

“The Pink Sheet”

PRESCRIPTION PHARMACEUTICALS AND BIOTECHNOLOGY

DECEMBER 2, 2013

Founded 1939

Gilead, Celgene, Biogen Head List Of Most Productive Biopharmas

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Top biopharmas with the most productive R&D and best overall performance are characterized by focused areas of interest, modest R&D budgets (in absolute terms), and a strong presence in the U.S., according to consulting firm Catenion, whose senior partner Markus Thunecke presented data on Nov. 19 at the Therapeutic Areas Partnerships meeting in Boston.

Gilead, Celgene, Biogen Idec Inc. and Baxter International Inc. have the biopharma industry's most productive R&D operations, while all of these but Baxter are also among the industry's best performing companies in 2013, according to Catenion's analysis. Winners on the list are highly focused on a few therapeutic areas, with deep understanding of those areas. These companies assume greater business risk because of their portfolio concentration, but also have hopes of higher rewards. Large companies with diversified portfolios tend to have less downside risk, but also less upside potential, Thunecke said.

Biogen Idec, which has undergone a top-level management shift and turnaround in the past five years, has 85% of its R&D work ongoing in three therapeutic areas (central nervous system diseases, auto-immune disorders, and hemophilia), for example. Baxter is ranked third in R&D productivity because of its cost-effective approach to producing its hemophilia and plasma-based R&D pipeline. “Baxter is in a highly attractive therapeutic area, hemophilia, which is an orphan drug, and has other blood-based products, which it has developed at a fraction of the cost of what others have spent on R&D,” Thunecke said in a follow-up interview. “You can take a product to market in hemophilia at a cost of \$100 million or less, which is the typical cost of a Phase III oncology trial.”

Roche was listed at No. 7, primarily because it owns **Genentech Inc.**, which, in its heyday, was universally acknowledged as one of the most productive R&D companies.

The aim of the study was to set a benchmark for measuring R&D productivity and value creation in biopharma. “Anyone can count the number of drugs with regulatory approvals,

and the R&D spend of public companies, but that does not tell you if the R&D efforts create value,” Thunecke said.

R&D productivity was measured using a net present value analysis of companies' pipelines as of August 2013, divided by cumulative R&D expenditures. Best performance was defined by a variety of metrics based on compounded annual growth rates for three numbers: revenues, earnings before interest, depreciation, taxes, and amortization and market capitalization.

Biopharma remains one of the most profitable industries, with 40% margins, but its flagging growth has contributed to the perception it is in a crisis, he said. Pipelines often are not able to replace products lost to generic competition.

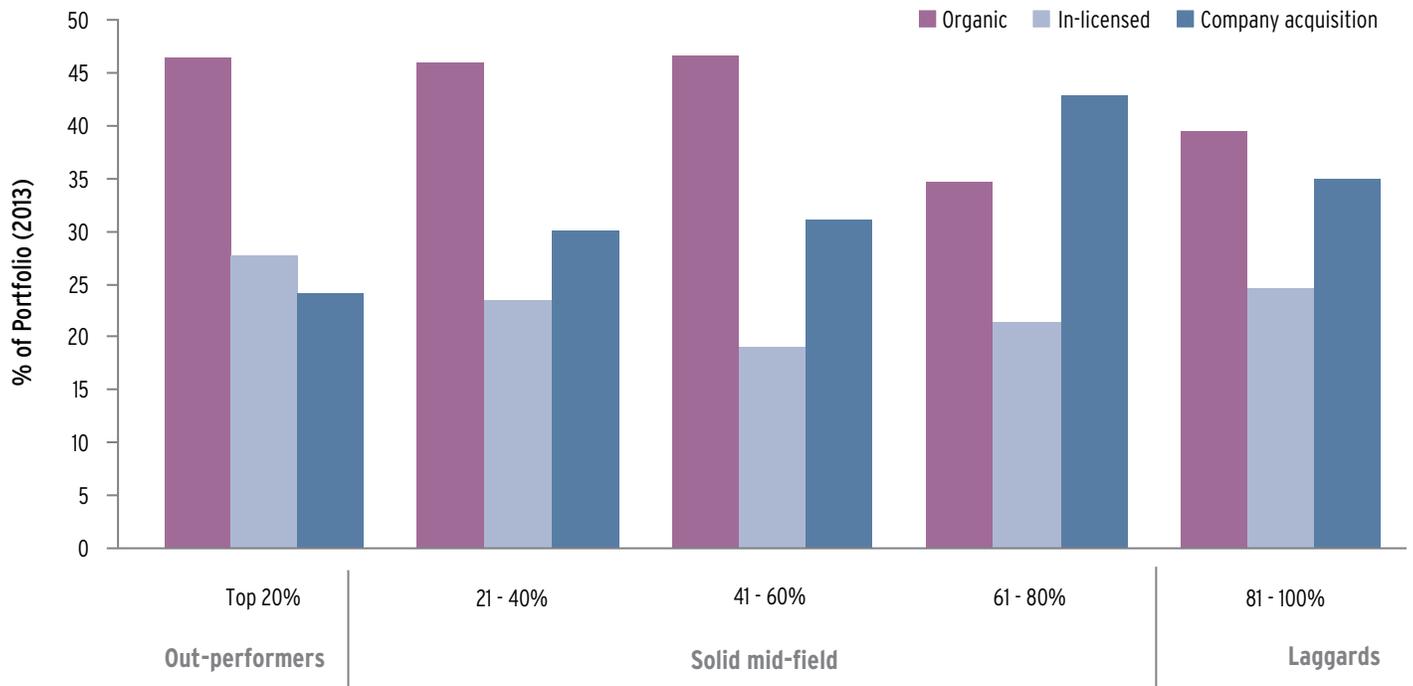
The problem isn't lack of growth opportunities, but rather the inability of big pharma's current R&D models to scale up effectively, he said.

