



**WIPO-KIPO-KWIA International Workshop for Women
Inventors and Entrepreneurs 2014**

Topic 11: Exploiting Intellectual Property Assets

Licensing 3: Valuation of IP (for licensing and assignment)

Seoul

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OPTEON

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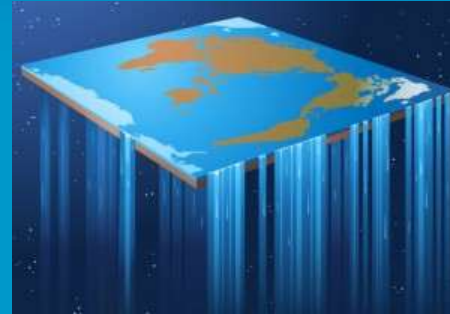
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Exploding the myths about valuing IP

- The earth is not flat
- You can't fall off the edge of the earth
- There are no such things as fairies
- There are no such things as leprechauns with a pot of gold
- There is no such thing as a 5% standard royalty
- There is no mathematical formula to value IP





Purpose of Valuing IP

- To arrive at a price to sell or buy the IP (assignment)
- To arrive at a price to rent out or rent in the IP (license)
- To place some considered amount for the value of IP on a balance sheet
- To quantify what the IP cost to produce (historical)
- To quantify what the IP would cost to produce today (replacement cost)



Outline

- Purpose of these slides
 - Is not to equip you to value IP yourself
 - Valuing IP is a highly technical and skilled art
 - Is to acquaint you with some valuation methodologies
 - Factors affecting the value of IP
 - Methods for valuing IP
 1. Historical Cost
 2. Replacement Cost
 3. Opportunity Cost
 4. Industry Standards
 5. Benchmarking / Comparable Analysis
 6. 25% Rule of Thumb
 7. Discounted Cash Flow Analysis



Preferred Valuation Methodologies

- Some types of IP particularly lend themselves to particular valuation methodologies, or have industry acceptance as the preferred method

IP type	Preferred valuation methods
Biotechnology Licensing	Benchmarking or comparables analysis Discounted cash flow Industry Standards
Biotechnology Sale	Discounted cash flow
Engineering Licensing	25% Rule
Literary work	Benchmarking or comparables analysis
Music and lyrics	Benchmarking or comparables analysis



Preferred Valuation Methodologies

- Some types of IP transactions lend themselves to particular valuation methodologies,

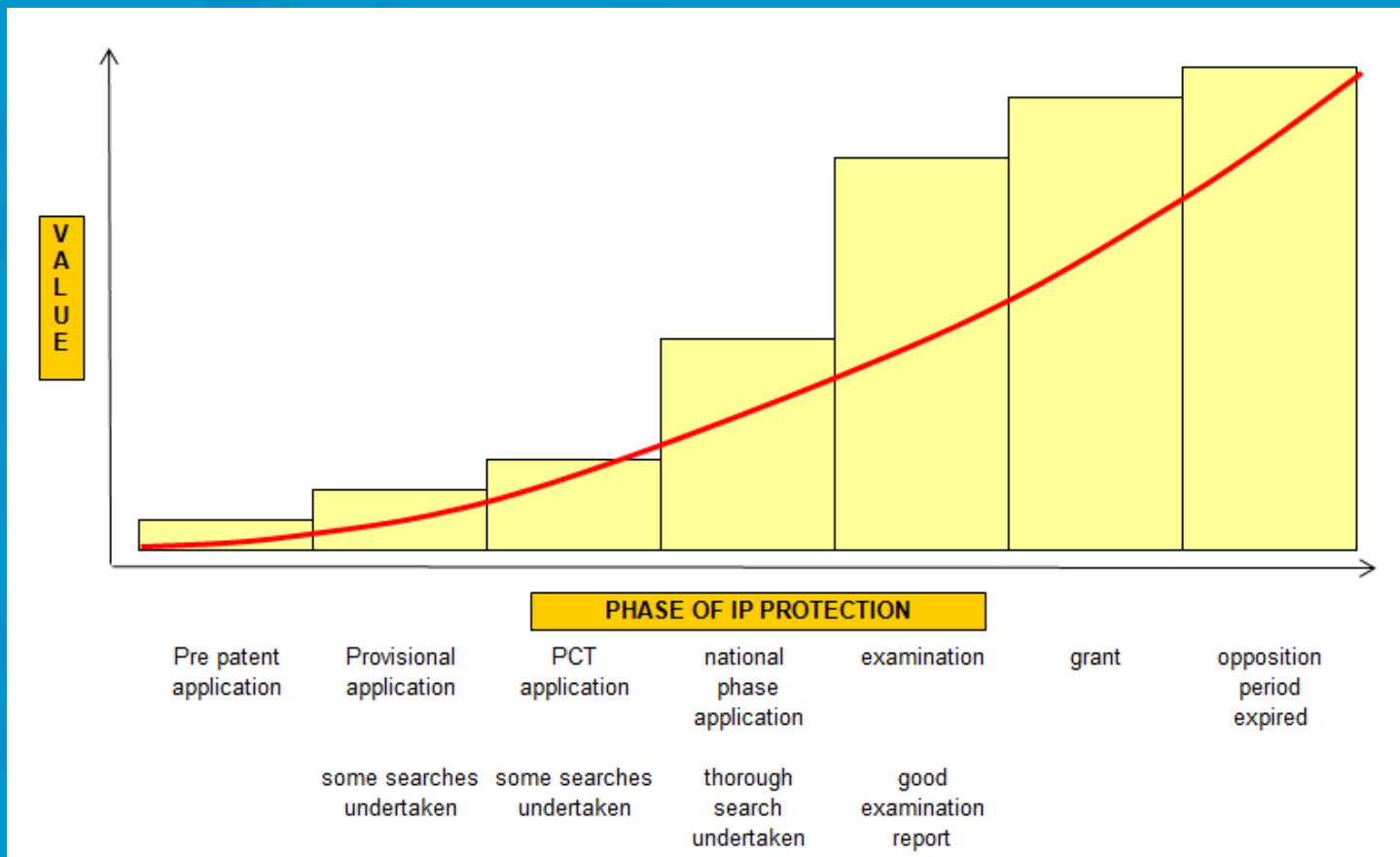
Transaction type	Preferred valuation methods
Sale of IP	Discounted cash flow Replacement Cost
Licensing of IP	Benchmarking or comparables analysis Discounted cash flow Industry Standards 25% Rule



