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21st CENTURY PHARMA

Managing current challenges to ensure future growth

Executive Summary of June 12, 2008 IMS Pharma Strategy Series Webinar

Over the last 30 years large pharmaceutical companies enjoyed unprecedented success. Unfortunately, the almost effortless growth and profitability the industry experienced throughout the 1990s cannot be expected to continue in a dramatically altered 21st century marketplace. To manage current challenges and ensure future success, pharmaceutical executives must understand how the market is changing and identify new strategies to respond, compete, and grow. Strategies that guaranteed success during the past 20 or 30 years will not guarantee success in the future.

TRANSITIONS IN GLOBAL PHARMACEUTICAL MARKETING

The past decade has yielded a number of significant transitions in global pharmaceutical marketing, particularly those related to the growth rate, markets, and R&D focus.

Growth rate. Throughout the 1980s and 1990s a double-digit annual growth rate in the pharmaceutical market was the norm. Over the past 8 years, however, the growth rate has dropped to the low-to-mid single digits. Major markets have moderated, while growth has accelerated in the “pharmerging” markets (China, Brazil, Mexico, South Korea, Turkey, India, Russia). The U.S. remains the largest market (projected to be 39 percent of the total market in 2008), but its contribution to global growth has decreased significantly.

Market segments. The focus of growth and innovation in the pharmaceutical marketplace has changed dramatically. In the past, the developed market was driven by primary care needs for drugs to treat conditions that affected large numbers of patients: infectious diseases, GI disorders, high cholesterol, and high blood pressure. Now the momentum has shifted dramatically. The number of new product

Pharmaceutical manufacturers have not responded to marketing transitions as rapidly as they should. The solution to today’s challenges requires new business models to seize new opportunities and profit from them.

launches has decreased and the market is dominated increasingly by specialty driven products. In 2008, the primary care segment will decrease globally for the first time, and specialty categories will drive 70 percent of total global growth. This has already become apparent in the U.S., where growth in the primary care categories decreased by 4 percent during the first quarter of the year. The current market is driven by needs for innovative, molecularly targeted products designed to treat small groups of patients with more complicated diseases: cancer, rheumatoid arthritis and immune disorders. The global dynamics of changing demographics, epidemiology and economic development, particularly in the pharmerging markets, will bring new sources of pharmaceutical growth and revenue.

The decline of the blockbuster. The decline of the blockbuster drug represents one of the most dramatic transitions in pharmaceutical marketing. Ten years ago, blockbusters accounted for only 9.8 percent of growth but by the middle of this decade they accounted for 44.3 percent. Focusing R&D efforts on blockbusters involved huge costs that were justified by multi-billion dollar sales potential and favorable regulatory and pricing frameworks. Now the tide has changed. R&D targets in the blockbuster categories have diminished. Favorable pricing has eroded, and safety and regulatory review has increased the cost of

Significant Transitions in the Global Pharmaceutical Market

TRANSITION	LATE 20TH CENTURY TRENDS	EARLY 21ST CENTURY TRENDS
Growth Rate	Double-digit	Low/mid single-digit
Markets	Developed, primary care-driven	Emerging, specialist-driven
R&D Focus	Limited portfolios of blockbusters: small molecules for large groups of patients with chronic diseases requiring primary care	Broad-based portfolios: innovative biologics for small groups of patients with higher-burden diseases requiring specialist care

bringing a primary care therapy to market (and keeping it there). Generics are now replacing the current stock of blockbuster drugs at a faster rate than new block-buster launches. Within the next five years, \$129 billion of branded pharmaceuticals will face generic competition. As the availability of blockbuster platforms has decreased, pharmaceutical executives are redirecting R&D budgets and manufacturing strategies to niche indications. Advances in molecular technology allow the development of targeted drugs used for smaller numbers of patients. Even in very broad categories, the “one size fits all” approach has been replaced by a preference for narrowly targeted products designed for populations of high unmet needs. But change has come slowly and in some cases has been met with reluctance.

“When we look at the proposed changes in R&D and marketing strategy, we have to ask ourselves: are they aggressive enough? How dramatically will these changes affect the company five years from now? I’d like to see these agendas being questioned at a much more significant level than they are now,” said Jerry Cacciotti, IMS Vice President.