While the general topic broaches well-tread ground, Catenion's extensive analysis, based on a proprietary methodology, has yielded some interesting insights. With 2013 as a baseline, the firm measured R&D productivity by looking at each of the 30 largest pharma companies' (including large biopharmas) cumulative R&D spend over the past 10 years, along with analysts' consensus view of the net present value of the current clinical pipeline combined with the NPV of marketed products, and also excluding the marketed products.

The figures were adjusted for opportunity cost and also to include cost of R&D-driven acquisitions, with the latter's weight in the overall calculation varying according to the nature of the deals. That is, the more the deal appeared to be driven by the acquirer's need to access pipeline assets, the greater the percentage of the full cost of the deal that figured into the cumulative R&D spend. A deal that was driven more by commercial interests or synergies counted for much less in the company's 10-year cumulative R&D spend rate, and deals driven by an equal combination of reasons gave middling weight to cost of deal in equating the R&D spend.

The results showed that “the larger you get the tougher it is to be productive from a value perspective in R&D and to show sustainable growth,” Thunecke said. The sweet spot

No Correlation Of A Particular Asset Sourcing Strategy With R&D Productivity



Source: Catenion analysis (primary data from Evaluate Pharma)

Top 10 Biopharma Companies 2013, by R&D Productivity And Performance

R&D Productivity				Company Performance			
Final NPV Rank	Company	Rank 1 (all NPV)	Rank 2 (Pipeline NPV)	Final comm. Rank	Company	Rank of Historical Sums	Rank of Future Sums
1	Gilead Sciences	3	1	1	Celgene	1	2
2	Celgene	2	4	2	Gilead Sciences	2	1
3	Baxter International	4	2	3	Biogen Idec	4	3
4	Novo Nordisk	1	12	4	Shire	6	5
5	Abbott Laboratories	6	5	5	Novo Nordisk	5	9
6	Biogen Idec	5	8	6	Bayer	11	4
7	Roche	9	10	7	Sanofi	7	14
8	Allergan	7	18	8	Allergan	9	9
9	Shire	8	19	9	Otsuka Holdings	3	24
10	Bristol-Myers Squibb	19	3	10	Astellas Pharma	13	12

*NPV: net present value

ONLY TOP 10 OUT OF 30 SHOWN

Source: Catenion; Big pharma (>€15bn sales 2012) highlighted in pink, final R&D productivity rank is generated by weighing all NPV 2/3 and Pipeline NPV metric 1/3

in R&D spend, that is, the amount of annual spend that appears to yield the most valuable assets, in absolute terms, is \$1 billion to \$2 billion, a year, regardless of company size. The study confirmed that a "science-driven, mid-sized model can be highly successful," he added. Beyond that budget size, decision making gets unwieldy.

"Huge companies struggle to maintain R&D productivity," and while many are reorganizing around centers of excellence or 'biotech within a big pharma' models, those will take at least five years to show results, he said, adding the caveat that it becomes problematic because at big pharma, the "typical tenure of the CEO is less than that."

He hypothesized that in the sweet spot, decision making is manageable for R&D leadership teams. At big companies, which can have 100 projects or more in their pipelines, "the people who make decisions at the top are removed" from projects and the people at the bottom "get frustrated."

Some factors commonly believed to play a role in R&D success are not important, the study found. No correlation exists, for example, between R&D productivity and any particular business development strategy. Given the industry's

recent emphasis on externalization, and the need to look outside for innovation, that "seems counter-intuitive, but companies that dominate these rankings have strong internal capabilities," he said. Others rely heavily on in-licensing or deals; Shire, ranked fourth in overall performance in 2013, with its traditional reliance on a search and develop model, also spends 20% of sales on R&D, so it is not more cost-effective to go outside, he added.

Likewise, there's no direct relationship between R&D productivity and the number of first-in-class molecules in a pipeline. That's because R&D productivity includes not just novelty as measured by first-in-class status, but also clinical differentiation, which could characterize other kinds of products as well. Nearly 40% of molecules in top companies' clinical pipelines have first in class potential, a sign that pharma is becoming more innovative as it adjusts to payers' demands for more value.

The study evaluates companies based on their 2013 competitive performance only, but it could be repeated annually to detect shifts, although these are not likely to be dramatic, given the long time-frames involved in pharma R&D, he said. 