



Valuation Principles

BioValley Investors' Lunch

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Venture Valuation, Switzerland

www.venturevaluation.com

Content



- 1. Venture Valuation**
2. Basics about valuation
3. Company Assessment
4. Overview Methods
5. Product Valuation
6. Conclusion



Venture Valuation Today










- 1. Independent, third party Valuations
- 2. Biotechgate Database
- Experts Finance / High-tech industries
- Not a venture capitalist
- International experience
- Systematic / Validated Approach
- Track record of over 120 valued companies
- Clients such as NVF, Fraunhofer Gesellschaft, European Investment Bank

Product portfolio



Economic Development					
Business Angels					
Non-Profit Organizations / Foundations					
Investors (VC, Corporate)	main customers	main customers	main customers		
Pension funds					
Companies	main customers	main customers			

Biotechgate.com

Country	Biotech	Biotech Instr. & Services	Biotech related	Med Tech	Investor
 Austrianbiotech.com	16	32	13	11	3
 Canadianlifesciences.com	142	62	162	23	12
 Frenchbiotech.com	70	136	19	12	28
 Germanbiotech.com	117	288	77	69	2
 Indianbiotech.com	13	117	202	5	45
 Italianbiotech.com	42	75	126	35	6
 Scandinavianlifesciences.com	24	50	13	27	4
 Swisslifesciences.com	49	145	99	326	43
 Total (biotechgate.com)	532	953	725	514	146

In total there are over **6'800 companies** in the database.

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Valuation of 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



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

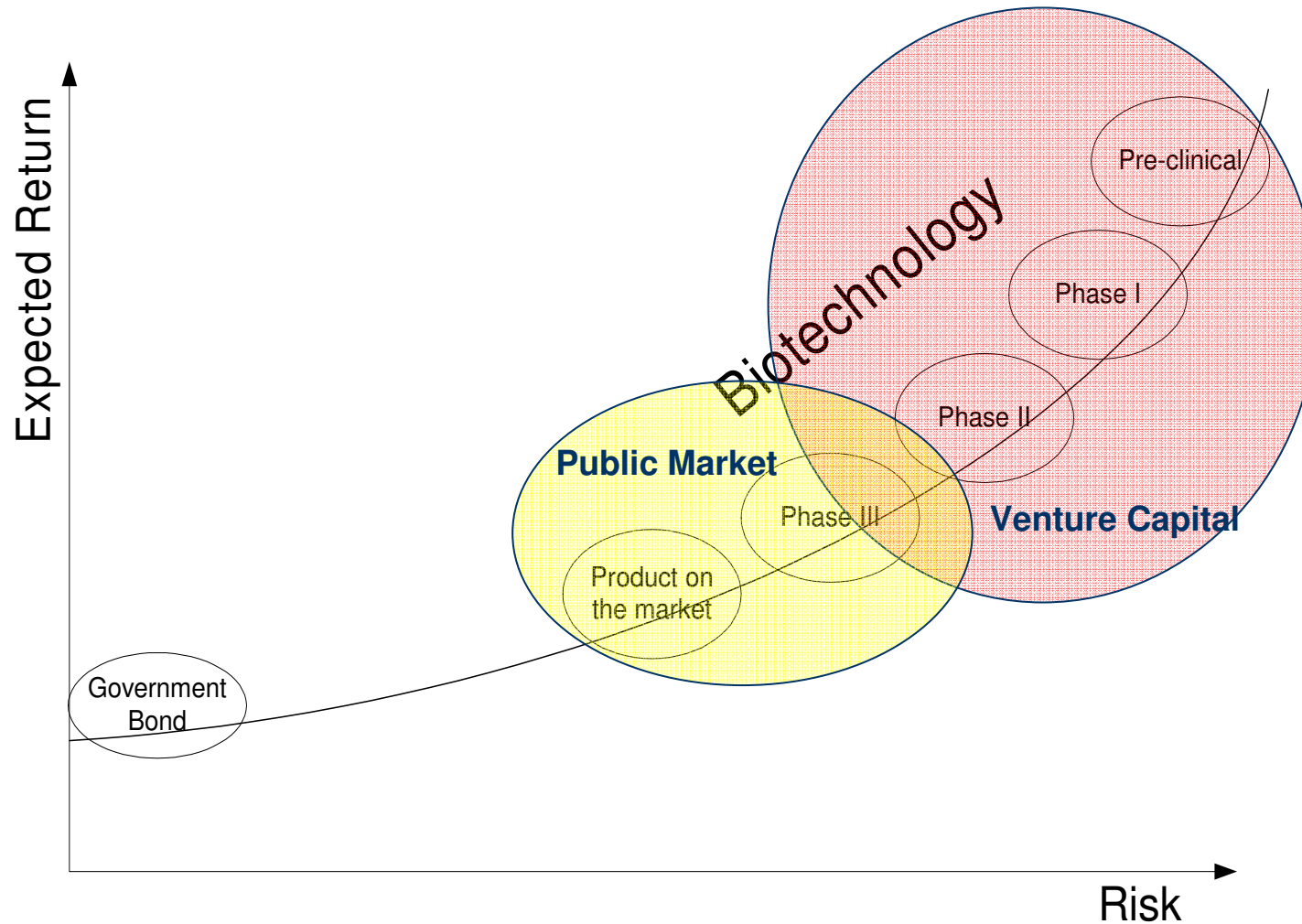
Rational on Valuation



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

Risk vs. Return



From Assessment to Valuation



1. Understand the fundamentals
 2. Assumptions drive the valuation
- => assessment is key

Assessment:

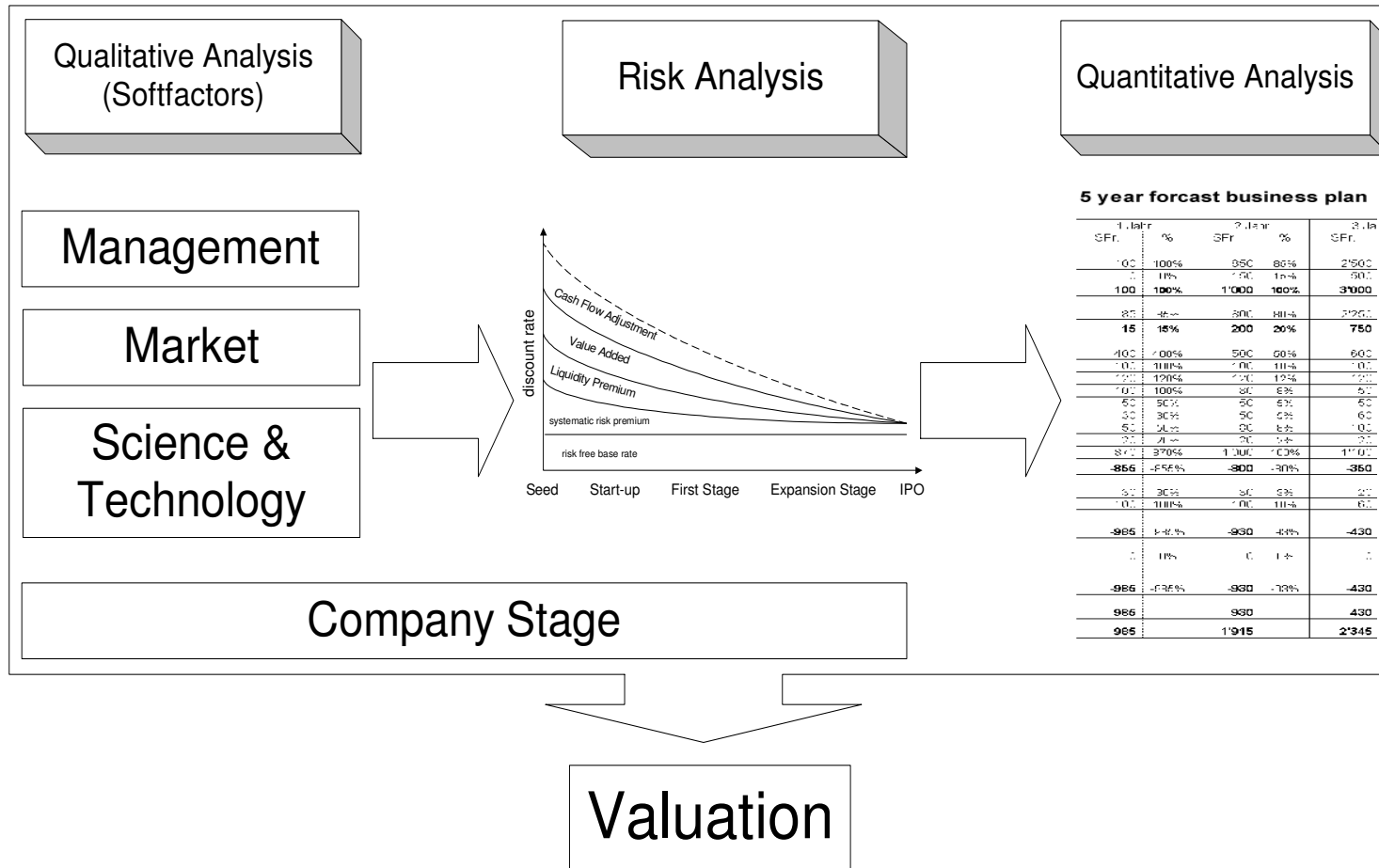
1. Management 
2. Market  
3. Technology  

