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THE VALUATION EXPERTS

Financing sources for life science projects and companies

Dr. Aitana Peire

May 2017 | International Exploitation Training FFH2.0, Prague

Venture Valuation

Mission

Independent assessment and valuation of technology driven companies / products in growth industries

Biotechgate: Company directory – licensing opportunities / Investors database / Licensing deal terms

- Experts Finance / High-tech industries
- Not a venture capitalist
- International experience
- Track record of over 400 valued companies
- Clients such as NVF, Fraunhofer Gesellschaft, European Investment Bank; VCs; Arpida/Evolva

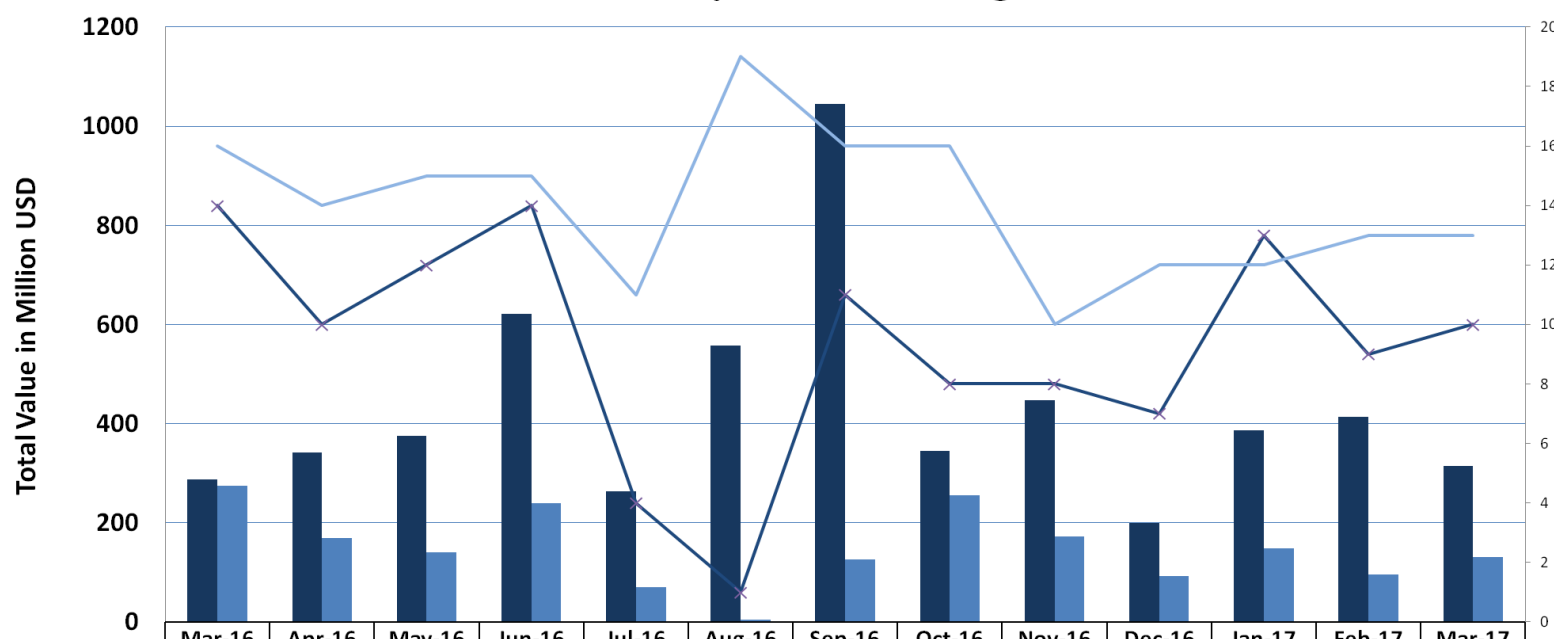
Agenda

- **Financing trends – Private financing**
- **Financing Sources**
- **Dos and Don'ts in raising money**

Financing trends

Private financing Biotech (Therapeutics and Diagnostics)

Biotech Therapeutic Financing Rounds



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- **Financing Sources**
- **Dos and Don'ts in raising money**

Financing Sources - Overview

1. Own development → resources needed

- Own financing (Services)
- Public: Grants / Government Funding
 - a) Regional
 - b) National
 - c) European / international
- Raise capital
 - a) Equity (VC, Corporate, Family Office, BA)
 - b) Venture Debt / Convertibles
 - c) Product Financing

2. Out-licensing

- Value retention; lead vs. follow-on products

Financing Sources – Equity Finance

	Venture Capital	Corporate Investors	Family Offices	Business Angels
Size	> EUR 3.5m	Open	Open	< USD 1.5m
Company type	High risk / potential	Strategic fit, innovative	Service component, opportunistic	Seed / early stage
Total capital requirement	High	High	Medium	Low
Exit	Set 5-10 years	M&A	Long-term partner	Medium term

Financing Sources – Non-Equity Finance

	Debt Financing	Grant / Government	Convertibles	Revenue, Royalty Product Financing
Size	open	< EUR 3.5m	open	> EUR 7m
Company type	Mature companies	Innovative, R&D, early stage	High growth, later stage	Mature, later stage
Total capital requirement	High	All	All	High
Exit	Repayment	None	Repay / convert	none

