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Health Care and Pharmaceuticals



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THERE'S BEEN A LOT OF ECONOMIC TURMOIL in the last few years. Although the pharmaceutical industry has emerged in relatively good shape, it nevertheless faces some significant challenges on the road ahead. First among them is the need to dramatically change its business model to boost its pipeline of new products. Companies must find a way to balance being “lean” with the critical need to be innovative. Fortunately, the two are not mutually exclusive, but they must be carefully managed. And in the midst of it all, while pharma has emerged relatively unscathed from health care insurance reform, don't expect initiatives such as electronic medical records to create a panacea of improved care and cost reduction; there is a need—and opportunity—for companies to launch innovations that will lower costs.

3

In the New Health Care Environment, Big Pharma Should Focus on Innovation, Not Marketing

Pharma has emerged from health care reform in a reasonably good position. But structural problems within the industry remain. While big pharma has used increasingly large mega-mergers to support its reliance on blockbuster products with huge sales, it still faces the long-term need to develop fundamentally new business models to cope with its most significant problem—a failure to come up with innovative new treatments, according to Wharton faculty.

6

Information Technology Is Unlikely to Help Contain High Health Care Costs

It is worth looking at the role that technology might play in helping to provide less expensive care. President Obama made information technology a key part of his plan to reduce costs and improve the quality of care. However, that plan could backfire and actually increase health care costs because of the need for training, implementation of the new systems, and the labor required to maintain the technology, according to experts at Wharton.

Contents

12

Compatible Goals: Companies Can Be Lean and Innovative

Being “lean” is no longer a temporary trend driven by the economy, but rather an actual business model that combines concepts such as waste elimination, just-in-time inventory management and worker involvement. But can “lean” coexist with innovation or will it smother the creativity required to innovate new ideas?



In the New Health Care Environment, Big Pharma Should Focus on Innovation, Not Marketing

Pharma has emerged from health care reform in a reasonably good position. New customers will soon be entering the system, and price protections remain in force. But structural problems within the industry remain. While big pharma has used increasingly large mega-mergers to support its reliance on blockbuster products with huge sales, it still faces the long-term need to develop fundamentally new business models to cope with its most significant problem—a failure to come up with innovative new treatments, according to Wharton faculty.

Once a powerful profit-machine, big pharma is stumbling up against dry product pipelines, fierce competition from generic manufacturers, consumer concerns about safety, and false marketing claims—along with the threat of a larger government role in drug purchases and pricing. “The old model is dead, and big pharma is struggling to come to terms with what new model is going to work,” says Wharton

management professor John Kimberly. “What is clear is that scale is not going to do it.” IMS Health, the drug industry forecasting firm, reports that the global pharmaceutical industry will grow 4% to 6% in 2010, up to \$825 billion—the lowest levels of growth in a decade.

While health care reform has dominated headlines, drug companies have come through the debate relatively untouched,

according to Mark Pauly, a Wharton health care management professor. Early in the health care reform negotiations, the drug industry promised the Obama administration it would contribute \$80 billion in savings to help finance proposed reform over the next 10 years. In return, the industry’s basic pricing structure would remain intact. “In the short run, they fought off strong pressure. They dodged the bullet,” says Pauly. “They are already far down in revenue growth but they are lucky because a lot of people in Congress would like to kick them more.”

In addition, Pauly notes that the expansion of coverage to more than 40 million uninsured would give the industry a larger customer base. The revenue growth would translate to pure profit because the cost of creating a medication is not in the production of the pill itself, but the research that goes into discovering a new therapy. Over time, however, Pauly says the industry could

face government pressure on pricing. “In the long run, if we are serious about cost containment, they are in the cross-hairs.”

Looking ahead, Pauly adds, the introduction of new products—such as expensive anti-cancer drugs—will be subject to more scrutiny based on cost either through Medicare, another form of public insurance or exchanges as proposed in some of the reform proposals. “It’s going to be more of a regulated industry.” With reform passed the drug industry is one of the primary candidates for regulation.