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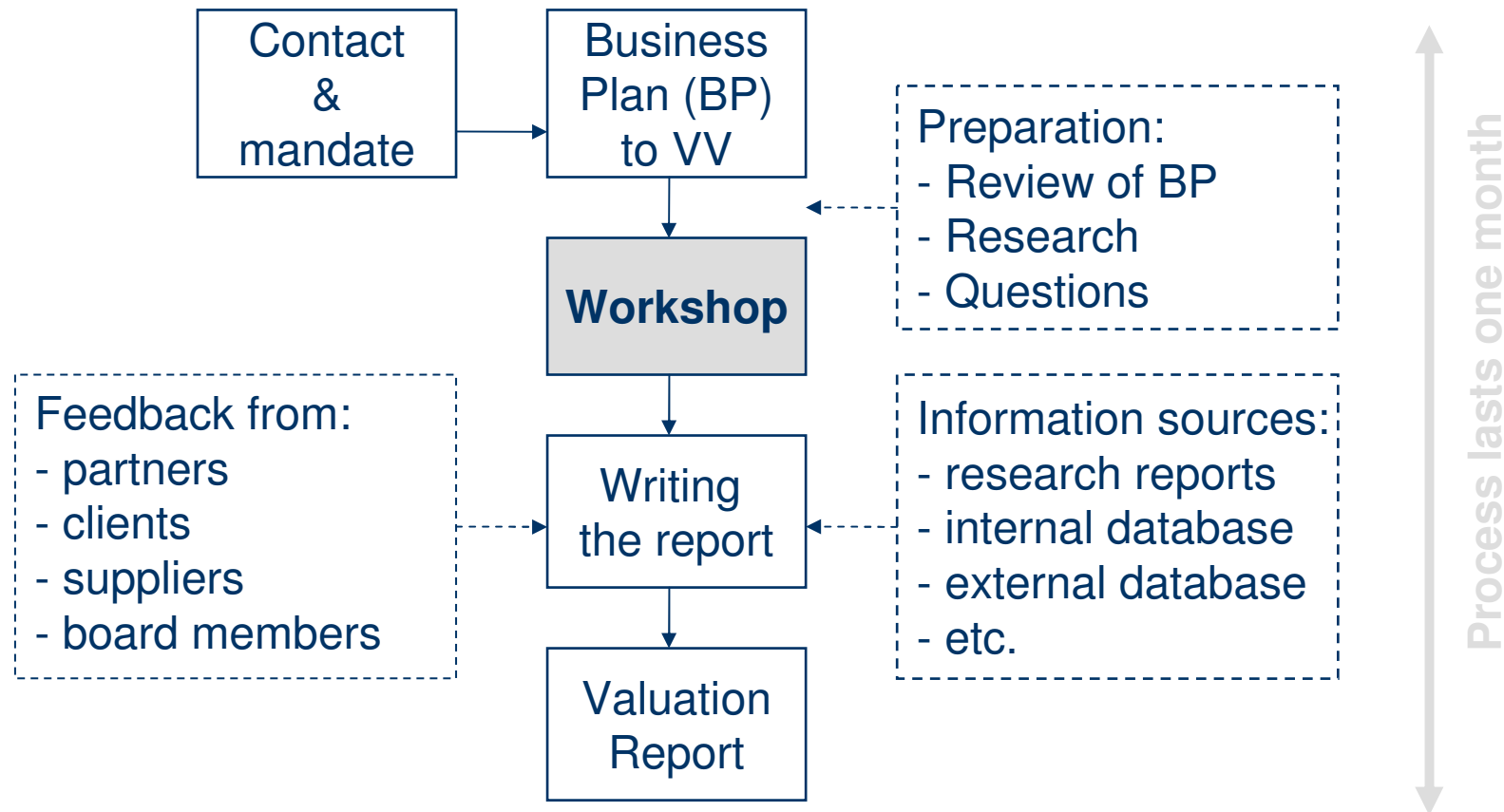


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Valuation Framework



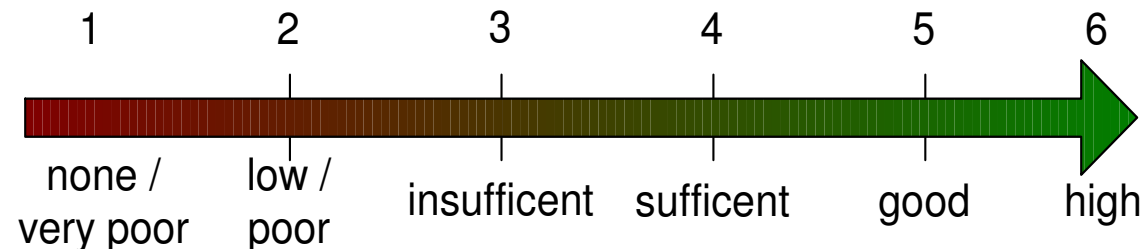
Process for a valuation



Management



1. Completeness skills
2. Track record / experience
3. Motivation / Incentive structure
4. Organization
5. Emotional intelligence / social competence
6. Composition and involvement of boards