Financing Sources – Equity vs Licensing

	Own development Equity Financing	Out-licensing Licensing Deal
Follow-on products (earlier stage products 3, 4, 5)	(-) Fund raised on later stage products Price: low/ none within portfolio	(++) Interesting for pharma Limited value to VC/ analyst
Lead Products (products 1&2)	(++) Preserve potential within company Creates main value for investors	(+) Reduces burn-rate Provides Cash Depending on deal terms/ value

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- **Dos and Don'ts in raising money**

Do's in public funding

- Strategy: apply only if project is in line with your strategy
- Rules: evaluate which program fits your needs, study the rules
- Partner: find the right partners completing your expertise
- Evaluation: public funded projects are evaluated, so you have to sell your project
- Support: there are different support organizations, so ask them (e.g. national contact points)

Don'ts in public funding

- Profit: Don't apply to make a profit, but to get knowledge and a network; funding is for pre-competitive support
- Topic: only apply if your research fits the theme
- Partners: make sure you have reliable partners
- Scope: Don't ask for EU funding for regional scope
- Not easy: Competition is high, don't expect easy funding

Dos for the preparation in private funding

- Be specific. Substantiate statements with market data
- Summarize and properly structure financial information; review by outside parties
- Show how much money you need; how do you spend it
- Attractive business plan (design), but not overdone
- Network like crazy
- Choosing your VC is as choosing a co-founder
- Do reference checks on the VC (previous investments)
- Having multiple term sheets makes a difference

Don'ts for the preparation in private funding

- Don't use highly technical descriptions of products
- Don't make vague or unsubstantiated statements
- Don't ignore or underplay your competition
- Don't ignore key risks
- Don't take the funding process lightly
- Don't try to raise between significant milestones
- Don't be afraid to ask for adequate funding

Dos in the Sales pitch in private funding

- Show a clear and logical exit strategy
- Save up good news for the middle of the process
- Wait until you have significant traction
- Be direct and have a plan – VCs like to see your confidence
- Be open and honest
- Be brief – provide executive summary
- Cite clearly how much money the company will need
- Be realistic in making estimates and assessing market

Don'ts in the Sales pitch in private funding

- Don't pitch ideal VCs first – practice
- Don't just pitch - listen to the VC
- Don't be defensive
- Don't pick your investor solely on brand/name.
- Don't plan on closing any rounds in August / December or within a short time
- Don't engage in a bidding war.
- Don't travel too much – stay local
- Don't press people beyond the Thank You email after a meeting.



Thank you!

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THE VALUATION EXPERTS

The valuation process of life science companies

Dr. Aitana Peire

May 2017 | International Exploitation Training FFH2.0, Prague

Overview

- **Introduction to valuation**
- **Valuation of start-up companies**
- **Valuation of a therapeutic product**
- **Q & A**

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Valuation – what?



1. Valuation of a product

⇒ Licensing deal

⇒ Strategic development decision



2. Valuation of a company

⇒ Investment / Financing round

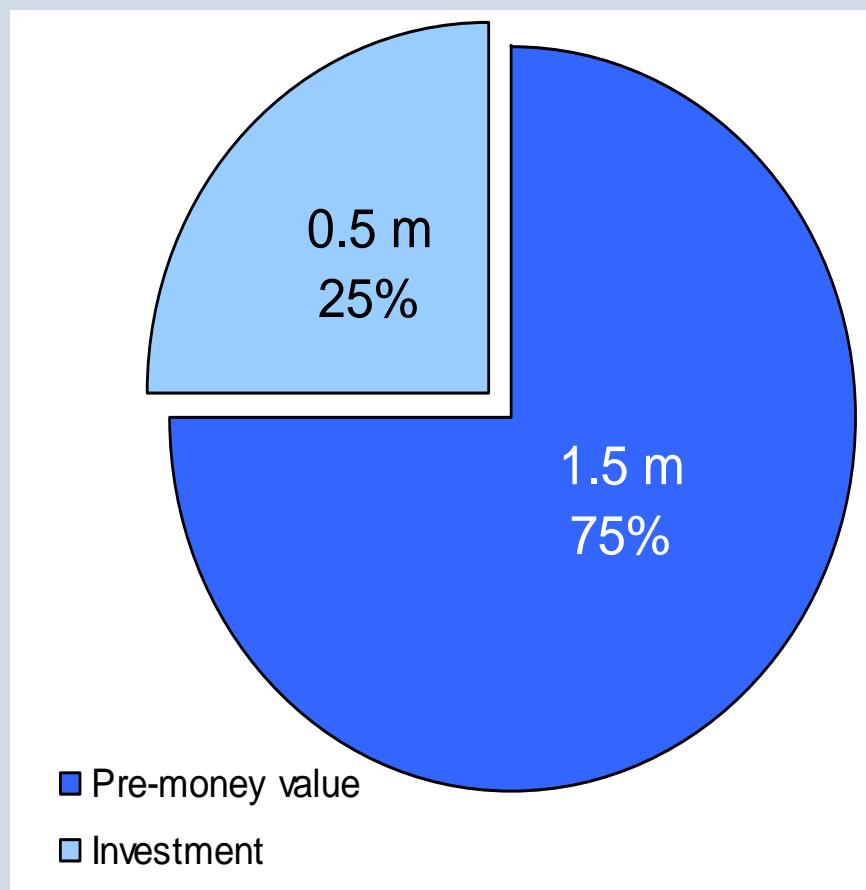
⇒ Merger / Acquisition

⇒ Measure success of company development



Valuation – why?

