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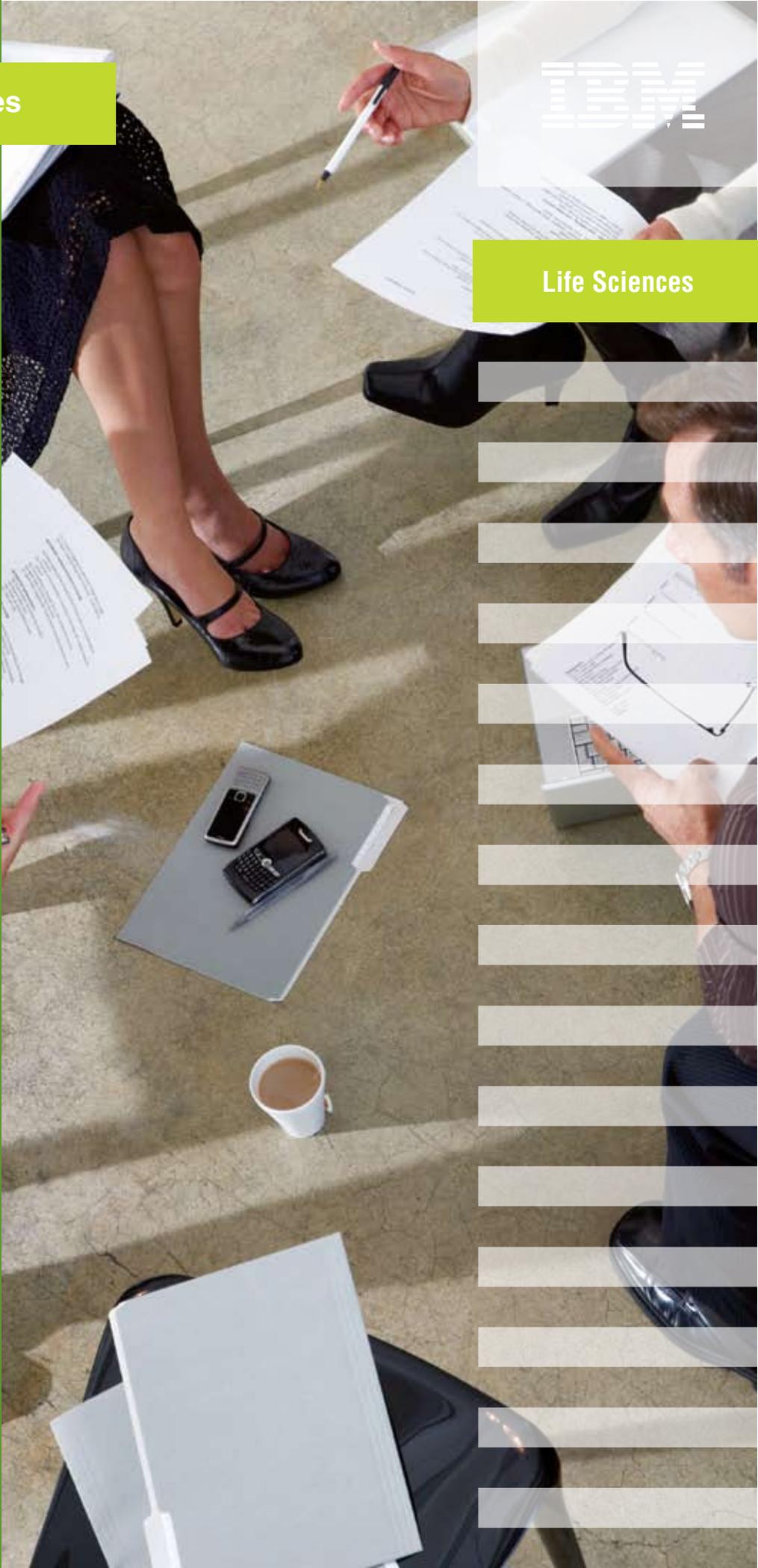
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Imperfect harmony

Alliances within the
life sciences industry



Life Sciences



IBM Institute for Business Value

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Imperfect harmony

Alliances within the life sciences industry

By Heather Fraser, Salima Lin and Julia Chang

Among biopharmaceutical companies, the desire to partner is increasing faster than the capabilities necessary to do so.

