



Practical Examples of Application of IP Valuation Methods
Case studies in Biotech and Pharma



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Speaker's resume: Alain KAISER

Professional Specialities:

Financial evaluations of intellectual property rights

Judicial expert - Court of Appeal of PARIS – damages estimations in counterfeiting and passing off expertise

Strategy and financial evaluations of IP in different contexts :negociations taxes audits...

I am a Consultant for industries, lawyers and patent attorneys

Author of « L'évaluation de la PI » chez Lextenso

Articles : Les Nouvelles LES, DECIDEURS JURIDIQUES, La Tribune, Les Echos, Economie et Comptabilité, Echanges, Option Finance, La Revue des Marques, Les Echos HEC INPI « Les Entretiens de Paris »,« Securitization », « Patent valuations : methods and issues », working paper CEPN

Book : Financial valuation of technology assets (L'évaluation financière des actifs technologiques) lextenso-editions.fr ; lgdj.fr ; fnac.com et amazon.fr - code ISBN 978-2-297-06044-8

Professional career :

Founder and Partner of IP TRUST patent attorney law firm

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Small/Medium size pharma (target) vs Financial Investors – Comparables based on Multiples

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Biotech Patents – funding the R&D – Risk Adjusted NPV

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Biotech – Venture Capital – Venture capital method

VALUING A SMALL PHARMA Cie - HOPHTA

PHARMA case I (slide 1) :

PHARMA FUND is a fund with €1,5 billion to invest in high increase rate companies (Investments between €7 m to €50 m), dedicated to non-listed biotech and pharma, it's goal being to bring to the management of this industry strategic support and to strengthen Cie growth over a period of 4 to 6 Years.

HOPHTA PHARMA is a pharmaceutical Cie with an income of €50 m (per annum) it is 8 years old and is based in Europe (France, Spain, Swizterland, Netherlands and Benelux), specializing in ophtalmology (eye dryness and irritation) owning 6 full range products on the market and 3 MAs (Marketing Approvals) in it's pipe, and 4 new products in an early stage.

PHARMA FUND has made a request to us to perform an audit and a financial evaluation of HOPHTA PHARMA in order to decide how much to invest in it.

VALUING A SMALL PHARMA Cie - HOPHTA PHARMA case I (slide 2) :

Risks and Assets Analysis :

- Products on the market and competition (volumes, incomes, increase rates on both, margins...); for marketed products;
- MA analysis and compliance with administrative authorizations in each country; marketed products and products coming soon on the market;
- IP ownership and R&D agreements for marketed products, products coming soon to the market and R&D in progress;

This risk assessment will provide the provisions for any identified risks in the final agreement between HOPHTA PHARMA and PHARMA FUND. (HOPHTA PHARMA top management will remain unchanged).

VALUING A SMALL PHARMA Cie -HOPHTA

PHARMA case I (slide 3) :

Benchmarks Analysis :

- Sources :

<https://finbox.io/ALIM/models/ebitda-multiples>

<https://finbox.io/ALIM/models/pe-multiples>

- EBITDA multiples for ophtalmo competitors : 13x

Alimera Sciences		\$0.85	\$6.34
		Stock Price	645% Upside
METRICS	RANGE	CONCLUSION	
Selected LTM P/E Multiple	25.8x - 29.8x	27.8x	
Selected Fwd P/E Multiple	NA - NA	NA	
Fair Value	\$5.88 - \$6.79	\$6.34	
Upside	591.8% - 699.0%	645.4%	
BENCHMARKS		TICKER	
Corium International, Inc.		CORI	
Aerie Pharmaceuticals, Inc.		AERI	
Imprimis Pharmaceuticals, Inc.		IMMY	
Merck & Company, Inc.		MRK	
Alimera Sciences, Inc.		ALIM	
Sector		Health Care	

VALUING A SMALL PHARMA Cie -HOPHTA

PHARMA case I (slide 4) :

Benchmarks Analysis :

Sources :	HOPHTALM PHARMA	2017	2018	Forecast 2019	Forecast 2020
Epsilonresearch;					
Eurofins; European					
Industry Market	Income in m€	43	50	78	90
Multiples					
(Duff&Phelps); IMAP	Gross Margin	25	30	45	55
reports, finbox.io; EY;					
PWc...Nasdaq Biotech	EBITDA	0,5	2,8	12	19
Index...					
	Multiple		13		
• EBITDA multiples for	Value		36,4		
ophtalmo competitors :					
13x	Debts		18		
	Equity estimation		18,4		

VALUING A SMALL PHARMA Cie - HOPHTA

PHARMA case I (slide 5) :

PHARMA FUND OFFER :

- € 13,5 m in total :
 - € 8 m in shares in return for 44% equity ; they don't want the control in shares but have a significant part in the future revenues split;
 - € 5,5 m in convertible notes at a 4% annual interest rate, and 9% interest rate if non-converted (1 convertible note = 1 share).