- Value before investment (pre - money value): USD 1,5 m
- Investment: USD 0,5 m
- Value after investment (post-money value): USD 2,0 m
- Share Investor:
 $0,5 \text{ m} / 2,0 \text{ m} = 25\%$



Valuation – why?

- Out-licensing of a phase II product
 - Deal terms:

up-front	USD 1 m
milestones	USD 20 m
royalties	7%
 - rNPV of product ?
 - rNPV of deal ?
-
- ⇒ rNPV of product: USD 30 m
 - ⇒ rNPV of deal: USD 10 m
 - ⇒ Split Biotech / Pharma: 33% / 66%

rNPV: risk adjusted net present value

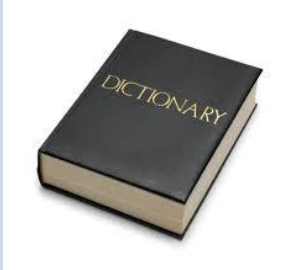
Valuation – when?



- Think ahead
- Be prepared for negotiations
- Know the fundamentals
- What assumptions have been used
- Out-licensing or financing round?

=> Ongoing exercise

Definitions



- **Value:** implies the inherent worth of a specific thing
- **Price:** depending on the market (supply / demand); whatever somebody is prepared to pay

“Price is what you pay. Value is what you get.”

By Warren Buffett

Rational on Valuation



Why assessment and valuation of high growth companies?

- Industry lacks transparency
- Valuation is key issue in development
- Very difficult (high uncertainties)
- High potential for investors
- Long investment cycle
- Traditional valuation methods unsuited
- Complex technology and IP situations

Trends in Valuation



- Pharma companies have gap in pipeline
- Biotech industry has become more mature
- Market for available phase II products is dried up
- Pharma want to be involved from pre-clinical stage
- New demand: generics, Asia
- New deal and collaboration forms: options

=> Increasing demand for projects

Mindset of investors



- Take high risk, but expect high returns
 - Pressure from investors
 - Compete in capital market
- => Different investors for different projects (less VCs more alternative sources)

	Probability of failure	Return
Government Bond	0%	3%
Bonds	5%	5%
Blue Chip Company	10%	9%
Internet company (Nasdaq)	50%	20%
Biotechnology Company	80%	50%

Mindset of Pharma



- Fuel pipeline
- Portfolio approach
- Sales force for specific therapeutic areas
- Compete with Investors
- Collaboration vs. acquisition

Assessment



1. Understand the fundamentals
 2. Assumptions drive the valuation
- => Assessment/assumptions are key

Assessment:

1. Management



2. Market



3. Technology



Overview

- Introduction to valuation
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Valuation approaches

1. Operations-based methods:

⇒ *business plan, fundamentals*

2. Market-based methods:

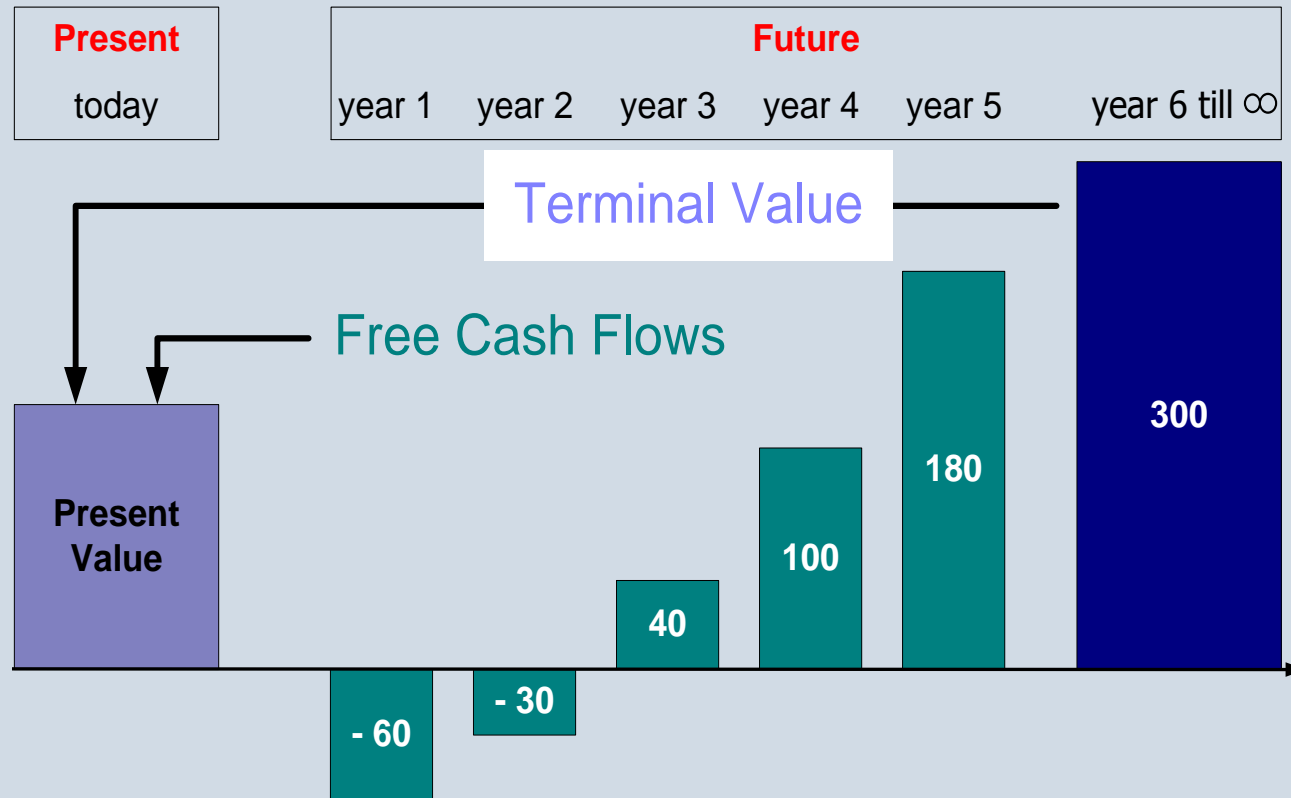
⇒ *price, trends, comparison difficulties*