The number of major alliances between large biopharmaceutical companies and smaller biotech firms or academic institutes is soaring. Yet the latest biopartnering study conducted by IBM and Silico Research shows that many life sciences companies still struggle to collaborate effectively. There are four steps such companies can take to enhance their appeal. They can capitalize on areas of existing expertise to attract new partners; “sweeten” an offer with non-financial incentives; adopt a project-oriented perspective; and develop the skills to engage in different kinds of partnerships.

Introduction

The search for promising new medicines has produced numerous collaborations between large biopharmaceutical companies (Big Pharma) and their smaller brethren in the biotechnology (biotech) arena over the past decade. This trend has accelerated in recent years. The projected value of the “big-ticket” deals expected to take place in 2008 is US\$45 billion, 50 percent more than the US\$30 billion that changed hands in 2006 (see Figure 1).¹

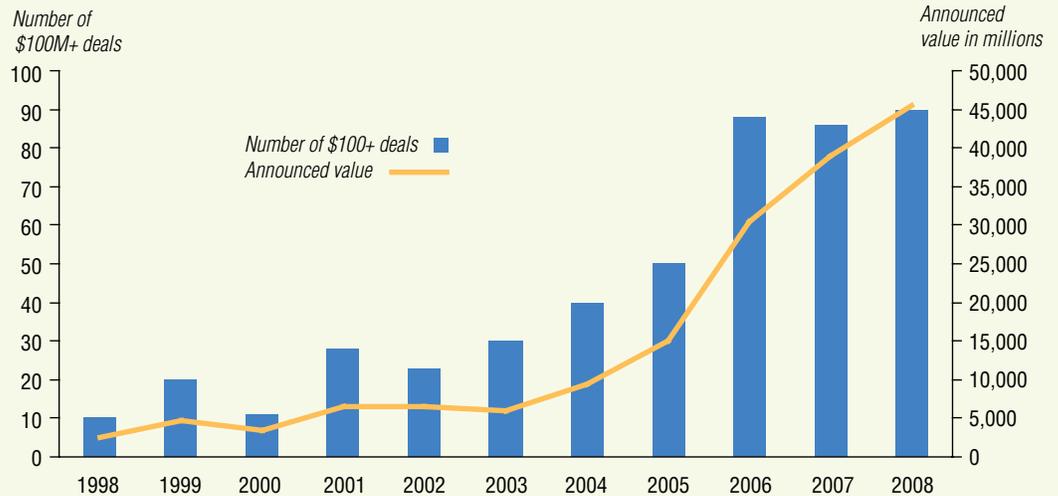
Moreover, there is no sign of any slowdown in interest, despite the new economic environment; 45 percent of the life sciences chief executives who participated in the 2008 IBM Global CEO Study plan to partner exten-

sively over the next three years.² Many large biopharmaceutical companies also have the financial strength to act on such plans.

Yet the latest biopartnering survey conducted by IBM Global Business Services and Silico Research shows that many large life sciences companies have made only marginal improvements in their ability to find new partners, negotiate terms and manage the alliances they established over the past two years (see sidebar, *What is biopartnering?*). This suggests that they will have to raise their sights.

If they are to attract the best scientists, develop targeted treatments and services for patients with specific disease pathologies and move into new or emerging markets, they

FIGURE 1.
The value of the big alliances struck by the life sciences industry has soared over the past two years.



Source: Trends in Big Ticket Alliances (\$100m+) 1998-2007." Recap.com. 2008.
 Note: Figures for 2008 are projected.

will have to collaborate even more extensively than they currently plan on doing. And the opportunities for doing so may now be more favorable than they have been in many years, as a growing number of cash-strapped biotech companies seek financial support.