Marketing Practices Come under the Microscope

In addition to government involvement in pricing and sales, the industry is facing new scrutiny of its marketing practices at the state and federal levels, according to David Grande, a senior fellow at the Leonard Davis Institute of Health Economics at the University of Pennsylvania.

In fall 2009, Pfizer agreed to pay the largest U.S. criminal fine in history—\$2.3 billion—to settle U.S. Justice Department claims that the firm had violated marketing regulations by promoting its painkiller Bextra (which has since been removed from the market) and other drugs for uses that had not been approved by the U.S. Food and Drug Administration.

According to Grande, states are increasingly adding restrictions to how drug marketers can interact with doctors and limiting the value of gifts and other subtle, non-financial inducements to prescribe one company’s product over another. Federal legislation has been proposed that would require disclosure of gifts at varying levels, ranging from \$10 to \$500. “Many gifts would fly under the radar at the \$500 level,” he says.

Some states are developing so-called “academic detailing” programs in which educators—those without a financial stake in one particular product over another—would meet with doctors to keep them up-to-date on new treatments, Grande says. “In the last decade, we have seen much more scrutiny of physicians prescribing in high profile cases where drugs were pulled off the market. And with the high cost of drugs and cost pressures—particularly in the public sector—legislators are more aware of these practices and are more engaged.”

While marketing to physicians still dwarfs drug company outreach to consumers, he notes, the explosion in so-called direct-to-consumer (DTC) advertising since regulations were eased in the late 1990s has brought more attention to drug marketing. Indeed, says Grande,

“They may save themselves if they come up with a wonderful product at a wonderful price, but they may need to light a votive candle.”

Mark Pauly, Professor of Health Care Management, The Wharton School



federal officials seem actively engaged in monitoring the industry as a result of the safety problems. However, it is too soon to say whether the Obama administration is going to come down harder on the industry than prior administrations.

On another front, the industry faces continued pressure from cheaper generic drugs that can come onto the market

once a branded product loses its 20-year patent protection. According to the IMS report, generic competition will be the major factor bringing global pharmaceutical growth to the mid-single digits through 2013. In the next five years, drugs generating \$137 billion in sales—including the widely prescribed cholesterol medicine Lipitor—will confront generic competition.

Kimberly notes that generic drug manufacturers are growing increasingly sophisticated in their ability to produce generic versions of a medication as soon as it loses patent protection. Large pharmaceutical companies, which have viewed generic producers as their sworn enemies, are now wondering whether it would be a successful strategy to get into the generic market, he says.

In response to declining research productivity, many large drug firms have acquired or formed partnerships with small, innovative biotech firms producing biologically based products. As of now, those types of products have no generic competition because there is no mechanism to prove they are equivalent to the original product, as is possible with chemical-based entities. The FDA and industry are exploring the creation of bioequivalency standards that could eventually lead to generic competition in this product category.

For years, the industry’s response to its many challenges has been to double down and acquire competitors to bring in new products and create synergies by reducing overhead and focusing on selling major blockbuster drugs. Recent examples of this strategy are Pfizer’s \$68 billion acquisition of Wyeth and Merck’s \$41 billion purchase of Schering-Plough.

Kimberly says Pfizer’s move is designed to quickly fill its product portfolio when Lipitor, which accounted for a quarter of the company’s sales before the Wyeth merger, loses patent protection in 2011. Indeed, Pfizer bought Warner Lambert in 2000, largely to acquire Lipitor. “They have to do something to plug the revenue gap,” Kimberly states, adding that Pfizer has painted the merger as an attempt to build a diverse product base and wean itself off dependence on a single product. However, Kimberly notes, that would have happened anyway once the company lost patent exclusivity on Lipitor.

