

Financial Innovation: supporting a new Biopharma business model

One successful approach to fund innovation, as mentioned above, has been to use capital from the market and willingness for investors to support drug development. For decades, investors were more and more willing to support drug development with the consequence of having investment fostering growth in innovation coming from the financial economy. The COVID19 vaccine partnership between governments and Pharma companies was more of an accelerator to bring innovation to the community at a time of urgent need, rather than an exception to the model. It definitely opened new avenues but didn't change the very basics of funding innovation.

Without capital, innovative ideas will remain only ideas. Before starting any drug development, capital is needed to get to meaningful Phase 2 results that will then attract new investment to continue further developing the drug and move to the next phases that may lead to a successful approval. One feature of drug development is that it attracts investors comfortable with higher risk profile of such investment and with the expectation of high rewards. In the field of cancer and rare diseases, translating a promising drug candidate to final approval is estimated to cost \$2.6 billion as of 2019 with a probability of success little over one in twenty-five in the past years and a minimum of 10 years before reaching the market¹. A striking example of the resilience needed to develop drugs could be found in Alzheimer (AD): Since 1995, cumulative private expenditures on clinical stage AD R&D were estimated at \$42.5 billion, with the greatest costs (57%; \$24 billion) incurred during phase 3; approximately 184,000 participants were registered in clinical trials before developing the first disease modifying drug in 2020². Funding the early-stage research until final clinical development (large scale clinical testing) and ultimately market launch is definitely proved to be a very risky investment. In recent years, some work has been done to design financial vehicles that could solve this issue; the "rare disease megafund" is such an idea³, or the analysis of the requirement of funding long shots such as cancer or Alzheimer drug development is an other one. In both situations, the scale, duration and low probability of success relative to their level of investment make these projects more difficult to fund⁴. These new financial mechanisms have the ambition to help conventional institutional investors to consider funding these risky R&D projects which very often have social values far beyond their private sector returns. By reducing the cost of capital through debt financing, therefore reducing the cost of drug development and ultimately potentially impacting the cost of drugs, there is hope that these innovative ideas in the financial economy could bring the right amount of capital to the right projects with the right investors. We could imagine that the Pharma industry being dedicated to solve health issues by bringing innovative drugs should attract the investors with the right risk profile rather than being seen as a safe and easy investment returning high profits. However, some Big Pharma companies demonstrate a "bond" return profile with limited innovations brought to the market but very efficient commercial tactics such as price increase when and where ever possible. Both outside and within the US, the concept that price controls improve social welfare and should overshadow business considerations leading to a more inclusive and humanistic process for determining prices, becomes the mainstream concept. However, this shouldn't threaten the industry to earn premium prices for breakthrough drugs. The question of the "appropriate" price is central to this debate, a common understanding among all stakeholders is that this price should support the right investment in research to develop breakthrough innovations and the adequate return to shareholders.

A remaining problem is related to the fair business model supporting this growth: sales are supporting reinvestment in research for the next generation of innovations; but how can a Pharma company support sales'

¹DiMasi, Grabowski & Hansen, 2016

²The costs of developing treatments for Alzheimer's disease: A retrospective exploration, *Alzheimer & Dementia*, the journal of the Alzheimer's association

³Bridging the valley of death through financial innovation, written testimony of Andrew W.Lo, prepared for the U.S. House of Representatives Financial Services Committee, September 11, 2019

⁴Funding long shots, *John Hull, Andrew W. Lo and Roger M.Stein. Journal of Investment Management, Vol. 17, No. 4, (2019), pp. 9-41*

growth ? Is the Pharma model a consumer model and as such a model for which sales are being driven through promotion ? Indeed, drug promotion plays a key role in maximising sales and the Pharma industry has faced much criticism in its promotional practices. The World Health Organization defines drug promotion as:

“all informational and persuasive activities by manufacturers and distributors, the effect of which is to influence the prescription, supply, purchase or use of medicinal drugs”

Creating awareness among healthcare professionals and updating their knowledge on recent advances in treatment options are two important consequences of the right promotion approach. However, many stakeholders were concerned that drug promotion had gradually evolved to embrace aggressive marketing strategies and at times unethical business and scientific practices where the need for profit-making eclipsed commitment to patient care and scientific exploration. This evolution is largely responsible for the poor reputation of the Pharma industry in the past few years. It has definitely impacted drug costs by raising the average wholesale price with the evidence that aggressive marketing techniques induce overuse and over-treatment in certain cases creating an artificial market expansion. This period is now behind and it has clearly been understood that the Pharma industry will have to shift its promotion model with a greater support for the medical education programs run by academic institutes, the management of a network of external alliances and a better understanding of governments and health insurers. The connection to secondary-care specialists and patients' associations will help to drastically change the promotion model. A process in which information is continuously disseminated in a series of non-controversial interactions will be the key to change the reputation of the Pharma in order to ensure that all stakeholders are truly supportive of its business model. This shift in the model will have direct impact on how investors could evaluate the main Pharma groups and reward them on the market.

A new investor's mindset is therefore not only supported by the development of new funding mechanisms but also by a clear sign that Pharma companies will adopt the adequate pricing and commercial behaviour. A strong call from investors to support true innovative companies will be reflected in the financial evaluation of these companies on the Market.