What affects value ?

Quality of IP - IP protection

- The more advanced the protection, the greater the value





What affects value ?

Quality of IP - IP protection

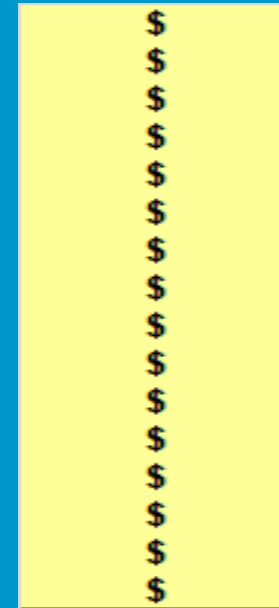
- Which has the greater value ?



Know How



Patent app *without* FTO

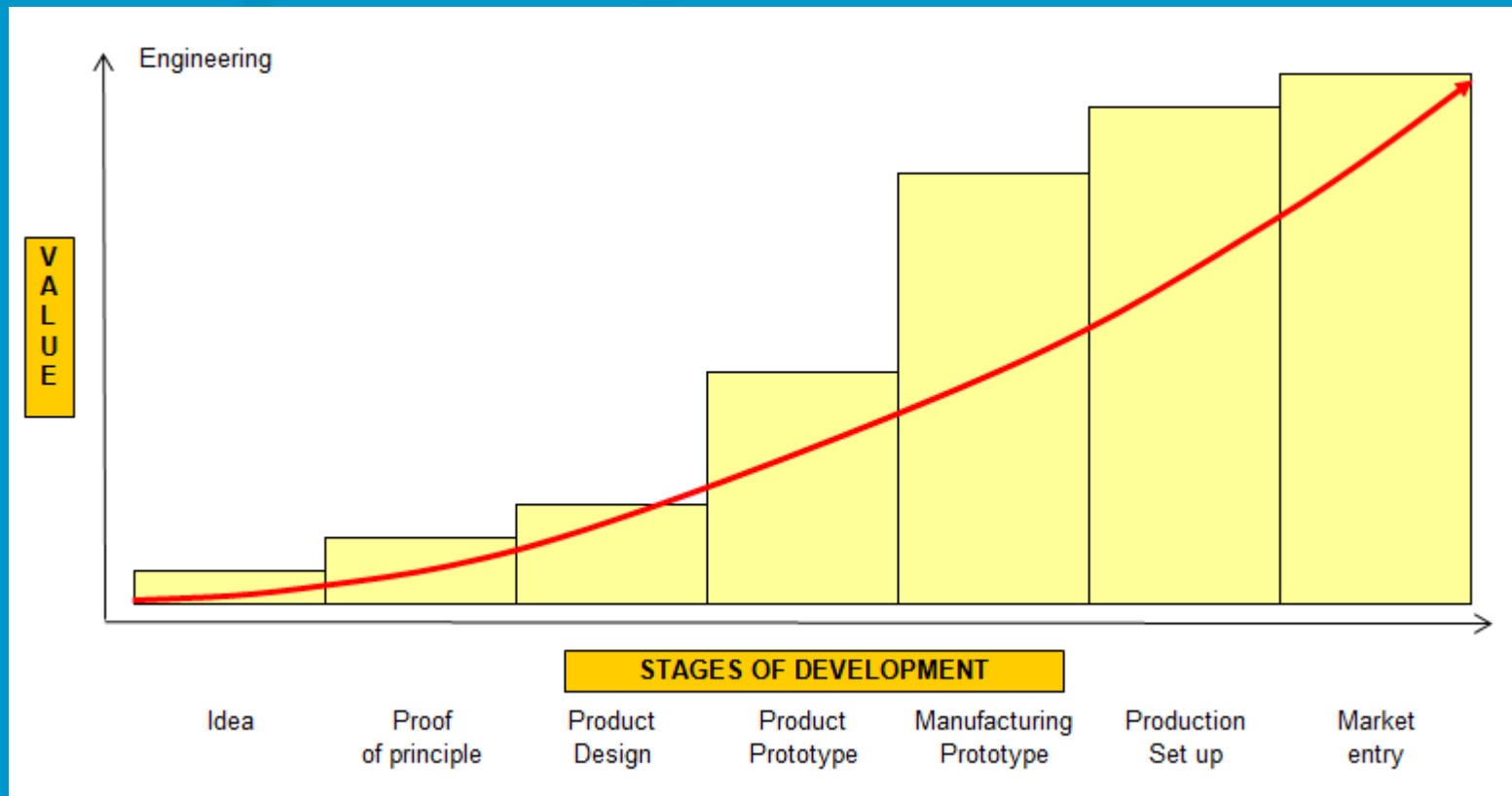


Patent app *with* FTO

What affects value ?

