

Creating breakthrough innovation during a pharmaceutical merger or acquisition

With industry challenges climbing, pharmaceutical companies are finding it difficult to sustain desired—or expected—revenue growth rates. Although mergers and acquisitions (M&A) offer several avenues for achieving growth, results are often short-lived. To develop capabilities that fuel growth over the long term, pharmaceutical firms should exploit M&A transactions as a potential way to dramatically improve research and development (R&D) productivity.



By Jeffrey Jung

Pharmaceutical mergers

Contents

- 1 Introduction
- 1 Symptoms of a struggling industry
- 3 Short-term growth versus long-term productivity
- 7 Diagnosis: An increased focus on innovation
- 13 Rx for change: Preparing for a smoother R&D integration
- 15 Conclusion
- 16 About the author

“You can sustain sales growth for about one to three years with a merger through savings, but unless you kick start top-line growth, then you haven’t achieved much through the merger except sustaining your position a little longer.” – VP, A top 15 pharmaceutical company.

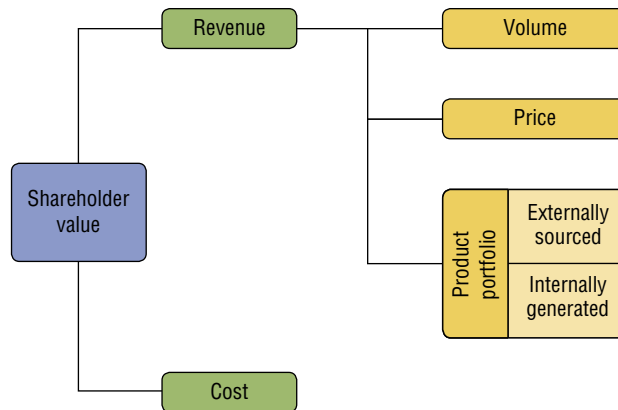
Introduction

Although the pharmaceutical industry has performed well historically, by the late 1990s, many pharmaceutical companies had found that their innovative capabilities could not keep pace with investors’ expectations for double-digit growth. As a result, merging companies grew by acquiring other companies’ products or pipelines. However, these mergers are not currently providing the solid, long-term productivity benefits most companies need to maintain a competitive advantage.

According to a study at the IBM Institute for Business Value, M&A strategies should target R&D integration not only as a source of cost savings, as has been typical of past mergers, but also as an opportunity to realize long-term gains. An increased focus on R&D productivity as pharmaceutical companies merge encourages innovation, yielding faster and more-effective discovery and development of the new chemical entities that drive market value.

Symptoms of a struggling industry

To meet shareholders’ lofty expectations, pharmaceutical companies typically focus on three sources of value creation, leveraging volume, price and product portfolio in ever-changing equations to boost earnings (see Figure 1). However, current industry pressures threaten the success of these traditional strategies.



Source: IBM Institute for Business Value

Figure 1. Sources of value creation.

“The problem with the industry today is that now through 2011, the pipeline for drugs that are now available for sale is not big enough to sustain every company’s growth aspirations.” – VP, A top 15 pharmaceutical company.

Strategies that seek to increase volume are struggling; with so many large sales forces competing for physicians’ time, opportunities to detail products are becoming scarce. Companies reliant on volume-based strategies face the rapid introduction of competitors’ “me-too” drugs, which shrink the market opportunity for exclusive drug sales. Indeed, pharmaceutical companies can no longer expect market exclusivity for the entire patent life of a product. In addition, increased competition often saddles sales and marketing with the added pressure and rising costs of accelerating speed-to-peak sales.

As the population ages and the use of high-cost drugs increases, revenue growth from price increases meets opposition as both public and private payors demand price reductions. Blockbuster expirations exert intense pressure on companies to replace a magnitude of lost revenues in a short period of time. Finally, recent high-publicity recalls have resulted in more rigorous and time-consuming approval processes with regulatory agencies, leaving less time for the drug to remain unchallenged in the marketplace.