Merck's merger with Schering-Plough, he says, is interesting because Merck had traditionally resisted the urge to combine with competitors, remaining staunchly independent during a long series of industry mega-mergers. "This is deep in Merck's genes. The fact that they are acquiring Schering-Plough is a signal to me that big pharma is struggling to come to terms with what new model is going to work."

New Ideas, New Trends

Kimberly points to a few indications of new ideas that are hatching in the industry that could eventually form the basis for fundamental change. One notable trend, he says, is that pharmaceutical companies are acquiring or partnering with biotech companies that make more sophisticated products. Biotech medications, which must typically be delivered by infusion in a physician's office, tend to be more expensive and highly targeted to patients compared to the traditional chemical-based compounds that the pharmaceutical industry usually manufactures.

Biotech companies tend to be small, science-based operations, often run by a founding entrepreneur. As a result, Kimberly says, they are likely to be more innovative than the big pharmaceutical companies that have attempted to drive discovery through mass screenings of chemical entities hoping to hit on a compound that might show promise against disease.

Now, he says, many large drug companies are investing in pieces of many companies that usually are focused on one product. The best example of this strategy, he says, is Eli Lilly, which is participating with more than 200 small companies working on novel treatments. "It's only in the early stages, and there's no guarantee it will pay off," he says.

Kimberly also predicts that in the next five to 10 years, big pharmaceutical firms will increase their level of investment in small research-based start-ups with promising products, and cut back on the vast research and marketing operations they have spent billions to amass. This emerging model poses challenges to pharmaceutical management that is

used to working in a highly centralized framework. "How do you manage a portfolio of companies with their own idiosyncrasies and their own history?" he asks. "It's a fascinating management challenge."

According to Wharton health care management professor Guy David, changes in marketing practices could staunch the backlash developing over drug safety. He notes that the industry now spends \$5 billion in advertising aimed directly at consumers—a tactic that has eroded doctors' roles as gatekeepers in the prescription process. The result has been a rash of expensive settlements with injured patients, fines and costly withdrawals of products that might now create problems for patients who need the drugs most.

Direct-to-consumer advertising has been good for patients—those with clear-cut medical needs—by raising awareness of treatments, according to David. For example, Lipitor is an effective drug in helping prevent heart disease and is easy for doctors to prescribe because cholesterol levels are simple to verify, he notes. On the other hand, drugs for pain or depression are more difficult for doctors to target. As a result, larger numbers of patients clamor for high-powered medications with little regard to the relationship between the potential benefit and the risk of side effects. Once that relationship erodes, higher incidences of safety problems are bound to be recorded, potentially leading to the withdrawal of a drug from the market that would be beneficial for certain patients.

"Direct-to-consumer advertising, from the firm's perspective, is a double-edged sword," says David. "In one sense, it is like any other advertising, but you are, in an indirect way, increasing the likelihood of an adverse reaction."

Brian Strom, another senior fellow at the Leonard Davis Institute, suggests that pharmaceutical firms focus on developing products with a strong value proposition to fend off any future demands for lower prices. In recent years, the drug industry's blockbuster model has led drug makers to focus on tweaking


another company's product to create "me too" medications. Then they rely heavily on marketing to generate enough revenue to support the organization's large research and marketing overhead.

Companies should emphasize "comparative effectiveness" as they select promising drug candidates and usher them through clinical trials and government approvals, says Strom. Comparative effectiveness emphasizes the benefits of one drug over others in treating a condition. A few firms have used this to market products, but it requires significant investment in producing clinical data, and there is the risk that the data might show the drug is no better than others—or worse, he notes.

"They would rather compete on marketing expertise. That's the model we have now," says Strom, arguing that research geared toward comparative effectiveness could help bring down health care costs, while continuing to provide innovative new treatments.

An overemphasis on marketing, along with high-profile withdrawals of drugs once trumpeted through elaborate media campaigns—such as the arthritis drug Vioxx—has led to growing consumer distrust of pharmaceutical manufacturers, according to Strom. "The industry shouldn't be afraid of comparative effectiveness. They would be better off embracing it, and trying to use it rationally, rather than fighting it. The solution isn't marketing. They should be focusing on innovation."

