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Health Innovation: Creating Next Gen Leaders

ONE OF THE PLEASURES OF EDITING *PHARM EXEC* is to search out new and emerging stakeholders with an impact on how we "do" innovation in the biggest sector of the US economy—healthcare. That quest led me last month to a meeting of a new network of 19 US and European academic programs focused on building an inventory of shared learning and best practices in health innovation to drive reforms in both the public and private sectors. The Global Educators Network for Health Care Innovation Education (GENiE, www.thegeniegroup.org) seeks to advance the idea that for healthcare to change, the education of its leaders must change first.

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GENiE's basic mission—to make innovation a central element in the education of future leaders in healthcare—emerged from a research survey of 59 healthcare CEOs conducted by Professor Regina Herzlinger of the Harvard Business School that documented how graduate education programs were not giving CEOs the talent pool required to execute around a more innovative business model. Among other flaws, the survey revealed that current education tracks were too specialized, theoretical, and prescriptive, with little effort being made to induce the characteristics of spontaneity, adaptability, and cross-functional awareness needed to navigate successfully in a real world of unpredictable, disruptive change.

GENiE has met as a group three times, at Harvard Business School, the Duke Medical School, and the University of Alabama at Birmingham (UAB). The network now comprises more than 200 experts drawn not only from academia, including major schools of business, public health, nursing, and medicine, but from professional practice groups, consultancies, and industry as well. GENiE also draws on 16 CEO Champions from, among others, J&J, Amgen, Medtronic, Cardinal Health, Athenahealth, and the American Medical Association. McKinsey, Bain Capital and KPMG represent the consultancy world while a global perspective is offered by CEOs from Discovery Health (South Africa), Medwell Ventures (India) and Amil Participacoes SA (Brazil).

Five cores forward

The objective of the May 7-8 meeting at UAB's Collat School of Business was "building curriculum and community." Consensus was taken to go forward on the following:

(1) Avoid formal accreditation criteria for health innovation studies for more practical ways to highlight this area as a distinctive field and to benchmark best practices in teaching/training, particularly for mid-career professional education.

(2) Expand and disseminate case study teaching aids appropriate to a business climate marked by ambiguity at every turn, meaning a strong case study should never exhibit a bias toward one answer.

(3) Impart practical, real-world urgency to curriculum development, organized around a single basic assertion: no task in business is more difficult today than bringing a regulated health product successfully to market.

(4) Solicit examples of innovative health practices outside the US and Europe, especially in Asia and Africa, where reforms are more scalable and can be introduced at lower cost.

(5) Place more emphasis in the health innovation curriculum on computer science information technology (CSIT—not be confused with health informatics), marketing, and communications capabilities (you can't sell innovation unless you can pitch it), and pricing/market access strategy, where innovation on the payer side is dramatically changing behaviors in all areas of healthcare.

There was also endorsement of the inherent inter-disciplinary nature of innovation, which led to an interesting definition of a successful teaching curricula: while at the outset of a program it should be simple to identify which students come from a business or a medical or a public health background, at the end of the program it should be impossible to do so.

The most objectionable single word identified by the group? Silos: of behavior, thought, and principle. All these characteristics remain endemic in healthcare, with anecdotes abounding, like the majority of new US medical school grads who believe Medicare and Medicaid are the same program. It's another reason why professional education in health must cross and combine disciplines because, while there is no "magic bullet" to solve the sector's problems, this one comes closest.

With 400 potential breakthrough medicines coming on stream through the end of the decade, there is also the pregnant question of whether big Pharma itself has the innovative chops to make it all happen. As we highlight in this month's cover feature on our annual Pharma 50 list of top companies, the outcome depends heavily on the quality and effective use of human capital—people and talent. Does industry have that talent, in sufficient numbers, with the right mix of skills, transferable across functions and geographies, and capable of being passed forward to the next generation? It's a key strategic issue for the "c-suite:" In our knowledge industry, education matters.

Pharmaceutical Executive

VOLUME 35, NUMBER 6

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2015 Pharma 50

By Michael Swanick, David Hole, and Ben Comer, PwC

Pharm Exec's annual Pharma 50 listing is clear proof that once-small and midsize biopharma companies are moving up to join the top ranks of big Pharma. But do these former "stealth" players have the strategic reach and agility to digest all that growth, along with the human capital necessary to prevail in an endlessly demanding market?

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Getty Images/Nav preet Amole

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Blockbuster 2.0

By Stan Bernard and Janet Wells

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Hard Science, High Hopes

Casey McDonald, Senior Editor

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Country Report: Morocco

With the perception of Morocco as just a local healthcare market waning, the country is focused on forging partnerships with other African nations and developing its pharma industrial base and export capabilities.

PHARMACEUTICAL EXECUTIVE VOLUME 35, NUMBER 6 (Print ISSN 0279-6570, Digital ISSN: 2150-735X) is published monthly by UBM Advanstar 131 W. First St., Duluth, MN 55802-2065. Subscription rates: $70 (1 year), $125 (2 years) in the United States and Possessions; $90 (1 year), $145 (2 years) in Canada and Mexico; $135 (1 year), $249 (2 years) in all other countries. Price includes air-expedited service. Single copies (prepaid only): $7 in the United States, $9 in all other countries. Back issues, if available, are $20 for the United States and Possessions, $25 for all other countries. Include $6.50 per order plus $2 per additional copy for US postage and handling. If shipping outside the United States, include an additional $10 per order plus $3 per additional copy. Periodicals postage paid at Duluth, MN 55806 and additional mailing offices. POSTMASTER: Please send address changes to PHARMACEUTICAL EXECUTIVE, PO Box 6180, Duluth, MN 55806-6180. Canadian G.S.T. Number: r-12421 3133rt001, Publications mail agreements NO. 40612608. Return Undeliverable Canadian Addresses to: IMEX Global Solutions, P. O. Box 25542, London, ON N6C 6B2, Canada. Printed in the USA.

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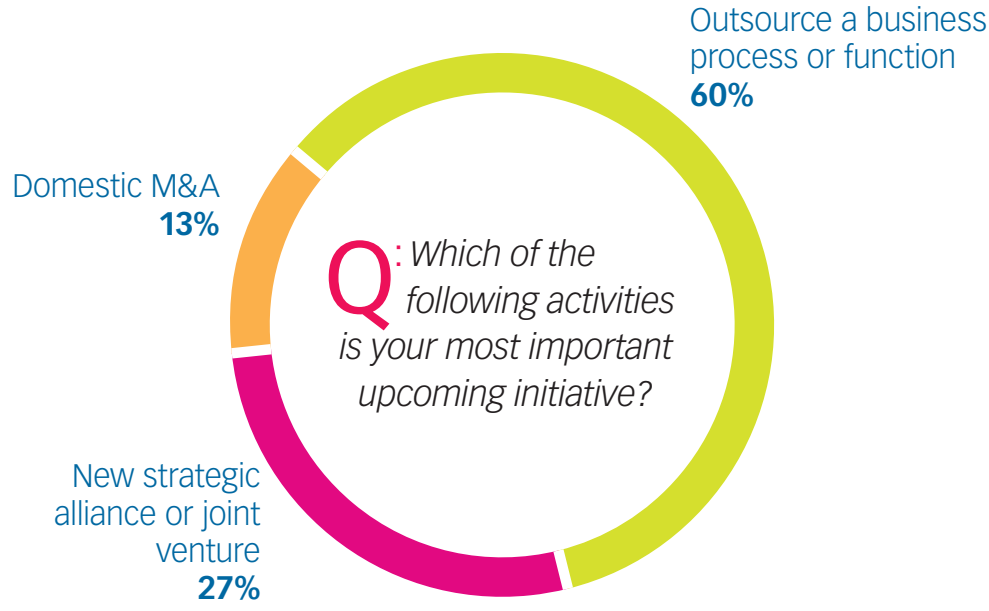

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■ At least 15 pharma companies now consciously investing into multicultural markets on a brand level.

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■ Some apps-FDA may consider "drug labeling," must conform to broader rules for drug ads/promotion.

eyeonfda, @eyeonfda, 5/13/15
"Medical Apps Tricky for Pharma"
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■ Why @PharmExecutive? Money could and should be better invested elsewhere—no one dare say that in election month!

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More Mandates for FDA

New proposals from Congress to spur innovation will strain resources needed for regulatory approval

With a bipartisan "21st Century Cures" bill moving through Congress, and negotiations beginning on how the next round of user fees will shape FDA policies and priorities (see sidebar), there's great optimism in Washington that these efforts will yield real improvements in biomedical discovery and drug development to speed new therapies to patients. FDA officials, though, are nervous about finding resources to implement new mandates while maintaining an efficient review process.

Despite a groundswell in support for greater government funding for biomedical research, Congressional appropriators may not provide any new money for NIH or FDA

Despite broad support for the "Cures" bill negotiated by leaders of the House Energy & Commerce (E&C) Committee, there may be a long wait for Senate action. E&C chairman Fred Upton (R-Mich) is looking for final House approval this summer, but members of the Senate Health, Education, Labor and Pensions (HELP) Committee are crafting their own innovation legislation and don't expect a bill until fall.

The House measure gained Democratic support by offering a hefty budget increase for the National Institutes of Health (NIH) and under pressure, agreed later to add a sizeable funding increase for FDA. The measure proposes to boost NIH funding by $5 billion over three years (to hit $35 billion in 2018) and provides another $10 billion over five years to support a new NIH Innovation Fund. FDA is authorized less than $100 million a year to support clinical trial modernization and evidence development. More important, added language exempts FDA user fees from budget sequestration and proposes "pay for" options. But despite a groundswell in support for greater government funding for biomedical research, there's no indication that Congressional appropriators will provide any new money for NIH or FDA.

Meanwhile, Janet Woodcock, director of the Center for Drug Evaluation and Research (CDER), fears that a law requiring new programs and multiple guidances will undermine her ability to meet review and approval commitments. This latest E&C proposal has "significant resource implications for FDA," Woodcock stated at an April E&C health subcommittee hearing. CDER's new drug review process is now "going at full speed, and we'd like to keep it that way," she commented, warning that timely sponsor meetings important for accelerating innovative development programs "would be the first to go" if the agency gets further stretched on resources.

FDA's first priority is to implement statutory requirements set by Congress, she explained. Next comes meeting user fee goals negotiated with industry. The extensive resources needed to advise on clinical programs and to collaborate on biomarkers might have to be scaled back.

Help on hiring

What FDA sorely needs, says Woodcock and others, is to cut some of the red tape and obstacles to recruiting and retaining experts able to address complex scientific and regulatory issues. Too-low salaries prompt experienced staffers to leave for more rewarding jobs in industry and academia, and complex government employment practices make it hard to attract top talent. Woodcock told the Senate HELP Committee that staff turnover "is a huge problem for us" and that FDA has "a desperate time" bringing in neurologists due to low salaries.

Jeffrey Shuren, director of the Center for Devices and Radiological Health (CDRH), similarly described FDA as the "training ground for industry," as young professionals leave after a few years for industry jobs offering salaries two or three times what they make at FDA, and where the work load is more manageable. When medical reviewers depart right in the middle of processing an application, Shuren added, that ultimately hurts patients as well as regulated companies.

The "Cures" legislation would help FDA by raising some pay rates and making it slightly easier to employ certain specialists. Woodcock also would like new hires from biopharma companies to be able to place securities in

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blind trusts instead of having to sell them to come to FDA. And she sought more "direct hire authority" to speed up the employment process for certain health professionals able to "go toe-to-toe with industry scientists."

Seeking agreement

To gain Democratic support for the Cures initiative, Republicans agreed to the NIH budget increase and dropped some controversial provisions, such as extended exclusivity on certain new medical products. But there is agreement to reauthorize the priority review voucher program for rare pediatric diseases, which is set to expire, as well as an initiative to spur development of new antibiotics, utilizing a modified approval pathway for therapies targeted to limited populations. The legislation encourages more sharing of research and clinical data by removing barriers to national interoperability of e-health records. And there's support for telemedicine, for faster coverage decisions on new vaccines, and for a breakthrough program for medical devices.

Getty Images: Hisham Ibrahim

Under the heading of achieving a "faster, safer and more personalized" research system, the "Cures" bill backs greater use of central, or "lead," institutional review boards (IRBs) to oversee multi-site studies, authorizes greater use of "clinical experience" reports to help support FDA approval of certain new indications, and gives FDA flexibility to approve "qualified indications" based on clinical data summaries, as opposed to full case reports.

Payers as well as pharma companies support flexibility in presenting healthcare economic information to formulary committees and insurers, a change likely to increase industry investment in economic analysis, according to a report by Avalere Health. And a "medical education" provision would revise the "Sunshine" disclosure program to make it easier for marketers to distribute journal articles and medical textbooks to physicians and to support certain continuing medical education events.

Even though FDA already is doing much to accelerate biomarker qualification, the process could benefit from Congressional backing, says former FDA commissioner Andrew von Eschenbach. He emphasized at a recent Alliance for Health Reform briefing that biomarker assessment is key to furthering precision medicine and predicted that Congress will pass "transformational legislation" this year; just how big the bill will be, he added, is "a work in progress." PE

Can user fees fill the gaps?

As Congress moves forward with legislation, FDA and industry are beginning the convoluted process of negotiating new user fees for generic drugs (public meeting June 15) and for drugs and biologics (public meeting July 15) to reauthorize these programs in 2017. FDA's total annual appropriation of $2.6 billion—less than just the proposed $3.5 billion annual increase Congress is offering the National Institutes of Health (NIH)—makes the agency ever more dependent on the $2 billion it collects from industry. Ten years ago, the Center for Drug Evaluation and Research (CDER) appropriations almost equaled its fee revenue; now user fees account for nearly 70% of its budget. With the Prescription Drug User Fee program (PDUFA) already supporting most of the drug application review process and advisory activities for developing innovative therapies, it remains to be seen if industry is willing to pay more to fund some of the initiatives proposed in the "21st Century Cures" legislation, such as expanding the Sentinel System, establishing a broader process for evaluating patient reported outcomes, developing more guidances on biomarkers and precision medicine, and devising policies for utilizing evidence from clinical experience.

The wrangling has begun already over renewing the Generic Drug User Fee Program (GDUFA), as manufacturers complain loudly about CDER's disappointing progress in reducing application backlogs and in speeding up new approvals. CDER's generic drug office has suffered from extensive change and now is under pressure to articulate a clear pathway for addressing these issues to retain confidence in the fee program.

Front & Center

Hub Models Align Interests

The growing utilization of narrow networks of specialty pharmacies is fueling the expansion of Hub operations.

Biopharmaceutical manufacturers are moving toward further consolidation of vendor networks in an effort to control costs and risks while improving outcomes and value. This trend toward narrow vendor networks increases the need for end-to-end solutions that meet the interests of manufacturers, specialty pharmacies, patients, providers and payers.

"While manufacturers are moving to a greater utilization of limited specialty pharmacy networks, payers continue to push back by requiring dispensing from their own specialty pharmacies," said Rob Brown, Vice President, Business Development for Omnicare Specialty Care Group (SCG). "The best solutions leverage the relationship between the specialty pharmacy network and the Hub to ensure consistent, high-quality support services with a comprehensive aggregation of data along all points of the patient therapeutic journey."

Omnicare SCG provides access, affordability and adherence commercialization services for the bio-pharmaceutical industry in support of specialty therapies. Their integrated and tailored services include brand support, third party logistics, program pharmacy and specialty pharmacy. Omnicare SCG, hosted a panel discussion on "Specialty Pharmacy and Hub Integration" at CBI's Annual Patient Assistance & Access Programs conference in Baltimore. Following the discussion, *Pharmaceutical Executive* met with Brown to explore his views and ask the following questions:

As manufacturers push for more limited specialty pharmacy networks, who handles such crucial details as benefit investigations, prior authorizations, patient financial assistance evaluation, access, adherence, and so on?

Rob Brown

Specialty pharmacies (SP) that are part of smaller networks (one to three SPs) tend to assume responsibility for support services more so than in larger networks (seven to 15 SPs). These larger networks rely more on a Hub provider. An important key to success in these relationships is to ensure that both the Hub and also the specialty pharmacy have clearly defined roles and responsibilities for a seamless experience in regard to all stakeholders—providers, patients, caregivers and payers.

The Hub acts as the quarterback in communicating initial coverage information with patients and providers and in triaging to the appropriate SP. The Hub handles wrap-around services such as copay assistance, clinical services and educational engagement to ensure a consistent patient experience. The Hub also serves as a central data repository to ensure pull-through of all patients and coordinates HIPPA compliance to collect the required data.

What are best practices in designing a Hub to fit a specific product and patient population?

Individualized engagement is necessary at key junctures along the patient journey. Timing and type of connectivity is defined by the therapy, while method of connectivity should be driven by patient preferences. Some patients and caregivers might prefer phone communications while others prefer text messages. Hub case management systems can accommodate individual patient preferences while still meeting the predefined baseline goals of the program. Data capture of both baseline and additional outreach can provide valuable insights into compliance and adherence protocols going forward.

We recommend basing support services at the Hub, particularly for larger networks with more potential for variation between specialty pharmacies. Sourcing support services from the Hub ensures consistency in processes and in overall messaging. The patient or provider experience, from start to finish, must be totally synchronized in order to eliminate workflow redundancy and increase speed to therapy.

What are the most common Hub designs and how do they affect specialty pharmacies?

Three main Hub designs include:

- Mandatory, where all patient referrals come through a central Hub, and the specialty pharmacy is reliant on the Hub to triage prescriptions to the pharmacy, which can result in increased patient numbers.
- Voluntary, where providers can choose to send a patient to the Hub, and allows the pharmacy to deploy its own sales team to provider offices. As a one-to-one relationship, this can result in increased business and faster speed to therapy.

- Central Service Provider, where one specialty pharmacy within the network is the central intake for referrals.