CHANGES IN KEY MARKETING FUNDAMENTALS

The transitions in global pharmaceutical marketing have been driven by changes in several key fundamentals:

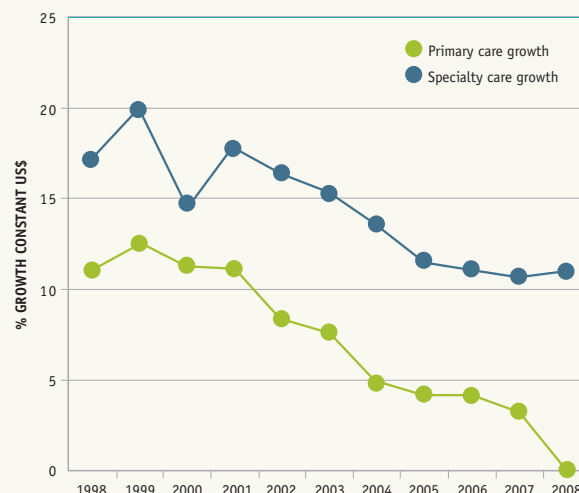
Safety issues and regulatory actions. The standard of care for all patients has risen dramatically; consequently the standard of proof is higher than ever before. New drug applications are scrutinized more closely, and more drugs now require black box warnings. The FDA approval process is becoming more demanding and more conservative. For many therapeutic categories, approval almost always requires data to show that the proposed new drugs are safer and/or more effective than existing agents. Clinical trials are becoming increasingly complex and expensive.

Increased power from patients and third-party payers. With the advent of direct-to-consumer advertising and Internet information, consumers are more educated about drugs than ever before. Widespread publicity about problems with drugs once considered safe by the FDA, such as hormone replacement therapy and COX-2 inhibitors, has made consumers wary. Today consumers are less willing to accept risks that the FDA might consider reasonable. They want more complete data about clinical trials and the calculated risks of drug efficacy and safety. The formulary acceptance of third-party payers, including Medicare and Medicaid, exerts perhaps the greatest influence on which drugs will be prescribed.

Changes in intellectual property (IP) protection.

Traditional pharmaceutical IP is under threat. Pharmaceutical companies in the U.S. and Europe are experiencing increasingly aggressive patent litigation, shortening the time of patent protection and accelerating the entry of generic versions. Legislators tend to support this approach, considering generics a means to reduce the bloated budgets for drug therapies. In the pharmerging markets, IP regimes are new and thus untested. The social contract that influences the major markets is being

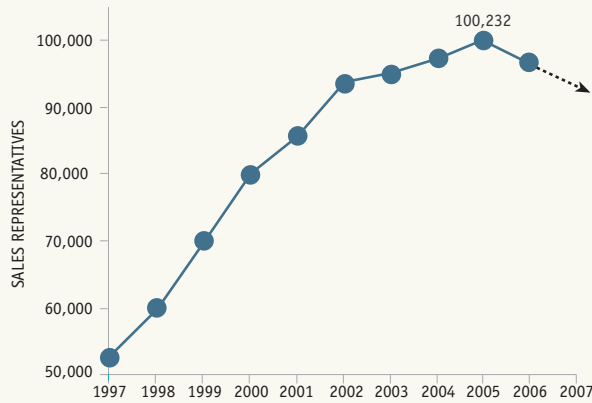
In 2008, the Primary Care-driven Segment Will Decline Globally for the First Time Ever



2007	
% Market Share	
Primary care-driven	60%
Specialist-driven	40%
% Contribution to Growth US\$	
Primary care-driven	34%
Specialist-driven	66%

Source: IMS Health, MIDAS, MAT Dec 2007

In Terms of Field Force Growth, Restructuring has Finally Begun to Have an Impact ...



And Almost Every Major Pharma Company is Addressing the Challenge in Some Way

- Making changes to senior management → 15 out of 18 companies
- Pursuing divestitures & acquisitions → 7 out of 18 companies
- Restructuring the current sales force → 5 out of 18 companies

threatened by compulsory licensing, ineffective enforcement, and a more tolerant attitude toward IP infringement.

Evolving economics. As genericization accelerates, the major markets are facing a multi-year drag on growth, at the same time that R&D costs are reaching new heights.

“The dramatic success of the industry has led to a dramatic increase in the standard of care. Late-stage trials are failing because the standard of proof is so high that trials have become increasingly complex and expensive.”

— Mary Tanner
 Founder, Life Sciences Partners

Clinical trials are being scrutinized more closely by the FDA and European regulators, and consumers are more cautious after hearing about safety problems with marketed drugs. While drug companies continue to maintain very large R&D infrastructures required to produce blockbuster drugs, pharma portfolios contain a large proportion of in-licensed drugs. Expensive R&D engines aren’t producing at the rate they once did. As a result, many companies are earning less from new products than they are paying for the R&D to develop those products, and inefficient product development has dramatically increased the cost of capital.

NEED FOR A NEW BUSINESS MODEL

Pharmaceutical manufacturers have not responded to marketing transitions as rapidly as they should. Too many executives are delaying asking the serious questions, wishing that the situation would be different and resisting signs that

change is needed. The solution to today’s challenges requires new business models to seize new opportunities and profit from them.