As the industry struggles against these challenges, one bright spot is growing sales abroad. IMS refers to seven countries, including China, Mexico, and Russia, as "pharmerging markets," and predicts sales in those nations will grow by 12% to 14% in 2010 and 13% to 16% over the next five years. China alone is expected to contribute 21% of overall growth through 2013.

In the meantime, Pauly says the drug industry remains in search of new guidance. "They may save themselves if they come up with a wonderful product at a wonderful price," he says, "but they may need to light a votive candle." 



Information Technology Is Unlikely to Help Contain High Health Care Costs

While the new health care insurance reforms may have some effect on slowing the growth in health care costs, it remains unclear how much of a difference they will make. In the meanwhile, it is worth turning attention to the role that technology might play in helping to provide less expensive care.

President Obama made information technology a key part of his plan to reduce costs and improve the quality of care when he included \$19 billion in electronic medical record funding in the \$787 billion American Recovery and Reinvestment Act of 2009. However, that plan could backfire and actually increase health care costs, according to experts at Wharton.

“Everyone is desperate for a way to get a handle on health care costs and increasingly it is becoming a bigger and bigger part of employee compensation. It’s gobbling up wage growth,” explains

Kevin Volpp, professor of medicine and health care management at Wharton. “And the infrastructure for delivering health care in this country is surprisingly primitive. It’s shocking.”

Volpp argues that upgrading information technology (IT) for the health care industry is vital. To be sure, an IT upgrade has the potential to allow doctors and hospitals to share critical patient records, give patients the ability to monitor their health, and prevent errors. Advocates and policymakers often argue or assume that the new technology will save money

and improve quality. But there are some who are not so certain, especially about IT’s ability to cut costs.

“No one has done the careful research to indicate that if one health care system has information technology and the other doesn’t, then the care is different. There are no controlled trials,” says Mark Pauly, a health care management professor at Wharton. All that technology is no panacea, he warns. In fact, he believes IT could actually raise costs because of culture clashes, training, the implementation of the systems and the labor required to maintain the new technology. “The best-case scenario is that information technology will improve quality but not lower costs. The worst case is that there’s no difference at all.”

That opinion is echoed by other experts at Wharton and the University of Pennsylvania. “The focus on IT in health care is a good thing, but there’s way too much hype about it and misunderstanding

about what the benefits will be and how quickly they will come,” says Peter Gabriel, medical director of clinical information systems at the University of Pennsylvania Health System.

Volpp agrees that tracking real cost savings from health care IT is a difficult task, but he expects there to be some benefits from spotting and eliminating redundant care. But those benefits aren't likely to add up to big savings, says Lawton R. Burns, director of the Wharton Center for Health Management and Economics. “I agree that information technology is important, but it's not the slam dunk it's portrayed to be,” he says. The chase to reduce costs, improve quality and expand coverage is deemed the “iron triangle of health care. A lot of us wince [at that goal],” Burns notes. “It's arguable that we can't do any of those things well.”

David A. Asch, a Wharton health care management and economics professor, agrees that technology is a big part of reform. “No one is arguing against it, but that doesn't mean that it's not oversold,” he says.

Gabriel likens the fascination over IT in health care to a shiny new object that's easier to focus on relative to more daunting issues. “The cost problem is so huge and related to other things,” he says. “The fundamental problem with cost is the payment structure, which is designed around paying for services. The economics incent [patients] to spend more money, and providers to see more patients and do more procedures. To really save, you have to start rationing care. The reason we're talking about technology is because the real problems are so hard to solve that no one wants to touch them politically.”

Burns agrees. “At the end of the day, the only thing that can control health care costs is rationing, but no one wants to do that so we nibble around the edges [of the problem].”