Strategies to broaden the product portfolio have come under pressure as blockbuster drugs become more difficult to find. Most of the body’s major enzymes, which have been the basis for many drugs that target larger populations, have already been exploited.¹ The remaining unmet needs are more complex, and drugs to treat them are more difficult to develop. In addition, despite heavy investments in new technologies to develop new chemical entities, many companies are finding that the benefits from these technologies may be years away. And although companies have sought in-licensing deals to heal ailing pipelines, large pharmaceutical companies have bid up the price of desirable late-stage products to potentially unprofitable levels.

Last, but not least, pharmaceutical companies are finding that increases in R&D costs have put additional strain on the bottom line. As companies target more diverse populations and therapeutic areas, clinical trials and resources – such as patient and physician volunteers and new technologies – increase in cost and complexity. Because companies are exploring compounds in unprecedented areas, their failure rates are higher than ever before, and trial-and-error clinical tests are becoming increasingly expensive. Add to that the rising costs that companies incur for escalating regulatory requirements, and many pharmaceutical companies face seemingly insurmountable odds to sustained productivity.

“Mergers compound their problem because it increases the baseline from which they need to make that double-digit growth. But that’s the next CEO’s problem ...” – VP Corporate Development, A top 15 pharmaceutical company.

The constant struggle to increase shareholder value despite these unrelenting industry obstacles is producing a continual stream of industry mergers. Although M&A activity in the pharmaceutical industry has been directed at boosting sagging earnings, most strategies have focused on short-term gains instead of long-term cures. Revenue growth from increasing the sales force to gain market share, moving into new geographic regions or gaining access to another company’s pipeline or current products is difficult to sustain. The same is true for achieving cost savings from spreading fixed costs across a greater base and eliminating duplication. In fact, the only sustainable quick-hit benefit gained from current M&A strategies is access to a widely applicable platform, novel technology or patent.

Typically, companies that focus solely on short-term gains struggle to maintain their pre-merger market position. For these companies, the number of new drugs produced has not increased at the same rate as R&D spending. In the absence of new product launches, many pharmaceutical companies have had to focus on volume and price to grow. Unless the trend of declining R&D productivity is reversed, *pharmaceutical firms will be forced to merge continually* to plug product gaps, creating a never-ending treadmill effect where pharmaceutical companies grow larger and larger while chasing growth rates that are increasingly difficult to obtain and – more importantly – sustain.

Short-term growth versus long-term productivity

The R&D benefits typically sought through M&A focus on taking advantage of the increased scale of the organization. Increased size enables pharmaceutical companies to:

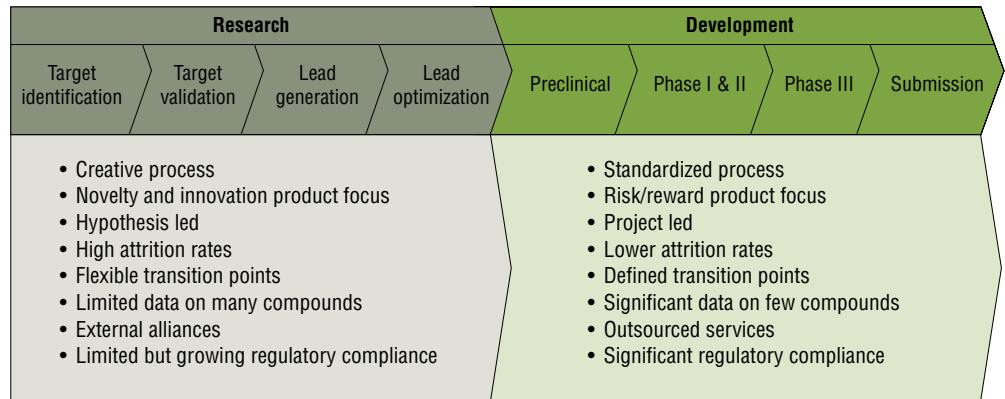
- Fill pipeline gaps
- Expand or deepen therapeutic areas
- Spread risk by placing bets on more projects and technologies
- Achieve cost savings by eliminating duplicate resources
- Become a more attractive research partner
- Negotiate better deals with suppliers.