But that, in turn, means the industry leaders will have to hone their biopartnering skills, both to make themselves more appealing to potential partners with really exciting discoveries and to ensure that they attain their research goals.

What is biopartnering?

Biopartnering is the sourcing, formation and management of alliances. The most efficient life sciences companies proactively source the best deals and enable prospective partners to reach them easily, thereby building a reputation for being a "partner of choice." They use the due diligence, valuation and negotiating process to build a relationship of mutual trust, and realize the value of the alliances into which they enter by creating and executing robust alliance business plans, and organizational and governance arrangements.

Imperfect harmony

Alliances within the life sciences industry

Genentech and Roche continue to figure prominently as preferred partners.

Who's the fairest of them all?

The 2008 biopartnering survey – the fifth to be conducted since 1999 – aims to assess how well large pharmaceutical and biotech companies interact with their partners. It draws on the responses of 223 people from 209 commercial and academic organizations around the world. And, as in previous years, it reveals some marked differences in performance. (For further details of the survey population and methodology, please see Appendix 1).

Two companies – Genentech and Roche – have consistently featured among the top five firms with which biotech and academic institutions want to join forces. This year, they have solidified or even improved on that record. Indeed, Genentech now ranks number one in every stage of the deal lifecycle (see Figure 2).

Genentech's success is partly attributable to experience; alliances have been a core element of the company's strategy since it was formed in 1976.³ But it also combines the resources of a large organization with the energy and drive of a much smaller concern, characteristics that make it very attractive to would-be partners.⁴

Roche likewise enjoys a favorable reputation among smaller biotech companies and universities. More than four-fifths of respondents commented on the strength of its scientific credentials. Its longstanding partnership with Genentech has also taught it the value of maintaining an arm's length relationship with its allies, thereby enabling both companies to preserve the cultures that made them innovative in the first place. Roche has explicitly stated that it will adhere to this strategy and

FIGURE 2.
Genentech and Roche have consistently outshone their biopartnering competitors.

2006 – Deal Sourcing		2008 – Deal Sourcing	
Roche		Genentech	
Genentech		Merck	
Amgen		GSK	
Abbott		Roche	
Novartis		Boehringer Ingelheim	
2006 – Deal Making		2008 – Deal Making	
Roche		Genentech	
Amgen		Merck	
Eli Lilly		Roche	
Genentech		Eli Lilly	
J&J		BMS	
2006 – Alliance Management		2008 – Alliance Management	
Roche		Genentech	
Amgen		Eli Lilly	
Genentech		Novo Nordisk	
J&J		Takeda	
AZ		Merck	

Source: "Biopartnering 2008 Survey." IBM Global Business Services and Sillico Research. December 2008.

allow Genentech "to operate as an independent research and early-development center," if it succeeds in its current bid for the remaining shares in the company.⁵

However, Amgen and Johnson & Johnson (J&J) have slipped down the charts. In 2006, both firms ranked among the industry leaders in at least two of the three stages of the deal lifecycle. This year, neither features in any of the top slots (see Figure 3).

FIGURE 3.
Amgen and Johnson & Johnson have seen their popularity as partners slump.

2006 – Deal Sourcing	2008 – Deal Sourcing
Roche	Genentech
Genentech	Merck
Amgen	GSK
Abbott	Roche
Novartis	Boehringer Ingelheim
2006 – Deal Making	2008 – Deal Making
Roche	Genentech
Amgen	Merck
Eli Lilly	Roche
Genentech	Eli Lilly
J&J	BMS
2006 – Alliance Management	2008 – Alliance Management
Roche	Genentech
Amgen	Eli Lilly
Genentech	Novo Nordisk
J&J	Takeda
AZ	Merck

Source: "Biopartnering 2008 Survey." IBM Global Business Services and Sillico Research. December 2008.