‘Reform Cannot Wait’

President Obama argues that health reform has to start somewhere. “I suffer no illusions that this will be an easy process. It will be hard,” he said. “The cost of our health care has weighed down our economy and the conscience of our nation long enough. So let there be no doubt: Health care reform cannot wait.”

Indeed, experts at Wharton predicted that Obama had enough political momentum to make some progress on health care reform because Americans have been suffering from increased costs amid a recession. At the same time, a bevy of technology companies such as Intel, General Electric, Microsoft and Qualcomm smelled an opportunity for new business. New technologies range

these transactions have costs related to them,” explains Neill. “The health care industry is too fragmented with too many motivations preventing real integration. IT is necessary, but it will not fix what's in place. Technology can accelerate the bad systems and processes and you can make the same mistakes 100 times faster.”

Neill says that these bloated health care processes appear during every office

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Lawton R. Burns, Director, Wharton Center for Health Management and Economics



from electronic medical records that would make it easier for providers to share information, to monitoring devices that enable patients to better track their health, and software to prevent errors.

Meanwhile, physicians say they are open to anything that would make health care transactions more efficient. For instance, Richard Neill, residency director and vice chair at the University of Pennsylvania's Department of Family Medicine and Community Health, says even the most simple health care transactions require many steps. “If I see a patient Friday and there's a prescription, I send an electronic fax to a mail order pharmacy to set it up. They fax back their form to fill out. It's a duel over who uses what form. All of

visit. The simplest health care interaction includes three or four different players: The doctor, the patient, the insurer and the employer. And it gets worse: A simple visit for back pain can escalate the number of players involved if the injury occurred at work and workers' compensation insurance is involved. “It's easy to add these up in aggregate and see the pain involved,” he notes.

All of these processes were built up over time and are still followed. “You're not going to wipe out 140 years of health care development,” says Burns. “Our health care system wasn't destroyed like Europe's [after World War II] so we can't start anew. New policies have to accommodate whatever exists.”

In addition, it's unclear what cultural issues will emerge as information technology is adopted. These cultural issues are in the forefront of primary care physician relationships. Experts at Wharton and Penn say physicians are generally skeptical of the technology movement. How much will a technology overhaul add to operating costs? How much will it cost to retrain workers? What's the electronic record learning curve? And what happens when a doctor has a laptop between him and the patient?

"Individual physicians just don't know where the money is going to come from," says Pauly. "If IT is tied to reimbursements it could work, but [many] are skeptical." Burns adds that the physician-patient relationship can also be altered. "Technology adoption changes the way you practice. What happens when your primary care physician is looking at his screen instead of you?"

Gabriel acknowledges such concerns. "These systems have a big learning curve and when physicians move to them, they should see fewer patients that first month," he says. "It takes about six months for doctors to feel comfortable with new technology."

The Hard Parts

Technology—not the information kind, but the new medicines, procedures and devices that extend human life—is the most powerful driver of health care cost increases. Hospitals are quick to deploy new health care technologies—often without regard to cost—because doctors and hospitals get paid based on the services they provide. Gabriel says that this cycle provides no incentive for health care providers to scrimp on tests, services and other procedures—even if another doctor recently performed them.

"In health care, one person's cost is another person's income," says Asch. "That creates a problem where the status quo is everyone's second-best option and no one agrees on the first choice. It's a paralyzing situation."

For instance, if a magnetic resonance imaging (MRI) test was conducted at hospital A in the same city as hospital B only a week apart, the second institution is likely to repeat the test. Why? The two hospitals aren't likely to have systems that can share the information digitally, but even

if they did there would be little incentive for hospital B to avoid conducting the same MRI test as the first institution.

Asch says that MRI tests would be repeated for a number of reasons. The second hospital may not trust the reading of the first institution's radiologist, there may be incomplete information, or the second hospital may worry about the chance that something may have changed. "The utopian vision is where everyone has widespread systems with interoperability," notes Gabriel. "But that may take years [to happen]."