New models must consider the positive and negative transformations in pharma. Positive trends include an increased share of the healthcare budget for pharmaceuticals, rapid implementation of healthcare information technology, increased diagnosis of asymptomatic conditions, improved rates of compliance and persistence, and expanded patient access to healthcare. Negative trends include government healthcare policy reforms, increasing concerns about drug safety, more aggressive cost containment in Europe and Japan, and the general global economic slowdown.

A new business model for pharma might include the following changes:

Resize the sales force and implement new sales models.

Consider sharing a sales force with a partner. Benefit from the advantages of using the Internet to increase detailing opportunities. More and more, physicians are relying on the Internet rather than pharmaceutical representatives to supply information about new products or new indications, a trend that is likely to accelerate as younger, technology-savvy physicians replace older, technophobes.

According to Mary Tanner, Founder, Life Sciences Partners, “Traditionally physicians relied on pharmaceutical representatives to supply information about new drugs or new indications. Now they can choose to learn via the Internet.”

Implement a flexible and efficient corporate structure.

Restructure the corporation to focus strictly on pharma by outsourcing all non-critical activities, including non-pharmaceutical manufacturing divisions. Downsize if necessary; creating a smaller and more flexible cost

structure will help to reduce vulnerability to revenue volatility. Maximize productivity by partnering and portfolio risk sharing to optimize the use of existing laboratory and production technologies.

Shift product portfolio focus. Create a niche focus by offering a broad portfolio of products in biotechnology and specialty therapy areas, working with a licensing or technology partner to develop expertise and credibility. Provide innovative ways to formulate or deliver existing drugs. Profit from today's advances in medicine: behavior modification, patient mentoring and evidence-based treatments. Consider selling medical outcomes rather than only pills or injections. Study the needs of consumers and introduce lifestyle programs that incorporate existing or new drugs or delivery systems. Develop techniques to improve compliance and persistence. Divest unprofitable or non-strategic products.

"Traditionally the industry has derived value from a pill or an injection, but today the real advances in medicine are in behavior modification, mentoring and evidence-based medicine. We need to target research toward these areas," said Cacciotti.

"At some point it may become more advantageous to the industry to sell outcomes rather than pills. We need to be ready for this," added Richard Evans, Vice President, AVOS Life Sciences.

Maximize the commercial value of new products. Invest in original R&D, supplemented by licensing or acquisition, to produce products based on breakthrough scientific innovations. Recognize that a product with a narrow indication can yield substantial profits. Understand when it is financially appropriate to abandon a new molecule.

Pursue profitable growth in emerging markets. Increase the product portfolio by acquiring strong products or partners from outside the U.S.

"In many companies R&D returns are lower than the cost of capital. It's irrational for firms to commit capital to R&D unless long-term returns are at least providing a risk adjusted return that is greater than the cost of capital."

— Richard Evans
Vice President, AVOS Life Sciences

FUTURE OF PHARMA

Despite the challenges of the changing marketplace, analysts are optimistic about the long term future of pharma. Medical science will continue to advance, more will be discovered about the molecular effects of disease, new compounds will be discovered that not only treat disease, but possibly to alter genes so that disease can be avoided. Demographics

GIVEN THE SHIFTING LANDSCAPE, WILL MORE DRAMATIC, STRUCTURAL CHANGES BE REQUIRED?

Downsizing by more than 50% to reflect future product portfolio & market realities

Faster migration away from the integrated business model

More aggressive licensing & acquisition to access product portfolios and geographic coverage to provide scale and focus

Accelerated divestiture of non-strategic products to drive focus

Further consolidation to remove excess cost

and socioeconomic conditions also favor innovations in healthcare. As societies grow richer they will demand access to more and better therapies. Accelerated use of healthcare information technology, increased diagnosis of asymptomatic conditions, and expanded access and coverage will improve patient adherence to pharmacotherapy. As the population ages, more people will need more drugs to treat the conditions of age, including coronary artery disease, diabetes and Alzheimer's.

Despite the positive long term outlook, maturing markets in many segments make it clear that a new business model is needed. But it is not yet clear what that model should look like. Most pharmaceutical companies are experimenting in some way. IMS research suggests that of the top 18 pharma companies, 15 were involved with some type of restructuring, seven have had major divestitures and/or acquisitions, and five have had changes in senior management. Companies are resizing and restructuring sales forces to align with more specialized product portfolios. They are implementing new sales models, leveraging the Internet and relationship marketing. Most realize that in addition to reaching physicians they have to establish new channels to reach consumers and to influence payers. Still others are diversifying with more aggressive licensing and acquisition, expanded geographic, and divestiture of non-strategic products to narrow focus and reduce costs.

Said Evans, "Diversification is fine. It helps to mitigate risks and may help to lower the cost of capital in certain periods. But it is not a big enough effect to repair the underlying core pharmaceutical problem."