Hub designs also can evolve over a product life cycle. For instance, a mandatory Hub, appropriate at product launch, could migrate to a non-mandatory model as product access matures. Or a mandatory Hub could change from focusing on product access to patient adherence.

How do Hubs in the orphan drug space differ from Hubs in other product areas?

Orphan drugs typically require a higher level of integrated services focusing holistically on the patient, the caregiver, and the demands of the product itself. Orphan and ultra-orphan Hubs tend to be mandatory to ensure that each patient is accounted for and that all data is completely integrated. Best practices for orphan and ultra-orphan drugs under a single-entity Expanded Access Programs (EAPs) integrate clinical trial conversions, third party logistics, reimbursement support, copay options, patient assistance, clinical services, product dispensing and compliance support.

What is the optimal specialty pharmacy network size?

Specialty pharmacy partners align with the manufacturer's objectives, product attributes and patient characteristics. SPs share the product vision of the manufacturer. They have relevant experience, provide quality data and maintain flexibility in relation to their workflow requirements. At Omnicare SCG, there's no steadfast rule for a right-fit, SP network size. What's critical is that the network is made up of partners that can meet volume requirements and the needs of the product, patient and provider population. It is also critical to determine if prescribers already are familiar with specialty pharmacies. If so, a mandatory network may present problems with practices that have existing loyalties or preferences to a specific SP. If the prescribers are less experienced, the network then must be able to cater to them and to coach them.

What are the critical operational data and reporting elements needed to ensure optimal coverage and utilization in a patient population?

Medication adherence rates, time to fill, turnaround times for benefit investigation, prior authorizations and financial support are all critical. Reimbursement data is also critical for the Hub and SP network to provide. This includes: understanding payer issues and concerns; ensuring that copays align with expectations and evaluating copay support design and utilization; and aggregating payer data points. Adding data on patient out-of-pocket spend and length of therapy may lead to a more complete understanding of patient behavior and trends as they affect prior authorizations and speed to therapy.

How can manufacturers, Hubs and specialty pharmacy collaborate to ensure that the evaluation and operationalization of all the needed elements is part of the program design?

All partners must work together to identify the important and actionable data needed to evaluate commercial success. Scorecards should be used to reflect the operational goals defined by the SP/Hub program. The scorecards also should show which pharmacies are meeting or exceeding the agreed-upon service levels required to deliver an exceptional patient experience. Speed to therapy and time on therapy, as well as the supporting factors, are important markers of success. Other markers include: whether the patients receiving education and additional services are performing better than those who did not receive the services; what is the average drop-off point and why; and what can be done to assist patients with adherence beyond this point?

Are there advantages of partnering with a Hub that is also a specialty pharmacy?

Increasing speed to therapy is the key driver, especially with therapies that are more acute in nature. Connecting the SP with the Hub electronically and objectively aligning their interests produces an exceptional level of continuity and coordination. If there is a retail component and a history of product abandonment, a Hub that can take the patient through to dispensing is another advantage. A heightened sense of accountability also can result when a single vendor operates both a Hub and dispensing service. A negative perception may be the SP operating the Hub is favoring itself but that can be overcome by setting business rules on triaging referrals.

How does Omnicare SCG optimize Hub operations and performance across different products and patient populations?

The Omnicare SCG manages as many as 40 Hub programs across a wide variety of disease states, patient populations, therapy formulations and adherence regimens. The standardization of core tasks is not only possible but also critical in redirecting valuable and costly labor to more value-added activities.

Our quality, training and implementation teams have partnered to identify commonalities across programs and best-practice processes. Documented with standard operating procedures, they serve as the foundation for the standardized data entry screens in our case management system. This core framework allows us to quickly modify processes to accommodate new or transitional programs, each with its own nuanced business rules, protocols and patient/provider contacts.

As a result, case managers are spared administrative tasks. Freeing them to focus on providing individualized, proactive support to both patients and providers helps to create and enhance lasting brand loyalty for the manufacturer.

What Does the UK's 'New' Government Mean for the Industry?

Examining the fallout for pharma after the Conservatives surprise majority win

The dust is starting to settle after what turned out to be, contrary to the expectations of many, a majority win by the Conservative Party in the UK's 2015 General Election. The Conservatives have managed to shake off the need to compromise to get into government this time around as last time they had to work in coalition government with the Liberal Democrats. Not that that will be avoided in this term either, as potential backbench rebellion within the party, coupled with a slim majority, could require Prime Minister David Cameron to work with others in parliament to get big-ticket legislation through. But just what does a Conservative government mean for industry?

Europe

On Europe, the Conservatives had a nuanced message in their campaign for re-election; not an outright rejection of being in Europe, but rather a stance that saw them promising a referendum on staying or going, but only after David Cameron has a chance to push for reform. So the question is whether Cameron will be able to get a better deal for the UK, and whether that is enough to stop the public voting to leave the European Union (EU) in a 2017 referendum.

Knowing whether being in or out would be good or bad for industry is a tough call. For industry, Europe is still very fragmented, even with the EU. A single market in many other areas, but as health is a national competency, companies have to navigate a myriad number of requirements from several agencies when setting price and getting reimbursed. With some big European countries, like Italy and Spain, running decentralized healthcare systems, even getting a product to patients there, means getting to grips with more than one payer.


David Cameron

Plus, some of the European rules that you might have hoped would have helped both patients and industry to get timely access to medicines don't always seem to work; the European Transparency Directive is an example. This sets out a target timeline for concluding price and reimbursement processes, yet these timelines aren't always met.

There are ongoing efforts though to improve things with respect to health technology assessment (HTA) in Europe. This is primarily through EUnetHTA—a collaboration between member states agencies and the European Commission. The UK getting out of Europe probably won't mean losing out on the benefits of a (limited) degree of consensus around HTA. If you're skeptical, the fruits of these efforts won't be borne out for industry anytime soon anyway. What it might mean is the National Institute for Health and Care Excellence (NICE) no longer being in EUnetHTA. Whether that's a good or bad thing comes down to one's view of NICE. Worth noting is that NICE wasn't part of the original EUnetHTA project in any case, but over time there is more than a passing similarity to the NICE approach in some of the EUnetHTA's outputs, particularly the guideline on health economic evaluation. Even if NICE was no longer part of EUnetHTA, its stamp would still be left. The UK leaving Europe might also mean losing a UK seat at the table under the HTA Network, a network of Ministries across Europe, set up under the European Directive for cross-border healthcare.

Also, not being part of Europe would mean UK-based scientists and clinicians might lose out on EU funding that can indirectly contribute to the success of the commercial industry.

Scotland

Closer to home, the Conservatives will face an interesting time trying to govern the "United" Kingdom when 56 out of 59 seats for Scottish Members of Parliament (MPs) are now held by the Scottish National Party (SNP). The Scottish voters have, by virtue of the first past-the-post system operated in the UK, turned Scotland yellow. This result is despite a "no" vote when the Scottish public were asked if they wanted to be independent in September 2014.

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Front & Center

Driving brand differentiation in a crowded pharmaceutical marketplace

Patient-centric innovation in packaging goes beyond regulatory requirements to build brand loyalty

Market dynamics and patient perceptions in healthcare are changing. Competition from biologics and generics has never been so intense. The new product pipeline is shrinking, putting increasing pressure on existing pharmaceutical products. Additionally, patient behavior has shifted. People perceive themselves as active consumers of healthcare, who are responsible for making their own choices, not passive patients. This all adds up to pharmaceutical manufacturers needing a differentiating edge to maintain and grow sales. Drug companies must shift their model to a patient-centric approach to build brand loyalty.

Innovative medication packaging can create product differentiation and help build that loyal relationship. Packaging design that's based on patient insights provides a better user experience, potential for improved outcomes and increased sales.

"Packaging Matters," an annual international research study by global packaging company MWV, examines the role packaging plays in the marketplace by reviewing consumer purchasing behavior, brand loyalty and overall product satisfaction across market categories. Study results show a direct correlation between packaging usage experience and people's overall engagement with a product[i].

The study showed that 37 percent of consumers have purchased something again because of packaging functionality. However, if people find the experience of using medication packaging frustrating, they are not apt to take the medication as often as they should, delaying refill or repurchase.

Hung Le

So what are patients looking for in their medicine packaging? Here are the packaging attributes patients ranked as most important:

1) Keeps the product safe
2) Prevents spilling, leaking or breaking
3) Keeps the product fresh/effective
4) Easy to reclose or reseal
5) Easy to get the right amount out and Designed to keep me and my family safe (tie)

Going beyond market requirements

Innovative packaging is often defined as the conversion of normal packaging to perform multiple functions. In the highly regulated pharmaceutical industry, manufacturers need a packaging partner that responds to (or even anticipates) the changes that new drugs, advances in technology and new legislation require.

Those new needs can be a catalyst for creativity in designing innovative, patient-centric packaging. One example is child-resistant (CR) packaging that's also senior-friendly.

The "Packaging Matters" study found 34 percent of people strongly agreed that "packaging designed to keep the product safe and/or protect me and my family" would make them more likely to purchase products from that manufacturer or brand. The study also noted the importance of ease of use. This tells us that innovation in child-resistant packaging, to ensure it's both user-friendly for adults and child-resistant, can improve patient satisfaction and boost sales.

CR packaging is not new—it dates from the passage of the United States Poison Prevention Packaging Act of 1970. Still, poisoning is currently the fifth leading cause of unintentional injury death for children and adolescents in the European region, according to the World Health Organization[ii]. Medications available at home are associated with the greatest risk of death to children (in high income countries)[iii]. And in the US, every year more than 60,000 children are admitted to the emergency room after ingesting unsecured medication[iv].

The good news is CR medication packaging is one of the best documented successes in preventing the unintentional poisoning of children[v]—helping to stop children from gaining access to medications even after they have gotten hold of a package.

Patient-centric design

Designing and developing CR packaging that is compliant with regulations as well as pleasing to patients not only requires a deep understanding of packaging design, but also extensive patient research to tease out what benefits certain features provide, according to Hung Le, vice president of Global Innovation Engagement, MWV Home, Health & Beauty.

"We always begin with the patient," Le said in a recent interview with *Pharmaceutical Executive*. "When packaging integrates patients' needs and preferences into the design, it serves more of a purpose than just containing medication or meeting a regulation. In the case of CR design, what develops then is packaging that keeps children safer, improves ease-of-use for adults, and provides a positive patient experience."

A quantitative patient preference study conducted by MWV in 2014 showed that even adults without children living in the home recognized the importance of, and appreciated, CR packaging. Ease of use was a factor among this group; however, they also wanted CR features and did not feel they should have to give up one for the other.

New regulations

In mid-2015, CR packaging that meets new US Consumer Product Safety Commission regulations will enter the market for over-the-counter and prescription drug products containing more or the equivalent of 0.08 milligrams of imidazolines in a single package.

Imidazolines are found in more than 40 commonly used eye drops and nasal sprays. The regulations will likely affect the sale of nearly 60 million units of product currently sold in the United States on an annual basis.

A proactive solution

Taking a proactive approach as soon as they learned of upcoming potential regulations, MWV developed the Hi-Mark® CR Nasal Pump. "By building in qualitative and quantitative patient research at every step, we went beyond CR regulations to optimize the user experience for adults, especially seniors," said Le. "It's innovation driven by insights."

During the development of the nasal pump, three concepts were tested with patients, and the preferred design was refined based on their feedback. Specific features that were incorporated as a result included:

- Use of a simple range of motion to open the pump, without requiring extreme precision, making the package truly senior-friendly.
- Audible indication that the product is locked.
- Integration of the CR feature into the pump versus the over cap, ensuring the highest level of protection for children by preventing access to the medication, even if the over cap is left off or lost.

Le pointed out that the design modifications yielded a package that meets the needs of both children and seniors, taking dexterity and cognitive skills into account.

Addressing medication adherence

Patient insights can also be applied to help solve another challenge: medication adherence. Half of all people in the US and EU do not take their medicines as prescribed. Poor medication adherence can lead to worsening of disease, serious and avoidable health risks, increased hospitalizations and even death. The annual cost of non-adherence in the US is estimated to be $317 billion and $125 billion in the EU.

Pharmaceutical companies, retail pharmacies and payers are all focused on finding effective solutions to improve adherence, and have tried programs ranging from provider counseling to email reminders. However, these interventions can lose impact over time, especially in the gaps between fill and refill, and adherence declines dramatically.

Medication packaging is a uniquely effective adherence intervention because it reaches every medication user, every day, Le said. It gives people the tools they need to change their adherence behavior, including reminder cues, disease and treatment education, and consistent reinforcement. MWV has designed medication packaging that's proven in peer-reviewed research to improve adherence.

This adherence packaging features a calendared medication blister and an outer carton with medication information, adherence education and links to other adherence programs. The calendared blisters stay attached to the outer cartons for the duration of the medication regimen, enabling a daily opportunity for education and brand messaging.

The designs for MWV's adherence packages are based on patient insights, including packaging features that enable ease of use, fit with lifestyle, medication protection and patient-preferred CR opening technique. In 2013, MWV introduced Optilock® technology, a CR locking mechanism that transforms adherence packaging by enabling a significantly smaller CR package.

Differentiation through design

MWV's packaging is customizable, which enables pharmaceutical companies to develop brand-specific solutions that fit the unique needs of each medication and patient population, as well as regulatory requirements.

"We work closely with our customers to review brand challenges, map the patient experience and provide the resources and expertise needed to develop packaging solutions that enable brand differentiation and patient loyalty," Le said.

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i MWV Packaging Matters™ Study, 2014.

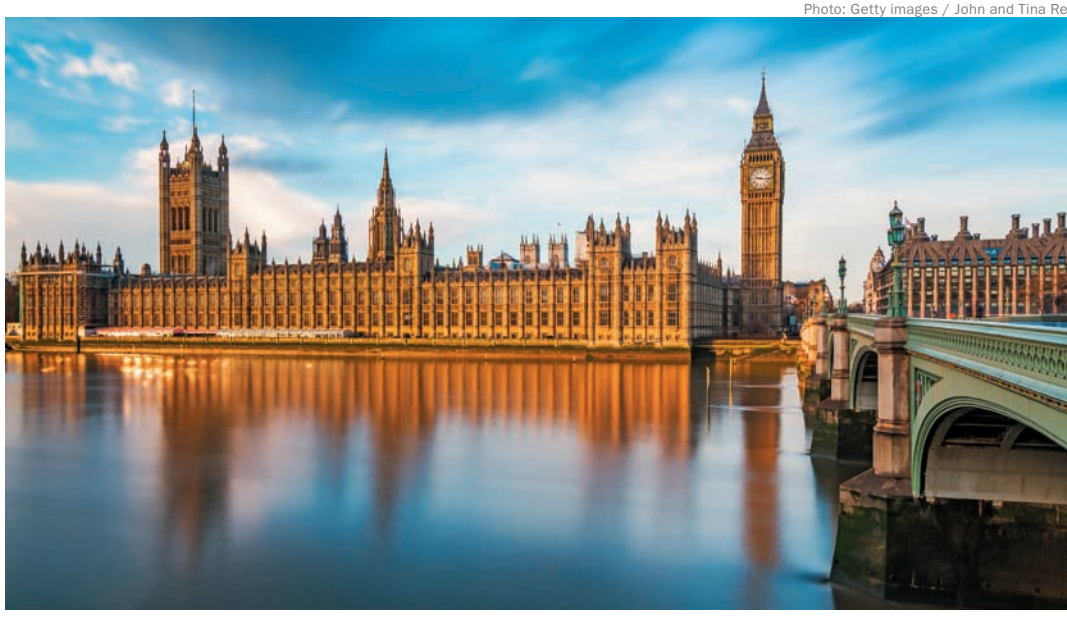
ii The Child Safety Report Card Europe 2012. The European Child Safety Alliance.

iii European Report on Injury Prevention 2008. World Health Organization.

iv Centers for Disease Control and Prevention. Put Your Medicines Up and Away and Out of Sight. Centers for Disease Control and Prevention Website. Available from: http://www.cdc.gov/features/medicationstorage/. Accessed February 9, 2012.

v World Report On Child Injury Prevention ed. Margie Peden et al. World Health Organization 2008.

Photo: Getty images / John and Tina Reid



The Conservative Party has a majority in Parliament for the first time since 1992.

For industry, Scotland has always been very different. A closer knit community, a separate HTA agency—the Scottish Medicines Consortium (SMC)—and a desire to develop a Scottish model of value when England was talking about value-based pricing (VBP). All this, even before the surge in influence of the SNP that the election results have brought about.

What this change in political makeup might mean for industry is further pressure—already felt through the Scottish Committee for Sport and Health inquiry into VBP—for Scotland to have its voice heard in agreeing the next Pharmaceutical Price Regulation Scheme (PPRS). Health and social affairs were already marked down for further discussion between the UK and Scottish governments, as one of the recommendations from the 2014 Smith Commission on further devolution of powers to the Scottish government. The PPRS agreement—between the Department of Health (DH), on behalf of all the UK's governments, with the Association of the British Pharmaceutical Industry (ABPI), on behalf of industry—has traditionally been a bilateral agreement covering indirect price regulation and increasingly issues on access to medicines. A multilateral negotiation would undoubtedly change the dynamic.

Europe is still very fragmented, even with the EU. Companies have to navigate a myriad number of requirements from several agencies when setting price and getting reimbursed

Industry

For industry, much should stay the same, particular with the Secretary of State for Health, Jeremy Hunt, staying in his post. That might be good news for some; it means all the effort going on behind the scenes for reviews such as the accelerated access review (AAR) and the Review on Antimicrobial Resistance won't be cast aside just because they weren't set up under someone else's reign. Both of these are not yet complete; AAR could well report before the end of the year, including changes to speed up access to medicines, but the final AMR report will be published sometime next year.