The fall in their ratings can probably be explained, in part at least, by the fact that both companies face major commercial challenges. In March 2007, Amgen was forced to put warnings on its two blockbuster anemia drugs, Aranesp and Epogen, after evidence that they caused serious side effects in some patients. The company's woes were compounded when clinical trials showed that patients taking its new colon cancer drug, Vectibix, in combination with other medications were more likely to die than patients who only took the other treatments.⁶

Johnson & Johnson is now experiencing similar problems with Procrit, its rival product for cancer-induced anemia, which is also under scrutiny from the U.S. Food and Drug Administration.⁷ And it has recently encountered safety issues with HIV drug Prezista.⁸ These difficulties may well have helped to divert management's attention from the business of forming alliances.

Fortunately, however, it is possible to make a comeback. In 2006, neither Merck nor Bristol-Myers Squibb (BMS) ranked among the biotech sector's most preferred partners. This year, by contrast, Merck has stormed up the charts, while BMS has earned a place as one of the five companies best at negotiating and striking deals (see Figure 4).

FIGURE 4.
Merck and Bristol-Myers Squibb have made an impressive comeback.

2006 – Deal Sourcing	2008 – Deal Sourcing
Roche	Genentech
Genentech	Merck
Amgen	GSK
Abbott	Roche
Novartis	Boehringer Ingelheim
2006 – Deal Making	2008 – Deal Making
Roche	Genentech
Amgen	Merck
Eli Lilly	Roche
Genentech	Eli Lilly
J&J	BMS
2006 – Alliance Management	2008 – Alliance Management
Roche	Genentech
Amgen	Eli Lilly
Genentech	Novo Nordisk
J&J	Takeda
AZ	Merck

Source: "Biopartnering 2008 Survey." IBM Global Business Services and Sillico Research. December 2008.

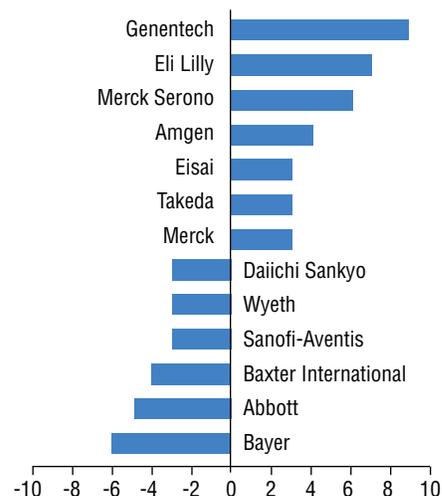
Biotechs with high-quality drug candidates are driving harder bargains with more complex deal structures.

Merck's stellar performance reflects the priorities of new chief executive Richard Clark, who announced in April 2007 that he intended to "build on (Merck's) commitment to identifying and entering into partnership opportunities outside Merck" that complement the research it is doing in-house.⁹ BMS has also made a huge effort to improve its deal sourcing and alliance management skills, as part of a wider initiative to change its business model.¹⁰

Meanwhile, Eli Lilly and Company has made considerable headway when it comes to managing alliances. In 2006, it ranked eighth in this category, but, in 2008, it came second only to Genentech. Indeed, 29 percent of respondents gave the company a perfect score for its alliance management skills, an achievement that was three times better than the average. Again, Lilly's success is well deserved; it has worked very hard over the past few years to transform itself from a traditional, integrated pharmaceutical company into a "fully integrated pharmaceutical network."¹¹

Some companies also "punch well above their weight." Large organizations typically generate more mentions in the media and have more extensive professional networks than smaller ones, so it is not surprising that they attract plenty of suitors. But stripping out the impact of differences in revenue reveals that several smaller firms, including Merck Serono, Eisai and Takeda, have earned a far bigger reputation for their biopartnering skills than size alone can explain (see Figure 5).

FIGURE 5.
Some companies "punch well above their weight."