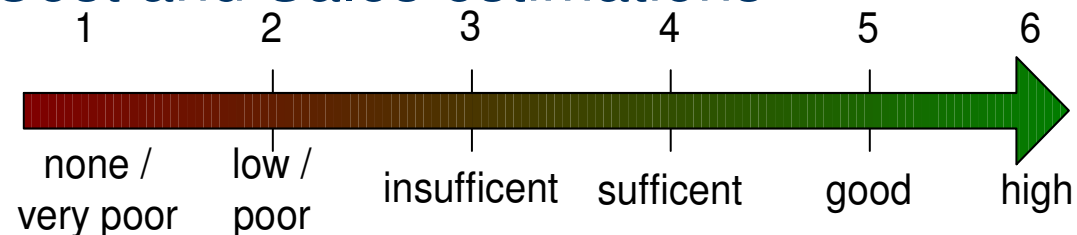


Market environment

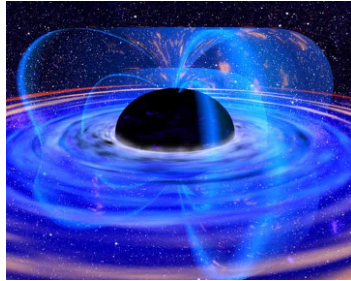


Industry Structure: (Five forces by Michael Porter)

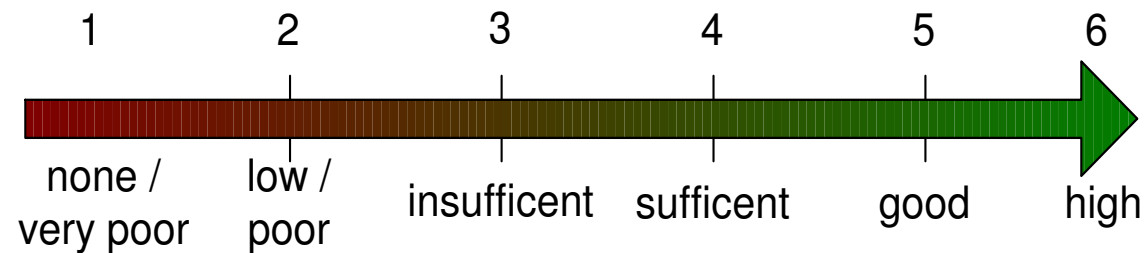
1. Threat of new Entry
2. Rivalry among existing competitors
3. Pressure from substitute products
4. Dependencies on customers
5. Dependencies on suppliers
6. Current and future market potential
7. Customers
8. Political / legal dependencies
9. Cost and Sales estimations



Product, Sciences & Technology



1. Intellectual Property (IP)
2. Unique selling proposition
3. Alliances/partnerships
4. Management of future discoveries
5. Time to market



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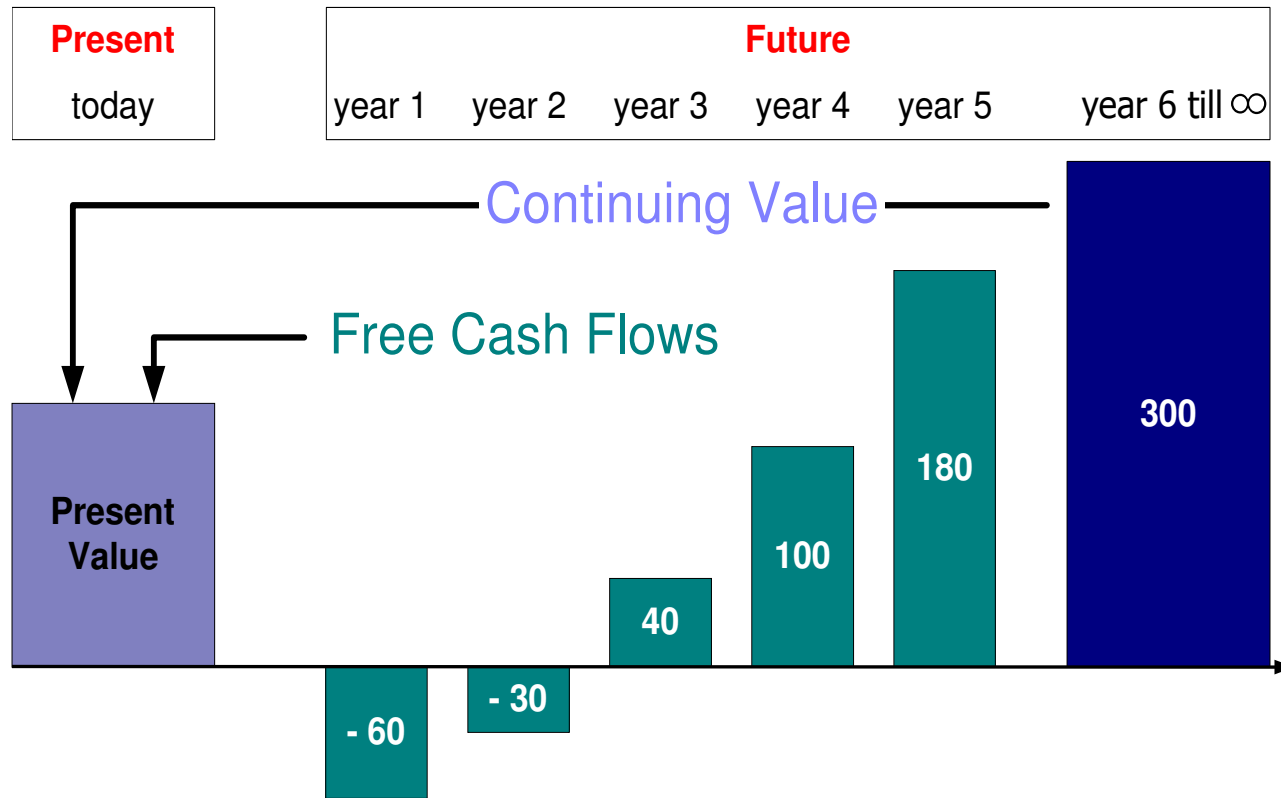
High growth companies