However, to optimize the benefits afforded by greater size, companies must understand where scale benefits productivity, and where it does not. In fact, industry experts speculate that many larger pharmaceutical companies may have already reached a point of diminishing returns to R&D scale. Increasing corporate complexity drives up the costs of communication and coordination across the organization, which means that it takes longer for good ideas to even be recognized, much less acted on or implemented. Larger companies tend to be more conservative, bureaucratic and risk averse, and as a company grows larger, the probability of naturally occurring creativity decreases.

That said, in order to optimize the benefits of scale, companies must determine the appropriate degree of post-merger R&D integration. Of course, there are advantages and disadvantages to both full and limited R&D integration, depending on the merger benefits the company desires; however, the greater the degree of integration, the more opportunity that arises from benefits of scale:

- With limited R&D integration, a company can avoid diluting the acquired company's strength, especially the entrepreneurial environment typically found in a smaller acquisition. In addition, the company may suffer fewer cultural clashes than if it chose full integration. Initially, limited integration costs less; however, it also offers fewer opportunities for cost savings. With limited integration, companies may experience difficulty in identification and realization of innovation synergies, waning corporate morale and camaraderie, and inhibited knowledge sharing, which can be crippling to the company's progress and productivity.
- Full R&D integration increases opportunities to eliminate duplicate costs for resources, such as staff and technology. Integrating scientists within the same facilities forces different cultures to work together and provides a greater opportunity to identify and leverage the strengths of each company. Also, full integration of processes and technology are advantageous in promoting internal collaboration that leads to innovation. Full integration costs more than limited integration and takes more time to achieve. Cultural differences must be worked out between the two companies, and company leadership must make difficult decisions regarding staff cuts and facility closings.

Regardless of the level of R&D integration a company chooses, it should consider the differences between the nature of work processes in research and development and formulate its integration approaches accordingly (see Figure 2).



Source: IBM Institute for Business Value

Figure 2. Differences between research and development.

Within pharmaceutical companies, therapeutic areas normally do not share knowledge with each other. In fact, there may even be knowledge that is not shared effectively within a therapeutic area. As individual areas rebound from the merger and become self-sufficient, the merged company may lose the opportunity to benefit from the diversity of knowledge embedded within these silos.

Benefits from economy of scope – the ability to maintain a diverse portfolio of research projects, while simultaneously capturing the internal and external knowledge that strengthens and increases the corporate knowledge base – is the primary advantage of large pharmaceutical companies.² As the diversity of projects in a company grows, each project has access to a larger pool of knowledge. Companies can leverage the benefits of a broader corporate knowledge base to increase the diversity of source drug targets, discern new methods for lead identification and optimization, and improve research technologies.

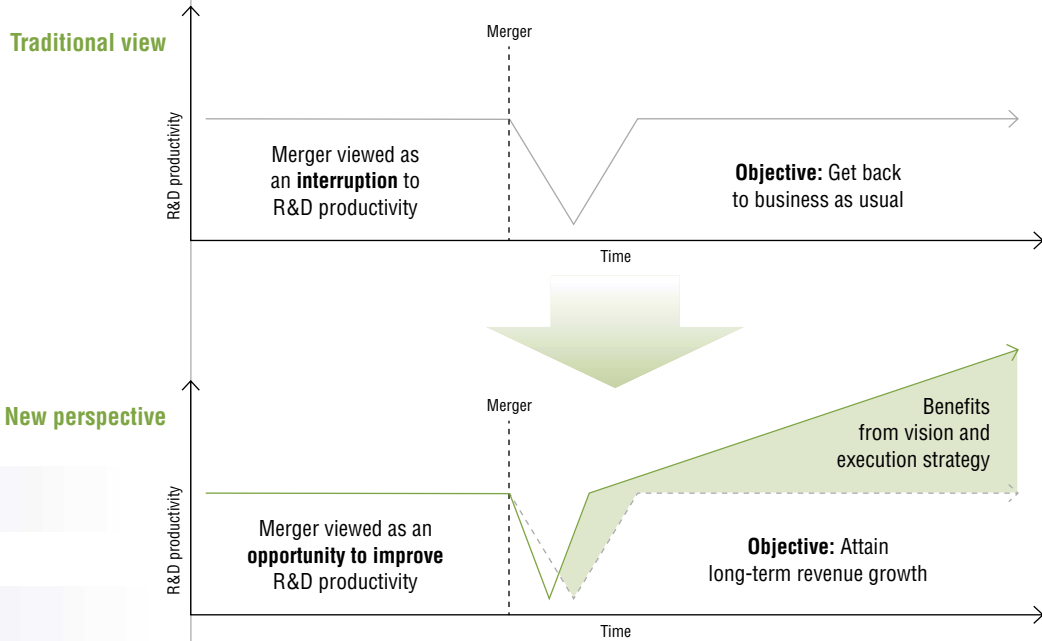
“There is a market premium given to innovators. Look at the biotech P/E multiples versus the pharma P/E. Within each group, there is a disparity on P/E based on the track record of success and how often they had to go out and buy innovation.” – Global Healthcare Head, Leading investment bank.