- | | | |
|-------------------------------|---|--------------------|
| – Discounted Cash Flows (DCF) | } | Operations methods |
| – rNPV | | |
| – Real Options | | |
| – Venture Capital method | ⇒ | Mixed method |
| – Market Comparables | } | Market methods |
| – Comparable Transactions | | |

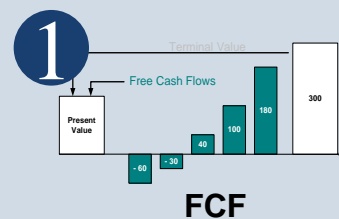
⇒ there is no “the right method”

⇒ combination of different methods

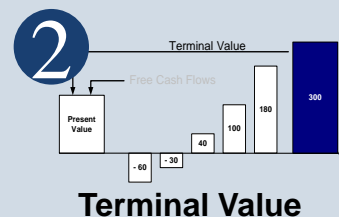
Basic DCF



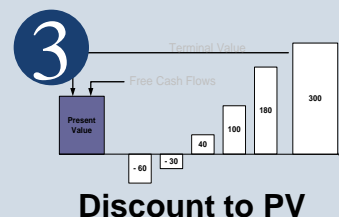
Discounted Cash Flow



Determine Free Cash Flows for year 1 to 5 or 3/10



Calculate Terminal Value



Discount with Discount Rate



Sum of Free Cash Flows

Comparables method



Company Value:
USD 10 m
50 employees

Ratio



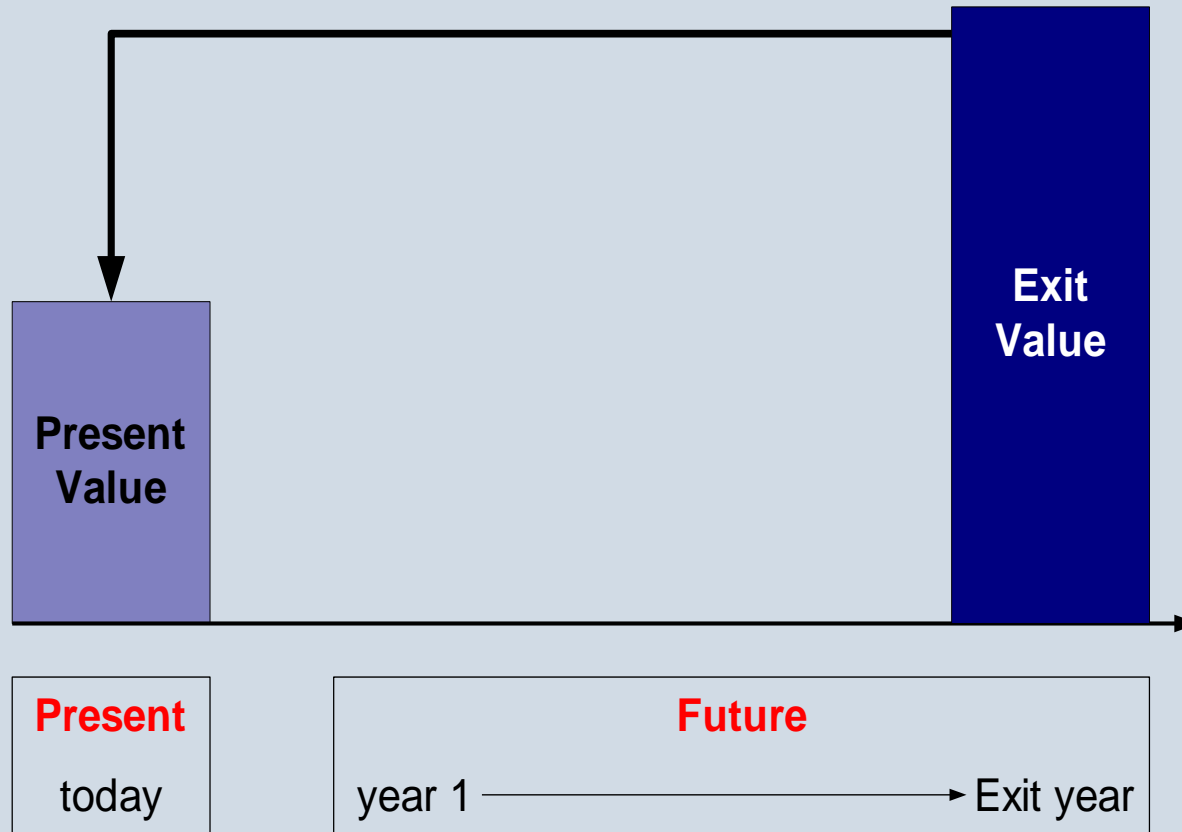
- Revenues
- Earnings
- EBITDA
- Employees
- R&D
- Company specific factors