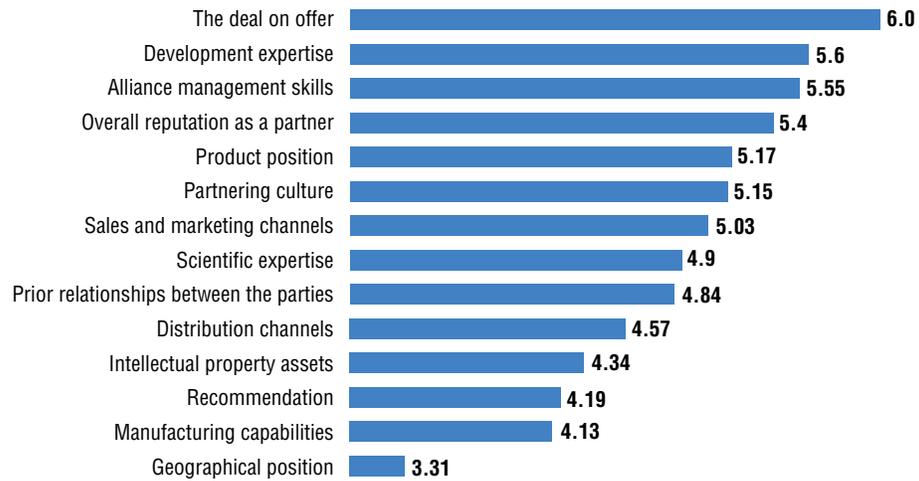


Source: "Biopartnering 2008 Survey." IBM Global Business Services and Silico Research. December 2008.
Note: This score is calculated based on respondent mindshare ranking minus company ranking in terms of revenues.

The key drivers of alliance formation

Our survey shows which large biopharmaceutical companies are currently considered the best partners. It also sheds some light on what small biotech firms and academic institutes look for when forming an alliance. Predictably, perhaps, financial recompense comes first (see Figure 6). And, here, there is evidence that the balance of power is shifting. At one time, Big Pharma could virtually dictate its own terms. Today, smaller companies with promising molecules can drive a much harder bargain. Forty-eight percent of the deals that were struck between 2006 and 2008 contained equity and co-promotion arrangements, compared with just 34 percent of the deals that were struck between 2000 and 2005.¹²

FIGURE 6.
Small biotech companies and academic institutions focus on financial remuneration, development expertise and alliance management skills, when choosing a partner.



Source: "Biopartnering 2008 Survey." IBM Global Business Services and Silico Research. December 2008.
 Note: The importance of each driver was rated on a scale of one to seven, seven being the most important.

Development expertise and alliance management skills also feature prominently among the features biotech and academic researchers seek; indeed, for academics, they are even more important than financial remuneration. Conversely, scientific expertise ranks only eighth on their list of priorities, primarily because they believe that they already have a strong background in pure research. What researchers in universities and small biotech firms therefore prize are the technical and clinical development capabilities a large company can bring to the table.

“One of the most important benefits of the alliance was the credibility we gained from having a Big Pharma partner with the resources to fund an expensive development program.”

A more complex business

The growing use of co-promotion and equity arrangements is only one sign of the extent to which the biopartnering business is maturing and becoming more complex. A number of companies are now using creative, risk-sharing arrangements to finance the development of new medicines. Lilly has just entered into one such alliance with NovaQuest and TPG-Axon Capital (see sidebar, *Three's company*).¹³

Several companies have also devised sophisticated new business models for developing products using different partners at different stages in the R&D process. For example, Swiss biopharmaceutical development specialist Debiopharm in-licenses promising molecules from universities and independent research organizations, develops them itself and then out-licenses them to pharmaceutical companies for marketing and sales.¹⁴

Although counter to the natural inclination to partner in order to bolster areas of weakness, companies should focus first on partnering in their areas of strength.