Taking advantage of knowledge diversity: Successful techniques used by interviewed companies

- Having a central office whose role it is to understand all the company’s research projects and to identify synergies. A scientist could call up this office and ask, “Is there anyone in the company working on X?”
- Sponsoring internal research conferences and presentations to which people travel from various R&D locations to ensure that knowledge moves geographically.
- Putting together groups with people from both merging companies to brainstorm on synergy opportunities for reaching productivity goals.
- Using intranets and other technological forms of communication and knowledge management to organize the way in which information is shared.

In larger companies, a well-defined process to capitalize on diversity of knowledge and expertise will allow good ideas and opportunities to “rise to the top.” Focusing on the benefits of diversity allows an R&D organization to exploit the sustainable benefits of scale resulting in stronger innovation. When other scale benefits are exhausted, the benefits to companywide innovation provided by economies of scope remain, boosting long-term R&D productivity (see Figure 3).



Source: IBM Institute for Business Value

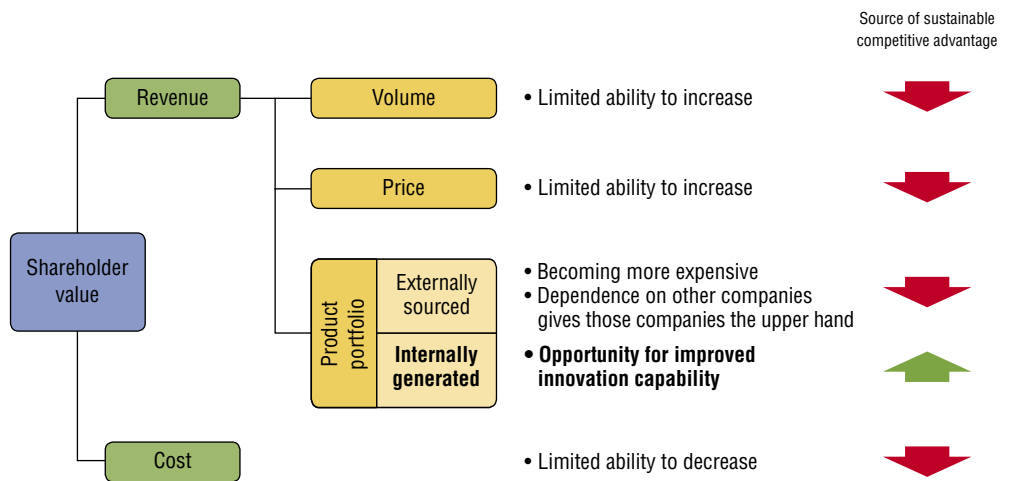
Figure 3. Changing the traditional view of post-merger R&D integration.

“People emphasize amassing resources instead of the value achieved per resource unit.” – VP of Discovery, A top 15 pharmaceutical company.