10 employees
⇒ Company Value:
USD 2 m*

* $(10/50) \times 10 \text{ m} = 2 \text{ m}$

Venture capital method



Overview

- Introduction to valuation
- Valuation of start-up companies
- **Valuation of a therapeutic product**
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Product valuation

- Licensing deal
- Strategic development decision
- Expenses included are only those relevant to the product
- Product not industry comparables required
- Management risks not taken into account



Introduction

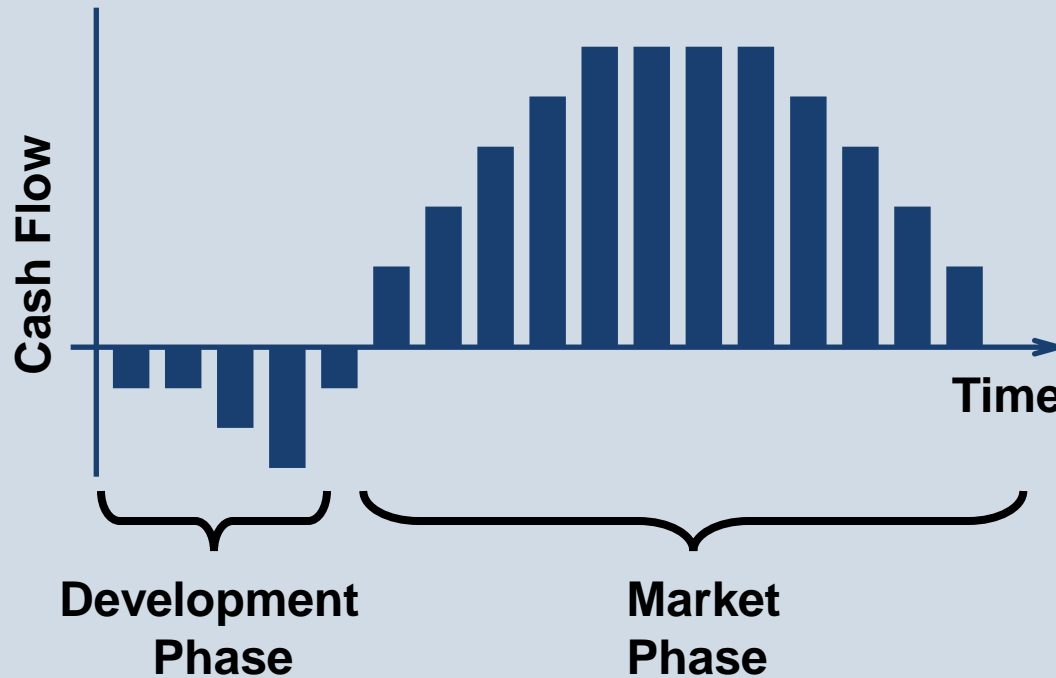
Input

- Development cost and timelines
- Production / Marketing cost
- Market / expected sales
- Success rate based on historical data

Output

- Expected annual discounted cash flows

Valuation components



- Determine timelines and cash flows in each phase
- Develop solid assumptions for all key variables

Risk adjusted NPV

$$\sum_{i=1}^T \rho_i \sum_{t=1}^T \frac{DCF_{it}}{(1+r_d)^t} + \rho_7 \sum_{j=1}^5 q_j \sum_{t=1}^T \frac{CCF_{jt}}{(1+r_c)^t}$$

Risk adjusted Net Present Value

- Also called eNPV
- Method of choice for Big Pharma

Benefits:

- Helps understand accurate value and maximises deal options
 - Adjusts value for Development risk and Discount rate
- ⇒ Risk is split in two components
- 1) Product Risk (attrition rate)
 - 2) General Risk (discount rate)

Five-step process



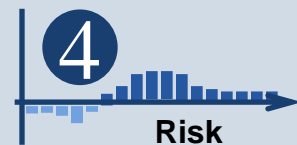
Determine Cash Flows in **Development** Phase