- Asset valuation method => does not work
- Price/earning value => does not work
- Often no revenues / earnings
- Value = potential of the future and associated risk
- Influence factors:
 - Management
 - Market
 - Science and Technology
 - Stage of company

Used Methods

- Cash Flow based Method (DCF)
- Relative valuation Method
- Venture Capital / Exit based Method
- Decision Tree Valuation Method
- Option pricing Method

Basic DCF



Market Comparable



Company Value:
EUR 10 m
50 employees

Ratio



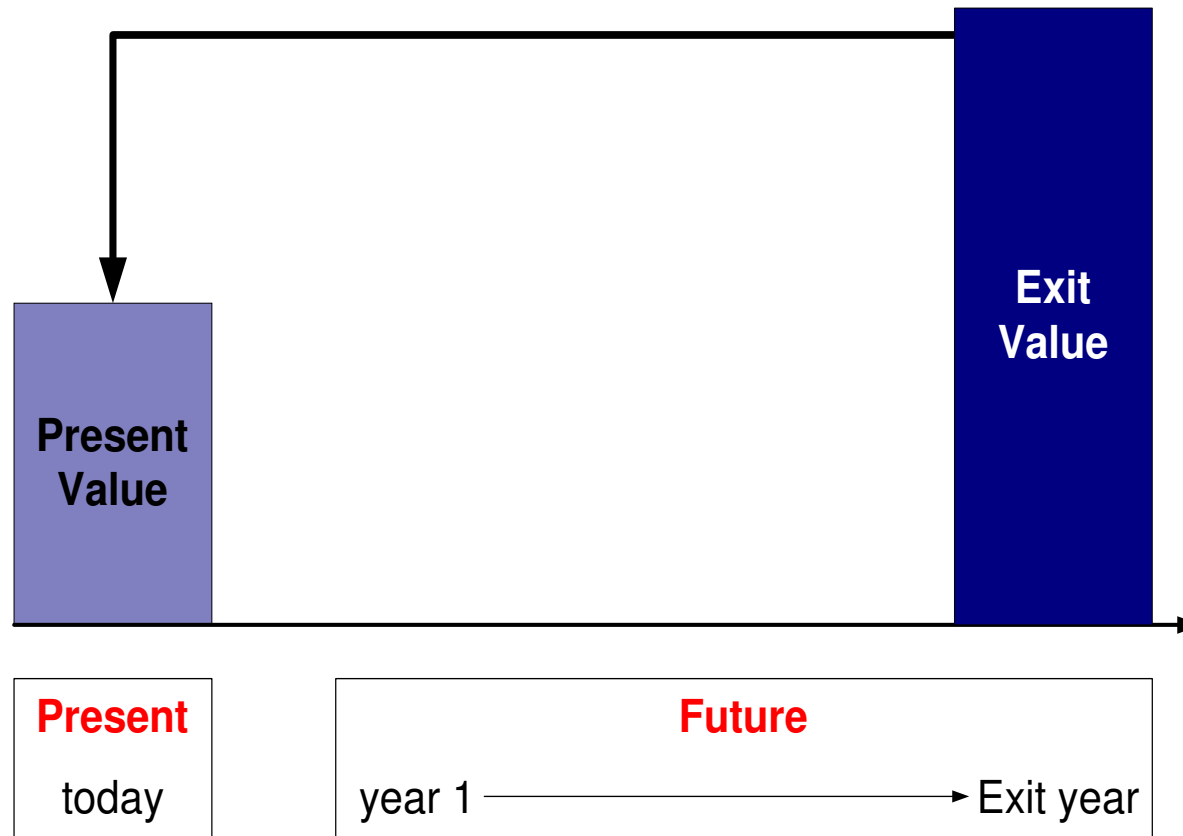
- Revenues
- Earnings
- EBITDA
- Employees
- Company specific factors