Lastly, many large biopharmaceutical firms are expanding their links with academia and adopting a more strategic approach to such alliances.¹⁵ Rather than using academic medical centers to design and conduct clinical trials, as they did in the 1990s, they are commissioning university researchers to solve specific research problems in areas of mutual interest and using various models to manage these partnerships.¹⁶

Three's company

In July 2008, Lilly announced an innovative scheme to co-fund the development of two lead molecules for treating Alzheimer's disease. Investment firm TPG-Axon Capital and NovaQuest (the alliance management arm of contract research organization Quintiles International) will provide some US\$300 million toward the cost of developing the two molecules. NovaQuest will also help to design Phase III trials for both candidates, and Quintiles will perform at least two of those trials under a fee-for-service agreement. Lilly will pay TPG-Axon and NovaQuest milestone payments during the development process and royalties, if it succeeds in taking either drug to market.

Recommendations

So, what can large biopharmaceutical companies do to make themselves more alluring to potential partners, as the options for developing and commercializing medicines increase? IBM's analysis suggests that there are four things they can do. They can:

- Start from a position of strength.
- Search for the win-win.
- Look after the "ABCs" of managing alliances.
- Develop partnering skills throughout the extended enterprise.

Starting from a position of strength

One of the factors industry and academic researchers consider when they are looking for a partner is the product position of the company concerned, as Figure 6 shows. This is not surprising, since life sciences companies are typically judged on the strength of their pipelines and market presence in the therapeutic areas in which they choose to compete. It therefore makes sense for any large biopharmaceutical company that wants to find external sources of research to start with what it already does best.

It should begin by analyzing its reputation to identify the therapeutic areas in which industry and academic researchers believe it is a leader rather than a follower – and there may be differences between the two populations. It should then capitalize on any areas of acknowledged expertise to attract new partners. When it wants to move into other areas of research where its reputation is weaker, it should look for ways in which to compensate for these weaknesses. It could, for example, consider hiring an established "star" to act as the principal investigator and lend more credibility. Alternatively, it could tap into its network of academic connections, including former partners and alumni organizations, since some of these people will have useful professional and commercial links.

"We welcomed the opportunity to work with world-class scientists on cutting-edge research with significant clinical value."

Searching for the win-win

Once a company has located a potential partner and started the negotiating process, it should explore the opportunities for “sweetening” the deal. The most obvious option is to offer more generous milestone payments or royalties, but money is by no means the only available inducement. Development expertise is almost equally critical. So the company might, for example, promise to commit a larger proportion of its development resources to the proposed collaboration.

There are other ways of sugaring the pudding, too. Academic researchers have very different career goals from industry executives, and those goals change as they move up the ladder. An assistant professor needs to publish extensively to establish a strong scientific track record, whereas a dean at the pinnacle of his or her profession is generally more interested in building a nucleus of researchers, enhancing the department’s prestige in order to attract research grants and making an impact beyond academic circles. It is therefore only logical to offer them different incentives. A junior academic may welcome the opportunity to publish and present at conferences, for example, whereas a mature academic is more likely to be attracted by a diplomatic role that provides direct access to senior executives within the company.

“Our partner owns the patent, but we would highly appreciate it if the company acknowledges the chemists who contributed to the project by naming them in the patent and any publications.”

Looking after the “ABCs”

The nuts and bolts of alliance management are also important; indeed, they are becoming even more important, given new, more intricate partnership structures and the current global economic climate. Three elements are essential: the internal *alignment* of a company’s business strategy and functions with its research goals; the definition and management of its *boundaries* with the other party or parties in the extended enterprise; and ongoing *commitment* to the alliance. These “ABCs” underpin any well-managed partnership.¹⁷

In fact, most large biopharmaceutical companies have become much better at aligning their business strategies with their research goals, but they still struggle to align their business units and functions with those goals. The development of new business models is also changing the nature of the boundaries between their partners and themselves. And, in the current economic environment, sustained commitment is more critical than ever, since small biotech firms are particularly vulnerable to cash flow variability.

