

2016 Outlook: Large Pharma to Seek Help from Therapeutic Start-Ups to Alleviate R&D Investment

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As we approach the New Year, the life science and biotech industries will see increased activity in the pharmaceutical sector. The issue is that drug development pipelines (new drugs) are decreasing, which ultimately translates into reduced future revenue. Two predominant reasons for this situation are the number of drug patents expiring and the decline of internal R&D productivity within big pharmaceutical companies.

Why are we becoming less productive? Here's a simple illustration. The first commercially available product to reduce fever, Bayer Aspirin, was launched in 1899. Think of this new market as being represented by the entire pizza pie below. Subsequently, the pizza is portioned into slices with the introduction of acetaminophen, known as Tylenol, in 1995, followed by Ibuprofen in 1969. The continuous sectioning of the pie represents the natural segmentation that occurs in any market. Assuming the cost of drug development remains constant, each additional slice results in a decreased return on investment.

Historical Market



With increased knowledge of the human body, targeted therapies (new slices) require new testing methodologies. Thus each slice actually turns into more of a stack, as the cost of testing is not leveraged across the entire pie, but applied to each unique slice. The end result is additional cost and a further decline in return on investment.

Today's Market



Simply, the pharmaceutical industry needs more products to participate in smaller and smaller market segments. To improve results, buying successful products from start-ups versus developing them internally becomes an attractive alternative.

The pharmaceutical industry excels at clinical trials, sales, and marketing, but their mega infrastructures often take a hit because they do not have the ability to move at an agile speed during drug development. Because start-ups can move swiftly, usually for a lesser investment, big pharma is seeing a cost benefit to working with smaller organizations during R&D. Therefore, we'll see big pharma seek the help of specialized therapeutic start-ups to outsource research and development projects for new drug discoveries. As a result, we could see a drug development buying spree.

With the changing landscape, investors will see opportunities to support even more therapeutic start-ups, which will help them get to Series A and Series B funding quicker than ever. The investments are risky, but can have huge return.

As government policies and health care regulations change in the upcoming election year, big pharma may have to make even more adjustments to their business model in order to meet financial goals. This may open up an even bigger opportunity for therapeutic start-ups to reach funding goals.

At the Pittsburgh Life Sciences Greenhouse, we're excited to support a number of therapeutic start-ups that have innovated tremendously impactful patient-centric solutions. We look forward to the year ahead and continuing to guide our therapeutic companies to provide innovative solutions within the overall pharmaceutical category.

About James F. Jordan: *Jim Jordan is an accomplished Fortune 20-level executive with strong experience in industry, consulting, and academia. A recognized expert in market development and guiding the successful formation of entrepreneurial startup businesses in the life sciences industry, Jim joined the PLSG in 2005 and became Vice President and Chief Investment Officer in 2007. Prior to joining the PLSG, Jim served as Senior Vice President of a \$3 billion division of McKesson Corporation, a leading distributor of health care systems, medical supplies and pharmaceutical products, and as a Vice President for Marketing at Johnson & Johnson. He has held a range of management positions in sales and marketing, operations, supply chain management, information technology, finance, and quality assurance with several Fortune 500 medical device companies including C.R. Bard, Inc. and Boston Scientific, Inc. Jim has leveraged this experience in several startup ventures and is active on several Boards of Directors. Jim's experience also includes consulting engagements with numerous companies such as Medtronic, Frost & Sullivan, Circuit City, Philip Morris, Northrop Grumman, Schwartz Pharmaceutical, and Otsuka Pharmaceutical. He has served as an Adjunct Associate Professor at the University of Richmond and is currently a Distinguished Service Professor of Healthcare and Biotechnology Management and the Senior Director of Healthcare and Biotechnology Programs at Carnegie Mellon University's Heinz College. He holds a Bachelor of Science degree in Business Administration from Merrimack College and a Master's degree in Business Administration from Boston University.*