Diagnosis: An increased focus on innovation

Traditionally, expectations of increased productivity for post-merger R&D have been low. Many pharmaceutical companies feel immediate pressure to boost stock prices following a merger and, therefore, tend to focus almost exclusively on short-term cost savings. In addition, the desire to improve R&D productivity is not typically a driver for mergers or acquisitions. Because corporate management understands sources of value creation such as volume, price and cost better than they understand how to increase R&D productivity, they typically concentrate on achieving M&A synergies in areas where they are most comfortable. In many cases, post-merger improvements in R&D are viewed as an unexpected bonus of mergers, not as an expectation. Lastly, long-term success in improving innovation is difficult to predict and measure, and pharmaceutical companies do not usually set and track performance goals in R&D.

The development of new chemical entities (NCEs) is vital to maintaining a competitive advantage. Indeed, as a company’s ability to sustain shareholder value using volume, price and cost levers declines, companies with strong internal R&D innovation will be winners – outlasting and outproducing their competitors (see Figure 4). Mergers present a unique opportunity to improve R&D productivity that is often overlooked. In short, if companies are willing to concentrate on improving innovation as a path to increased shareholder value, increased post-merger productivity in R&D doesn’t have to be a gamble.



Source: IBM Institute for Business Value

Figure 4. As the returns from traditional strategies diminish, companies with strong internal innovation capabilities will be best positioned for sustainable future growth.

To optimize R&D productivity after a merger, strategies should be built around four main areas:

- *Portfolio investment* – Determining the most attractive research areas and projects in which to invest and the amount to invest in each area
- *Number of candidates in process* – Maximizing the number of compounds discovered and in development
- *Failure rate* – Enabling early identification of failures
- *Cycle time* – Decreasing the time it takes for discovery and development of new compounds.

Each of these four key strategic areas must be supported by actions or initiatives that encourage effective integration and enable long-term innovation. Each area carries its own integration benefits and challenges.

Portfolio investment: Actions to enable innovation

Portfolio investment: Action 1

Identify research areas where the new company can develop or leverage existing competitive advantage by evaluating commercial value potential, probability of success, and known or anticipated development costs.

Benefits

- Provides focus to the new organization on the future opportunity areas
- Allows company to take advantage of scope benefits of the merger
- Spreads investment risk across more opportunities.

Challenges

- Driving acceptance of new priorities
- Cutting previously important projects in nonstrategic therapeutic areas
- Avoiding attrition of strong talent as research priorities shift.

Pharmaceutical mergers

Portfolio investment: Action 2

Develop a collaborative environment so that the new company can achieve more value for each investment dollar. This environment should be enabled by collaborative technologies and an incentive structure that balances the needs of individuals and the organization.

Benefits

- Optimizes the investments that companies make in research by leveraging knowledge gained in one area across another
- Improves understanding of target compounds through improved communication and knowledge sharing.

Challenges

- Combating inwardly focused corporate cultures that may hinder collaboration across functions and organizations
- Integrating legacy technologies that may not be well-suited for a collaborative environment.

Portfolio investment: Action 3

Create institutionally agreed-upon criteria for determining initial and ongoing investment levels for research projects and apply them consistently.

Benefits

- Develops one set of rules for the entire organization
- Sets expectations immediately.

Challenges

- Overcoming resistance as traditional decision-making methods are forced to change
- Managing current projects to the new set of criteria may be difficult for those in leadership roles.

Portfolio investment: Action 4

Create a central reporting process that is uniform across therapeutic areas to monitor the progress of funded projects.

Benefits

- Keeps management informed of project status
- Allows management to focus on business results while scientists focus on scientific results.

Challenges

- Encouraging reluctant scientists to share research data
- Integrating disparate legacy technologies
- Creating an integrated platform may require additional time and expense.

Pharmaceutical mergers

Number of candidates: Action 1

Number of candidates in process: Actions to enable innovation

Develop a uniform discovery approach and leverage mutual assets to meet the growth goals of the newly merged organization. Use best practices, lessons learned and “best fit” technologies. To support higher quantities of candidates, create new processes and invest in new technologies, where appropriate.