10 employees
⇒ Company Value:
EUR 2 m*

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

Venture Capital Method



Real Option Method

The six levers of financial and real options

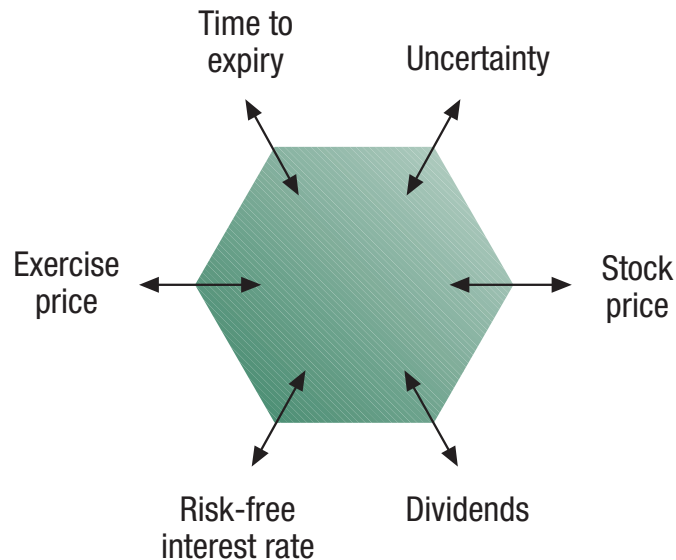


Increase raises option value

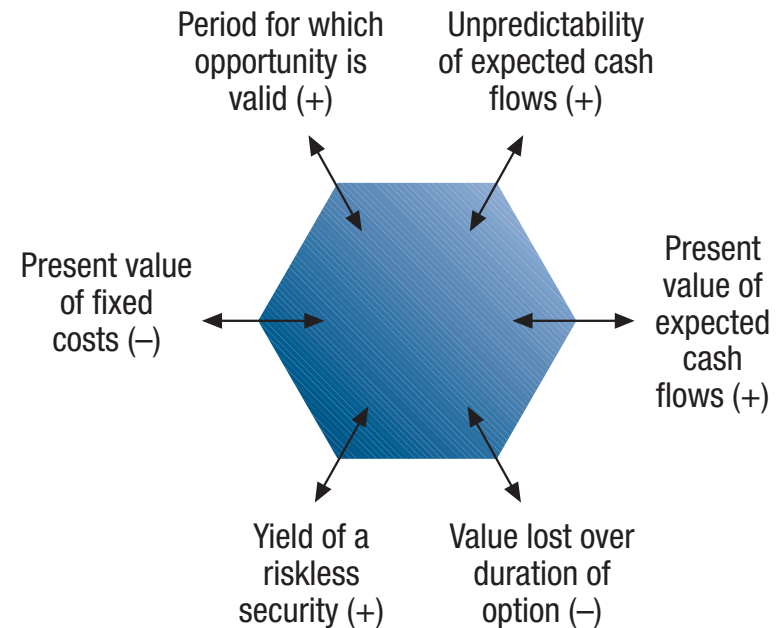


Increase lowers option value

Financial-option value levers

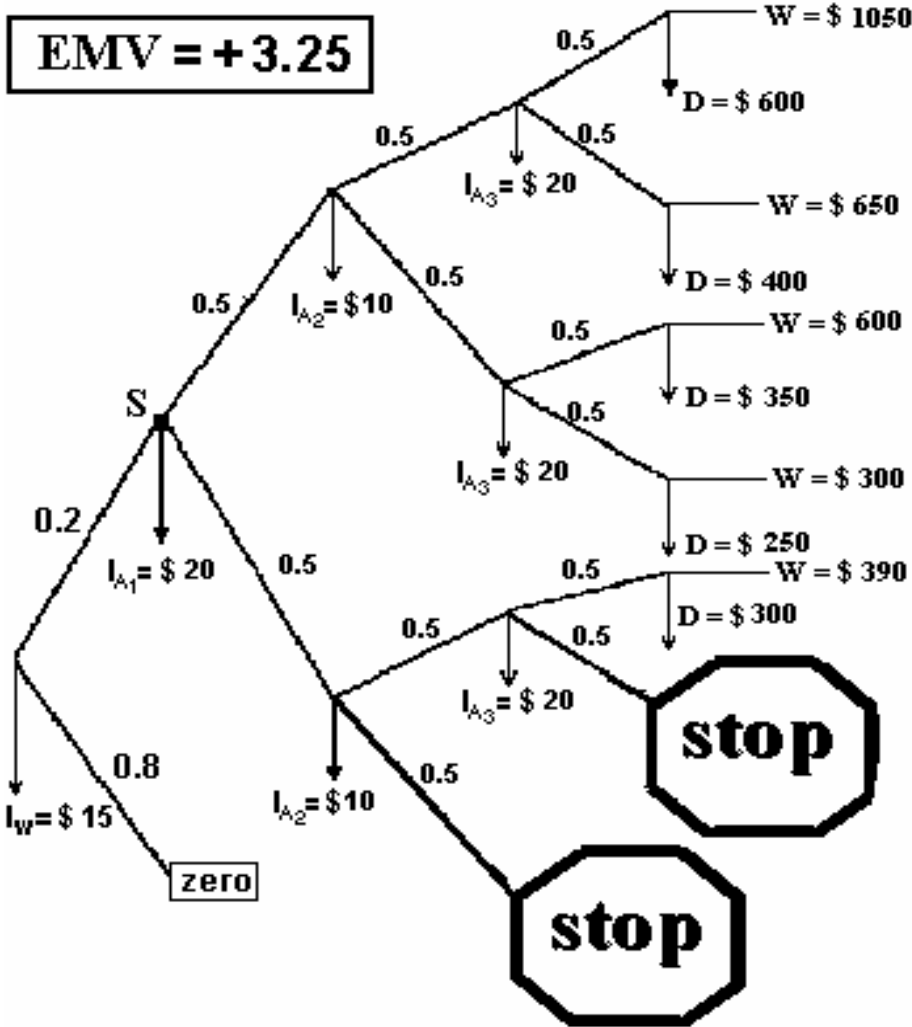


Real-option value levers