END OF CASE I

VALUING A Biotech patent - T PHARMA case II (slide 1) : Patent value

T PHARM is a biotech spin off from an academic lab : inventors were doing research in the lab and created the start-up T PHARM/ inventors and the university want to bring the patent into T PHARM's assets/ they need to calculate a value for the patent

- **no revenues**
- **no WACC since they finance R&D with equity only**
- **no direct comparables**

Traditional methods are not suitable for biotechs:

- **future revenues only**
- **high risks and uncertainty in investments and revenues**

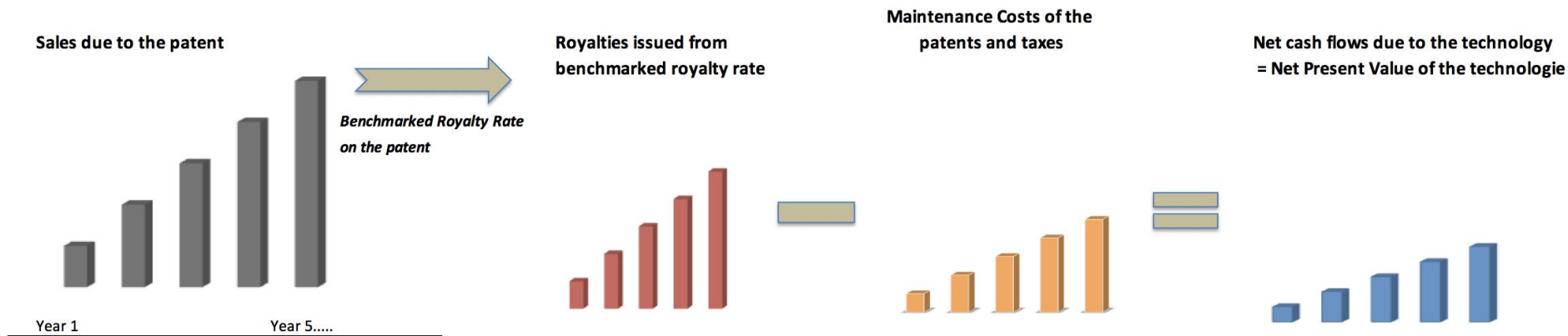
VALUING A Biotech patent - T PHARMA case II (slide 2) :

T PHARM's patent :

- **nanoparticle synthesis process blends plant extracts rich in flavonoids with gold salts**
- **These nanoparticles are used for the treatment of cancer with hyperthermia**
- **FTO (freedom to operate) is conclusive and positive**
- **Prior art is favorable no precedent**