A Conservative government should also further cement the government commitment to the five-year PPRS, due to end in 2018. After all, since it's bringing in millions, it's an attractive deal. The tricky thing is whether it's still such a good deal for those companies who are members. Add to that the potential of more players at the negotiating table and the next couple of years could shape up to a tough negotiation ahead for industry, even if the Prime Minister and the Secretary of State have stayed the same. PE

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Pharm Exec 50
The Hidden Asset is Human

Once-small and midsize biopharma organizations are moving up to join the top ranks of big Pharma. Do these no-longer "stealth" players have the strategic reach and turn-on-a-dime agility to digest all that growth, along with the human capital necessary to prevail in an endlessly demanding market—one that keeps revising the definition of success?

By Michael Swanick, David Hole, and Ben Comer, PwC

Specialty drug sales, record-breaking M&A paired with tax synergies, and global expansion helped to bring a new face into this year's Pharma 50 top 10, and substantially boosted the rankings of several others.

Led by the breakout success of its hepatitis C virus (HCV) franchise, Gilead Sciences recorded $24.5 billion in global revenues for 2014. Gilead's rise into the top 10 list of biopharmaceutical companies, up from No. 18 in last year's ranking, demonstrates the fast-track opportunity of specialty markets, especially in areas of high unmet medical need. The company's announcement of its first quarterly cash dividend to stockholders, to be paid out beginning this month, is a clear sign of the growth Gilead has achieved as an organization.

Other climbers like Actavis, which jumped six places from 24 to 19 this year, have pursued an opportunistic growth platform with respect to M&A. Actavis completed its $66 billion acquisition of Allergan earlier this year, and intends to change its name as a result; look for Allergan rising to take a second new spot in the top 10, in next year's Pharma 50.

By now, the big Pharma players have all established

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a presence and capability in emerging markets. While the pace of growth has slowed in some emerging markets like Brazil and China, AbbVie was able to maintain its ranking position, in the No. 10 slot this year, due to its commitment to expanding the global footprint of its key products.

Signs point to growth

Buoyed by an impressive 41 new medicines approved by FDA last year, the biopharmaceutical industry is increasingly optimistic about the potential for growth. Cutting edge science and technology proliferate across industry pipelines, just as more patients gain access to health coverage and drug benefits. According to PwC's 18th annual global CEO survey, released earlier this year, 92% of pharmaceutical and life sciences CEOs expressed confidence about their prospects for revenue growth over the next three years. Underscoring that confidence, 58% of

FAST FOCUS

» Midsize innovative companies with strong biologic franchises continue to make their way up the global revenue ladder—Gilead Sciences enters the top 10.

» The transition from small molecules for chronic conditions to specialty biologics is exemplified by the disappearance, after many years, of Purdue Pharma, as it confronts the commoditization of its blockbuster pain drug OxyContin. Our new addition to the Pharma 50 list this year is Alexion Pharmaceuticals, maker of Soliris, one of the world's most expensive drugs, indicated for two ultra-rare disorders of the immune system.

» Emerging country players are becoming more visible, with India's Sun Pharmaceuticals rising to No. 32 in rank, up from 48 last year—the biggest jump on the list, driven in part by its acquisition of Ranbaxy. And last year's new entry, South Africa's Aspen Pharmacare, rises three places to 41.

» Large integrated pharma organizations face a twofold challenge: maintaining the multiple earnings growth momentum that investors expect, while capturing the focus, flexibility, and small-scale efficiencies associated with the leading midsize biotechs. New survey research from PwC reveals that success here depends on building a strong internal culture that pays close attention to human capital, including talent development; diversity, including geographic diversity; and creative collaborations with outside stakeholders.

Rank	Company headquarters [website]	2014 Rx Sales (USD in mln)	2014 R&D spend (USD in mln)	2014 Top-selling Drugs [USD in mln]
1	**Novartis** **Basel, Switzerland** [novartis.com]	$46,127	$9,301.1	Gleevec [4,746] Gilenya [2,477] Lucentis [2,441]
2	**Pfizer** **New York, New York** [pfizer.com]	$44,514	$7,152.0	Lyrica [5,168] Prevnar 13 [4,212] Enbrel [3,850]
3	**Roche** **Basel, Switzerland** [roche.com]	$40,086	$8,614.0	Rituxan [7,547] Avastin [7,018] Herceptin [6,863]
4	**Sanofi** **Paris, France** [sanofi.com]	$38,223	$6,200.2	Lantus [8,428] Plantix [2,472] Lovenox [2,257]
5	**Merck & Co.** **Paris, France** [sanofi.com]	$36,607	$6,532.0	Januvia [3,931] Zetia [2,650] Remicade [2,372]
6	**Johnson & Johnson** **New Brunswick, New Jersey** [jnj.com]	$30,726	$6,030.8	Remicade [5,790] Olysio [2,302] Zytiga [2,237]
7	**GlaxoSmithKline** **Brentford, England** [gsk.com]	$30,302	$4,865.8	Seretide/Advair [6,966] Pediarix [1,364] Avodart [1,326]
8	**AstraZeneca** **London, England** [astrazeneca.com]	$25,694	$4,941.0	Crestor [5,512] Symbicort [3,801] Nexium [3,655]
9	**Gilead Sciences** **Foster City, California** [gilead.com]	$24,474	$2,737.0	Sovaldi [10,283] Atripla [3,470] Truvada [3,340]
10	**AbbVie** **North Chicago, Illinois** [abbvie.com]	$19,879	$3,252.0	Humira [12,543] AndroGel [934] Kaletra [870]

Source: 2015 EvaluatePharma® , Evaluate Ltd, www.evaluate.com

the CEOs surveyed said they expect to increase total headcount over the next 12 months.

"We are cautiously optimistic about the evolution of the global economy," Joaquin Duato, worldwide chairman, pharmaceuticals, Johnson & Johnson, told PwC. "While emerging markets continue to be a very important driver of growth for us, the ability of the US, Japanese, and European economies to perform well will continue to be foundational to our growth."

Macroeconomics aside, achieving consistent growth in the context of a high-risk R&D enterprise, and a commercial landscape that increasingly prioritizes lower-cost options, is no simple feat. Whether growth comes organically, through discovery, development, launch and lifecycle management functions, or inorganically through mergers, acquisitions, or licensing deals, a number of issues must be addressed in order to successfully manage growth, and ensure that it continues. Talent—that greatest of asset intangibles—sits at the top of the list.

Deals or DIY

Growth by nature requires change, and a keen ability to identify the new skills necessary to develop and support new business capabilities. Regardless of whether companies are on the hunt for acquisition targets, preparing for a new launch, expanding into new markets, or implementing a cost reduction initiative, any restructuring process can serve as an opportunity to realign talent and business activities.

In the case of a merger or acquisition, the organizational muscle to get a deal done is critical in capturing early value. From a talent perspective, a strong business development and legal function is necessary to both identify targets and follow through with due diligence to strike a deal. Finance departments can provide a valuable assist in this process by making use of the proliferation of public data now available on competing organizations. Insight into the brand strength of an acquisition target, for example, can deliver an edge in the vetting process.

The quantity and pace of biopharmaceutical deals—despite

Rank	Company headquarters [website]	2014 Rx Sales (USD in mln)	2014 R&D spend (USD in mln)	2014 Top-selling Drugs [USD in mln]
11	**Amgen** **Thousand Oaks, California** [amgen.com]	$19,327	$4,124.0	Enbrel [4,688] Neulasta [4,596] Epogen [2,031]
12	**Teva Pharmaceutical Industries** **Petach Tikva, Israel** [tevapharm.com]	$17,474	$1,488.0	Copaxone [4,237] Treanda [767] Budesonide [711]
13	**Bayer** **Leverkusen, Germany** [bayer.com]	$16,351	$2,495.0	Xarelto [1,844] Kogenate [1,473] Betaseron [1,088]
14	**Eli Lilly** **Indianapolis, Indiana** [lilly.com]	$16,349	$4,379.9	Alimta [2,792] Humalog [2,785] Cialis [2,291]
15	**Novo Nordisk** **Bagsvaerd, Denmark** [novonordisk.com]	$15,825	$2,452.4	Novorapid [3,109] Levemir [2,533] Victoza [2,393]
16	**Boehringer Ingelheim** **Ingelheim, Germany** [boehringer-ingelheim.com]	$13,903	$3,150.7	Spiriva [4,300] Pradaxa [1,592] Micardis [1,445]
17	**Takeda** **Osaka, Japan** [takeda.com]	$13,038	$3,178.9	Velcade [1,265] Blopress [872] Protonix [841]
18	**Bristol-Myers Squibb** **New York, New York** [bms.com]	$11,969	$3,913.0	Sprycel [1,493] Baraclude [1,441] Reyataz 1,362]
19	**Actavis** **Zug, Switzerland** [actavis.com]	$11,130	$1,085.9	Namenda [899] Lidocaine [446] Rosuvastatin [378]
20	**Astellas Pharma** **Tokyo, Japan** [astellas.com]	$10,419	$1,855.4	Prograf [1,710] Vesicare [1,225] Xtandi [1,178]

Source: 2015 EvaluatePharma® , Evaluate Ltd, www.evaluate.com

Federal Reserve Chair Janet Yellen's comment last month that stock values generally are "quite high"—seems likely to continue in the short to mid-term. Appropriate post-merger activity is determined by the type of integration struck: organizations must decide on full integration, or the degree of autonomy to which it will grant an acquired entity. That important decision will drive the degree of synergy that can be achieved.

Once made, the first places to look for early value capture are the enabling corporate functions: efficiencies within HR, finance, IT, real estate, and the legal department. Second, are functions that support the value chain, including R&D, manufacturing and supply chain, and the commercial organization. Other groups at the intersection of these functions—like medical affairs and health economics and outcomes research—represent additional prospects for finding efficiencies and capturing value.

Just as there's a need for an acquiring entity to have the organizational muscle to identify and close the deal on a target, similar strength and capabilities on the back end are needed to perform a successful integration. The success of an integration depends on setting up the entire organization for early value capture without business disruption, and doing it with a sense of purpose. Corporate culture is the North Star from which purpose shines, and the onus of enablement falls heavily to the HR function.

Not everyone is out in the night air looking to mix it up with a new mate. For companies pursuing organic growth, different but equally critical issues are intrinsic to a strong talent agenda. One is building a new capability in the commercial function; capability in terms of both commercial strategy and commercial operations. Market access strategy is replacing the narrow technical remit of

Rank	Company headquarters [website]	2014 Rx Sales (USD in mln)	2014 R&D spend (USD in mln)	2014 Top-selling Drug [USD in mln]
21	**Baxter International** **Deerfield, Illinois** [baxter.com]	$8,694	$1,164.0	Gammagard Liquid [2,224]
22	**Biogen Idec** **Weston, Massachusetts** [biogenidec.com]	$8,203	$1,893.4	Avonex [3,013]
23	**Merck KGaA** **Darmstadt, Germany** [merckgroup.com]	$7,683	$1,814.8	Rebif [2,444]
24	**Mylan** **Canonsburg, Pennsylvania** [mylan.com]	$7,585	$563.9	EpiPen [1,019]
25	**Daiichi Sankyo** **Tokyo, Japan** [daiichisankyo.com]	$7,575	$1,683.4	Benicar [1,918]
26	**Celgene** **Summit, New Jersey** [celgene.com]	$7,476	$1,847.8	Revlimid [4,980]
27	**Otsuka Holdings** **Tokyo, Japan** [otsuka.com]	$6,961	$1,528.2	Abilify [4,638]
28	**Allergan** **Irvine, California** [allergan.com]	$6,234	$1,077.5	Botox [2,231]
29	**Les Laboratoires Servier** **Neuilly-sur-Seine, France** [servier.com]	$5,999	$1,624.8	Aceon [899]
30	**Shire** **Dublin, Ireland** [shire.com]	$5,830	$840.2	Vyvanse [1,449]

Source: 2015 EvaluatePharma® , Evaluate Ltd, www.evaluate.com

How the listings were compiled: 2014 R&D Spend, 2014 Rx Sales, Patent Expiry, and Orphan Drug analyses were provided by life science market intelligence firm Evaluate Ltd via its EvaluatePharma® service, www.evaluate.com. *Pharm Exec* would like to thank EvaluatePharma® for assisting in the development of this year's Pharma 50 listing. EvaluatePharma® takes sales estimates from leading equity analysts to create a consensus sales forecast, currently to 2020. Evaluate's Sales and R&D Spend figures represent the fiscal year that ended in 2014. For most American and European companies, that means the year ending December 31, 2014. For many Japanese companies, the fiscal year ending March 31, 2015, was used. Historic averages were used in the conversion of companies' native currency to USD.

the traditional pricing and reimbursement function. Capability building may include not just managed markets and other customer channels in the US, but also building the commercial capability across a global footprint and in both established and emerging markets.

The role of HR in this process is to be a true business partner in the marketplace: HR creates value when it is able to work with the commercial function to truly anticipate and articulate the capabilities needed to drive growth, and then to shape a compelling employer value proposition so that it can compete successfully. How an organization differentiates itself is crucial in a competitive talent market. HR can't just be a benefit menu or a mouthpiece for issuing orders.

Talent type

So what kind of talent is the right kind of talent? Critically, talent with a value add. Ninety percent of the pharmaceutical and life sciences CEOs surveyed by PwC said they look for a much broader range of skills when hiring that they did in the past (see chart on page 26). That's nearly 10% higher than the collective response to the same question from CEOs representing all other industries.

Diversity matters, too. Of the CEOs surveyed, 64% reported having a strategy in place to promote talent diversity and inclusiveness. Another 12% said they plan to adopt such a strategy. Asked about the positive business impact of a talent diversity strategy, six areas were cited by over 80% of CEO respondents. A diverse workforce helped companies: collaborate internally and externally; innovate; strengthen brand and reputation; enhance business performance; enhance customer satisfaction; and finally, attract new talent. Diversity also means geographic diversity.

The nod to collaboration is important. Increasingly, organizations need to go beyond the purely transactional execution of

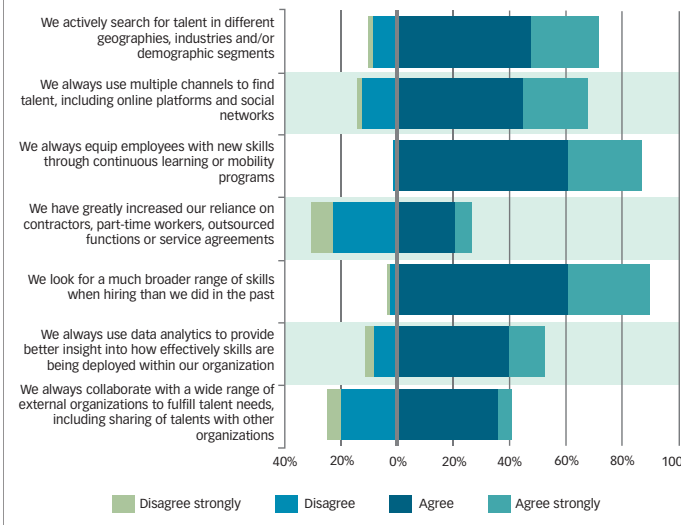
Rank	Company headquarters [website]	2014 Rx Sales (USD in mln)	2014 R&D spend (USD in mln)	2014 Top-selling Drug [USD in mln]
31	**Abbott Laboratories** **Abbott Park, Illinois** [abbott.com]	$5,101	$129.0	Biaxin [399]
32	**Sun Pharmaceutical Industries** **Mumbai, India** [sunpharma.com]	$5,012	$288.1	Levulan Kerastick [75]
33	**Valeant Pharmaceuticals International** **Mississauga, Ontario** [valeant.com]	$5,007	$246.0	Wellbutrin [303]
34	**CSL** **Melbourne, Australia** [csl.com.au]	$4,743	$377.3	Privigen [1,990]
35	**Eisai** **Tokyo, Japan** [eisai.com]	$4,422	$1,157.6	Aricept [543]
36	**UCB** **Brussels, Belgium** [ucb.com]	$3,715	$1,232.9	Cimzia [1,059]
37	**Fresenius** **Bad Homburg, Germany** [fresenius-kabi.com]	$3,707	$368.0	Heparin sodium [75]
38	**Chugai Pharmaceutical** **Toyko, Japan** [chugai-pharm.co.jp]	$3,576	$684.4	Actemra [228]
39	**Menarini** **Florence, Italy** [menarini.com]	$3,442	N/A	Lobivon/Nebilet/Nebilox [316]
40	**Grifols** **Barcelona, Spain** [grifols.com]	$3,255	$231.6	Gamunex IGIV [1,048]

Source: 2015 EvaluatePharma® , Evaluate Ltd, www.evaluate.com

a partner contract, whether it's contract research, contract manufacturing or contract sales. Internal roles that intersect with contracted services need finely-honed vendor management and relationship management capabilities. The latter is becoming a premium. By necessity, vendor management is in part managing the terms of a contract, but the move to managing the relationship and the ecosystem in which the vendor operates can elevate the conversation to one of shared value. Over time, the most rewarding interface is the relationship interface, because it promotes a sense of true investment in mutual success.

Talent Search Strategies

To what extent do Pharmaceuticals & life sciences CEOs agree with the following statements about their organizations talent activities?



Source: PwC's 18th Annual Global CEO Survey (January 2015).