Determine Cash Flows in **Market** Phase



Discount with **Discount rate**

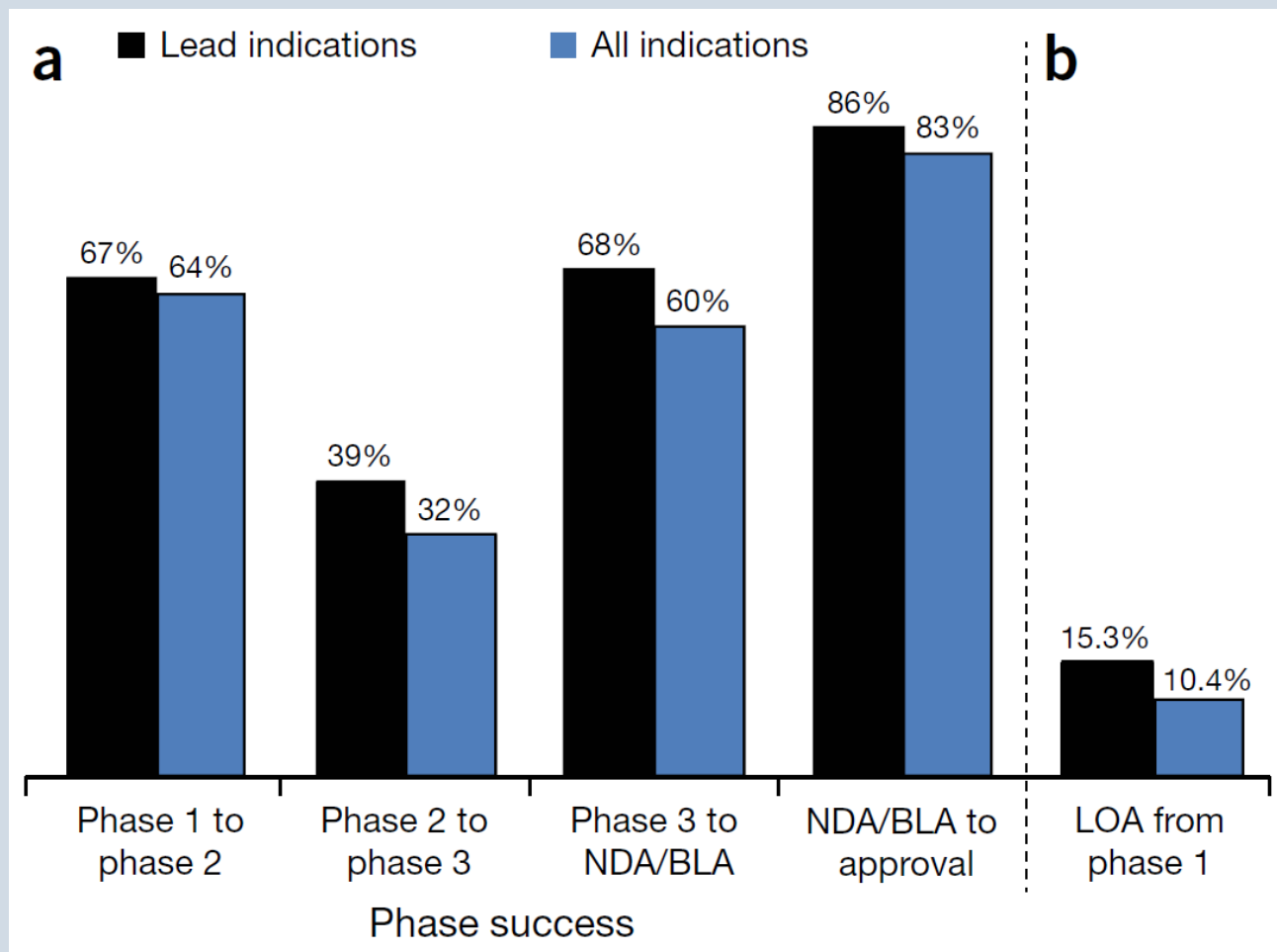


Adjust for **Risk** (success rates)