Benefits

- Helps identify synergy opportunities
- Gives “street credibility” to the processes, policies or technologies that are brought forward into the new organization
- Allows the new company to start fresh and abandon organizational “baggage”
- Encourages people to develop operational approaches not possible in separate, smaller organizations.

Challenges

- Developing new approaches that combine the best that both companies have to offer depends on creation of criteria that are accepted by both organizations
- Including appropriate representation from both organizations on the leadership team
- Breaking mental ties to a legacy operational approach
- Convincing staffs from both organizations that decisions were made objectively based on established criteria.

Number of candidates: Action 2

Develop an incentive program that encourages researchers to fail earlier in the cycle and counters the more risk-averse behavior typical in larger organizations.

Benefits

- Improves quality of compounds that go into development
- Optimizes research investments.

Challenges

- Avoiding potential culture clashes as one firm’s research group critiques the other company’s work.

Number of candidates: Action 3

Create a cross-therapeutic knowledge repository that captures research data and reports so that future research can be compared to past successes and failures.

Benefits

- Improves discovery potential enterprisewide
- Increases organizational learning about specific diseases and targets.

Challenges

- Integrating data and technologies previously stored in silos
- Capturing tacit, or individually owned, information electronically
- Handling information that is deemed too sensitive to share.

Failure rate: Action 1

Failure rate: Actions to enable innovation

Rationalize discovery technology across both companies' research processes to develop high-quality compounds and capture data that can be mined for future experiments.

Benefits

- Increases the speed at which new compounds can be developed
- Allows organization to collect, analyze and share more data points than otherwise possible
- Enables researchers to focus on value-added tasks.

Challenges

- Managing large amounts of complex data
- Integrating research systems in a way that the data can be shared might be difficult because of:
 - Reliance on custom programs
 - Incompatible technology standards
 - Business cultures that are hesitant to share information.

Failure rate: Action 2

Use the merger as an opportunity to adopt collaborative discovery models that improve knowledge transfer between biologists and chemists.

Benefits

- Increases the overall return on the investment that companies make in research by leveraging knowledge gained in one area across another
- Improves understanding of target and compounds through enhanced communication and knowledge sharing.

Challenges

- Overcoming inwardly focused cultures that may hinder collaboration across functions and organizations
- Leveraging legacy technologies that may not be well-suited for a collaborative environment.



Failure rate: Action 3

In the new research organization, promote a culture that rewards “failure” as much as it does the creation of new compounds.

Benefits

- Decreases development costs by increasing the likelihood that compounds will succeed once in development
- Lowers the stress on development organizations.

Challenges

- Convincing research to accept a lower output number
- Shifting the research mindset from quantity of targets to quality of targets.

Cycle time: Actions to enable innovation

Cycle time: Action 1

Develop a uniform development approach and leverage key assets to improve efficiency and promote speed to market: use best practices, lessons learned and “best fit” technologies from both organizations. Create new processes, invest in new technologies or outsource, where appropriate, to be able to support higher quantities of candidates.

Benefits

- Enables new company to take advantage of scale benefits where appropriate
- Provides the organization with tangible goals and specific expectations
- Permits company to focus on parts of development where true competitive advantage can be gained
- Reduces costs by:
 - Streamlining internal operations
 - Automating processes
 - Outsourcing costly, noncore functions.

Challenges

- Implementing an organizational design to meet new goals
- Managing to new goals despite resistance
- Blending differing philosophies about what drives competitive advantage
- Breaking emotional ties to legacy technologies that are no longer applicable with new processes
- Relinquishing control of appropriate processes to third parties.

Cycle time: Action 2

Conduct skills assessment of both organizations to determine “fit” within newly combined R&D processes.

Benefits

- Allows company to ascertain how fast it can execute on new strategies
- Identifies skill training needs.

Challenges

- Calming workers concerned about their jobs
- Developing an objective list of valued skills.