Rank	Company headquarters [website]	2014 Rx Sales (USD in mln)	2014 R&D spend (USD in mln)	2014 Top-selling Drug [USD in mln]
41	**Aspen Pharmacare** **Durban, South Africa** [aspenpharma.com]	$3,066	$1.8	Fraxiparine [282]
42	**Hospira** **Lake Forest, Illinois** [hospira.com]	$3,035	$344.3	Precedex [330]
43	**Sumitomo Dainippon Pharma** **Osaka, Japan** [ds-pharma.com]	$2,944	$662.7	Latuda [770]
44	**Mitsubishi Tanabe Pharma** **Osaka, Japan** [mt-pharma.co.jp]	$2,928	$646.9	Remicade [639]
45	**STADA Arzneimittel** **Bad Vilbel, Germany** [stada.de]	$2,405	$72.9	Apokyn [68]
46	**Mallinckrodt** **Dublin, Ireland** [mallinckrodt.com]	$2,310	$166.9	Optiray [284]
47	**Endo International** **Dublin, Ireland** [endo.com]	$2,238	$58.3	Opana ER [198]
48	**Alexion Pharmaceuticals** **Cheshire, Connecticut** [alxn.com]	$2,234	$403.9	Soliris [2,234]
49	**Lundbeck** **Copenhagen, Denmark** [lundbeck.com]	$2,223	$499.3	Cipralex [828]
50	**Kyowa Hakko Kirin** **Tokyo, Japan** [kyowa-kirin-pharma.com]	$2,157	$451.4	Nesp [524]

Source: 2015 EvaluatePharma® , Evaluate Ltd, www.evaluate.com

Strategic Recommendations for Adapting Your Safety Signal Management System to Evolving PV Regulations

On-demand webcast | originally aired May 20, 2015

Register for free at www.pharmexec.com/pe/signal

Event overview

Regulatory expectations for proper safety signal management are more stringent than ever, with 50% of all signals reviewed by the EU Pharmacovigilance Risk Assessment Committee (PRAC) in 2013 resulting in changes in labeling. In the EU, transparency, compliance and quality are critical elements of the pharmacovigilance (PV) legislation. In the U.S., the FDA continues to expect strong and swift signal detection and analysis throughout a product's lifecycle.

Whether your company holds one or multiple product authorizations, a fit-for-purpose, clear and transparent safety signal management system fully integrated in an IT solution – including signaling strategy setting, prioritization rules, and clear decision points – is core to the success of your PV program.

In this webinar, our presenters will provide key considerations for a successful PV signal management system.

You will learn

- How to set the right framework to keep your signal management system simple and adaptable.
- Ways to develop a useful SOP, WI and templates keeping the bigger PV picture in mind.
- Challenges of choosing the right signal detection strategy depending on the available safety data sources and product lifecycle status.
- Key points for a compliant powerful e-tool supporting the signal management process: Quintiles signal management database.
- What the "must have" built-in reports are for any signal management database, to ensure full oversight in expected and unexpected situations.

Who should attend

Key decision makers involved in the following areas for medicinal products:

- Clinical operations
- Quality Assurance
- Regulatory
- Pharmacovigilance
- Research and Development

Job functions also include:

- Qualified Persons (QPPV)
- Drug safety officials
- Medical directors
- Compliance officers
- Risk management specialists

Presenters

Deirdre McCarthy
Senior Director and head of Lifecycle Safety Benefit-risk Management Services
Quintiles

Margot Stam Moraga
Director of Lifecycle Safety Benefit-risk Management Services
Quintiles

Moderator

Michael Christel
Content Managing Editor
Pharmaceutical Executive

Questions

Contact Sara Barschdorf at sbarschdorf@advanstar.com

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QUINTILES

Top 10 Patent Expirations in 2015

Rank	Company	Product	Therapeutic Subcategory	Patent Expiry Date	2014 Global Sales (in US $, mln)
1	Novartis	Gleevec	Other cytostatics	7/4/15	4,746
2	Otsuka Holdings	Abilify	Anti-psychotics	4/20/15	4,638
3	Amgen	Neulasta	Immunostimulants	10/20/15	4,596
4	AstraZeneca	Nexium	Antacids & anti-ulcerants	8/3/15	3,655
5	Actelion	Tracleer	Other anti-hypertensives	11/20/15	1,620
6	Boehringer Ingelheim	Micardis	Angiotensin II antagonists	6/1/15	1,445
7	Pfizer	Zyvox	Anti-bacterials	2/17/15	1,352
8	GlaxoSmithKline	Avodart	Prostatic therapies	11/20/15	1,326
9	Novo Nordisk	Norditropin SimpleXx	Growth hormones	12/15/15	1,159
10	Bayer	Mirena	Hormonal contraceptives	12/5/15	1,088

Source: 2015 EvaluatePharma®

There is room to improve. Research conducted by PwC's Health Research Institute (HRI) found that next to government-sponsored research, contract research organizations (CROs) are the most common type of partnership at pharmaceutical and medical device companies surveyed. In fact, outsourcing has grown to such an extent that it now encompasses over 40% of drug discovery and development spending. And yet, deeper relationships are not pervasive. HRI research found that 38% of the organizations surveyed characterize their partnership with a CRO as highly integrated and strategic, while 47% describe the relationship as being at arm's length. These results suggest that some companies still see CROs as low-cost vendors for limited services. Companies may be missing a broader opportunity that comes from a full strategic alignment.

Beyond CROs and other traditional vendors, biopharmaceutical companies are beginning to partner more often across traditional lines to address the shift toward patient outcomes as the measure of product value. Developing a shared understanding of risk to reward—in partnering with health insurers, health systems, patient advocacy groups or technology firms—requires strong relationship management talent, and the ability to forge a consensus between sometimes competing incentive structures.

For organizations operating in emerging markets, the talent strategy is the single determinant of whether strategic goals will be successfully achieved. In China, for example, there is such an aggressive talent market that the issue becomes keeping up with the pace in order to get people in the door—and keep them—within the commercial function. In Southeast Asia particularly, the No. 1 inhibitor in achieving a growth target is acquiring and retaining the right caliber talent.

More than words

Organizational culture is often both invisible and literally written on the wall. Companies able to bring their culture to life throughout the organization are successful in establishing a link between the business purpose and values, business strategy, and the behaviors that drive performance. Leaders in this area are drilling down from culture as defined by statements of mission, purpose and values to identify specific business activities that drive value creation. Further, these organizations are able to define the behaviors they need employees to exhibit in order to deliver on those activities, and to reinforce those behaviors through sanctions and rewards within the performance management system.

By doing that, the culture comes alive; it becomes the way of working. Reinforcement mechanisms establish recognition or reward for working in a certain way, or sanctions for doing otherwise. An example can be something as simple as in-the-moment feedback about performance, to acknowledge desired behavior or let an employee know that a behavior needs modification. Team-based in addition to individual rewards can also ensure that individuals are not only performing in their roles, but are contributing to their teams, business units, and company at large.

Many organizations stop short of taking the culture to this level of granularity. Anyone who's walked a corporate office or manufacturing site has seen the posters and mission statements. But employees aren't necessarily living the values, because there are no mechanisms to reinforce those values. Leadership must prove in a tangible way, on a day-to-day basis, that culture matters. If it doesn't matter at the

Top 20 Selling Orphan Drugs in 2020 (US $ in mln)

Rank	Product	Generic Name	Therapeutic Subcategory	Company	2014 Sales	2020 Sales	Phase (Current)
1	Revlimid	lenalidomide	Other cytostatics	Celgene	4,980	9,586	Marketed
2	Opdivo	nivolumab	Anti-neoplastic MAbs	Bristol-Myers Squibb	6	7,503	Marketed
3	Soliris	eculizumab	Other haematologicals	Alexion Pharmaceuticals	2,234	5,522	Marketed
4	Rituxan	rituximab	Anti-neoplastic MAbs	Roche	7,547	5,517	Marketed
5	VX-809 + ivacaftor	ivacaftor; lumacaftor	Other respiratory agents	Vertex Pharmaceuticals	—	4,927	Filed
6	Keytruda	pembrolizumab	Anti-neoplastic MAbs	Merck & Co.	55	4,717	Marketed
7	Imbruvica	ibrutinib	Other cytostatics	Pharmacyclics	492	3,501	Marketed
8	Tasigna	nilotinib hydrochloride monohydrate	Other cytostatics	Novartis	1,529	2,417	Marketed
9	Yervoy	ipilimumab	Anti-neoplastic MAbs	Bristol-Myers Squibb	1,308	2,243	Marketed
10	Esbriet	pirfenidone	Other respiratory agents	Roche	48	2,156	Marketed
11	Imbruvica	ibrutinib	Other cytostatics	Johnson & Johnson	55	2,104	Marketed
12	DCVax-L	—	Other cytostatics	Northwest Biotherapeutics	—	2,046	Phase III
13	Gazyva	obinutuzumab	Anti-neoplastic MAbs	Roche	54	2,027	Marketed
14	Pomalyst	pomalidomide	Other cytostatics	Celgene	680	1,891	Marketed
15	Alimta	pemetrexed disodium	Anti-metabolites	Eli Lilly	2,792	1,866	Marketed
16	Sprycel	dasatinib	Other cytostatics	Bristol-Myers Squibb	1,493	1,826	Marketed
17	Advate	factor VIII (procoagulant)	Anti-fibrinolytics	Baxter International	2,094	1,825	Marketed
18	Kyprolis	carfilzomib	Other cytostatics	Amgen	331	1,811	Marketed
19	Obeticholic acid	obeticholic acid	Cholagogues	Intercept Pharmaceuticals	—	1,752	Phase III
20	Ofev	nintedanib	Anti-angiogenics	Boehringer Ingelheim	5	1,674	Marketed

Source: EvaluatePharma® (May 2015)

2014 and forecasted 2020 worldwide sales for the projected top 20 selling orphan drugs.

top, it won't matter much anywhere else, either.

The entrance of millennials into the workforce represents a unique opportunity to boost the culture guiding an organization by tying those principles to a performance management system, including non-financial rewards. Money still talks, of course, but millennials in particular tend to look for something instead of or in addition to money. As PwC US chairman and senior partner Bob Moritz wrote in the *Harvard Business Review* last November, millennials respond to rewards that will benefit them in life- or career-enhancing ways, such as eligibility for a sabbatical to pursue an interest, travel, volunteer, or stay at home with family.

Keep growing

Once merely slow dance partners, pharma and biotech are increasingly joined at the hip, if they aren't already housed under one roof. From a business perspective, it's a perfect match: commercial and regulatory networks and expertise, in exchange for bleeding edge science and life-changing, even curative, new therapies. The great thing about science is that it doesn't discriminate; brilliant minds of all kinds continue to be switched on by the math and mystery of biology or bioinformatics, and the desire to do something positive on a grand scale. However, many employees working in biopharmaceuticals over the past several years have endured layoffs, corporate integrity agreements, and leadership churn. Going forward, companies must anticipate the new skills needed to compete, involve HR in strategic planning and organization design, and be willing to invest in talent, financially and otherwise. An organization is only as strong as the people who show up to work every day. PE

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Photo: Thinkstock / Dario Lo Presti

Blockbuster 2.0:
Eight Ways to Follow that Leader

What can companies do for an encore when their own blockbuster product is threatened by branded or generic competitors?

By Stan Bernard and Janet Wells

Over the past decade, many industry journalists, analysts, and consultants presumed that specialty markets, pricing pressures, and pharmacogenetic testing would kill off billion-dollar products. However—to paraphrase Mark Twain—reports of the death of the blockbuster have been widely exaggerated.

Contrary to popular belief, the blockbuster model is alive and well. Despite a specialty market and intense pricing pressure, Gilead Science's hepatitis C virus (HCV) anti-viral *Sovaldi* soared to an historic $10 billion launch last year. Evaluate Pharma projects that sales of *Sovaldi* and its combination product *Harvoni* will exceed $15 billion in 2015, surpassing the record annual sales of the cholesterol king *Lipitor*, the best-selling agent of all time. Even while entering a so-called "niche market" limited to HER+ test expressers with metastatic breast cancer, Roche's *Herceptin* has become a $5 billion blockbuster. Currently, there are more than 50 drugs with annual sales exceeding the blockbuster level of $1 billion in global annual sales. Accord-

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» Post-blockbuster momentum is increasingly important to portfolio life cycle management success.

» Precedent suggests eight strategies to offset revenue erosion of a fading blockbuster and establish successor products for launch and post-marketing success.

HIDING IN PLAIN SIGHT

Co-Pay as the Key to Patient Engagement?

Originally aired May 21, 2015 **ON-DEMAND WEBCAST**

Register for free at www.pharmexec.com/pe/affordability

EVENT OVERVIEW:

The transition into a healthcare landscape that rewards value and outcomes over volume presents challenges to traditional Co-Pay Support/Patient Affordability Programs. We explore some of the implications of our changing healthcare landscape to patient affordability programs; the opportunity for Pharma to deliver value beyond traditional approaches and define what program success should look like in our value-based healthcare landscape.

Who Should Attend

- Market Access
- Brand Managers
- HEOR

Key Learning Objectives

- Implications of value-based healthcare landscape to Patient Affordability Programs
- Specific opportunities for pharmaceutical manufactures to maximize the impact of their Patient Affordability Program
- Highlight new key success metrics for Patient Affordability Programs

Presenters

Paul LeVine
Vice President,
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Moderator:
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Content Manager
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For questions contact Sara Barschdorf at sbarschdorf@advanstar.com

ing to Thomson Reuters, there are 11 more projected blockbusters launching in 2015, including Bristol-Myers Squibb's cancer agent *Opdivo* and Regeneron/Sanofi's cholesterol agent *Praluent*.

Ironically, pharmaceutical companies' bigger challenge has not been finding but following blockbusters. What can these companies do for an encore? How can companies successfully follow their own blockbusters when threatened by rivals' brands or generic competitors, either before or after patent expiry? Pfizer's well-documented struggles to replace its blockbuster *Lipitor* highlight the immense challenges that many companies face as they pursue "Blockbuster 2.0." Pfizer tried numerous strategies to replace or extend the patent life of *Lipitor*, including combining it with the developmental HDL-raising compound atorvastatin, but ultimately failed. GlaxoSmithKline with its respiratory juggernaut *Advair/Seretide* and Sanofi with its gold standard insulin *Lantus* are among the many companies currently facing this predicament.

Pharmaceutical companies' bigger challenge has not been finding but following blockbusters

There are many reasons why companies fail to follow a blockbuster with a Blockbuster 2.0. First and foremost, a product has become a blockbuster because it is so well received by market stakeholders, especially providers and patients. It can be very challenging to improve upon the gold standard. Providers and patients trust and rely on the product and often resist switching. For many doctors, prescribing a blockbuster becomes habitual. Payers may have contractual arrangements or financial incentives such as rebates, discounts, or tenders which restrict switching from the blockbuster agent. Branded or generic competitors may offer better or lower-priced alternatives.

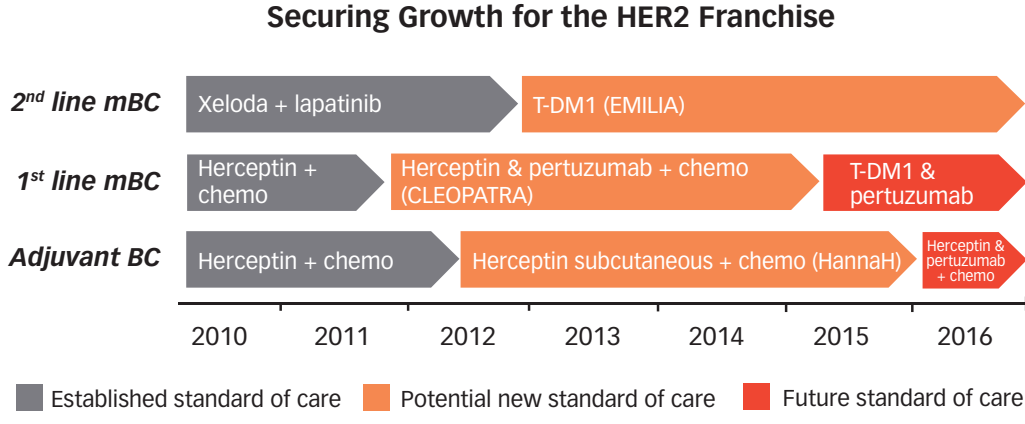
Strategies for sequel

A number of pharmaceutical companies however, have demonstrated effective approaches to remedy this situation. Here are eight strategies for following a company's own blockbuster:

Conversion: The most commonly pursued approach is to convert providers and patients into users of the company's next generation blockbuster. The classic example of this strategy is AstraZeneca's switch from its $6 billion blockbuster heartburn agent *Prilosec* to *Nexium*, a closely-related stereoisomer. According to a 2002 Wall Street Journal report, AZ initiated the "Shark-Fin Project" seven years before the proton-pump inhibitor *Prilosec* was scheduled to go off-patent. The internal team identified numerous ways to convert *Prilosec* users to *Nexium* believers, including conducting head-to-head studies of the two products demonstrating Nexium's better results in gastro-esophageal reflux disease (GERD); legal and regulatory activities to protect intellectual property rights; an aggressive advertising campaign to switch "the purple pill" positioning from *Prilosec* to *Nexium*; and a massive direct-to-consumer marketing campaign. As a result of this highly controversial approach, AZ overcame branded rivals, prevented generic competition, and successfully established Nexium as a $6 billion successor heartburn drug.

Sanofi is currently borrowing a page from AZ's Blockbuster 2.0 playbook as it seeks to fend off branded and generic rivals for its market-leading basal insulin *Lantus*. The company is seeking to switch diabetic patients to *Toujeo*, its follow-on "next generation of basal insulin." The company has conducted several head-to-head trials demonstrating the advantages of *Toujeo*, featuring a more flexible and sustained dosing profile with reduced hypoglycemic episodes and weight gain. The company is also taking legal actions against potential biosimilar competitors and aggressively promoting the product. Despite these steps, analysts expect *Toujeo* to generate only a small fraction of *Lantus*' $8 billion in annual sales. To further offset *Lantus*' expected sales losses to competitors, Sanofi has broadened its diabetes franchise with new products, including developing *LixiLan*, a combination of *Lantus* with its new GLP-1 agent *Lyxumia*, and adding MannKind's inhaled insulin *Afrezza*.