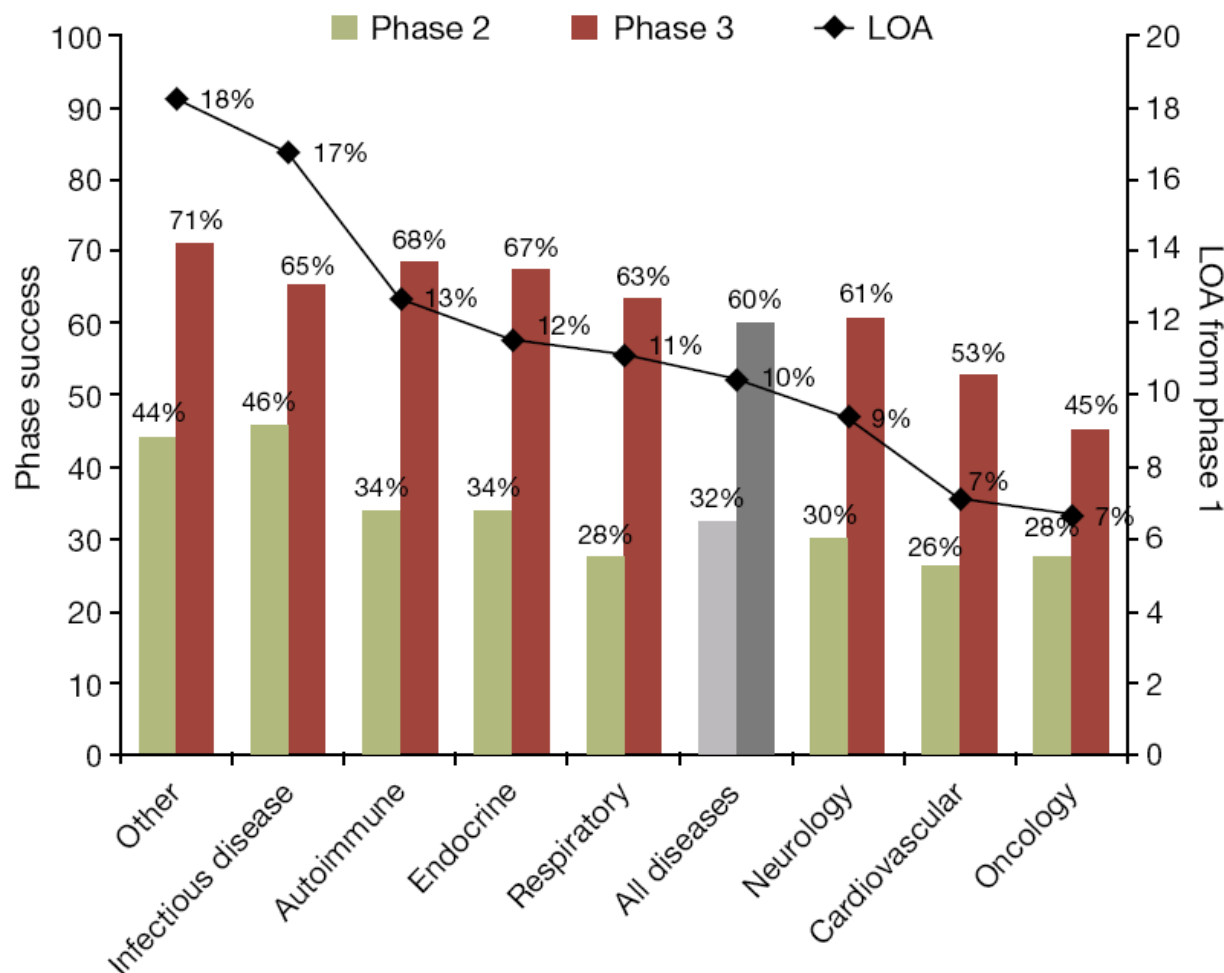
Sum cash flows

Success risk



Source: Nature Biotechnology; Clinical development success rates for investigational drugs; January 2014

Success risk II



Source: Nature Biotechnology; Clinical development success rates for investigational drugs; January 2014
LOA: Likelihood of approval

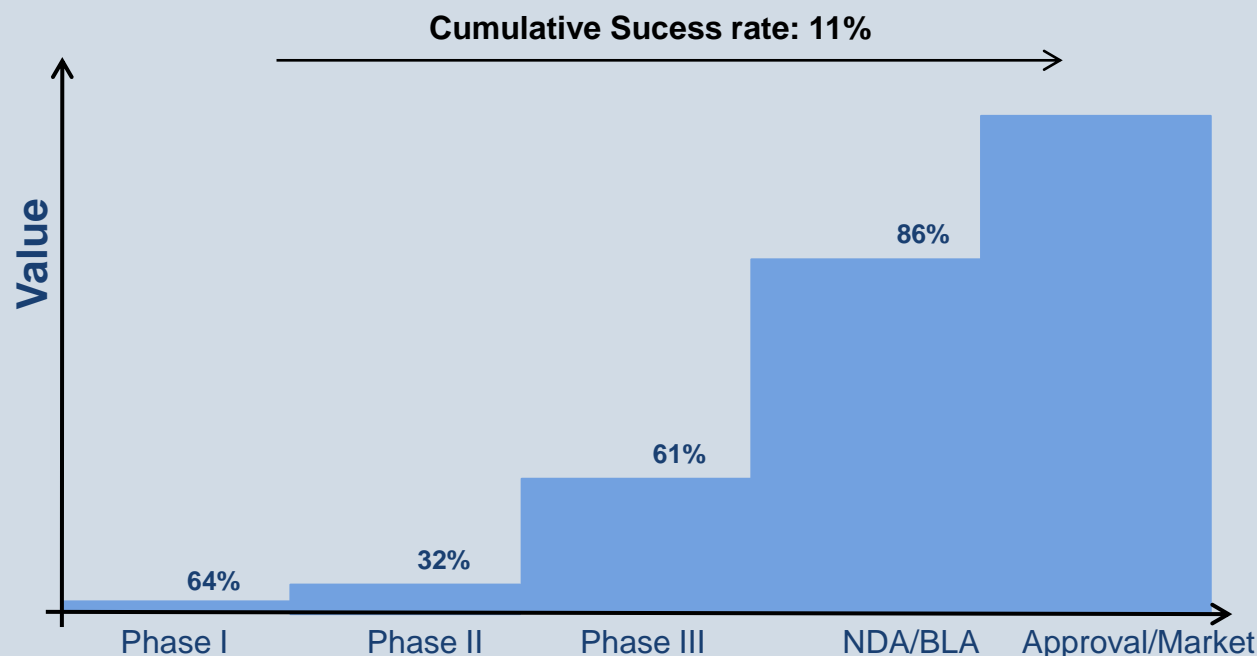
Success risk III

The relation between Risk and Value

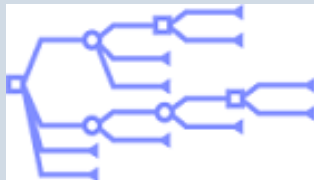
- Completion of a phase ➡ Direct value increase