However, Gabriel adds that there's also an economic justification for that second MRI test: The second hospital makes money from it. Unless some part of the health care chain says that second MRI tests can't be conducted, redundant services will occur.

According to Volpp, better information systems could curb such redundancies. For instance, if one doctor had the complete MRI image, he'd be less likely to order a do-over. "A lot of providers wouldn't order that second scan," he says. Nevertheless, he agrees that the health care payment model needs to change to one where providers are paid based on outcomes rather than services.

27 Ways to List Gender

Those decisions over whether to repeat a test could be more logical if there were widespread information sharing to track where health care dollars were flowing, say experts at Wharton. To share that information, however, the industry needs to agree on standards. Gabriel says that the University of Pennsylvania Health System alone has 27 different ways to represent "male" and "female" in reports. On some forms, sex is recorded as male or female; on others, M or F; some use 1 or 2; still others opt for x or o, etc. That sort of inconsistent labeling can throw a monkey wrench into the process of information retrieval from a database.

"Now take that problem and multiply it by the universe of clinical diagnoses," says Gabriel, referring to the varying approaches used by primary care doctors, insurers, the government and hospitals.

Pauly notes that the government definitely plays an important role in developing standards. The Bush administration created the Office of


the National Coordinator for Health Information Technology to help coordinate such standards, and President Obama has continued the effort with more funding. "If Medicare would pay only if you followed a certain standard, everyone would [do so]," Pauly says.

Despite the misgivings about information technology's impact on the health care industry and the myriad challenges to adopting it, experts at Wharton and Penn say there will be a wide selection of systems to deploy.

Among the notable health care technology efforts:

- Electronic medical records, which allow doctors to share information about a patient. Unfortunately, these record systems aren't easily connected with other hospitals. Volpp, however, says that the systems are critical for the health care industry and serve as a precursor to reform efforts.
- Increased monitoring for—and by—patients to manage chronic diseases. Last year, GE and Intel formed an alliance to develop home-based monitoring technologies that will passively transmit vital data such as glucose levels or heart rates to health care providers. Volpp adds that these technologies have to be closely watched for effectiveness. For instance, such home-based devices have potential to improve quality of care, but will they be so expensive that their use would be justified only for high-risk patients? Other companies such as LifeScan, a unit of Johnson & Johnson, are looking into similar types of devices to improve care.

GE said in May 2009 that it would spend \$3 billion in research and development to launch "at least 100 innovations that lower cost, increase access and improve quality by 15%" by 2015. A big part of GE's pledge is aimed at accelerating health care information technology adoption.

Experts say these projects are worth the effort, but the industry should keep its expectations in check and closely scrutinize investments. "To the extent [that] these technologies improve the quality of care and get the patient more involved, I'm all for them," says Neill. "But the technology is not a sea change—just a chance to change." 

Compatible Goals: Companies Can Be Lean and Innovative



Being “lean” is no longer a temporary trend, but rather an actual business model that combines concepts such as waste elimination, just-in-time inventory management and worker involvement. But can “lean” coexist with innovation, or will it smother the creativity required to innovate new ideas?

According to experts at The Boston Consulting Group (BCG) and Wharton faculty, lean and innovation can indeed complement each other, and it’s about time they came together. Lean brings structure and predictability to innovation, and sharpens the distinction between idea generation and the development process, they say. Both share a common goal: to meet customer needs in a cost-effective manner. And lean can help empower researchers and reduce uncertainty in the innovation process itself.

“There is intense pressure to cut costs, and companies waste a lot of money on product development because the processes for accelerating the best ideas and terminating low-value ideas are often weak or non-existent,” says Hal Sirkin, senior partner at BCG in Chicago and global head of the firm’s operations practice. Companies would do well, he says, to reorient themselves toward “high-impact, high-value” innovations and to “be aggressive in cutting projects that are unlikely to deliver a payback from their portfolios.”