Combinations: Gilead is an expert in combining products to ensure follow-on blockbuster success. The company built its HIV/AIDS franchise with its two-fixed dosed combination blockbuster *Truvada*. It followed that act with the three-dose combination Blockbuster 2.0 *Atriplia*, which replaced its predecessor as the world's best-selling HIV therapy. Gilead next launched *Stribild*, a four-ingredient single-tablet regimen, which has already achieved blockbuster status. The company is applying a similar strategy to its HCV franchise, starting with the mega-blockbuster *Sovaldi* followed by *Harvoni*, a combination of *Sovaldi* and the NS5A



Building on the blockbuster Herceptin for metastatic breast cancer (mBC), Roche recently launched two follow-on agents: Kadcyla, an antibody-drug conjugate combining Herceptin and the cytotoxic chemotherapy, DM1; and Perjeta, to be used in conjunction with Herceptin or Kadcyla.

Source: Roche

inhibitor ledipasvir. *Harvoni*'s sales have already eclipsed the huge quarterly sales of the original molecule *Sovaldi*.

Transition: Building on market entrenchment and physician familiarity of *Herceptin* for metastatic breast cancer, Roche launched two follow-on agents: *Kadcyla* (trastuzumab emtansine, or T-DM1), an antibody-drug conjugate that combines the HER2 inhibition of trastuzumab (the active ingredient found in *Herceptin*), and the cytotoxic chemotherapy, *DM1*; and *Perjeta*, which can be used in conjunction with *Herceptin* or *Kadcyla*. These two follow-on agents and a potential bundling of Roche's HER2 breast cancer drugs represent a critical anti-biosimilar defense strategy for Roche. As shown in the chart above, Roche is encouraging oncologists prior to the launch of *Herceptin* biosimilars to transition to using the two new agents instead of *Herceptin*.

Prioritization: Some companies sequence next-in-class agents to follow use of the original blockbuster. In analysts' meetings, Celgene has prioritized use of its original blockbuster *Revlimid* as a first-line multiple myeloma medicine followed by its other agents *Thalomid* and/or *Pomalyst*. Although *Pomalyst* is a newer, more potent follow-on agent, Celgene wants doctors to prescribe *Revlimid* first since *Pomalyst* is unlikely to achieve the blockbuster sales of its predecessor.

Indications: AbbVie's *Humira* is the poster child for maintaining the high sales of Blockbuster 1.0 by leveraging eight different indications, including rheumatoid arthritis, psoriasis, and Crohn's disease. In 2010, *Humira* US Commercial Leader Jeffrey Stewart was quoted as saying, "We're the only self-injectable TNF (tumor necrosis factor) inhibitor in the category that works across the bones, skin, and the gut." More recently, Elaine Sorg, VP, US Immunology at AbbVie, said "*Humira* is the only biologic with such breadth of indications." *Humira*'s U.S. product label literally lists these eight indications as if listing blockbuster versions 1.1, 1.2, 1.3, etc. *Humira* essentially offers "a pipeline in a product," to paraphrase AbbVie CEO Rick Gonzalez. Despite being launched 11 years ago, *Humira* has become the world's best-selling drug with projected 2015 sales exceeding $13 billion.

Acquisition: Failing to find a TNF blocker to succeed *Humira*, AbbVie was forced to go outside the rheumatology area. The company recently acquired Pharmacyclics and its oncology product *Imbruvica* (ibrutinib), the first in a class of medicines called Bruton tyrosine kinase (BTK) inhibitors. AbbVie has publicly committed to its pipeline-in-pill strategy with *Imbruvica*, which already has four of its own FDA-approved indications.

Acquisition of potential Blockbuster 2.0 products or complementary agents in the same therapeutic area is an approach used by many companies. For years, AZ has marketed the $3.5 billion respiratory blockbuster *Symbicort*, an inhaled corticosteroid/long-acting beta agonist (ICS/LABA). As competitors broadened their inhaled respiratory portfolios, AZ responded by making acquisitions to fill the gaps in its respiratory portfolio. In 2013, AZ purchased Pearl Therapeutics,

Companies must initiate a Blockbuster 2.0 multi-disciplinary team as soon as they recognize their first compound's blockbuster sales potential

whose metered dose inhaler (MDI) development pipeline included a long-acting muscarinic antagonist (LAMA), a LAMA/LABA combination, and a triple combination (ICS/LABA/LAMA) for chronic obstructive pulmonary disease (COPD). Alongside *Symbicort*, this provided AZ with a full portfolio, with the triple being eyed as a blockbuster on its own. Because the products would not launch for a few years, AZ also picked up the respiratory portfolio of Almirall and its US partner Actavis, giving AZ an instant boost from LAMA aclidinium and LAMA/LABA aclidinium/formoterol in Europe. The Almirall portfolio also contains other products, which, when paired with AZ's novel agents in R&D, could provide future respiratory blockbusters for AZ.

Litigation: Nearly all companies seek to protect and/or extend the life of their original blockbuster. AbbVie has been defending over 200 patents for *Humira* prior to its 2016 patent expiry and has sought an injunction to block the European Medicines Agency from releasing detailed clinical trial data. Similarly, Celgene has actively sought to maintain exclusivity for *Revlimid* beyond its patent expiry in 2019. Given that Revlimid represents the majority of its sales and profits, Celgene has built a patent fort to protect this drug from generic rivals.

Hybridization: Some companies seek to use several of these strategies simultaneously. GSK created a new once-daily ICS/LABA (*Breo/Relvar*) to convert users from its blockbuster *Advair/ Seretide* (fluticasone/salmeterol) business, which represents over a quarter of the company's total pharmaceutical revenues. Recognizing the upcoming fragmentation in the ICS/LABA class and that *Breo/Relvar* would not be able to replace all of the revenues delivered by *Advair*, GSK created a Blockbuster 2.0 portfolio—all produced in the Ellipta inhaler, which is an optimized version of its popular but older Diskus inhaler. GSK acquired a large share in Theravance, partnering with the company to pool R&D assets and to ensure rapid development success.

GSK has worked to develop the broadest portfolio in the respiratory field, offered in a common device platform, that includes the first LAMA/LABA to the market in the US; a triple combination that could be first to market; and a novel ICS/LAMA combination targeted for a new indication called asthma COPD overlap syndrome. GSK also used litigation in Europe to challenge Sandoz as it brought its own version of salmeterol/ fluticasone in a purple Diskus-like inhaler to the market. With its landmark studies SUMMIT and SALFORD, GSK is working to evolve the respiratory market, possibly carving out cardiovascular mortality as a new indication, and to establish the healthcare resource utilization benefits of once-daily treatment with the Ellipta inhaler.

Best practices

There are at least three key learnings from companies who have been challenged to find a Blockbuster 2.0:

- **Accept the challenge:** Pharma companies and professionals should not underestimate the difficulty of replacing a billion- dollar agent. As these examples demonstrate, many companies have failed to find a successful solution to the Blockbuster 2.0 predicament.
- Start planning early: Branded rivals will target a potential therapeutic class blockbuster as soon as they feel threatened, often as early as developmental Phase II or III, and may conduct counter-launches in the pre-launch period. Similarly, generic companies will seek to acquire a potential blockbuster's active pharmaceutical ingredient in Phase III and no later than at launch in order to initiate their own counter-strategies. Consequently, companies must initiate a Blockbuster 2.0 multi-disciplinary team or task force as soon as they recognize their first compound's blockbuster sales potential. This internal team should consist of executive management, marketing, clinical discovery and development, medical affairs, legal, regulatory, manufacturing, competitive intelligence, market research, business development, and other cross-functional professionals as appropriate.
- **Use multiple strategies:** The internal team should evaluate the potential Blockbuster 2.0 strategies listed here and others to find the right mix of options and actions. As Pfizer and other companies can attest, Blockbuster 2.0 failure can be a very painful lesson. PE

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Hard Science, High Hopes

Masters of the deal recently met in New York to discuss the status of their trade and the forces propelling M&A, licensing, and partnerships in the life sciences for 2015

The momentum behind dealmaking in pharma and biotech is so undeniable that a popular query has been to try to get someone to take the dark side, contrarian position, to hint at a disturbance in a growing bubble. Financing, M&A, and partnering activity appears indefatigable in 2015 with early data outstripping the record-breaking marks from 2014.

This spring, *Pharm Exec* and Campbell Alliance convened an intimate group of business development professionals, Jedi's of the life science deal, to discuss current sentiments in the industry. The group gathered at New York's contemporary beacon for research and collaboration in the field, the Alexandria Center for Life Science.

Per tradition, the group received a sneak peak of Campbell

Alliance's annual survey, Dealmakers' Intentions. The discussion informed a more complete take on the survey, its seventh iteration, which will make its rounds at the summer blockbuster conference, BIO.

Among the recurring themes from the dialogue was the tremendous fervor across the industry and an agreement that the optimism surrounding life-saving treatments is no industry mind trick. Industry is seeing the culmination of genome era science and deep understanding of molecular mechanisms. The by-products of the exceptional advances are dollar signs with zeros. Excerpts from an afternoon of discussion follow here.
—Casey McDonald, Senior Editor

PE: ***Besides the big price tags and astronomical valuations, we're seeing great science. Is the connection from science to finance clear?***

NOUHAD HUSSEINI, REGENERON PHARMACEUTICALS: Technology has to some extent caught up with itself, and the investments and scientific breakthroughs from last decade are really starting to bear fruit. Consider next-gen sequencing and human genetic research as an example of this, where we are now seeing real benefits from advances in these fields.

In terms of obtaining human genetic evidence that can validate mechanisms of action and doing the right clinical experiment in the right population, I really think all of that is directly connected to the success that we are seeing. You can also look at the fields of cell therapy or gene therapy, where we are seeing some recent breakthroughs, but only after literally decades of investment in basic research and clinical experimentation. Investors who put billions into the sector in the last boom cycle (1999-2001) largely had an unrealistic investment horizon, and were disappointed by how long it took that investment to pay off. Investments in basic science and technology take time, but we are now seeing those investments mature and bear fruit—we are harvesting it now.

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- Investments in basic science and technology in areas such as cell and gene therapy are starting to bear fruit.
- Good opportunities for deal-making, while tougher to find, are not going away. The best science always wins.
- Including patients at the table should be a strategic focus, but there are challenges.

LES FUNTLEYDER, E SQUARED ASSET MANAGEMENT: For example, we invest in a gene therapy company with technology dating back to 2000. But the reality is that what we are seeing now is going to be another 15 years, even though there is a lot of excitement about gene therapy and oncology. It seems like we are in the early innings, and we just maybe don't want to get too far ahead of ourselves, like we did the last time. People thought miracles would happen. It's easy to forget how long it takes.

My interest, besides the science, is the business model. It's not like the old pharma model where you go to the pharmacy every month and get the prescription. So how do we reimburse for that? It's more of a bioethical question, but it is an interesting one that I am pondering, and I would like to hear ideas on that.

PE: ***When you are talking about a cure, a single pill, or injection, how do you do that financial model that's at all useful for striking deals? Is there a precedent or tools to look to?***

FUNTLEYDER: I don't think it's answerable. Arguably, you can say, well, it's big up front and you come back for a tune-up every year, and if you are still disease free, we'll pay you some month. I think that is the current standard of thinking, but I don't know. I don't know how we are going to do this yet. I think we are going to feel our way around. Given some really good data out there, we may have these conversations more quickly than we are prepared to have them.

NEEL PATEL, CAMPBELL ALLIANCE: The different dynamics of the US vs. the European Union start to play increasingly more important roles in that payers in the US hold onto a covered life for about three to four years. Thus, they are incentivized to care for those lives for those three to four years. Whereas in Europe, in a country

Roundtable Participants

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like France, the focus is potentially over the full life of the individual, and this different perspective will interject a new dynamic.

HUSSEINI: Consider potential examples that might be more extreme than Gilead's *Sovaldi*. For example, if you had a one-time shot that can permanently cure a genetic disease, it is not hard to argue that such a lifetime cure would be worth a million dollars of value. But who is going to pay that million dollars?

I'm sure we will continue to experiment with different and creative payment models; some will work and some won't. It is a good problem to have. These patients are getting cured. Hopefully this will be a common problem for the industry.

FUNTLEYDER: There are a lot of ways to skin a cat, we just don't know which one is the right model yet. Models may work better for the relatively rare drugs, but when you start to get a bigger population, there's greater complexity. That's where *Solvaldi* ran into trouble, not necessarily the price. If 10 people had hepatitis C virus (HCV), you wouldn't have had a congressional hearing. So now you have a very expensive drug, for a big population. The result has been payer freak-out.

PAUL HADDEN, HEALTHCARE ROYALTY PARTNER: I think it ultimately it will be dependent on the patient population, the incidence, the prevalence, and companies feeling out how best to price a cure given those underlying disease demographics and discussions with payers.

"Not only is the data really impressive, but the timelines are speeding up. It is the fact that both sides of R&D are accelerating that makes it quite exciting."
— PAUL HADDEN, HEALTHCARE ROYALTY PARTNERS

From science to *quality* opportunities

PATEL: ***What are you seeing in terms of opportunities? Are you seeing an increase in the number of opportunities, or has it maintained a relative steady state?***

JONATHAN YORK, DAIICHI SANKYO: Let's put it this way, at JP Morgan, you see maybe 40 or 50 companies, every year, and it's still the same. I'd probably consider doing a deal with 10%, and this has been fairly consistent. But I think you have to look harder now, especially for late stage assets. That basket has fewer things in it now.

KIA MOTESHAREI, EMD SERONO: One thing I have noticed, the good assets are higher quality assets than they were a few years ago. They are well thought out, and better developed to their given stage. I don't know the reason but maybe it's because of the transition that many pharma folks have done to the biotech side. They are more familiar with clinical, regulatory, and commercial issues, and they do it more by the books. This is in contrast to how the old biotech used to do it—the cheapest, fastest way possible.

YORK: While it doesn't necessarily trickle down to something that is available for partnering, the best science always wins and the science has gotten a lot better. This year you will see it with PCSK9's, new drugs for heart failure, and PD-1 inhibitors. The average asset you see isn't that impressive, but the trend is in the right direction.

HUSSEINI: I agree that good opportunities are not going away. As long as there is continued scientific innovation around things like genetic therapies and human genetics research, there will be no shortage of exciting new targets and therapeutics to go after.

HADDEN: The science definitely seems to be accelerating. But it is also the development timelines of those novel molecules. If you look at some of the PD-1's in oncology, some of them were first humanized in 2008 and then six years later they were launched. So not only is the data really impressive, but the timelines are speeding up. It is the fact that both sides of R&D are accelerating that makes it quite exciting.

PATEL: ***Is it just the good assets that are coming together with a more robust data package or further thought through market research or greater scientific backing? Are all the assets you review now coming with more robust market research and scientific data, making the market more transparent?***

HUSSEINI: I try to draw a distinction between the "goodness" of an asset based on its inherent characteristics such as the rationale for its mechanism of action versus how well a given asset has been developed. It sounds like small companies are generally doing a better job developing assets. I won't argue that. I was reflecting more on the first, just that the science underlying these things is more innovative, more well-validated, putting aside the drug development aspect of it.

FUNTLEYDER: I will add, because we do venture, too, there is still plenty of bad science out there. I can say it, maybe they can't. We do see stuff and say, "Really, how dumb do we look?" But some still manages to get funded, which encourages people. There is still bad stuff out there.

HUSSEINI: There are bad ideas. Now they are getting funded, whereas a couple years ago they weren't. So if there is a bubble, that is where it is.

YORK: The question is what is going to happen in the future. Because there was this period—it's recent—where venture funds, a lot of them, went out of business, i.e., they couldn't raise another fund. But now the IPO window opened and these previously illiquid investments became liquid and people made a great deal of money. Investors who previously said, "I don't want to allocate that much capital in my portfolio to private equity or venture any more," those alternative investments now see these big IPOs getting done. That dynamic has resulted in new venture funds getting raised again. Ultimately, too many dollars are going to be chasing too few good deals. So if you look at valuations five years from now you might again see a disconnect between the quality of the science and the prices paid for it.

The bubble question

PATEL: ***All this talk and bluster about whether or not there is a bubble, but if there is an accommodating FDA and, therefore, more products are going to get approved, is that going to temper the bubble or is it not really a bubble in that case?***

FUNTLEYDER: That is the trillion-dollar question. All you hear these days is bubble. This would be, I think, the fourth in my career, if this is actually a bubble. Nobody actually says so when it *is* actually a bubble. The last two, you had two or three lone voices in the wilderness, but everybody was very complacent. I see the opposite now, where people have their finger on the sell button.

Ultimately, in healthcare, not a biotech per se, but we just watched Oscar, an HMO here in New York, go out for a $1.5 billion valuation, and they have 40,000 members. To me that is a bubble. It is probably 10 times what a publicly traded HMO would get for that same thing. I haven't seen the private valuations creep up the same way yet. But there will be a time, I'm sure, because Wall Street, for no other reason, always over does everything. So eventually we will have a bubble and a crash. But as long as people keep shouting bubble on television, it's not a bubble.

YORK: I'm interested to hear what the buyers from your point of view have to say. How much is a dollar of sales worth really in terms of a valuation multiple? Because is it six times sales? 10x? 20x? That's high. The question is whether there will be consolidation that will take care of some of that excess. I agree with you, you only know in retrospect if AbbVie paying $21 billion for Pharmacyclics was rational or far too optimistic.

"Ultimately, too many dollars are going to be chasing too few good deals. If you look at valuations five years from now, you might again see a disconnect between the quality of the science and the prices paid for it."

— JONATHAN YORK, DAIICHI SANKYO

FUNTLEYDER: As long as you're the seller.

MOTESHAREI: One difference between now and what we had back in the high valuation of 2000 is that today's high valuation is associated with companies that have assets. They have products that are closer to being commercial assets. Back in 2000, the high valuation—and in that case it was a bubble—was based on the technology platforms. Com-

panies that had technologies that were years and years away from making it to the commercial stage. So indeed, the environment is different. You have the high valuation but it's attached to an asset, whereas before it was attached to a technology that was not immediately ready to be fully capitalized on a commercial market. If valuations were to go down, they will go down gradually. The only single event these days that could "burst the bubble" is a drastic change in payers' policy.

