products similar to mine	Demonstrate cost effectiveness (ROI) of their services	Stick to a schedule / Demonstrate a track record with products similar to mine
#4	Demonstrate cost effectiveness (ROI) of their services	Establish a good working relationship	Demonstrate cost effectiveness (ROI) of their services
#5	Have production platforms that are relevant to my product	Offer a secure supply (Capacity Control) / Have production platforms that are relevant to my product	Offer a secure supply (Capacity Control) / Reduce my time and regulatory requirements for product licensure

Specific CMO-Sourcing Worries

We also asked our respondents if it was currently difficult for them to find a suitable CMO for mammalian cell production, microbial or other systems. Underscoring their concerns over secure capacity sources, fully 28% either strongly agreed (6%) or agreed (22%) that they had difficulty finding a suitable CMO for mammalian production. Virtually the same numbers (4% and 23%) applied for microbial systems, but a majority (23% strongly agreeing and 33% agreeing) signaled difficulties in finding a suitable CMO for other production systems.

What Clients Really Want From Their CMO

As mentioned, the requirement that a CMO “stick to a schedule” was by far the number one factor in last year’s survey, but fell to eighth place in this year’s survey. Why? Prospective CMO clients now seem at least moderately more concerned about obtaining secure production capacity. The shift to a relatively low position on the list may indicate the industry is maturing in its expectations of CMOs and understands that there will be delays and tech transfer issues, as well as business issues as part of the package when outsourcing. Scheduling issues may also be perceived as more manageable now.

“CMOs’ capacity has been freeing up a bit lately,” notes Tom Ransohoff, vice president and senior consultant at Bioprocess Technology Consultants. “We’re also seeing evidence that contract manufacturers are gaining maturity in some of the newer production technologies, with improvements in production management skills that make for better planning and faster execution.”

The fact that capacity control is now the top issue among our respondents appears to reflect a maturing awareness of the need for secure production sources throughout a product’s lifecycle, as a priority over near-term scheduling issues. For higher volume biopharma products we’re seeing evidence that some producers are opting for more than one secure manufacturing location.

The CMO Perspective

Our data suggest that capacity control, the establishment of a good working relationship with efficient client-CMO communication, production platforms with a good track record for the relevant production type, and cost effectiveness are now the top criteria on

which prospective clients judge CMOs.

What about the CMO perspective? Clients need to be realistic in their expectations: Hopefully the decline in importance of the 'must stick to schedule' issue means not only that CMOs are maturing, but also that industry clients are under-

standing better that there will almost always be at least some minor delays in setting up the outsourcing process. Recalibrating expectations is part of any new relationship, and the CMO-client one is no exception. Over time, we expect these issues to diminish further in

importance. This will happen not because they're no longer relevant, but because issues such as capacity management and meeting fixed schedules in process development will be based on years of experience.

Despite this there is still room for further realism on the part of clients. Industry respondents to the survey didn't seem very concerned about providing lead times to cover process development and tech transfer. In practice PD and tech transfer can take a great deal of time, and this is not just associated with biomanufacturing. The objective is to budget for the needed extra time to take the surprise out of the process.

New production systems are another area where tensions are apparent between what clients want and what CMOs can provide. Few CMOs are using yeast or other newer production systems today. But as novel systems and expression platforms become available, that too may change. To date, clients are more comfortable outsourcing established mammalian and microbial cell products.

The Evolving CMO-Developer Complex

The trend in the biopharma industry is clearly towards more outsourcing, not less. About half of our developer respondents currently outsource at least some of their mammalian cell production on average, and project that within five years that proportion will rise to nearly 60%. They anticipate outsourcing considerably more projects in other systems, as well. At the same time, our CMO respondents anticipate having to add much more capacity, improve their process development capabilities, and efficiency, relative to current baselines, and to what biopharma developers are doing. Other issues of concern noted in our survey, such as the difficulties that developers seem to be having in hiring suitable production and technical staff, point to greater and more widespread use of CMOs to handle production needs.

As CMOs increase their presence and connections within the industry, we expect their top concerns and those of their clients to shift further, and we'll continue to track these shifts in our annual surveys. ■