

Portfolio Management: Industry

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Principles of Portfolio Management

- Medical Need
- Vaccine Business Model
- Platform Considerations
- Expected Net present value (eNPV)
- Other Factors

Medical Need

- Primary consideration for considering a potential target
 - Ultimate justification for resource allocation
 - Fits with corporate philosophy and goals of a health care company
 - Opens doors to regulators
 - Improves Industry image with public and government
- Motivates everyone in the company
 - Ebola effort widely communicated through J&J
- Determines ultimately the size and value of the market

Vaccine Business Model

- Comprehensive Vaccine Business Model
 - GSK, Merck,, Sanofi, Merck – Sanofi Joint Venture
 - Broad Portfolio with all or most vaccine needs for customer met:
 - Pediatrics Adults, Elderly, Travelers
 - Pandemic, Epidemic and Developing world
 - Efficient branding & detailing with Physicians etc.
- Focused approach on large opportunities
 - Pfizer, Janssen, Takeda
 - Narrow Portfolio
 - Best in class concept or focus on one segment
- Contribution to the developing world
 - An essential part of Corporate Social Responsibility

Platform considerations

- Platforms include vaccine delivery coupled to manufacturing and analytic expertise
 - Live virus, viral vectors, inactivated virus inactivated whole cell vaccines, toxoids, conjugates, VLPs, DNA, RNA, adjuvants
 - Merck: live virus, VLP, conjugates
 - GSK and Sanofi similar to Merck + adjuvants & inactivated viruses
 - Janssen: Viral Vectors
- Easier to add to the Portfolio if part of an existing platform
- Sometimes addition to the portfolio can be to add additional platforms
 - GSK malaria vaccine development utilized adjuvant formulations which become part of platform which led to successful Zoster Vaccine

Expected Net Present Value

- Calculation that predicts earning over time after expense, interest and risk accounted for
 - All development costs (research, CMC, clinical)
 - Compound interest on costs over time
 - Probability of success
 - Cost of Goods (COGs) and Sales and Marketing
 - VS Marketing projection of sales over time
- A positive NPV usually required
- The NPV of any given candidate compared to everything else the company has in development including drugs, devices or anything else
- NPV important but not the only consideration

Other Factors

- Capacity of the current organization within the company to take on new projects without major expansion
 - Clinical may have capacity but Analytics may not
- Total corporate allocation to R&D may limit new projects despite positive NPV
- IP, recent acquisitions, preferences by Senior Management, success of other Therapeutic areas vs vaccine in corporation
- Expansion to new markets (China etc)