Redefining the Individual and the Team

Hollywood animation company Pixar, the maker of blockbuster movies including the “Toy Story” series and “Finding Nemo,” is a good example of how innovation and lean practices can enhance outcomes. Pixar has combined lean and innovation to good effect, according to Kartik Hosanagar, Wharton professor of operations and information management. Working within the movie industry “where lack of predictability is the norm,” Pixar has created a set of processes that emphasizes team-based collaboration and continuous feedback loops to help overcome creative blocks and track deliverables, but without the stress that could go with a regime of control.

Pixar’s record is proof that lean and innovation can coexist. “Pixar hasn’t had a single failure as yet. All its projects have been successful,” Hosanagar says, adding

that unlike the rest of the movie industry, it has never bought scripts from outside; it develops all its ideas and scripts in-house. “I discovered that much of what the industry uses is madness; what Pixar uses is a method to the madness,” says Hosanagar, who has studied the company with Jehoshua Eliashberg, a Wharton professor of marketing, operations and information management.

Part of what helps Pixar succeed is a model of working in which the individual is as valuable to the team as the team is to the individual, says Hosanagar. To help structure fruitful interactions, Pixar has instituted a system of daily meetings where team members talk about what they have or have not accomplished each day and others provide feedback. The point is not to track people. “In a creative world you often hit roadblocks, and team-based collaboration is critical,” he explains. “People might discuss work that is clearly in an incomplete stage; they don’t have to feel embarrassed.” The process involves cross-company teams, too, where one team working on a project might get feedback from another team working on a totally different project.

Filmmaker Woody Allen drafted a similar system years ago, according to Sirkin. “When people in the movie-making business know each other well and make movies over and over together, they get much better at knowing each other’s strengths and weaknesses, and can improvise and collaborate far more effectively,” he says of Allen’s approach.

Separating Idea from Development

Coming up with good ideas is a very different process from developing and commercializing those ideas. Good ideas that don’t generate a payback are ultimately of little value to a company, says Sirkin. Lean can bring the discipline needed to develop and profit from new product and service offerings. “Most people focus on ideas but not necessarily on what it takes to bring those ideas to market, and which ideas will make money,” he says.

What will make money, of course, is an idea such as a new product or an improvement to an existing one that customers are willing to pay for, says Kim Wagner, senior partner and managing director at BCG and co-head of its

biopharma R&D practice. Wagner sees lean concepts steadily making inroads into life sciences. “Listen to the voice of the customer,” she says, explaining how “a scientist with an interesting finding” could answer the question of whether it has “any tangible value” for users.

Lean’s focus on the customer can help reality-test an innovation, notes Wagner. It might seem like a great idea for a pharmaceutical company to replace a daily dosage with a once-a-week pill. But such an approach doesn’t suit the needs of elderly patients. “If you’re 75 years old, it’s hard to remember that it’s a Sunday and you have to take your pill,” she

“You need virtually every part of the company to make an idea come to life.”

Hal Sirkin, Senior Partner,
BCG



says of a once-weekly dosage regimen, adding that pharmaceutical companies have to factor that market reality into their innovation process.

Listening to the Voice of the Customer

Lean approaches can help organizations take customer satisfaction to new levels. Ravi Aron, a senior fellow at Wharton’s Mack Center for Technological Innovation who does extensive research on health care companies worldwide, cites the case of Bumrungrad International Hospital in Bangkok as an example. The hospital goes “well beyond” quality benchmarks in its industry, and owes that to “continuous and constant process improvements” on a range of metrics including recovery rates, time to recovery, length of stay and other patient satisfaction criteria, he says. “It goes beyond medical care to hospitality services, learning from feedback it collects from patients, physicians, clinicians and supporting staff.”

Bumrungrad uses technology in innovative ways to maximize patient satisfaction, including continual electronic updates of patient records. Aron offers an example of how the hospital uses technology in administering medicines, avoiding the “spaghetti process that is prone to errors” and is common across the industry. A Swisslog pharmacy robot aggregates daily dosages for each patient into little rings that go on conveyor belts, and get checked by RFID (radio frequency identification) and then by a nurse before they are handed over to patients. “It blew my socks off when I saw it,” he says.