"if you can do apples to apples comparisons in terms of efficacy and safety, nobody cares about convenience; it comes down to cost."

— LES FUNTLEYDER, E SQUARED ASSET MANAGEMENT

HADDEN: I agree—within the biotech sector, you could have several micro-bubbles. So not a broad bubble per se, but discrete sub-segments of the market where every company in that space is getting the benefit of the doubt right now.

YORK: I would say to the extent the regulatory environment has been a lot more permissive in terms of both the number of approvals and new pathways for breakthrough therapies, the payer environment has been the opposite. You have to expect that sales and margins are going to compress. If you are trading on a multiple of sales, you have to figure going forward something has to change. The payers finally figured it out. *Sovaldi* was a wake up call for them. I don't see that changing, especially the government, relative to Medicare Part D. It is a huge sales driver for many pharmaceutical products. If the government wants to restrict preferred formulary access to a limited number of products, they certainly can. I think going forward, if you are going to tell me sales are coming down and margins are coming down, then valuations are also coming down. The question is, when?

FUNTLEYDER: United Healthcare just bought Catamaran, speaking of deals. It's not a duopoly, it's a triopoly, when you have three major payers now, plus the government. The government is still not spoken for, by the way. I guess it will depend on who is in charge in 2016. You now have three payers, all of whom saw what they could do when they pushed *Sovaldi*, for example. But also—and we invest in payers also—they are all saying we are going to ramp up our exclusion list. We are not talking about fifth tier on the formulary. They are saying "no, we're not paying for it no matter what." It will be interesting to see how that plays out. I think it will require pharma companies to show pharmacoeconomic value, like differentiation. One thing that *Sovaldi* and the AbbVie drug (*Viekira Pak*) taught us is that if you can do apples to apples comparisons in terms of efficacy and safety, nobody cares about convenience; it comes down to cost.

HADDEN: Our firm spends a lot of time talking to payers. Our investments are so long term in nature, we have to understand how payers view a space today but also several years downstream. The payer environment has changed dramatically over the past few years—just look at Express Scripts and its exclusion list of more than 50 branded drugs at the start of 2014. The greatest strength payers have is at the start of a drug's reimbursement life. Going forward, I think you are going to see that payers focus on assets in high value therapeutic areas where there is either a lack of differentiation or no clear clinical benefit between two drugs. In those cases, you will see two sponsors pitted against each other as you did in the HCV market this past year.

HUSSEINI: When it comes to payers and pricing, it will be particularly interesting to watch the PD-1/PD-L1 race. This is unprecedented. There are over a dozen programs in this race—where else have we seen anything even close to this much competition on a single target? I think it's going to be fascinating to see how the payers influence that when they do.

YORK: It is worse than that. There was excitement about *Opdivo* therapy added to *Yervoy* for the treatment of melanoma. But the question remains, who is paying for combinations of immunotherapies? Are you going to spend $200,000 for these therapies? Nobody's figured out how to do that.

HADDEN: It is going to be fascinating to watch how this evolves, because you are going to have downstream novel oncology therapies that will be added on top of the PD-1/PD-L1 backbone, and how that pricing mechanism gets solved, no one knows. You could have a sponsor going to a payer with three novel drugs, each with three novel mechanisms that could be synergistic and additive…and here's the six-figure price? That will be an interesting discussion.

FUNTLEYDER: The payer amounts are changing. I don't know that it's here yet. It may never come. But some sort of bundling is becoming more common. I'm sure if you did a survey five years ago, there was no bundling. Now there's bundling. How are these pairs going to deal? If you have a $500,000 treatment for each drug, the PD-1, plus everything else. It's almost inevitable that there is going to be pricing pressure. Where it comes from might be different. People are going to throw up their hands and say we just can't afford it.

HADDEN: The other interesting trend is that while payers are focused on the immuno-oncology area, trying to control cost, they will also be trying to take cost out of the system with biosimilars. The biosimilar market will have unique players and price implications that will likely be launching concurrently over the next 5-7 years.

PATEL: That brings up an interesting point. Biopharma companies enjoyed their margins for so long they are going to face it in a couple different ways. Their innovative technologies are in a horse race, and there might be pricing pressure. Those who have been cash-flush for so long are going to be encroached upon by biosimilars, and there will be pricing pressures there. It will be interesting to see how deep the margin cuts end up being.

Bringing patients groups to the deal table

PE: ***Changing gears for a minute, considering the Cystic Fibrosis Foundation example, what will be the role of philanthropy and patient groups getting into the dealmaking space? Will these groups have a more active role?***

HUSSEINI: I think so because it gets results. Those groups can connect patients with drugs, with regulators, and move things along. And I think you have seen that these efforts have had success. As they get results, they are going to be playing a role. This is bringing another stakeholder to the table. In terms of the value question, you are not left guessing at the end whether patients and physicians want your drug; engagement with these groups helps you hear up front what the market is telling you they want.

FUNTLEYDER: So full disclosure. I'm on the advisory board of Boundless Impact, which is an impact investment firm. What they are looking for is to get a financial return in addition to a social return. Boundless isn't the only one. There are a bunch that are trying to connect people with money and interest and people who know how to do such. I don't know how it plays out, but money, interest, and intelligence, if you can merge those three, you kind of move things forward in a non-traditional path, whereas it used to be strictly a drug company thing.

"Their innovative technologies are in a horse race, and there might be pricing pressure. Those who have been cash-flush for so long are going to be encroached upon by biosimilars, and there will be pricing pressures there."

— NEEL PATEL, CAMPBELL ALLIANCE

MOTESHAREI: Additionally, the value of these patient associations is they have access to patients and they can convince patients to participate or contribute toward certain studies to help us learn more about their disease. I came across a group that has access to a certain group of patients with a very rare disease. The patients have all agreed to contribute biological samples that can be used for research studies. That is highly valuable, to be able to have

access to these bio samples that under normal circumstances is next to impossible to have in this small rare disease area. There is value in such patient associations beyond just the financial side of it.

HADDEN: The cystic fibrosis example is a bit unique in the sense that they did something different in terms of investing risk capital in clinical trials—I think they invested close to $75 million. That shows where you can have a real impact in terms of driving different outcomes versus just raising money for awareness and basic research. Look at last summer's ALS ice bucket challenge that showed the power of some of these organizations to mobilize resources. I think the question is how do these organizations allocate these resources and what actions do they then take to support their underlying mission?

"That is highly valuable, to be able to have access to these bio samples that under normal circumstances is next to impossible to have in this small rare disease area. There is value in such patient associations beyond just the financial side of it."

— KIA MOTESHAREI, EMD SERONO

PATEL: There is a lot of capital flowing to patient groups. With social media as an enabler, there is greater ability to reach into the community to generate capital. The success story in the Cystic Fibrosis Foundation's funding of *Kalydeco* probably is going to be emulated because there is more capital available to patient groups and they will look to generate similar successes within their disease areas of focus.

PE: ***Is there any risk of complications to having these groups on board?***

HUSSEINI: It is challenging when you start talking about the "right to try" concept. You want to help these patients and give the drug, but you also have an ethical obligation to do good science and evaluate if the drug works and actually does something real to help this person.

FUNTLEYDER: We are glad to have them, but we have heard from people that it does close up the comp table a little bit when you have all these groups floating around. We're happy, but I think we may be the outliers. We don't care about a messy comp table. So there is not always going to be a great alignment. I don't see that as a risk.

Mechanics of a deal

PE: ***Tell us about the process of dealmaking—where some of the snags are and any changes you've observed over the years?***

HUSSEINI: Just to connect it to this idea of competition, one of the challenges some companies face is around internal decision-making. Managing internal stakeholders can be a big challenge—trying to get the internal alignment. That can take a lot of time. In a world that has become increasingly fast moving—people at the table willing to move quickly—if you want to be competitive, you have to keep up, and being able to facilitate and connect very rapidly to senior-level decision makers with the right information is important. Sometimes, it forces you to move at an uncomfortable pace.

PE: ***Big companies have the buying power, but can they move quickly enough?***

HUSSEINI: Well, you would be surprised. Some of these big companies can do deals fast. Again, it is about getting their really senior people on board. If it is a good strategic fit, if it's a good deal, you may hear about a company doing a deal in four weeks, start to finish, putting big dollars on the table.

MOTESHAREI: Our deal with Pfizer is an example of that. We partnered our PD-L1 program with Pfizer that from start to finish took six weeks. It set the record for the largest up-front for 50% ownership of a single asset. Pfizer moved very quickly and we kept up with them.

To add to your point about the difficulties to get internal support to move a deal along,

there are added complexities, which are based on partners' demands these days. Many potential partners do not even let you in to look at the data before you submit a non-binding term sheet. I have to go to my senior management, get authorization for a non-binding term sheet, with very little data that the company has provided me, build a case, and try to get an approval for a non-binding term sheet. I am asked "But for what? You haven't shown me anything." My reply, "Well, they are not going to show me until I show them what my terms are!"

Potential partners are not making it easier, but they are in the driver's seat. If you have a good asset you are going to get multiple companies that are going to show interest, and they don't want to necessarily entertain eight or nine potential suitors. The difficulty for me is to get an approval for a term sheet that goes out, granted it's not binding. But still, I cannot put a term sheet together until I go through a process, which adds to the complexity of getting an approval internally.

YORK: We have the same issue. There is a perception by some in the investment community that Japanese companies don't move as quickly as other pharma players. The reality is that they move just as fast as everybody else. From the inception to the non-binding bid, that part is a lot of work internally. Laying the groundwork for a deal is complex, but by the time we get to the point of issuing a term sheet, we are all aligned. The rest of it goes fast, but doing one in four weeks is really difficult for us. The other thing is a lot of companies are issuing their own term sheets. If you can't sign up for this, you are not in the process. We see a fair number of things like that also.

FUNTLEYDER: ***I have a self-serving question. Say I have a Phase II oncology drug with some early data. What is the optimal way to move the process along for Big pharma? Let's say I call you up, what do you want to see and hear that will get you passed the 10% threshold?***

MOTESHAREI: I want to see a compelling story in six or seven slides. I'm the first filter. I get bombarded by opportunities and I don't have time to go through 50 pages of slides for each opportunity.

YORK: One of the things sellers usually don't know going in is what is that potential pharma partner looking for? For example, what is their oncology strategy? It's really about whether you get through the first filter. Then making the diligence process as user-friendly as possible, having the data site up and running, without too many exclusions on your data site for key information. Everybody wants to do it in stages—I understand that. But really, once you get past the filter, you are at least in the ball game; you want to enable it as much as possible for us. We are looking at a lot of things simultaneously.

"If you want to be competitive, you have to keep up, and being able to facilitate and connect very rapidly to senior-level decision makers with the right information is important. Sometimes, it forces you to move at an uncomfortable pace."

— NOUHAD HUSSEINI, REGENERON PHARMACEUTICALS

PATEL: We advise our clients who are looking to outlicense that what they need to do is make it easy for the business development executive to sell the asset to the internal stakeholders. They should try not to run from the question of what the asset is worth. Don't give the buyer an excuse to say no to a deal because you didn't address the potential issues with the product head-on, i.e., if you believe there is tremendous pricing power, then you need to have market research to substantiate why you think they are going to get more of a premium. Just try to give the buy-side business development team what they need to go to champion for internal consensus. PE

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Getty Images : Hayri Er

When **Care Models** Collide

What you should know about integrated delivery networks

By Kim White and Christen Buseman

Healthcare companies are being challenged to reduce costs while delivering innovative, quality care. A host of factors—shrinking reimbursement, penalties for quality shortfalls, more assertive payers, and the increasing transparency of provider pricing—are challenging traditional operating assumptions. Some of these changes are mandated by recent legislation, and others are market responses to this fundamental mandate for better quality at lower cost.

For pharmaceutical manufacturers, navigating this transition depends on understanding how to effectively engage healthcare delivery customers that look and behave differently. Specifically, rising cost pressures, stiffer financial penalties, and the imperatives of healthcare reform are forcing hospitals and health systems to develop new commercial models. One emerging tool is the integrated delivery network (IDNs) designed to aid the transition to a more value-based paradigm. Many health providers doing business with pharma are actively consolidating and/or creating alliances to develop them.

However, there is no common IDN model. Provider organizations vary in their development of and preparedness for a new business model. Some IDNs have well developed procedures for managing clinical variation and are assuming risk for a population, while others are just beginning to establish the infrastructure for managing populations and risk. And there are still others that are just trying to conduct business as usual.

Manufacturers are finding themselves selling into an uncertain, stormy environment that has drastically different business drivers, risk tolerance, and operating environments. As providers become larger, more integrated, and take on more risk, pharmaceutical manufacturers must develop commercial models that can adapt to this rapidly changing delivery landscape. In addition, focus will need

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» The core mission of most IDNs is to effectively manage the cost and quality of care.

» IDNs, each one unique, are likely to follow a four-point blueprint, with emphasis on sharing risk and securing pricing power.

» Pharma IDN engagement must involve efforts to demonstrate product value early and forge closer partnerships.

to be given to their R&D models to ensure they are developing the data they need to demonstrate value to these new, more demanding customers.

The changing face of 'Big Healthcare'

Although the healthcare delivery sector is in a state of turbulent change, one thing is certain: the drivers behind consolidation are here to stay, and IDNs will become more prevalent and influential. In 2012, the number of deals more than doubled those in 2009, and the largest IDNs in 2013 brought in multi-billion dollar revenues that rival Fortune 500 companies. It's not just large provider systems getting larger—local hospitals are partnering up to increase regional market share as well. Even some academic health centers have entered the consolidation frenzy, most recently seen in the merger between the University of Arizona Health Network and Banner Health.

While IDNs are becoming increasingly prevalent, the concept isn't new—some of the best known (like Kaiser Permanente, Geisinger, and Mayo Clinic) have been around for decades. These organizations have been highlighted nationally as examples of efficient and coordinated healthcare delivery to which other provider organizations should aspire. Even these IDNs, however, have widely variable structures, governance, and strategies. A key part of their success is the culture they've been able to develop that supports their business models and strategy, built with significant investments in time, energy, and capital.

Four binding truths

Today's evolving group of IDNs come in all shapes and sizes—the only common denominator is that they all own or manage multiple points of patient care. Some IDNs operate in local geographic areas, while others may be in markets across the US or even abroad. A central goal for most IDNs is to effectively manage the cost and quality of care, yet each organization is likely to take a unique and nuanced approach comprised of some or all of the following strategies:

Leveraging size to negotiate prices. A key driver behind healthcare consolidation is the desire to leverage volume to obtain better purchase terms. For pharma, this means fewer, larger accounts with greater market power. Broader use of group purchasing organizations (GPOs), and other cost controls are an outcome. In some cases, IDNs may expand their relationship with GPOs; other IDNs may choose to negotiate with manufacturers directly. This will have important implications for how manufacturers approach and segment their markets. Manufacturers may need to restructure their sales force and will need to build strategic account management capabilities to effectively target and engage these larger accounts.

Administrators play a greater role in product decision-making. To varying degrees, IDNs influence clinical decision-making by making administrative purchasing decisions. This means that decisions about which products to use are becoming more centralized. No longer left up to individual physicians, such decisions are increasingly made by committees comprised of physicians and administrators for whom institutional objectives may factor more significantly into decision criteria than had been the case.

> The drivers behind consolidation are here to stay, and IDNs will become more prevalent and influential

Depending on the governance structure and degree of centralization of the IDN, these administrative decisions may apply to facilities and physicians across the network, including affiliated physician groups or outpatient centers. Manufacturers need to understand how product decisions are made within an IDN and be able to provide data that demonstrates not only the clinical value of their products, but also the economic value. Consolidation of providers into fewer, larger accounts means that the failure to "make the cut" with any one IDN can have significant financial implications.

Requiring care protocols to improve efficiency. Many IDNs are managing variation in cost and outcomes by creating and adopting care paths that define treatment protocols. Some protocols outline general clinical decision points, while others are detailed to the point of defining the specific products to be used. Understanding where products fit along care paths, how the protocols are being used throughout the IDN, and who makes these care protocol decisions will be critical for drug manufacturers going forward. Suppliers must differentiate themselves from competitors to avoid continuing pressure for commoditization, or being shut out of the care path completely.

Assuming risk for their patients. A growing number of IDNs and other large provider organizations are starting to consider taking on risk in the form of bundled payments and population health manage-

ment. Some of this is driven by opportunity—CMS and the Center for Medicaid & Medicare Innovation (CMMI) have created a series of pilot models that involve various stages of risk management. Others are engaging with commercial payers and developing models for specific populations and subpopulations. As IDNs assume risk, they will look to manufacturers to do the same—and manufacturers need to consider how they will respond.

With fewer accounts and more centralized decision-making, manufacturers will no longer require the extensive reach of a large sales force

Pharma's Response

Regardless of the strategies and programs IDNs ultimately adopt, manufacturers can be certain that there will be an increased need to demonstrate economic and clinical value. Manufacturers will also be dealing with new decision makers as physicians' influence is shared with administrators and executives. Delivering value to this highly variable customer base requires a differentiated approach for each IDN. In order to successfully segment and engage customers, strategic account management capabilities need to be embedded throughout the organization. This should be accompanied by restructuring sales models to enable selling in a more complex environment. Finally, manufacturers must reevaluate the value that they offer to their customers, adjusting their R&D strategy and investments.

Strategic account management

There are compelling reasons for adopting strategic account management strategies for approaching IDNs. While all healthcare delivery organizations are focused on reducing cost and improving quality, each customer organization has unique characteristics that can have important implications for how to effectively approach sales. Some characteristics of IDNs, such as number of facilities, may be easy to discern. Others, such as the use of centralized purchasing, risk tolerance, and governance structure, will require in-depth understanding gained from relationship building and market intelligence. It's necessary to understand their business drivers, identify their key decision makers, and discern their current risk profile. Ultimately you must be able to demonstrate value in terms that matter to each audience that is a part of the purchasing process. To do that, it's critical to understand what those criteria are.