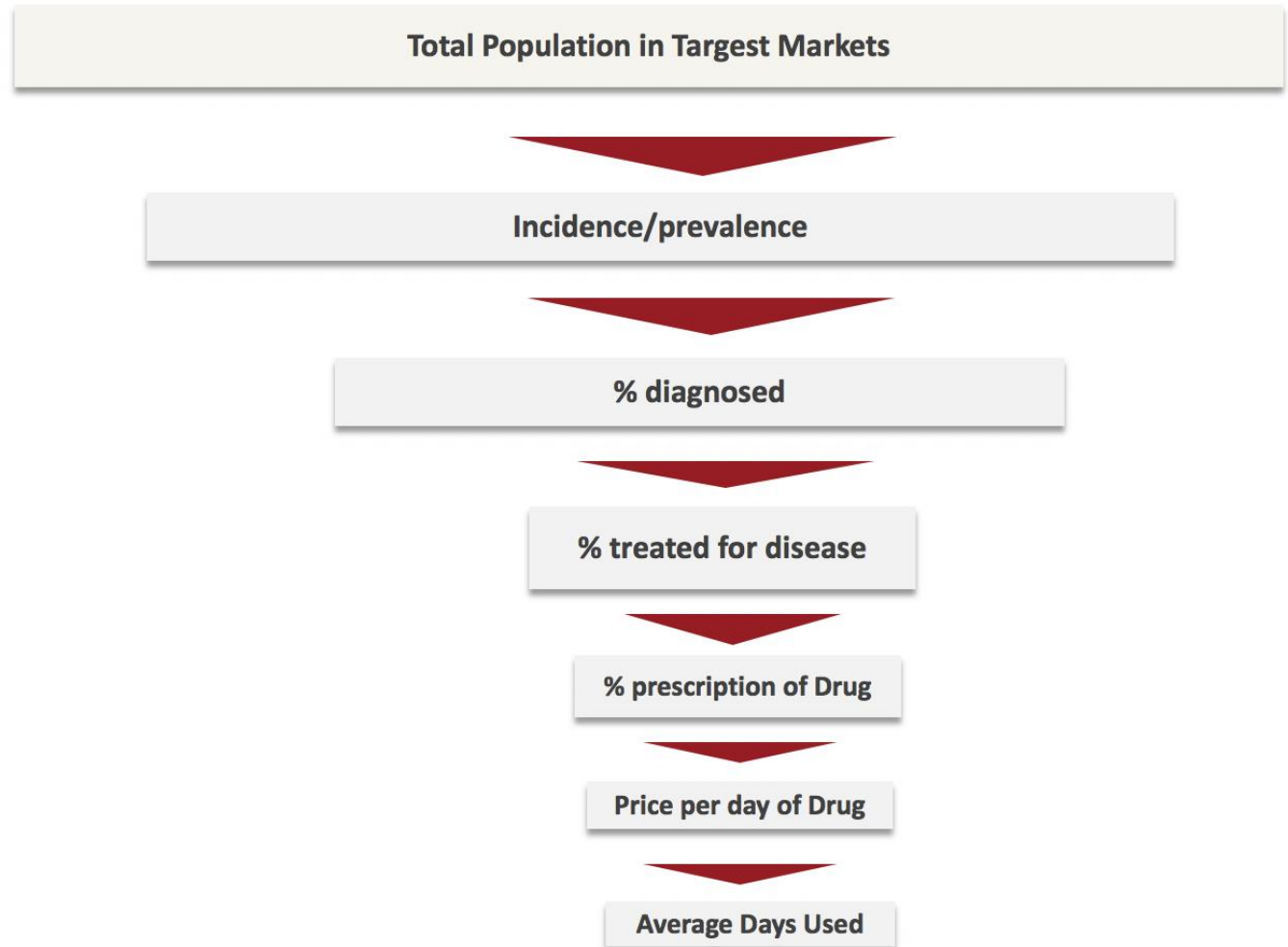
VALUING A Biotech patent - T PHARMA case II (slide 3) :

T PHARM's patent evaluation method : Royalty yields



VALUING A Biotech patent - T PHARMA

case II (slide 4) :



Prevalence :
total number of
patients at any
point in time

Incidence :
Number of New
patients each
year (used for
treatments one
time acute
event)

VALUING A Biotech patent - T PHARMA

case II (slide 5) :

Incidence :
Number of
New patients
each year
(used for
treatments one
time acute
event)

PATENT EVALUATION		Skin Cancer EU+CN+USA case					based on new cases treated only				
Increase rate	22/01/2016						2018	2019	2020	2021	2022
Years								1	2	3	4
(in €)											
Patients numbers							153 675	155 816	157 987	160 189	162 421
Growth in patients							1,4%	1,4%	1,4%	1,4%	1,4%
Diagnosis Rate							80%	80%	80%	80%	80%
Treatment Rate							10%	10%	10%	10%	10%
Nber of Patients treated							12 294	12 465	12 639	12 815	12 994
Cost of Therapy/patient/ 1year		€						10 000	10 000	10 000	10 000

VALUING A Biotech patent - T PHARMA

case II (slide 6) :