Source: The real power of real options; Leslie / Michaels; The McKinsey Quarterly, 1997 Number 3.

Decision Tree Method



Source: Real Options Approach to Petroleum Investments; Real Options 2000 Conference; Marco Antônio Guimarães Dias

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Introduction Product Valuation



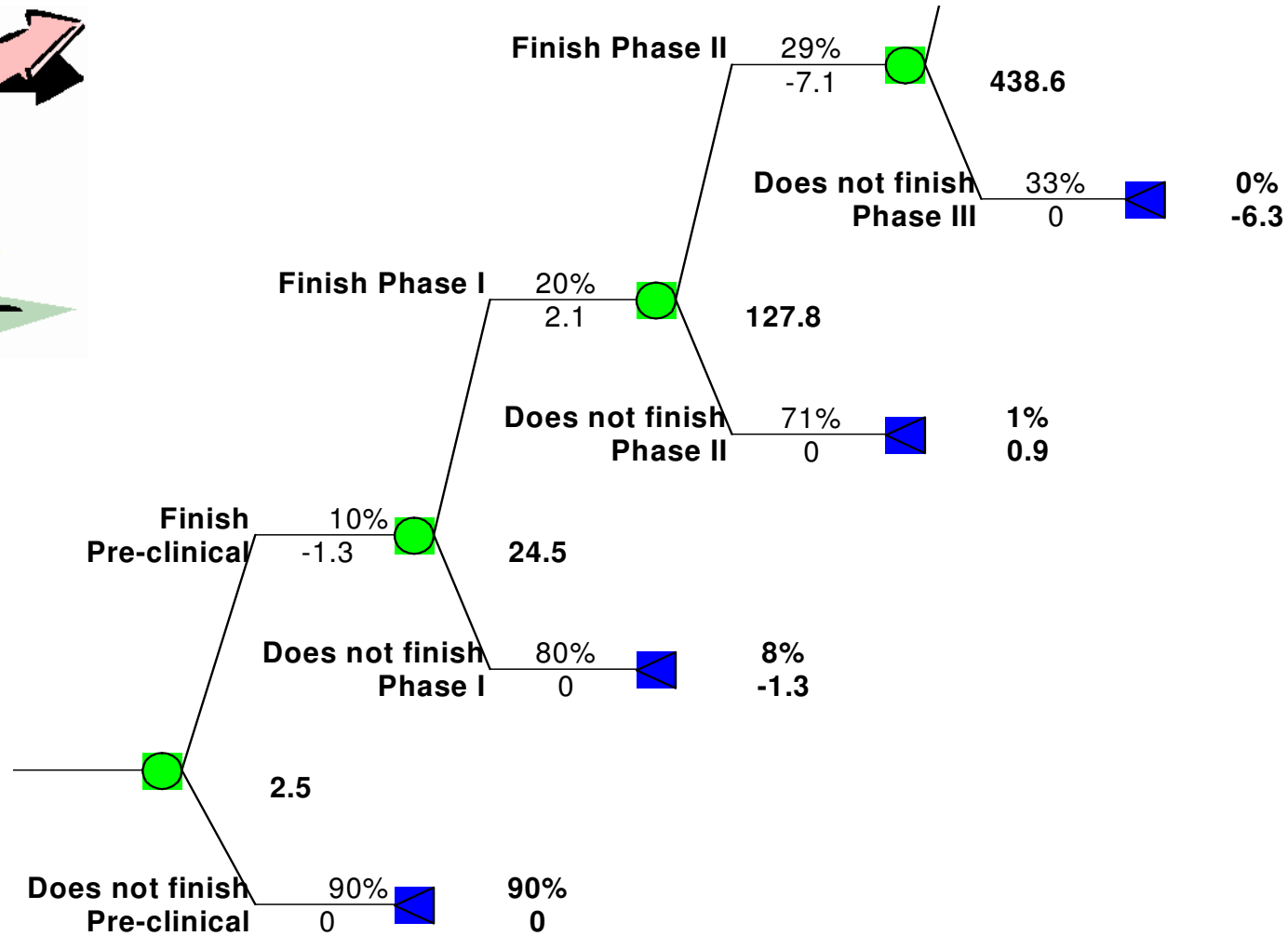
- Business model of a product development
- Biotech (R&D to phase II) => out licensing to Pharma (development and marketing)