m USD
672
477
125
18
8



rNPV – Example

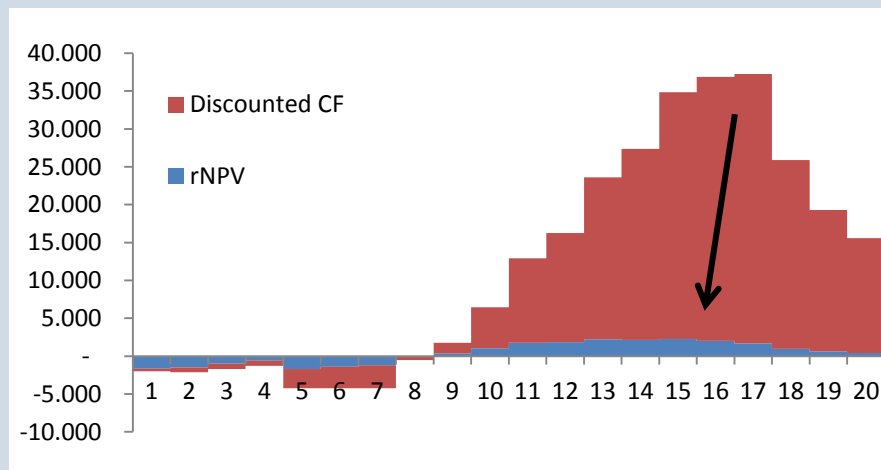
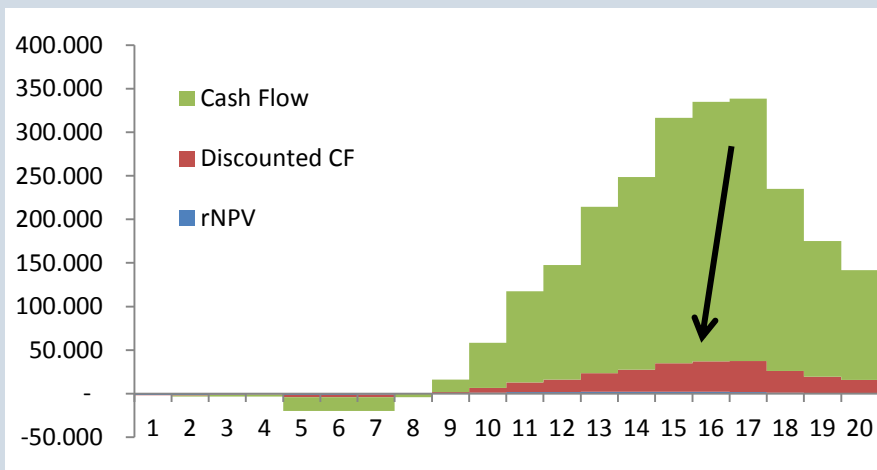


- Phase 1, single product company
- 20% discount rate
- 11% Probability of success (p1 to market)

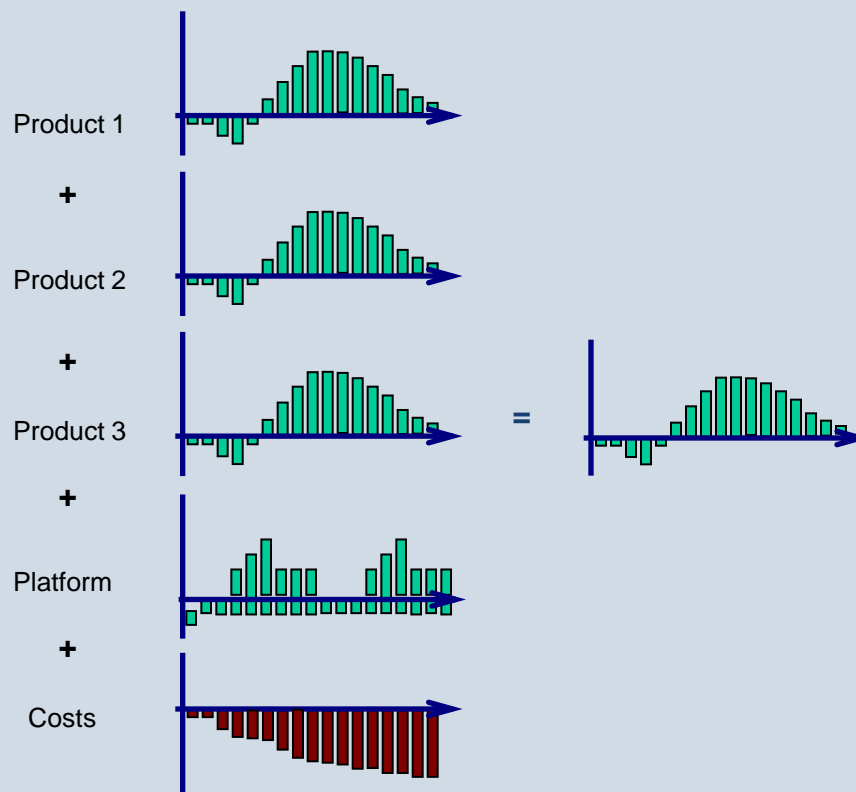
⇒ CF: USD 2'269m

⇒ DCF: USD 127m

⇒ rNPV: USD 8m



Company valuation



Early stage company
Sum-of parts valuation
Total value of project

Deal terms



- Front/ back-loading a deal can heavily influence deal structure
- Deal terms dependent on needs of both parties

In USD m	Payment of	rNPV* (or up-front)
Up-front	1 m	1 m
Finish Pre-clinical	1 m	0.44 m
Finish Phase I	1 m	70'000
Finish Phase II	1 m	17'000
Finish Phase III	1 m	8'000
Approval / Enter market	1 m	5'000
Royalties	1%	0.70 m

* Time value of money and Risk adjusted

Timing of payments



- Two very different deal structures can look identical

1

Cash Flow



- Non-discounted, non-risk adjusted

rNPV



- 25 million upfront
- 300 million milestones
- 5% royalties

2

rNPV



- 5 million upfront
- 50 million milestones
- 12% royalties

Conclusion

- Valuation is key in the development of a start-up
- Valuation is not easy
- Value \neq Price
- Its all about the assumptions
- Deal \neq Deal
- Be prepared



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Thank you for listening!

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