Benchmarks

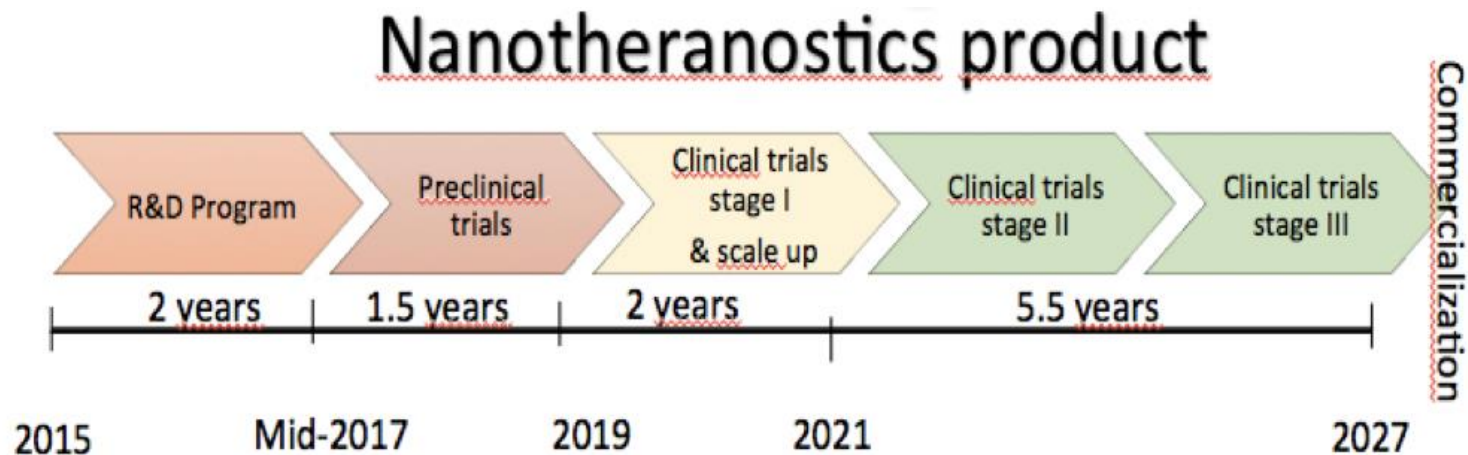
		Median			2,0%		5,0%	
Contrat N°	Technology	Agreements used for the becnhmark	Licensor	Licensee	Royalty upfront	Min Royalty %	Max Royalty %	Base
1	cancer treatment	OUI	Lerias Oy	Anthra Pharmaceuticals, Inc	\$	1,00%	12,00%	sales
2	cancer treatment	Y	FEMENIQUE Corp	Mova Labs	\$	2,00%	8,00%	net sales
3	cancer treatment	Y	OSI Pharmaceuticals	Genentech Inc	\$	5,00%	5,00%	sales
4	cancer treatment	Y	Center for Innovative Technology	Allos Therapeutics, Inc	\$	1,25%	1,25%	Sales
5	cancer treatment	Y	NeoPharm	Pharmacia & Upjohn Cie	\$	5,00%	8,00%	sales

Source : RoyaltyStats

VALUING A Biotech patent - T PHARMA case II (slide 7) :

T PHARM's patent evaluation date :

- 31th December 2018 (patent will end 22/01/2036)
- Pre-clinical trials succeeded



VALUING A Biotech patent - T PHARMA

case II (slide 8) :

Source : Bio Industry Analysis-

<https://www.bio.org/sites/default/files/Clinical%20Development%20Success%20Rates%202006-2015%20-%20BIO,%20Biomedtracker,%20Amplion%202016.pdf>