Strategic account management is more than high volume physician sales—it requires continuous management of complex relationships, multiple contracts, and different buying preferences across different types of provider organizations. The role straddles sales and marketing and requires integration across boundaries—within the customer and within the pharma organization. To be successful, strategic account management must have relevant and valid insights from strategic marketing. Real strategic marketing must start with an analysis of market trends, with the intention of determining current unmet clinical and economic needs—and predicting future needs as well. Strategic marketing also requires an ability to see the "white space" opportunities inherent in such trends. It also requires the organizational competencies to incorporate this insight into critical business decision processes such as portfolio management and product development.

Revisiting the sales model

With fewer accounts and more centralized decision-making, manufacturers will no longer require the extensive reach of a large sales force. This leaner sales force will need expanded capabilities to succeed in a new, more complex sales process. Prioritizing each account based on its potential and then working to optimize the value of the account requires a level of business acumen not commonly found among traditional sales reps trained to focus on a product's features and benefits. The core competencies for reps focused on IDNs will need to be redefined—they must have the ability to engage key decision makers with sophisticated scientific understanding of their products and the financial benefits they offer. Working sessions and training programs for sales staff are necessary to upgrade skills and translate them into practical applications.

As IDN account management becomes an important function within the sales team, accountabilities and reporting relationships will need to be redefined to ensure that there is clarity around roles and responsibilities. New performance metrics will be

needed to measure the quality of account management rather than just the volume of sales.

Executing in an IDN world: Two critical steps

Economic and clinical value drives a market-based commercial model. Manufacturers must identify what constitutes value to all relevant stakeholders—including payers, physicians, administrators, and patients. Absent any evidence supporting the economic and clinical value of the product, manufacturers will be left to compete on price. To avoid engaging in price wars, pharmaceutical companies must demonstrate value with data, and communicate the value proposition in terms that are meaningful to their customers.

Consider value in early product development. This may require developing a strong economic and clinical value message earlier in the product development cycle. In addition to randomized clinical trials, evidence underpinning the value story will need to be broad, such as post-market longitudinal studies, patient reported outcomes, and other sources of real world evidence. The value proposition needs to communicate the net benefit of pharmaceuticals in the broadest "real-world" context (i.e., clinical, economic, quality of life, and productivity measures) relevant to the customer's strategic objectives.

Companies must ensure that delivering value is at the core of all activities, from portfolio investment decisions, to product development, and extending across the entire product life cycle. Designing and developing products and services that fit with your customers strategic requirements—and are profitable to you—requires collaboration across multiple parts of the organization. This includes R&D incorporating added value into the product design at an early stage. R&D should also consider real-world patient issues—such as elderly age cohorts, multiple chronic conditions, and poly-therapy.

As providers pursue strategies that focus on treating a certain population, whether by geography or disease state, pharmaceutical manufacturers will need to understand how their products serve that population. They may need to invest in targeted therapeutics/personalized medicine based on biomarkers. The goal would be drug-diagnostic companions able to demonstrate high value in small subsets of the population that are of particular interest to the customer. By bringing their disease expertise to bear, manufacturers have opportunities to help providers stratify populations for different risk profiles or treatment responses in order to better manage scarce resources.

Identify ways to create partnerships. As providers work to better manage costs, they will find value in manufacturers that are experts in a therapeutic or diagnostic area. A customer's needs may not be addressed simply through a new product alone. Pharmaceutical companies need to explore whether to develop "service wraps" that provide more complete solutions across the continuum of care. They can differentiate their products and portfolio by offering value-added services that help providers manage certain segments of their population. By leveraging their disease knowledge to create products and services, pharmaceutical companies can gain a competitive edge and dominate a therapeutic area.

Manufacturers that are able to demonstrate ownership of a therapeutic area through a portfolio of effective products and services may be in a position to consider sharing risk with payers and providers for patient outcomes. In an environment where all stakeholders are working to manage costs and quality, this will be an effective way to differentiate on value. Important questions to consider when determining whether to take on risk include: Are providers looking for a partner to share the risk they have assumed as part of a capitated payment model? How confident are manufacturers that they can deliver products or services that help customers meet their goals? How much "skin" are pharmaceutical companies willing to put in the game? Are internal processes established to design, approve, manage and measure a risk-based arrangement where significant revenue is on the line and where those revenues might be deferred to some point in the future?

Conclusion: Stay flexible

The market and regulatory forces driving providers to form IDNs will continue to intensify as managing healthcare costs and quality continues to be a priority. This means that a variety of different care models will be competing in the US market for the indefinite future. Manufacturers should invest in developing new capabilities and R&D priorities that allow them to be nimble and responsive to providers, regardless of their current operating model and risk profile. By doing so, manufacturers will ensure that their models reflect the new market realities and they are equipped to meet rapidly evolving customer goals. PE

Q&A on the growing influence of IDNs on brand strategy.
bit.ly/1FBrFyI

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Bridging Industry's Charisma Chasm

Pharma's image is still suffering despite a rise in medical innovation. These five patient-centered strategies could help in finally mending the gap

According to the 2015 Harris Poll, the reputation of the pharmaceutical industry ranks ninth out of 15 industries. Pharma had only 37% positive mentions and was in the company of the airline industry, insurance, financial services, tobacco, and the government. Gone is the era of mass-market blockbusters; a new era of bringing highly specialized, innovative medications is upon us. These new products have the ability to not only transform lives, but also transform the reputation of the industry.

There are some tangible examples of the pharmaceutical industry's power to transform health. For example, in recent years we have seen HIV treatment approaches shift from treatment of an imminently life threatening illness to that of a chronic disease with an increased emphasis on convenient dosing, reduction of long-term side effects, and the management of comorbid conditions. In 2014, we also witnessed Gilead's innovative products *Solvaldi* and *Harvoni* effectively cure many patients with hepatitis C virus. Yet instead of focusing on the amazing science that led to these major advancements in public health, the media often fixates on pricing issues and the cost of medication as patients were queued up to receive these new treatments. And the innovation is stronger than ever. In 2014, a record 49 orphan drugs were approved to treat rare diseases, an increase of 53% over 2013, which held the previous record. In many cases, these drugs were the only FDA-approved treatment for a given rare disease and gave many patients suffering from rare and debilitating diseases a new lease on life.

We work with companies who demonstrate the power of pharma's breakthrough science every day with developments that range from a life-changing medication for a rare type of epilepsy to a gene therapy technology that has the potential to save lives and change the way drugs are developed. So with all of these remarkable developments, how is the pharma industry so maligned? What can be done to improve its reputation?

1. Realize that what is good for the patient is good for the business

Reputations are built through a series of positive and authentic interactions. In order to change the perception of the industry, pharma needs to really

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The current formula for creating DTC ads and the associated burden of risk language is dismal and needs to change

connect with patients and communities, listen to them, and deliver on their needs. Transparent and meaningful interactions need to replace the "spin" and "messaging." Patients know the difference between messaging and authentic engagement, and they are more powerful than ever in shaping the reputation of a company.

I will often hear that "feel good" type of patient activities don't really contribute financially to a company. In reality, this couldn't be further from the truth. A trusting and engaged patient is more likely to take his or her medication and have a positive treatment experience. And according to a recent article in *Forbes*, reputation is worth a lot. Intangible assets like reputation may be worth as much as 60% of a company's market capitalization.

2. Really know the patient

In most industries, it is widely known that you need to "know your customer." The pharmaceutical industry is no different, except that by focusing on physicians, instead of patients, we've gotten to know the wrong customer. Physicians are almost solely invested in maintaining their patients' health. In many areas, their compensation is being linked to patient satisfaction and outcomes. Consequently, pharma companies need to view themselves as physicians' partners in improving patients' health. For this to work effectively, it is critical to really know the patient, engage effectively, celebrate successes, empathize on setbacks, and mourn losses. By connecting in a highly personal way and always keeping the patient top of mind, drug companies can really put the patient at the center of all that they do.

3. Bring the community into the fold

One of the most important steps in improving pharma's reputation is to bring patients, community members, and advocacy into the process of drug development and commercialization. Companies that partner with patients and caregivers will find that they are way ahead of the game. Patients are the ultimate experts and they can be phenomenal strategic partners to co-create everything from clinical trial protocols and product packaging to programs and content that is authentic and meaningful. Once patients and the community see the great work that is being done by the pharma industry first-hand, they will want to be advocates and share their stories with others. Transparency and authenticity are key drivers in changing the reputation of the industry.

4. Fix DTC advertising

The current formula for creating DTC ads and the associated burden of risk language is dismal and needs to change. Drug companies are often left with about 30 seconds of a 60-second TV spot to talk about their brand, as the risk language often takes up a considerable amount of time. To make matters worse, attempts to make the risk language more tolerable and palatable for its audience often result in predictable and trite creative approaches. The good news is that the FDA Office of Prescription Drug Promotion is currently testing various formats for "major statements" in DTC drug ads. While a policy change is likely years away, this is a positive step, as there is a desperate need for a more authentic, informative, and realistic approach to DTC. In the meantime, the John Oliver–type parodies will continue and the industry's reputation will continue to suffer as many of these ads leave a lasting and "not so positive" impression.

5. Change starts from within

In working with various pharmaceutical and biotech companies, it is readily apparent that companies want to focus on the patient. In most boardrooms you will see mission statements that include some language about the patient, patient centricity, why patients matter, etc. The good news is that the desire for authenticity and connection to patients is real. The problem is that old habits die hard and companies often revert to what they have done in the past. Patients need to be infused in all brand activities to remind the company why they are ultimately in business: to better serve patients with medications that make a difference.

While change may be difficult, it is transparency, authenticity, and accountability that will build trust, and it is trust that will ultimately catapult pharma's reputation back to where it should be. The time is now to bring others into the fold by educating them and collaborating with them—this will both fuel innovation and show the world the unlimited potential of our industry to improve health. PE

Photo: Getty images / ANDRZEJ WOJCICKI/SCIENCE PHOTO LIBRARY

Big Opportunity for Big Data in China

Why the country is poised for a data renaissance—one that could play a pivotal role in the next wave of pharma innovation

The potential for big data to transform healthcare in the world's most populous country is a significant strategic option for the pharmaceutical industry. Imagine the wealth of genetic, biological, and disease-specific data that could be generated even from a fraction of China's billion plus population.

However, that is about to change. Drug development today is a costly and risky endeavor, with costs averaging $2.6 billion and only about 7% of early-stage drugs making it to market. Leveraging big data insights from the enormous amount of information collected in clinical research can help drug trials run more efficiently and effectively, and ultimately bring new treatments to market while lowering risk for the companies betting on them.

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Stars aligned

As a result, I believe China is poised for a data revolution in healthcare. Here are some reasons why.

» **Significant unmet medical need:** China's healthcare market is growing at a breakneck pace. By 2020, China is expected to become the world's second largest drug market, after only the US, and spending on pharmaceuticals is expected to reach $107 billion this year, more than quadrupling since 2007. This growth is driven by significant unmet medical need. Half of all newly diagnosed liver cancer patients and a third of all diabetes and lung cancer patients worldwide live in China. The situation is only growing more critical as China's population ages. It is estimated there will be 223 million people over age 65 in China by 2030. In addition, patients in China are demanding newer and better treatments, driven by a growing middle class with newfound purchasing power. All this combined makes a perfect storm for leveraging big data tools to find new cures and treatments for diseases linked to genetic and environmental factors, and develop targeted therapies to treat them.

» **Government support and growing healthcare infrastructure:** The Chinese government has implemented massive healthcare reforms over the last several years, expanding access to healthcare for people all over China, particularly in rural areas. The government recently announced plans to double the number of primary care doctors by 2020, saying it plans to leverage technologies such as mobile devices and cloud systems, and implement digital databases for electronic health records for the entire population by 2020. In addition, a steady stream of Chinese nationals working in life sciences have returned home to work, enhancing the nation's scientific talent pool, and contributing to a renaissance period of sorts for science in China.

» **Capital abounds:** Healthcare M&A activity has recently heated up in China, reaching a record $18.5 billion in 2014. Investors are excited about the prospects for growth not only in large cities, but across the entire country, which could translate to increased opportunity for incorporating big data across a number of healthcare settings.

Challenges remain

However, there are also challenges to consider, many of which need to be overcome in order for the burgeoning healthcare market to grow and thrive:

» **Concerns about government data policies:** China has implemented increasingly tight data localization policies over the last few years and is proposing further restrictions, such as requiring all Chinese data to be stored on servers in China while granting access to government authorities. These policies are making it hard for foreign companies to do business there. Critics say that, if fully implemented, these policies could cause China's GDP to fall by 1.1%.

Photo: Getty images / Kutay Tanir

There is little experience even with basic tools of data management such as cloud computing, which may prove difficult in encouraging uptake of larger data tools

» **Low activity in cloud computing, big data in healthcare:** While many other industries in China are taking advantage of cloud computing and data services, this is not the case in healthcare. Although the government recently announced it wants to incorporate these tools in the healthcare system, it was clear in my conversations with senior executives from a number of established and emerging Chinese life sciences companies that there is little experience even with basic tools for data management such as cloud computing, which may prove difficult in encouraging uptake of larger data tools. However, this may soon change, as the cloud-computing market in China is rapidly expanding in other industries and is expected to grow 45% this year.

» **Difficult system for approvals and reimbursement:** Approvals happen on a regional level in China, making it a cumbersome and time-consuming process with different systems and requirements in each province. In addition, the government is focused on reducing healthcare costs, particularly spending on drugs, which may stifle innovation in some areas.

Catching up

As we look to the future in China, it's clear there is a huge opportunity for big data to play a major role in driving the next wave of pharmaceutical innovation. Patients in China deserve the advances that big data in clinical research can help bring them. And although China may be behind in this sector for now, it likely won't be for long. PE

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HEALTHCARE & LIFE SCIENCES REVIEW

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MOROCCO: *Unclouded Ambition*

Morocco was among the first nations in Africa to develop a pharmaceutical industry over 60 years ago. "Our success grew from a framework where pharma companies needed to produce locally, which led to industrial investments in Morocco," explains Mohamed Houbachi, president of both Polymédic, a local producer, and AMMG, the Moroccan generics association. "This was a tremendous force in the development of the sector."

But then the business model changed. "Instead of working on 100 percent local production, companies that wanted to enter the market in Morocco would launch their own products under license with local laboratories," Houbachi explains. This business model is still widely in place to this day. "Local pharma companies were only seen as providers for the local market, and not as a sector that could export and that, therefore, deserved to be developed."

"We find the following characteristics: an industry of small batches, heavily dependent on imports of APIs, with high manufacturing costs and limited economies of scale. With a situation like this, one might have doubted the future of our pharmaceutical industry, but no such thing happened for the manufacturers, who never lost confidence and faith in their industry," adds Abdelilah Lahlou, general manager of Iberma. "The infrastructure is there, and this is what has made the country successful: I have personally received representatives from other countries, who were amazed with what we managed to put in place in the country," he enthuses. "Bad days seem to be over and Morocco has found a dynamic for the development of its pharmaceutical industry which will take it further."

From left: Houssaine El Louardi, Minister of Health; Moulay Hafid Elalamy, Minister of Industry

Morocco has clear ambitions: with a strong focus from King Mohammed VI on forging partnerships with other African countries, the country is keen to develop its pharma industrial base and export capabilities. Minister of Industry Moulay Hafid Elalamy has included pharmaceuticals in the list of "ecosystems," which will boost the Moroccan economy, according to the Ministry's *Industrial Acceleration Plan*.

The Moroccan market is also changing: the outcome of the 2011 Moroccan Arab Spring was very different from those of its neighbors. A referendum was held, which led to a new Moroccan constitution making access to healthcare a constitutional right. In April 2012, King Mohammed VI officially launched the Medical Assistance Plan (*Regime d'Assistance Medicale* – RAMED) across all regions of the country, with the aim of improving access to healthcare for the poorest segments of the population. Although universal healthcare coverage is still a long way off, RAMED now covers eight million Moroccans, with over 50 percent of the population covered with some form of social security in 2013.

"The social and political transformations experienced by Morocco and other Arab countries have helped raise our awareness, and changed our approach," explains Morocco's minister of health, El Houssaine Louardi, voted the country's most popular minister in January 2015. The government has put together a health sector strategy to take the country through to 2016, of which RAMED is a key component.

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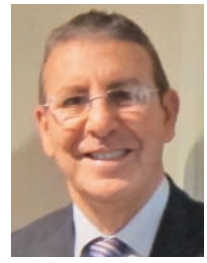


From left: Mohamed Houbachi, president, AMMG; Abdelilah Lahlou, general manager, Iberma; Abdelmajid Belaiche, director general, AMIP

"To overcome Morocco's health challenges, we must have mandatory, universal coverage, so that people can access care without having to pay up front," he explains.

SHIFTING SANDS: MARKET RESTRUCTURING

Part of the strategy for making universal healthcare achievable in Morocco is a series of price cuts: although in 2014, volumes increased 2.8 percent, the market in terms of value shrank by 4.7 percent during the same period.

"I believe that now, the worst is behind us: 2014 was really an *annus horribilis* for the sector," admits Abdelmajid Belaiche, director general of the Moroccan Association of Pharmaceutical Industry director general (AMIP). "Despite this, we hope that

Jacques-Henri Charpentier, director general, Bayer Healthcare Maghreb

in 2015 things will start again on the right foot. AMIP agrees with the price cuts: they make sense in a country like Morocco, where people have difficulties accessing medicine. Medicine is not expensive in Morocco, but its citizens are poor. In this context, the cuts are very just." What the industry understood less was a four percent transfer of margins towards the pharmacy sector. "This transfer of margins hit us. We suffered more from this lowered margins than from the price lowering itself."

