

### **Bridging the Gap in Deal Valuation**

Wednesday April 12, 2017



### **Bridging the Gap in Deal Valuation**

#### **Speakers:**

- Clare Fisher, Vice President, Interim Head of Transactions, Shire
- Greg Miller, MBA, MPH, Vice President of Business Development
   & Strategic Planning, Visterra, Inc.
- Henry Rath, MBA, Vice President of Business Development, Seres Therapeutics Inc.
- Mark Stencik, MBA, Director, BD&L Transactions, Merck Boston Innovation Hub

#### **Moderators:**

- Troy Norris, MBA, Executive Director, Parthenon-EY, Ernst & Young LLP
- William Pittock, MBA, Executive Director, Valuation & Business Modeling, Transaction Advisory Services, Ernst & Young LLP



### Bridging the gap in deal valuation

#### Panelists

Industry experts:		
Clare Fisher, MBA	Shire	Licensing and transactions
Greg Miller, MBA, MPH	Visterra	Business development and strategic planning
Henry Rath, MBA	Seres Therapeutics	Business development
Mark Stencik, MBA	Merck & Co.	Transactions, business development and licensing

Moderators:		
Troy Norris, MBA	Parthenon-EY	Transaction strategy and due diligence
Bill Pittock, MBA	EY	Valuation and business modeling



### Bridging the gap in deal valuation

### Topics for discussion

- Revenue forecasting and scenario analysis
- Valuation and deal terms analysis
- Evaluating risk to structure robust deals



Page 5

### Revenue forecasting and scenario analysis

Multi-stakeholder insights are quantitatively linked with price benchmarks and market constraints to forecast a product's price and uptake potential

#### Market Model

- Project market size and market growth based on:
  - Disease epidemiology
  - Drug-treated population
  - Reimbursement trends and patent expiries
  - Secondary research and analysis of prescription databases

### Integrated Price and Share Model

- ▶ Determine achievable price levels and expected patient share based on:
  - Price benchmarking and restrictions on use
  - ▶ Stakeholder value analysis for patients, payer, providers
  - Analysis of market access barriers and evidence requirements

### Adoption Model

- ▶ Predict expected patient adoption rate, duration of therapy, and treatment adherence
  - Primary research on stakeholder needs and product perceptions
  - Secondary research of published literature and/or medical claims databases

### Forecast Model

Forecast expected product revenues using integrated model accounting for market dynamics, achievable price, patient share and adoption rate, and treatment duration

#### Scenario Analysis

► Model discrete scenarios based on findings from primary and secondary research to assess revenue potential across a range of scenarios



### Revenue forecasting

within a short timeframe under uncertainty requires in-depth market and customer analysis focused on the key value drivers

#### **Secondary market research**

- Market
- Epidemiology
- Competition
- Treatment path
- Pricing and reimbursement



#### **Primary market research**

- Patient flow and referral patterns
- Unmet needs
- Evidence thresholds
- Product perceptions
- Pricing and reimbursement
- Expected adoption

#### Market analysis

- Segmentation
- Market size
- Growth
- Competitive intensity

# Market model S. Sodas Thropage Salvadan Sensey Sulvadan Overein

#### Sensitivity Analysis

- Market
- Competition
- Clinical results
- Reimbursement



#### **Adoption analysis**

- Adoption rate
- Therapy duration
- Adherence
- Relative share
- Price sensitivity



### Asset valuation and partnership terms analysis

Portfolios of development programs are typically valued using a risk-adjusted net present value approach that feeds into a deal model

### Revenue forecast

Model market, price/share model and adoption

### Projected profitability

- Forecast investment and profitability:
  - Development time and costs
  - Manufacturing and COGS estimates
  - Launch and commercialization costs

### Free cash flows

- Forecast free cash flow incorporating:
  - Change in working capital
  - ▶ Taxes, including NOLs

### Risk-adjusted NPV

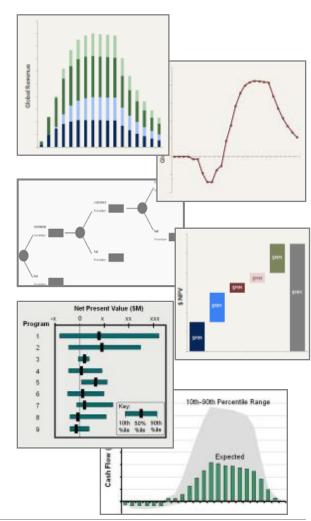
- Discount future cash flows discounted for time value of money based on cost of capital
- Apply R&D probabilities of success to estimate riskadjusted expected net present value

### Sensitivities and scenarios

- Sensitivity analyses, scenarios, simulation
- Value step-up analyses

### Transaction model

- Analyze deal terms to assess value-sharing between partners under alternative structures
  - Base case share of cash flows
  - Synergy sharing





### Partnership vs. Acquisition valuation

A portfolio of individual products can be valued individually and summed to company value

#### Revenue build

#### Alternative methodologies:

- Penetration to peak sales
- Patient flow
- Direct inputs

### Product P&Ls and valuation

#### Product P&Ls

- Product-specific costs
- Risk adjustments across portfolio
- Cash flow and valuation

### Partnership analysis

#### Partnership cash flows and value

- ▶ Upfront, milestones, royalties
- Cost and profit-sharing
- Partner synergies

### Corporate P&L and valuation

#### Corporate adjustments

- Non-allocable corporate OH
- Tax effects and NOLs
- Portfolio value summary

### Acquisition analysis

#### Acquisition analysis

- Acquirer/target P&L's
- Financing structure and terms
- Cost and revenue synergies
- Accretion/dilution