There is no easy answer for pharma, but some things are clear. Serial restructuring has proven inadequate because it has not produced sufficient productivity gains or enough

flexibility in cost structures to predict and manage volatility in revenue. Most changes in programs undertaken thus far have fallen short, and more dramatic experimentation is needed: downsizing by 50 percent, migrating away from the integrated business model, and outsourcing whole sections of the value chain. Pharma must analyze every aspect of the business, with the goal of doing many small things better. Expectations must be realistic. No single change will guarantee a return to 1990s levels of growth and profitability.

It is now clear that the success template of the last 20 years no longer applies. The winners in the future will profit because they have developed an integrated and deliberate strategy for moving forward. In the face of uncertainty,

smart players will take dramatic action to reduce costs, improve flexibility and to adapt to more cyclical markets. There will be much more experimentation with new models for innovation, development, and commercialization of drug therapies. The definition of 'product' will be rethought, as drugs become part of much more comprehensive medical solutions.

On a global basis, the market for pharmaceutical drugs has reached only a fraction of its potential. There is still substantial unmet need, and drug therapies comprise only a small portion of the \$4.5 trillion spent on healthcare. Therapeutic breakthroughs will still be rewarded in the marketplace. With creative, focused management, pharma can continue its success well into the 21st century. •



To hear the webcast in its entirety, or to view the webcast presentation, go to imshealth.com/pharmastrategiesreplay

Webcast Presenters

Jerry Cacciotti leads the SDG Life Sciences unit of IMS. Specializing in corporate portfolio strategy, Cacciotti has led clients through major strategy transitions — from decisions on entering new regions or business sectors, to exiting or investing in multi-billion-dollar franchises, to realigning business strategies at the broadest level. He has supported clients through the M&A process, supporting transactions worth hundreds of billions of dollars, and has extensive experience in valuation and negotiation strategy.

Cacciotti also has led significant engagements involving most therapeutic categories, particularly in oncology, respiratory, and cardiovascular therapy, and has worked with clients in Europe, North America, and Japan. His recent work has focused on frameworks to integrate strategic choices with shareholder and financial market expectations.

Prior to joining SDG Life Sciences, Jerry held positions in finance with Centennial Partners and Trammell Crow. Earlier in his career, he was a foreign policy analyst and press officer within the U.S. government.

Cacciotti holds a B.A. and M.B.A. from Stanford University.

Richard Evans served as a Senior Analyst covering the U.S. pharmaceuticals industry at Sanford C. Bernstein & Co., LLC, from 1998 until 2006. He was twice ranked first amongst his peers for drug stock selection by Bloomberg, and in 2006 was ranked amongst the top 20 stock pickers on Wall Street by Bloomberg. Dr. Evans was named to the Institutional Investor's All-America Research Team for much of his tenure, ranking first for major pharmaceuticals in 2006. His work has been highlighted in various major media outlets, including The Wall Street Journal, Barron's, The New York Times, Fortune, CNN, CBS, and Frontline.

Previously, he was a member of senior management at Roche, serving most recently as vice president, Business Policy and Account Management. In this capacity, he was responsible for Roche's commercial interactions with large organized buyers such as hospitals, hospital purchasing groups, managed-care organizations and governments. His responsibilities also included those areas of the company which define

and support account interactions, namely account management, customer marketing, pricing, contract administration, pharmacoeconomics, and distribution. During his seven years at Roche, Dr. Evans also served as the head of Business Development and Strategic Planning, and as product director for the company's injectable anesthetics. He earned a doctorate in Veterinary Medicine from North Carolina State University in 1988 and a master's of Public and Private Management from Yale University in 1991.

Mary C. Tanner has devoted 22 years to the healthcare and consumer products industry, as a Senior Managing Director at Lehman Brothers and Bear Stearns, both global investment banks. Tanner retired from Bear Stearns in 2004 and founded Life Sciences Partners, which specializes in healthcare investment and strategic advisory work. During her 22 years at Lehman and Bear Stearns, Tanner led or supervised over 575 transactions, including 220 mergers, acquisitions and divestitures with a total disclosed value of \$275+ billion. Among these were 14 large pharmaceutical mergers, including transactions between Rhone-Poulenc and Rorer, Rhone-Poulenc and Fisons, Marion Laboratories and Merrell Dow, Hoechst and Marion Merrill Dow, Sanofi and Sterling Drug, Sanofi and Synthelabo, BASF and Boots, Amgen and Immunex, Pfizer and Pharmacia and Sanofi and Aventis. Tanner also developed a large practice in the biotechnology industry as it emerged over the last 20 years, including the transactions between Roche and Genentech, Cetus and Chiron, Chiron and Behring Vaccines and others.

Tanner is a member of the Board of Evotec AG (Frankfurt listed), Synvista Therapeutics (AMEX listed), and Acute Pain Therapy, Ltd (Canada) and a member of the Dean's Council of the Yale School of Medicine.

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