Any large biopharmaceutical company that embarks on an alliance with a “baby biotech” company or academic institute should therefore endeavor to support its partner as seamlessly as possible. One of the best ways of doing this is to adopt a project-oriented perspective, by allocating funds to individual projects rather than functions; giving each project team the freedom to “buy” the resources it needs from internal or external sources, as it sees fit; holding the project teams accountable for the results they achieve; and measuring the performance of the functions in terms of utilization.

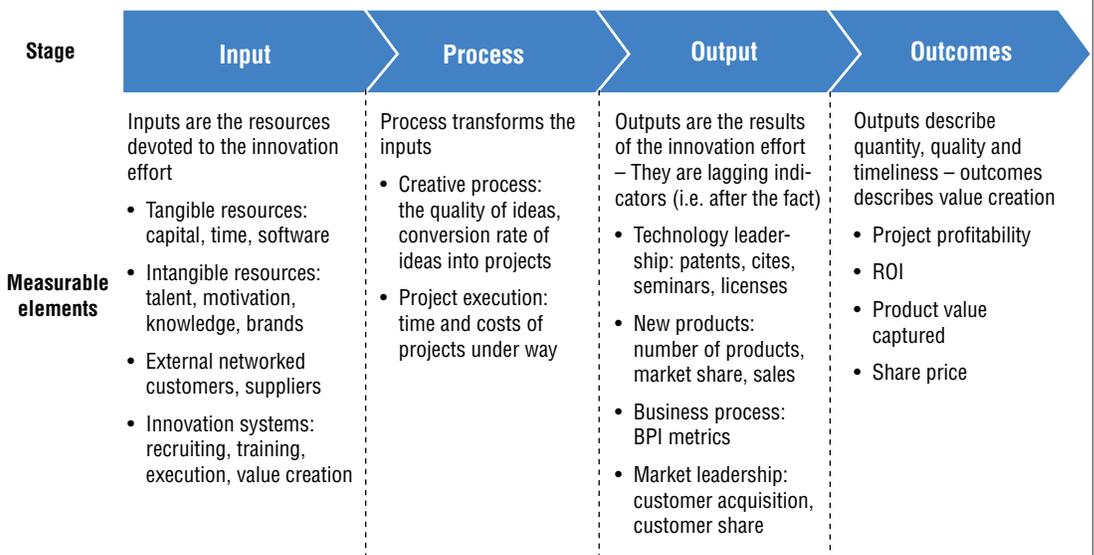
Alignment of strategy, boundary management and commitment to the alliance are the fundamental ABCs of successful collaboration.

But it is also vital to provide other forms of support, such as a robust technological infrastructure for sharing data, and to monitor each partnership very carefully in order to ensure that it is progressing properly. This should be an iterative procedure, in which management regularly measures the performance of the alliance – the resources and processes it is using, the results it is producing and the value it is creating – and adapts the resources or processes being used as necessary (see Figure 7).¹⁸

“A brief introduction to our partner’s organization in terms of an organogram, and an explanation of the decision-making and ‘governing’ bodies driving internal project progression, would initially have helped to align both organizations.”

FIGURE 7.

There are four aspects of an alliance that should be measured to assess its productivity.



Source: Davila, Tony, Robert Shelton and Marc J. Epstein. Making Innovation Work: How to Manage It, Measure It, and Profit from It. London: Prentice Hall, 2005.

Building a partnering organization

Lastly, it is essential to develop the skills required to engage in different kinds of partnerships. Some companies try to force-fit all their alliances into the same mold, but those with more experience of working beyond their own boundaries typically tailor their approach. There are at least six different models, ranging from the relatively simple to the very complex and from the relatively loose to the tight-knit (see Figure 8). The first task is thus to define the alternatives and the core capabilities that are needed to support them.

Once it has done this, a company can determine which model is most appropriate for each of the alliances it forms. But whichever model it chooses, it should have the right people, processes and governance model in place to manage the relationship throughout the entire deal lifecycle. It should, for example,

develop processes for making decisions quickly and for ensuring that there is a point of contact when key employees move to other positions or leave the organization altogether. It should also keep the lines of communication open when an alliance has ended – and even when a deal is never signed.