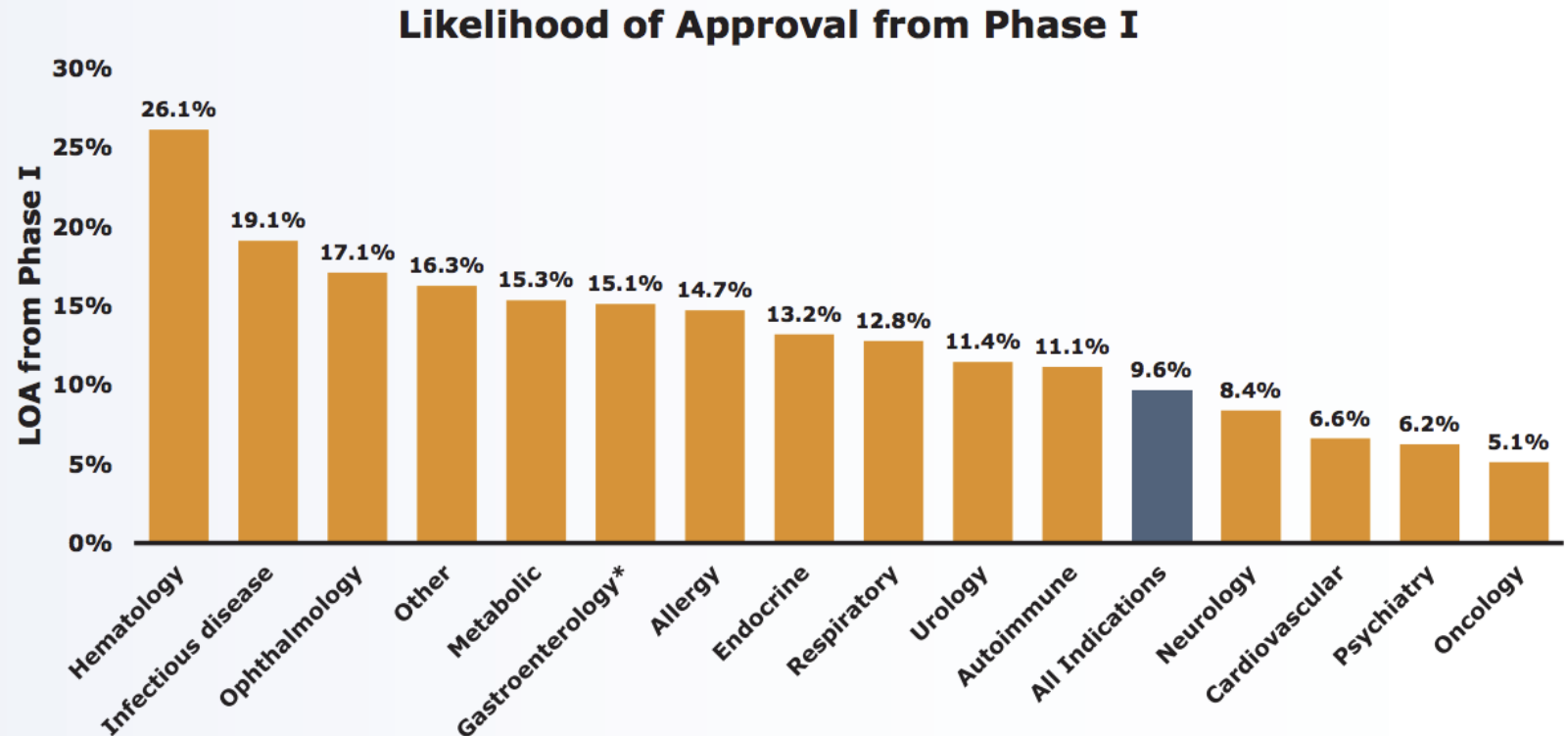


Figure 2a. Chart of LOA from Phase I, displayed highest to lowest by disease area.

VALUING A Biotech - T PHARMA case II

(slide 9) :

Patent will be brought to T PHARM's at a fair value of €342.2 K

PATENT EVALUATION		Skin Cancer EU+CN+USA case					
Increase rate	22/01/2016	based on new cases treated only					
Years		2018	2019	2027	2028	2029	2036
(in €)							
Patients numbers		153 675	155 816	174 056	176 481	178 941	197 140
Growth in patients		1,4%	1,4%	1,4%	1,4%	1,4%	1,4%
Diagnosis Rate		80%	80%	80%	80%	80%	80%
Treatment Rate		10%	10%	10%	10%	10%	10%
Nber of Patients treated		12 294	12 465	13 924	14 119	14 315	15 771
Cost of Therapy/patient/ 1year	€	10 000	10 000	10 000	10 000	10 000	10 000
Revenues from exploitation				139 245	141 185	143 152	157 712
Attrition		100%	100%	100%	100%	100%	100%
the evaluated technology		0	0	139 245	141 185	143 152	157 712
Royalty rate	3,50%						
Royalties		0	0	4 874	4 941	5 010	5 520
Patent maintenance costs		-10	-10	-15	-15	-15	-15
Revenues before taxes		-10	-10	4 859	4 926	4 995	5 505
taxes	15,00%	1,5	1,5	-729	-739	-749	-826
Investments to be done to complete the patent applications							
Cash Flow from royalties		-9	-9	4 130	4 188	4 246	4 679
time left over the year							0,058
discount rate	15,00%						
Discounted revenues		-	(7)	1 174	1 035	913	22
Pre-Estimated value for patents	6 710,5 k€						
Clinical risks	5,1%						
Estimated value for EU, CN & USA patents	342,2 k€						

