IBM Global Business Services

IBM Institute for Business Value

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Life Sciences

Cultivating innovation beyond corporate walls

Alliances between the life sciences industry and academia

Past collaborations between the life sciences industry and academia have not always been successful, due in part to the conflicting needs of university research and commercial viability. However, industry needs academia to stimulate innovative product development, and academia needs industry to fund research and provide careers for graduates. A new study by IBM Global Business Services and the University of California, San Francisco, reveals the business models and attitudes that can help make these collaborations successful.

When Henry Chesbrough coined the term "open innovation," he meant that knowledge is widely distributed in the modern world, and that companies should not just rely on internal sources of innovation; they should also use external ideas.[1] Today, a growing number of firms are turning to external organizations to supplement their own research and development (R&D). In fact, 71 percent of the chief executives who participated in IBM's 2008 Global CEO Study, and who also plan to change their enterprise models, intend to focus on collaborating with other organizations.[2]

The trend towards open innovation is particularly marked in the life sciences industry, largely because it has been struggling to develop good new medicines by itself. Between 1993 and 2004, spending on biopharmaceutical R&D increased by 147 percent, yet the number of new drug applications submitted to the U.S. Food and Drug Administration rose by just 38 percent.[3] With little to show for all the money they had invested and patent expiries set to erode a substantial amount of their revenues, many companies realized they needed to look beyond their own walls. (See Figure).

With a growing number of companies turning to universities to supplement their own research, various new models for collaborating are emerging. Yet none of these new models addresses the many differences between industry and academia, with the result that both partners remain frustrated.

Research conducted by IBM and the University of California, San Francisco (UCSF), suggests that four steps are essential to realize the full potential of industry-academic partnerships:

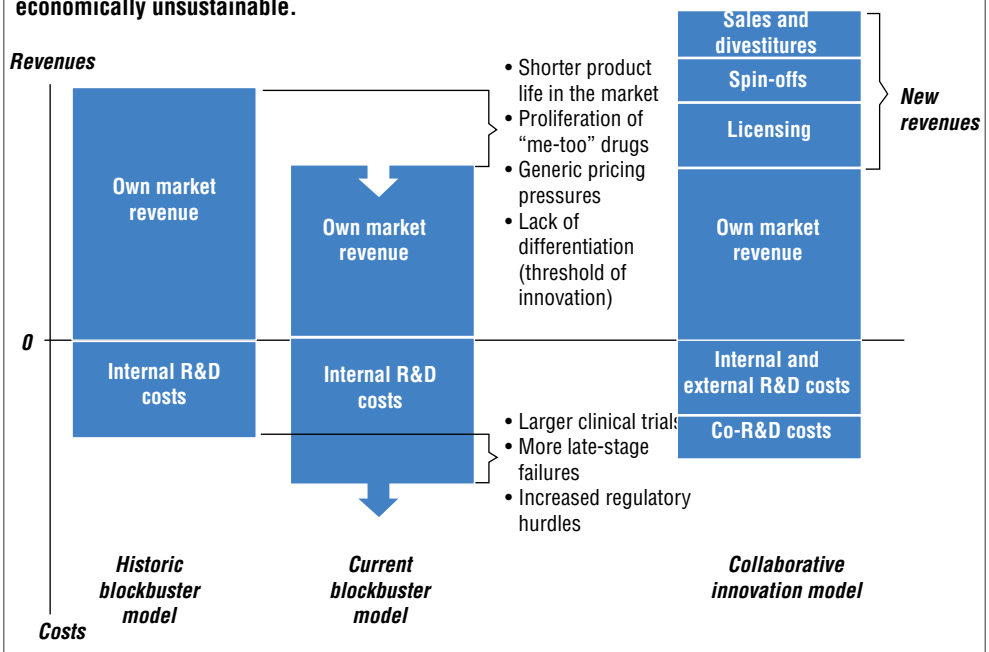
1. Understand and appreciate the value a partner brings to the alliance.
2. Align the goals, expectations and approaches of the respective partners before signing the contract.
3. Select the most suitable model for collaborating given the nature of the research project and, thus, the information that must be shared.
4. Manage multiple industry-academic alliances like an investment portfolio in order to eliminate redundancies and capitalize on any synergies between research projects in different therapeutic areas.

IBM and UCSF's research also suggests that other measures will be necessary to overcome some of the industrywide obstacles to developing a new generation of safer and more effective treatments. One such measure is more effective classification of different kinds of information, so that industry executives know what they can freely share with academic research partners without jeopardizing their companies' future revenues. Another is the creation of non-exclusive consortia in pre-competitive areas of research.

Industry-academic collaborations are likely to continue playing an important role in developing better treatments. Any pharmaceutical company that wants to capitalize fully on such partnerships should

- Adopt a strategic approach that takes the interests of both parties into account.
- Treat its alliances with academic researchers as a portfolio, both to reduce the duplication of effort and optimize the synergies across therapeutic areas.

FIGURE 1.
An illustration of why the current model for producing biopharmaceutical innovation is economically unsustainable.



Source: Henry Chesbrough, Open Business Models: How to Thrive in the New Innovation Landscape. Boston: Harvard Business School Press, 2006; IBM Global Business Services.

How can IBM help?

- ***Life Sciences R&D Transformation Solution – Business Model Innovation Strategy (Biopartnering)***– Helping our life sciences clients develop innovative R&D strategies driven from the intersection of business, science and technology. We address our client's foremost R&D business challenges with deep insight into the relevant scientific disciplines, emerging technologies and business insight. Working alongside IBM Research, GBS works closely with our clients to solve problems in modeling and simulation, nanotechnology, proteomics, and other scientific areas. Core to our work is deploying strategies around biopartnering and driving innovation beyond one's own R&D walls by tapping into the wealth of knowledge and expertise that resides in other large companies, smaller biotechs and academia. Assess the current biocollaboration, funding and IP model and map out the transformation from vertically integrated to network orchestrator to achieve improved R&D outputs.

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2 "The Enterprise of the Future: The Global CEO Study 2008." IBM Global Business Services. June 2008.

3 Jones, Andrew and Clifford, Les. "Drug Discovery Alliances." *Nature: Drug Discovery*, 4: 807-808. October 2005; "Annual Research, Development Spending by Pharmaceutical Industry Increased by 147 percent From 1993 Through 2004, But 'Productivity' Has Been 'Declining,' GAO Report Finds." Kaiser Family Foundation. December 20, 2006. http://www.kaisernetwork.org/daily_reports/rep_index.cfm?DR_ID=41779

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