Again, technology has a valuable role to play in enabling continuous and consistent communications with external parties, and building a successful partnering organization. Indeed, a strong technological platform is absolutely critical with the emergence of new biopartnering models involving multiple partners. It is clearly more difficult to store, retrieve and share information, ensure data privacy and maintain a proper audit trail, with a network of partners than it is with a single partner. And the use of myriad data formats, including medical imaging, is only compounding the complexity of the task.

FIGURE 8.
Various partnering models exist.

Model	Strategy
Orchestrator	Manages a network of partners, each of which has a stake in the outcome
Outsourcer	Manages a network of service providers, each of which performs activities that would otherwise have been performed in-house but does not have a stake in the outcome
Collaborator	Manages a network of non-competing partners, each of which has a stake in the outcome and collaborates with the other companies in the network to enhance the value of its individual products or services
Complementor	Collaborates with one or more partners to expand the market for its products or services by creating a collective offering that is more valuable than separate products or services
Aggregator	Uses its control over access to the market to combine individual products and services in a package that sells for more than those products and services could fetch on a stand-alone basis
Incubator	Provides funding and expertise for other companies, so that they can bring new products or services to market and it can recoup its investment by taking a share of the profits

Source: IBM Global Business Services.

Large companies are unlikely to attract the breadth and depth of partners they need if they insist on a single approach for all.

Some of the more obvious tools for collaborating include e-mail, portals, intranets and contract management applications. But the surge in online professional networking and Web-based commentary has also provided opportunities for identifying potential partners. Analyzing networking patterns and blogs may help to unearth companies with common areas of interest – and few biopharmaceutical firms fully utilize such tactics at present.

“Our partner didn’t really appreciate the limited extent of our technological capabilities for collaborating.”

Conclusion

Most large biopharmaceutical companies are changing their research focus, as the patents on the blockbusters they launched in the 1990s expire. But, with the shift from small molecules to targeted treatments, they will need to partner more extensively than some chief executives may yet have recognized – both to find new sources of knowledge and to get access to the medical devices, diagnostics and support services that will play as important a role as medicines in the development of healthcare packages for patients with different disease subtypes.

Moreover, the competition for good partners has been steadily increasing over the past few years, as the options for developing and commercializing new molecules expand. The recent upheaval in the financial markets may reverse this trend, but biotech firms with really desirable drug candidates will always attract plenty of interest. Many large biopharmaceutical companies will therefore have to refine their biopartnering skills. As the results of the 2008 biopartnering survey clearly demonstrate, some of them make exceptional allies, but many manage only to live in “imperfect harmony” with their partners.

For more information about this study, please contact us at iibv@us.ibm.com. To browse through other research by the IBM Institute for Business Value, visit:

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Appendix 1

Survey population and methodology

The 2008 biopartnering survey was jointly conducted by IBM Global Business Services and Silico Research. Fifty-five percent of the 223 respondents work in biotech companies, while 29 percent work in other areas of the life sciences sector (including pharmaceuticals, medical device manufacturing, contract research and contract services). The latest survey also includes academic researchers, in recognition of their growing role in drug research. Academic researchers comprise 16 percent of the total sample.

Two survey questionnaires, long and short, were distributed to senior executives in biotech and pharmaceutical companies, and key academic researchers in leading universities. The long survey went to alliance sponsors and their partners, asking for detailed feedback about each partnership

with the sponsoring company. The short form was sent to academic researchers and other executives in the sector, who were asked to nominate between 3 and 10 of the largest 50 life sciences companies with which they were most familiar. They were then asked to rate each company in five respects:

- Its skills in initiating alliances
- Its skills in negotiating alliances
- Its skills in managing alliances
- Its attractiveness as a partner
- How readily they would recommend the company as a partner to colleagues.

Those who wish to compare the results with the findings from the 2006 survey will find the latter at ibm.com/services/biopartnering

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