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)