Cycle time: Action 3

Motivate staff to achieve speed targets and reward collaboration in reaching overall goals, not just functional ones.

Benefits

- Helps ensure that one function does not excel at the expense of another
- Aligns corporate and individual unit goals.

Challenges

- Pushing past initial resistance from legacy cultures until the new corporate culture takes hold.

Rx for change: Preparing for a smoother R&D integration

There are many obstacles to consider in the R&D integration process, and these obstacles typically vary based on the differences between the two organizations involved in the merger. For instance, one organization’s approach to resource allocation or research strategy may be completely opposite from that of the other organization. Corporate culture and organizational structure may be vastly different between the two companies, affecting the way each company makes decisions and executes projects.

Nonetheless, there are five main challenges common to all R&D merger situations; corporations whose leadership considers these issues and the ramifications that they may have on their specific organization will be several steps closer to a smooth R&D integration. To help assess your organization’s readiness for R&D integration, take a moment to think through the questions in Figure 5.



Critical challenges	Questions for corporate leadership
Overcoming resistance to change	<p>How are key decision-making processes designed? Do they include objective criteria that are fair and understandable to parties from both companies involved in the merger?</p> <p>What measures have been taken to include parties from both companies in face-to-face brainstorming sessions to set common productivity goals for the new, combined R&D organization?</p> <p>What will motivate the integration teams to focus more on mutual value creation and less on political biases?</p>
Reducing productivity paralysis	<p>How quickly and fairly are key decisions regarding management positions, organizational structure, project portfolio and layoffs made?</p> <p>Departure of key leaders can impact productivity, deplete important intellectual capital resources and stall key projects: what specific corporate strategies have been designed to lessen this effect?</p>
Setting clear goals and expectations	<p>What kind of reward system will be established to recognize workers for meeting set goals and objectives?</p> <p>How are project goals structured? Do they address both short- and long-term accomplishment?</p> <p>Is productivity measured at every stage and substage of key projects?</p>
Addressing technology issues	<p>How user-friendly are R&D's technology solutions?</p> <p>How easy is it to customize new technological tools for the needs of individual research groups?</p> <p>How closely aligned are technology solutions, productivity strategies and organization's structure?</p> <p>How easy is it for employees across the company to search data and access information?</p>
Leadership	<p>Does corporate leadership provide strong and visible support to R&D integration, providing necessary resources and information?</p> <p>What steps have been taken to encourage employee ownership of initiatives and projects?</p> <p>What type of balance have leaders struck between piloting the integration centrally and empowering decentralized decision-making?</p> <p>What type of communication plan is in place? How frequently are decisions, goals and progress communicated to employees?</p>

Source: IBM Institute for Business Value

Figure 5. Questions for corporate leadership.

Conclusion

Blockbusters are harder to come by, newer chemical entities are targeting smaller patient populations and customers are clamoring for lower prices on higher-performance drugs, while approval processes grow more difficult and lengthy. Many pharmaceutical companies have seen mergers as a way to stay abreast of this building tsunami of market pressures. However, many mergers have reflected short-term strategies focused on filling gaps in product portfolios or pipelines, or increasing in scale as a means to increase market share. Although these strategies are effective in creating temporary benefits, they do not effectively address more complex, long-term opportunities that can feed organizational success into the future.

If mergers between companies do not include a strategy specifically designed to increase innovation, the benefits will likely be short-lived and may even erode the organization's pre-merger market position. For pharmaceutical companies that want their company value to reflect their investments in mergers and acquisitions, a strategy for increased R&D productivity is worth exploration and investment. A merger strategy that focuses on speeding effective R&D integration helps organizations rebound faster from the typical merger-related mire, identify and exploit synergies quickly and enable long-term innovations that boost market share.

Change is taxing: even the most carefully planned mergers can produce trying obstacles to continued productivity. To discuss how we might assist in developing a strategy geared toward increasing innovation by bringing together the best that both organizations have to offer, contact us at bva@us.ibm.com. To browse through additional resources for business executives, we invite you to visit our Web site at

ibm.com/services/strategy



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