Lean is put to best use in process improvements like those at Bumrungrad, Aron says, and to a relatively lesser degree in product improvements that have longer gestation periods. “Lean is a natural fit for process innovation,” he says. “Lean rarely comes into play in the first stage of product innovation,” and really begins its journey when an organization attempts to “hear the voice of the customer.” The third stage, where it orchestrates product innovation with delivery through constant improvements across its supply chain, “is where lean enters with a vengeance,” as Aron puts it.

Orchestrating Supply Chain Efficiencies

Companies adopting lean concepts learn to integrate their suppliers more actively and earlier in the product development process. “Rather than waiting and testing out your products independently, you might integrate your suppliers—certainly of key components—so that they are already working on delivering it while you are figuring out the details of your innovation,” says Sirkin. Even within the organization, lean has to be an enterprise-wide effort involving the functions of R&D, production, sales and so forth. “You need virtually every part of the company to make an idea come to life,” Sirkin says.

Lean and its sharp customer focus can help companies explore innovation in areas that otherwise may have been overlooked, says Wagner. For example, a pharmaceutical company may decide to continue exploring treatments for hypertension even if half a dozen drug brands dominate that market, she says. Guiding that decision would be certain segments in the patient population that are not adequately served by the drugs currently available, and are willing to pay for alternative treatments that work for them.

Companies that embrace lean methodologies will reduce the risks inherent in their development processes, Wagner says. This is especially critical for pharmaceutical companies, where the drug development process is risky, expensive, and extremely time-consuming. “To shorten this process,

many companies front-load activities or do them in parallel,” she explains. “But when development efforts fail—as so many do—these activities end up wasting resources.” Instead, companies should focus their efforts on the activities that increase the technical or commercial probability of a product’s success. “This not only helps the team ‘fail fast’ and move on to the next opportunity, it also limits the amount of extra effort wasted on unsuccessful programs,” she says.

In attempting to reduce waste and speed up processes in the product development process, pharmaceutical companies are also learning to de-layer their organizational structures. Wagner notes that many pharmaceutical companies tend to have very deep structures, with up to a dozen levels between the head of research and the researcher “at the bench,” adding to costs, delays and other inefficiencies. Managers need to look at all the layers to see what value each adds to the product. “If you cannot articulate what value is added at each level of the organization, then you have to question why that level exists,” she says. The de-layering exercise also “empowers scientists and makes the organization a much more exciting place to work. Productivity goes up.”

Empowering Researchers for Stronger Innovation

At companies that have wedded themselves to inflexibility and regimented processes through Six Sigma programs, lean philosophies can liberate

researchers and empower them to redouble their innovation efforts, says Hosanagar. He points to 3M Corp., the maker of innovative products such as Scotchgard, Post-it Notes and Scotch tape, which over the last few years has de-emphasized Six Sigma and the data-driven methodologies it brings to reduce process defects. It’s a word of caution for those taking the notion of variability reduction to its extreme, he says. “Six Sigma clearly has its role in an organization, but excessive adherence to it will kill innovation; people are not going to deviate from the norm and you won’t have innovation.”

Hosanagar goes back to how Pixar marries the structure that lean brings with the freedom creative professionals crave. “They have worked out a golden solution: Nurture creative freedoms and yet reduce waste with the same process,” he says. “They are able to create a situation where projects that are likely to be doomed are eliminated early on.”

Much of what lean represents might seem like a no-brainer, says Sirkin. Yet it is an opportunity for companies that don’t have lean development processes, he says. “Why the focus on lean now? In a downturn, cash-strapped companies are under a lot of pressure to cut costs,” he explains. “The more stress there is on the system, the more people look for ways to relieve that stress, to increase their profitability. It’s all about competition.” 