### **Evaluating risks and uncertainties**

### The three "S"s of risk assessment

Risk assessment	Pros	Cons	When to use
Sensitivity	► Focus attention on high risk variables	<ul> <li>May not capture key inter-relationships between variables</li> </ul>	<ul> <li>Searching for high impact variables (cost of capital, peak adoption)</li> <li>Conducting break-even analysis focused on individual variables</li> </ul>
Scenario	<ul> <li>Reflects dynamic inter- relationship between variables</li> </ul>	<ul><li>May overstate downside risk and upside potential</li></ul>	<ul><li>To reflect outcomes for a combination of variables</li><li>Modeling demand variability</li></ul>
Simulation	<ul> <li>Reflects full range and probability distribution of outcomes</li> </ul>	<ul> <li>Only as good as underlying assumptions on variable ranges</li> </ul>	<ul> <li>Modeling high impact variables with significant interrelationships</li> <li>Portfolio of inter-related value streams, such as multiple indications</li> </ul>

### Structuring deals to manage uncertainty

Using valuations to structure transactions that mitigate and share risks

- Share development and commercial costs and risks
  - Typically aligned with value-sharing
  - Governance bodies to jointly guide investment
- Contingent consideration tied to milestones
  - Milestones in alliances ranging from regulatory to reimbursement and revenue
  - Structured deals with contingent payouts, whether contractual or contingent value rights (CVRs)
- Increasing use of options in alliances and M&A
  - Option-based product licensing deals
  - Equity options on early stage companies
- Co-investment in early stage assets by corporate VC



Page 11

### Structuring deals to manage uncertainty

Structured transactions with contingent payments provide acquisition control with partnership risk-sharing economics

Investment models	Variations	Advantages
Straight acquisitions	<ul> <li>Acquisition of all company assets, liabilities, people and know-how</li> <li>Carve-out acquisitions of select assets and capabilities</li> </ul>	<ul> <li>Complete control</li> <li>Ability to integrate fully</li> <li>Ability to quickly extract cost synergies</li> </ul>
Acquisition with contingent payouts	<ul> <li>Clinical milestones</li> <li>Revenue-based lump-sum payments</li> <li>Unique situational payment triggers</li> </ul>	<ul> <li>Seller can lock in some near-term value while retaining a share of upside</li> <li>Buyer controls asset and decision-making with minimal ongoing relationship management</li> <li>Only pay for success and often capture majority of downstream value</li> </ul>
Traditional partnerships	<ul><li>Partnerships with event-based milestones</li><li>Straight licenses</li></ul>	<ul> <li>Exclusive rights</li> <li>Actively involved in program decision-making</li> <li>Collaboratively share development capabilities</li> </ul>



### Structuring deals to manage uncertainty

Option-based deals are a hybrid of traditional venture and partnership models, providing strategic and financial upside with limited upfront investment

Investment models	Variations	Advantages
Traditional partnerships	<ul> <li>Partnerships with event-based milestones</li> <li>Straight licenses</li> </ul>	<ul> <li>Exclusive rights</li> <li>Actively involved in program decision-making</li> <li>Collaboratively share development capabilities</li> </ul>
Proof-of-concept options	<ul> <li>Arms-length options to products, programs or technologies</li> <li>Partnerships with milestones at partner discretion</li> </ul>	<ul> <li>Exclusive option exercisable upon proof of concept</li> <li>Early development performed by partner</li> </ul>
PoC options with equity	<ul> <li>Proof-of-concept options with substantial equity investment</li> </ul>	<ul> <li>Balanced alignment of interests across company and optioned product</li> </ul>
Venture option models	<ul><li>Venture option funds</li><li>Direct investment</li><li>Strategic LP</li></ul>	<ul> <li>Equity investment tied to future product rights</li> <li>Funds directed toward programs of interest</li> </ul>
Venture investments	<ul><li>Direct investment</li><li>Venture co-investment funds</li></ul>	<ul><li>Limited need to provide R&amp;D capabilities</li><li>Potential equity upside</li></ul>



### Bridging the gap in deal valuation

### Topics for discussion

#### Deal Valuation Methodology

- Revenue forecasting and scenario analysis
- Valuation analysis

Page 14

Deal terms and comparables analysis

#### Applying Valuation in a Deal

- Managing valuation within a deal process
- Leveraging valuation and deal comps in negotiations

#### Guiding Principles for Applying Valuation

- Tailoring approach to each situation
- Staying focused on the fundamentals



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### **Bridging the Gap in Deal Valuation**

### **Thank You!**

**QUESTIONS?** 



### **Upcoming MassBio Forums**

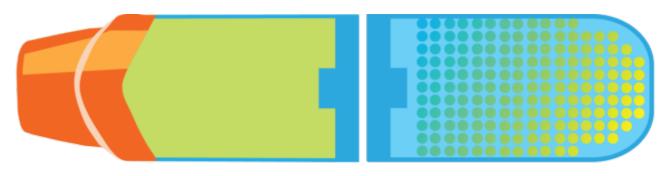
**April 27: Perfecting Your Pitch; EU** 

May 4: Successful Partnering Strategies in

**Developing Novel Medicines: Models for** 

Academia - Pharma Alliances; DD & Nonprofit

May 24: Biosafety 101 Workshop; SEF



## THE CONVERGENCE OF MEDICAL DEVICES & DRUGS:

THE FUTURE OF COMBINATION PRODUCTS

**Presented By:** 





May 12, 2017; 12:00pm – 6:00pm The Westin - Waltham, MA

Registration is now open