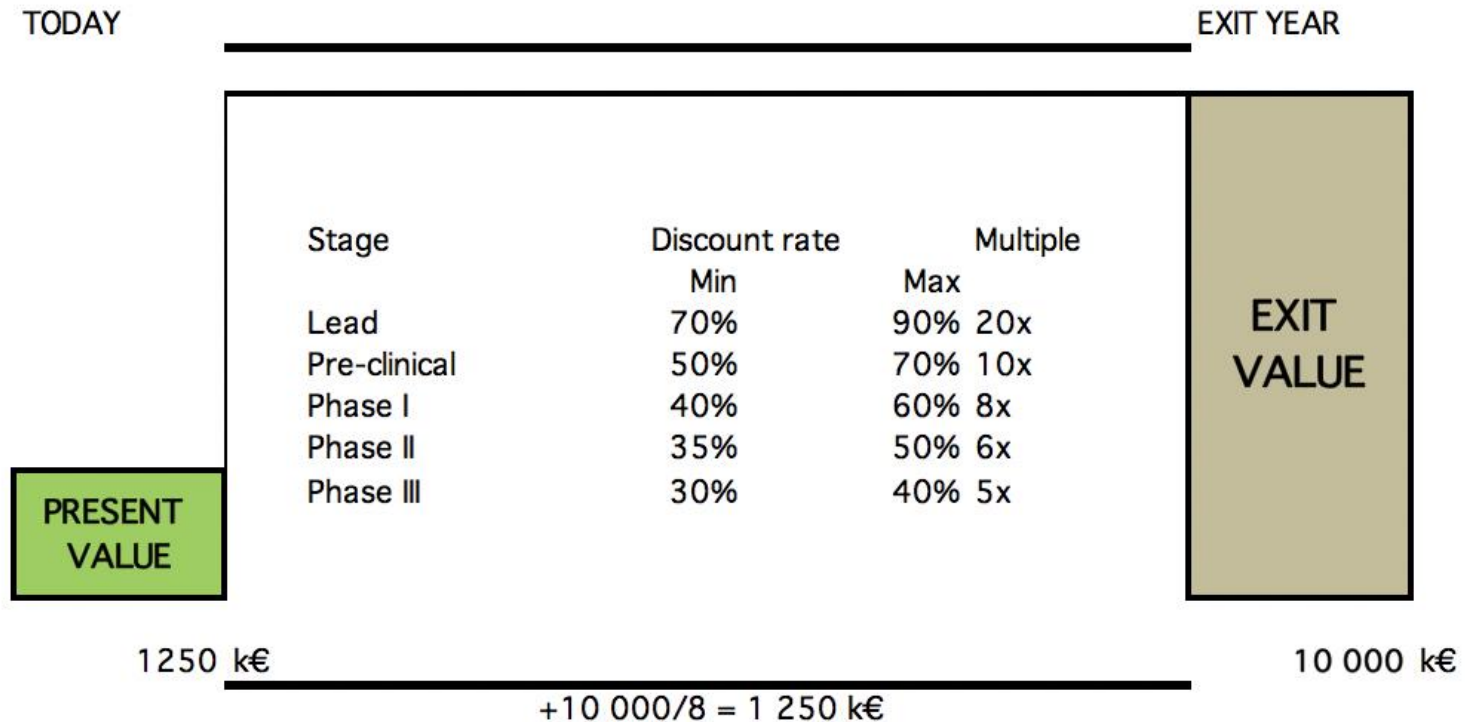
END OF CASE II

VALUING A Biotech - Usual PHARMA case

III – Venture capital method (slide 1) :

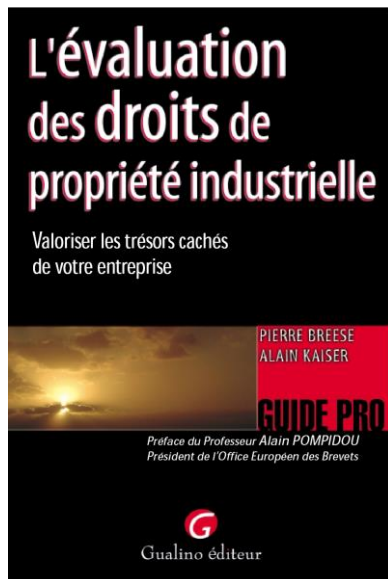
Usual PHARMA evaluation:

- Exit value of the business
- Stage determining the multiple ratio or the discount rate to apply
- Starting from the exit value and applying the multiple ratio we obtain the present value to be invested



END OF CASE III

Thank you for your attention



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« L'évaluation des droits de propriété industrielle »

Chez LEXTENSO- 2014

« L'évaluation financière des actifs technologiques »

Chez LGDJ- 2019