Input factors:

- Market / expected sales
- Development cost
- Production / Marketing cost
- Attrition rate based on historical data

=> Decision Tree

Decision Tree

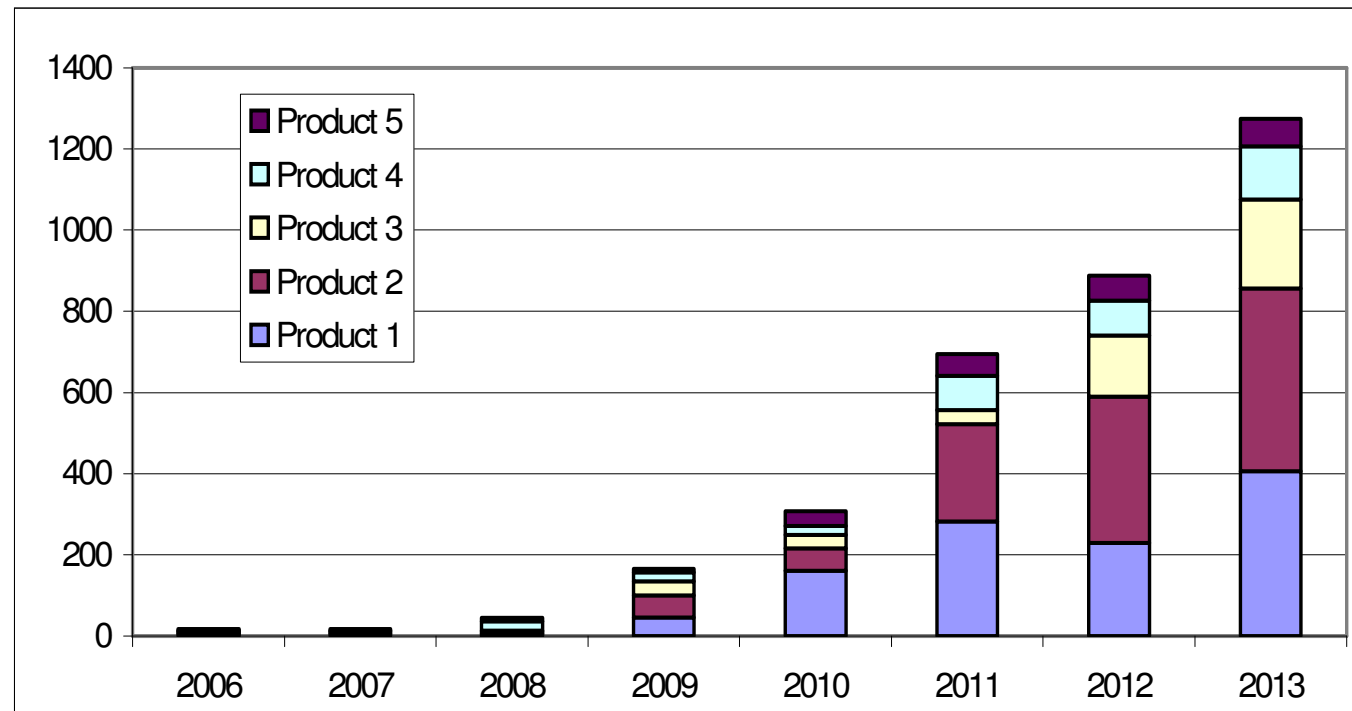


Assumptions

	Timing	Costs	Paym.	Net	NPV (15%)	Prob- ability
Finish Pre-clinical	Jan-03	3.1	-	-3.1	-2.79	10%
Finish Phase I	Jul-04	15	-	-15	-10.95	20%
Finish Phase II	Dez-05	23	4	-19	-11.37	29%
Finish Phase III	Jun-08	-	7	7	2.95	67%
Approval	Dez-09	-	8	8	2.74	90%
Enter Market	Jun-10	-	15	15	4.79	100%

- Out-licensing after phase II
- Royalty rate: 10%

Aggregation of Product Value



Structuring of a deal I



In m USD	Payment of	NPV (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

Structuring of a deal II



In m USD	Scenario 1	Scenario 2
Up-front	1	7
Finish Pre-clinical		
Finish Phase I	4	
Finish Phase II	8	
Finish Phase III	10	25
Approval	12	30
Enter Market	20	35
Royalties	5%	12%
Total deal value	55	97
Net present value (NPV)		13.9

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Conclusions



- Valuation is a process
- You can value a licensing deal or a company
- Assumptions are key
- Solid assumptions => assessment
- Assessment:
 - 1) management
 - 2) market environment and
 - 3) products, science and technology
- Main determinants of valuation: potential / risk

Conclusions



- Different valuation methods should be used
- Result is a value-range
- Price is not the same as value
- Even though valuations are very difficult, they have to be done
- High growth companies are more difficult to value than traditional companies, due to its less predictable future and higher risks