Jacques-Henri Charpentier, director general of Bayer Healthcare Maghreb, explains that there are still some important steps left in the reform process. "The procedures concerning the *Autorisation de mise sur le marché* (AMM), the price decree, access to reimbursement, all this is still in play. The year 2015 should allow for extra clarification so that by the end of the year, beginning of 2016, we start with the politics of medicine having been clearly settled, and that will allow for the predictability that is so essential for MNCs."

"The price decree hurt many laboratories, in particular the MNCs, and we are now waiting for accompanying measures and have already discussed this with the ministry. Indeed, the price cut is a laudable cause but now one has to ensure that the medicines are available on the Moroccan market," says Hubert de Ruty, country manager of Pfizer Morocco and president of MIS (*Maroc Innovation & Santé*), Morocco's association for innovative pharma companies. "The priority for us is access to treatments for patients, particularly important in an emerging country. This is likewise the priority of the minister of health, who is someone who has taken important decisions to really advance the debate and has put in place serious reforms impacting the daily lives of Moroccans."

GETTING THE GENERICS EQUATION RIGHT

"Today, generic medicine accounts for 30 to 35 percent of the market, but I truly believe that this share will grow in the coming years," says Mohamed El Bouhmadi, CEO of ZenithPharma, a fast growing Moroccan company.

"Morocco is a country highly classified by the World Health Organization, with a pharmaceutical industry that has been

Morocco By The Numbers

- 2nd largest pharma sector in Africa by size (after South Africa)
- 33 industrial units
- Local production covers 69.4 percent of domestic demand
- Morocco exports 7-8 percent of its production, an increase of 21.7 percent in turnover 2012-13
- Market size: MAD 14.8 billion total (USD 1.51 billion), MAD 8.7 billion private market (USD 890 million)
- Expected CAGR 2013-18: 4%

(Source: IMS Health, AMIP)

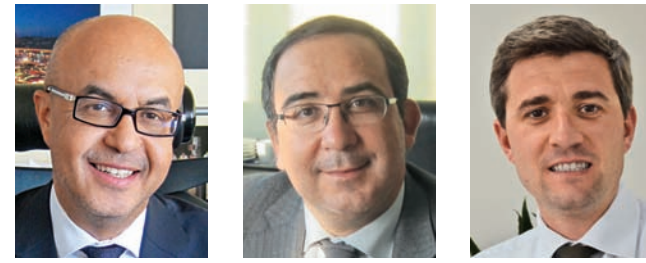
around for more than 60 years and plants that operate to European standards. So, the problem is not associated with the quality of generics. I believe that the generics consumption figure is low because of the lack of a comprehensive medical coverage system," says Driss Chaoui, director general of Afric-Phar. "However, with the current reforms being enacted by the government, we are seeing an improvement and believe that the consumption of generics will significantly increase."

However, it will be a long road to more than double the current rate of generics penetration, and there are still a number of legislative steps that could be taken in order to ease the transition. "70 to 80 percent of government tenders specify generic medicines. Products in these tenders are actually referred to under the international nonproprietary name (INN) system, and not under brand names," continues El Bouhmadi of ZenithPharma. "In order for generics penetration to soar, doctors should be able to prescribe using INN labels, and pharmacists should be able to substitute products. It's not possible as of today in Morocco."

GENERICS AND ORIGINATORS IN UNITS AND VALUES IN 2013

	Evolution Units 2012/2013	% Units	Evolution Value 2012/2013	% Values
Total	1.5	100.0	2.6	100.0
Generics	4.1	31.8	6.7	33.3
Originators	0.4	68.2	0.7	66.7

Source: IMS HEALTH



From left: Mohamed El Bouhmadi, CEO, ZenithPharma; Driss Chaoui, director general, Afric-Phar; Hubert de Ruty, president, MIS

WHY INVEST IN MOROCCO?

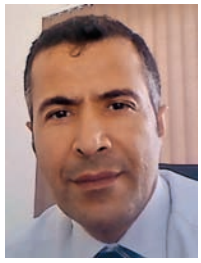
The long history of the Moroccan pharma sector has produced a relatively strong industry with undeniable expertise and skills.

Haissam Chraiteh, president and director general, Sanofi Morocco

Sanofi was one of the first companies to believe in the potential of Morocco, and today, that historical commitment shows: the company has a 20 percent market share in the country. "Sanofi has a historic presence in Morocco going back 60 years," explains Haissam Chraiteh, president and director general of Sanofi Morocco. "We were the first pharmaceutical company in Morocco with two affiliates, our own business, namely Sanofi, and a twin company, Maphar, which acts as a service provider and partner for a certain number of multinational laboratories."

Today, Morocco remains a strategic location for the company. "Ten years ago, Sanofi developed an innovative treatment for malaria. We created partnerships in Africa to deliver treatments at affordable prices. These programs developed well and at a certain point we needed to increase our production capacities. We chose Morocco as the place to do this, as it is an African country in which we already had a base and that was starting to develop in terms of regional importance. Ten years ago, we invested enormously in the production site and later in the development of export activity, " explains Chraiteh. In 2013, Sanofi renewed its commitment to Morocco, launching a new distribution platform, and receiving a visit from the company's CEO, "who opened this platform alongside the minister of health," he continues. "We needed to modernize our distribution capacity and, hence, the development of the new distribution center that allowed us to manage both our local production needs and our ambitions in Africa."

Another investor, Tecnimede, the Portuguese pharma company, chose Morocco as its first subsidiary outside Europe.



From left: Khalid El Attaoui, director general, Tecnimede; Brahim Oulammou, director general, Promopharm; Ayman Cheikh Lahlou, director general Cooper Pharma

"Tecnimede was established here in 1999," explains Khalid El Attaoui, director general of Tecnimede Morocco. Tecnimede decided in 2009 to build a new plant in the country. "We decided to opt for Morocco for numerous reasons," El Attaoui remarks. "Morocco has for quite a long time had the desire to attract outside investment and as such the necessary fiscal policies have been put in place, policies concerning the level of VAT and company tax rates. Also, Morocco, being politically open, has signed a number of free trade agreements with numerous countries which Europe does not have free trade agreements with, notably Turkey and the USA."

Sanofi's offices in Morocco

"We have one production plant in Morocco, alongside two partnerships with Polymedic and Sothema, allowing us to develop local products in the country," explains Bayer's Charpentier. "Around 70 percent of what we sell on the Moroccan market is produced locally." Charpentier goes on to explain that Morocco is also serving as an export location. "This year we are going to start using our production plant in Morocco to export a certain number of products, initially to the Maghreb region and eventually to the wider African continent," he reveals.

Will companies continue to find Morocco an attractive investment destination, given its relatively small market size? In 2011, Jordanian pharma company Hikma acquired Promopharm, a local Moroccan player. "For Hikma, Morocco is very important, first for its own domestic market but also due to the many opportunities for entry points it provides into the region and Africa," explains Brahim Oulammou, director general of Promopharm. "While there isn't a pharma company in Morocco that hasn't found the last few years difficult, it is important to take a long-term perspective. Hikma remains convinced that Morocco is a good investment."

THE GATEWAY TO AFRICA

"In the past, Morocco always looked towards the north but never towards the south," says Adil Zanfari, president of Genpharma, a local generics player. "When we compared ourselves, it was always to Spain, France and England, but never to the likes of Senegal. Before when we wanted to travel to Africa we had to go via Brussels, London or Paris. Now we can take a plane directly to Africa."

Cooper Pharma, a leading Moroccan company, has been in Africa since the late 1990s. "There is a real coherence with regards to this Moroccan strategy, a relationship not based on exploitation but on working together to evolve together in a win-win cooperation for all the countries concerned," explains Ayman Cheikh Lahlou, director general of Cooper Pharma. "We have signed a project to promote local manufacturing in the Ivory Coast and we believe that just as Morocco has a certain degree of self-sufficiency when it comes to the production of medicines, with a high level of manufacturing quality, that other countries in Africa should develop the same capacity."

"Morocco, indeed, has the potential to become a hub for the pharmaceutical industry in Africa, because it is endowed with considerable assets," says Myriam Lahlou Filali, the CEO of Pharma 5 Group, a leading Moroccan generics company that recently invested MAD 250 million (USD 24.82 million) in a new production plant. "Firstly, its strong industrial base makes the difference with Algeria and Tunisia. Morocco also enjoys an excellent reputation and the trust of our African partners. Moroccan drugs are well recognized for their quality; the professionalism of the teams, the francophone culture, and the geographic proximity are also assets. Our African partners actually tell us that Morocco could eventually have the potential to supplant Indian and Chinese products, which suffer from an increasing deficit in trust."

Bayer's manufacturing plant

However, Moroccan regulation does not make direct exports to Africa easy, as Mohamed El Bouhmadi of ZenithPharma points out. "It is extremely difficult to reach out directly to Africa because of the lack of structure currently in place in Morocco: we have to use French companies as intermediaries. I hope that authorities consider as a priority to set up in Morocco a hub that will allows us to go straight to Africa without any European intermediaries, which increase delays and distributing costs of drugs on the African continent."

This view is shared by Lamia Berrada and Samir Bachouchi, chairman and general manager of Bottu, a Moroccan market leader. "Unfortunately, Moroccan legislation does not allow the creation of a direct export plat-

Lamia Berrada, Chairman, Azzedine Berrada, President, Samir Bachouchi, General Manager, Bottu

Bottu offices

From Left: Myriam Lahlou Filali, CEO, Pharma 5 Group; Ali Bennis, President, Laprophan

form. It is a pity that our products go to Europe to be distributed in Africa! For a direct platform to be viable, it should be able to distribute in Africa products that originated outside of Morocco. We can either opt for an offshore structure or ask for permission and support from the authorities to create a regulatory framework to open the door to this project. This is something that manufacturers want, and they are working on it to make things happen, for this is a priority for the sector," they conclude.

However, the challenges of entering African markets are numerous: taken individually, markets are generally small, with poor infrastructure and low access to medicine. Will the African strategy be enough to grow the Moroccan industry sustainably? For Zanfari of Genpharma, "to build a Moroccan pharmaceutical giant company we need to go beyond our borders. This is our objective on a long-term basis. Becoming an African regional player with a presence in all 54 countries in Africa."

Laprophan, one of the leading Moroccan companies, has its sights on more developed markets. "We are targeting Europe and North America especially for our patented medicines," explains Ali Bennis, the company's president. To do this, it is building "a huge state-of-the-art new manufacturing plant of 92,000m²" that will conform to FDA and EMEA standards. "We can benefit from the free trade agreement with the United States to enhance our exports to this high potential pharmaceutical market," he explains.

Others believe the industry needs a change of strategy. "We need to find the means to innovate, even if these are incremental innovations," says Cheikh Lahlou of Cooper Pharma. Some, such as Abderrahim Derraji, founder of the website Pharmacie.ma, advocate a more collaborative approach with representatives of the industry speaking with a unified voice.

"What matters is that Morocco is a country where nothing is impossible," concludes AMMG's Houbachi. "Morocco is a country where we know how to take up challenges—the first of them being stability."

2015's Disruptive Dozen

The World Medical Innovation Forum unveils its inaugural list of breakthrough neuroscience technologies. We highlight a few here

Neuroscience luminaries clamored onto the stage at the World Medical Innovation Forum in Boston in May to present the meeting's much-anticipated "Disruptive Dozen." It was a truly impressive feat of engineering to squeeze the 14 experts onstage.

The purpose of the Disruptive Dozen is to identify and rank the breakthrough technologies that the Partners Healthcare faculty feel will revolutionize neurological care over the next decade.

A glance read might give the sense that we've got a long way to go in neuroscience; innovative leaps occurring across so much of biomedicine are stalled by the complexities and inaccessible nature of the nervous system. But the tenor of the researchers, some of the biggest thinkers leading investigation of the mind, is hopeful and inspired.

The list endorses somewhat vague notions and is less specific than most technology top 10 lists. As fellow communicators of industry and science, we certainly grasp the importance of packaging and the power of an enumeration of 10 (or 12) hot button items. See for yourself how well the Partners' attempt to manufacture Facebook and Buzzfeed fodder translates.

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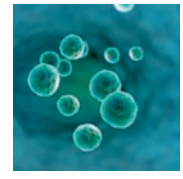
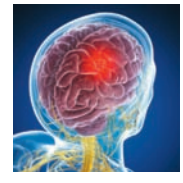
#12 Diagnosing and treating neurodegenerative disease through the microbiome



The list leads off with the meme-worthy portmanteau "microbiome." According to the Disruptive Dozen report, the links between gut microflora and psychiatric and neurodegenerative diseases will become more evident as will solutions that hinge on understanding our plentiful symbionts. The report hints at potential for the microbiome-directed therapies for psychiatric disorders as well as multiple sclerosis (MS) and Parkinson's disease (PD).

#10 Immune checkpoint inhibitors for brain cancer



Advancing therapies for conditions of the brain is challenging, and this includes cancer. "There have been few significant therapeutic advances in the field over the last two decades and innovative treatment strategies are desperately needed for glioblastoma multiforme," reads the report. Checkpoint inhibitors that rearm the immune system to fight cancer have enormous potential across oncology, and the excitement crosses the blood brain barrier.

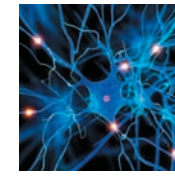
#7 New aspects of gene therapy

More than 1,800 gene therapy clinical trials over 25 years have amounted to a slow learning curve, but better gene selection, delivery methods, and promising early results are around the corner. PD, amyotrophic lateral sclerosis (ALS), and epilepsy are some disorders that could see early impacts by the steady improvements that are reviving the long-disappointing treatment tactic.

#2 Stem cell therapy to repair and replenish the brain

Stem cell therapies that can either protect or replenish structures of the nervous system are making gains in PD, MS, ALS, and Alzheimer's disease (AD). Clinical trials for AD are expected to start "soon," but Phase I and early Phase II trials for other indications have shown promise.

#1 Early diagnosis and treatment of Alzheimer's disease



Neuroimaging and diagnosing AD has experienced tremendous strides, but the search is on for cheaper and easier tests, like a blood biomarker. Treatment strategies like passive immunization, multi target approaches, targeting inflammation, and the gut microbiome are all seen as promising avenues for AD research in the next decade. PE

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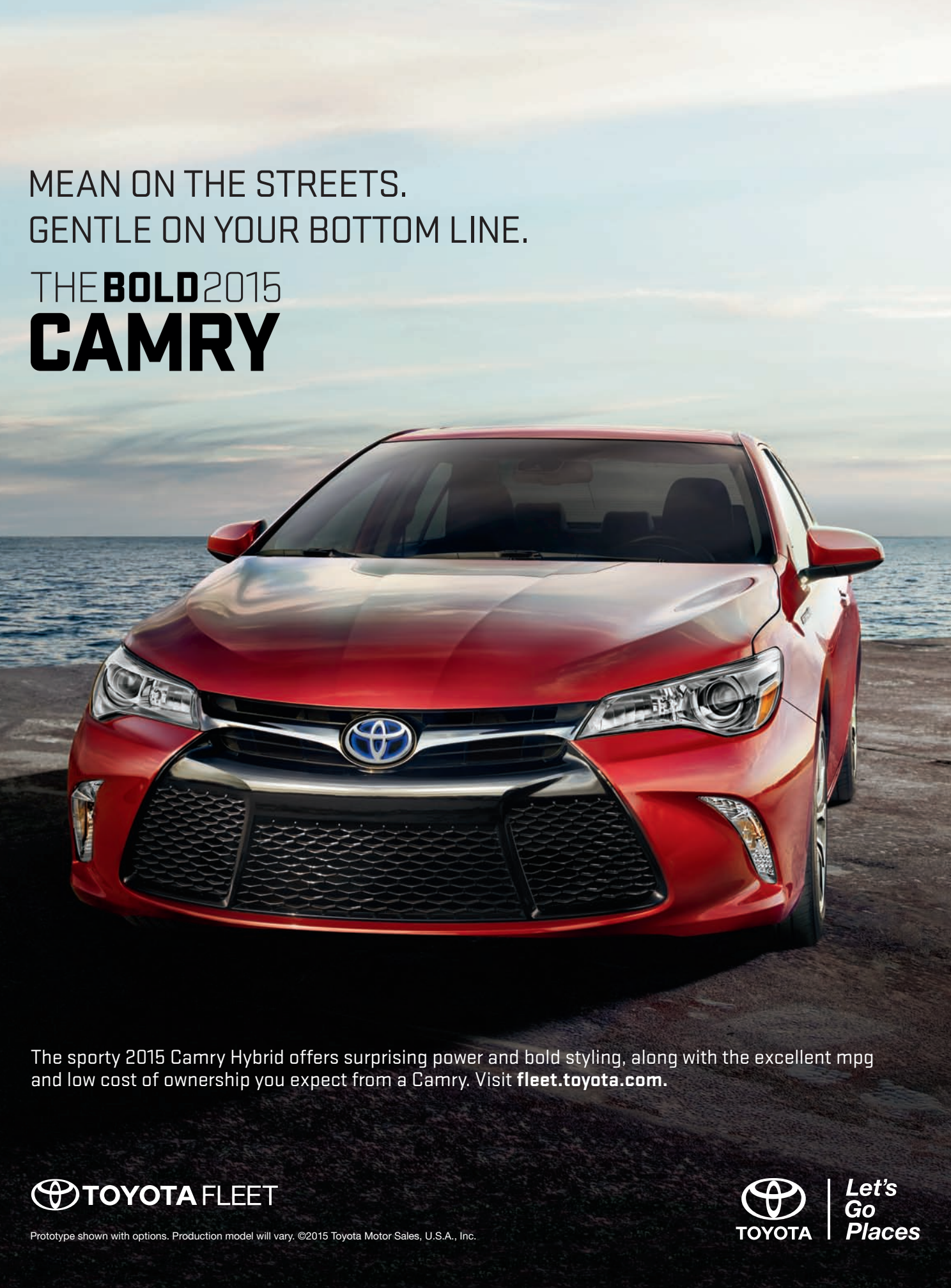

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