

TENDENCIES OF DEVELOPMENT OF INNOVATIVE POLICY OF PHARMACEUTICAL COMPANIES

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The conditions of activity of pharmaceutical companies become more complicated due to the accelerating scientific and technological progress, globalization of the economy, rapid change of requirements and preferences of consumers, and the impact of government regulation. Using reasonable innovative approaches on the formation of product range is one of the most important directions of providing competitiveness and increased financial resources and profits of pharmaceutical companies

Innovation is a multiphase process, beginning with laboratory based research leading to patentable inventions, moving into the stages of clinical research, which are then translated into safe, effective and commercially viable products from which society gains a benefit in terms of improved health. Pharmaceutical innovation includes the discovery, development, production and delivery process that enhances the availability of medical products and people's access to them.

Modern drug discovery pipeline can be divided into seven consecutive steps: viz. drug target identification, target validation, lead discovery, lead optimization, preclinical studies, clinical trials and marketing.

Evaluate Pharma® finds that worldwide pharmaceutical research and development totaled \$137bn in 2013 representing an increase of 2.1% on the previous year when research and development spend, in dollar terms, actually declined. Looking forward, research and development spend is forecast to grow at a rate of 2.4% per year, which contrasts with the compound annual growth rate of 3.4% between 2006 and 2013. The current value of the worldwide pharmaceutical industry's research and development pipeline surged 46% over last year's report to \$418.5 bn. The main driver of growth is an exciting new class of cancer products

targeting the programmed death-1 (PD-1) pathway with a collective value of \$63bn. Bristol-Myers's potential new anti-PD-1, Nivolumab is the world's most valuable research and development product valued at \$23.2bn, followed by two other potential anti-PD-1 products: Merck's MK-3475 (pembrolizumab) and Roche's RG7446, valued at \$16.7bn and \$15.6bn, respectively.

Top 20 pharmaceutical companies spent together \$86.9 on research and development. World leading pharmaceutical companies Novartis, Roche, Merck & Co, Pfizer and Sanofi have the most spends on research and development. Based on a consensus of leading equity analysts' estimates for company-level research and development spend, Evaluate Pharma®'s consensus forecast finds Novartis will continue to spend the most on research and development in 2020, with a spend of \$10.4bn in 2020. Of the top 20, Biogen Idec is forecast to grow its research and development expense the most rapidly, with research and development forecast to increase 10% per year from \$1.4bn to \$2.8bn in 2020. Overall, total research and development spend is expected to increase by 2.4% each year, reaching \$161.5bn in 2020. Research and development expenditure is forecast to grow at a modest 2.4% per year to 2020, reaching \$162bn.

Delivering new drug candidates more quickly and at lower cost is the need of the hour. To achieve these objectives, computational approaches in drug discovery process have become quite a necessity. Continued progress in the application of computational power to chemical and biological space has significantly impacted modern drug development chain.

In a competitive market, forming of innovative portfolio on the ground of research the external and internal factors is the basis for effective renewal of assortment of pharmaceutical companies. According to leading experts, there are two groups of factors influencing the formation of innovative strategy of pharmaceutical companies. They are current enterprise potential and environmental conditions (customer needs, competitive environment, and market position of the company). Market research carried out at different stages of the innovation process, is an important prerequisite for the success of new drugs on the market.