Risk - Value & Stage of development

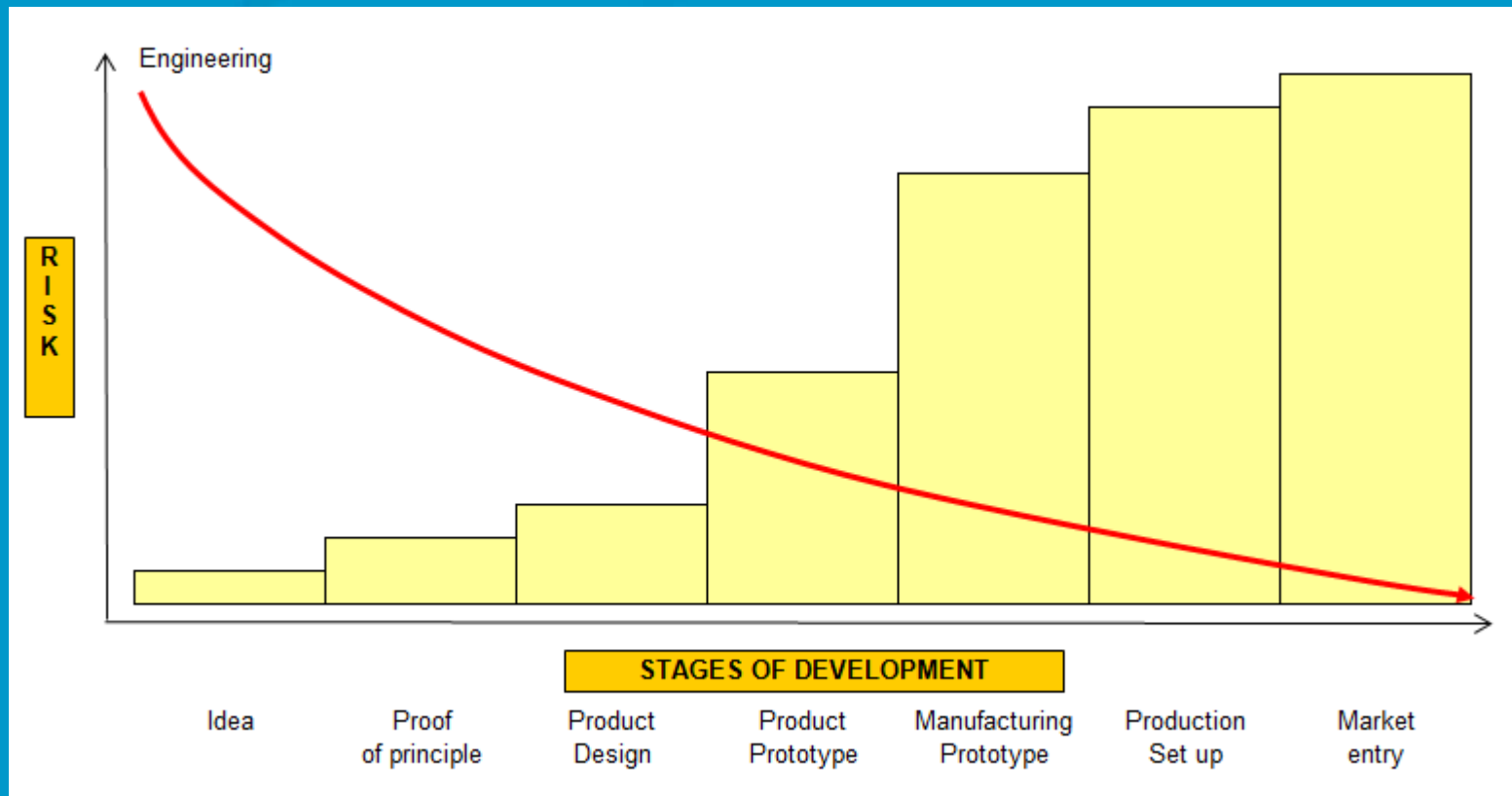
- The stage of development of the IP –
 - the more advanced the state of development the greater the value



What affects value ?

Risk - Value & Stage of development

- The state of development of the IP-
 - Since the more developed the IP is, the less risk there is in more investment

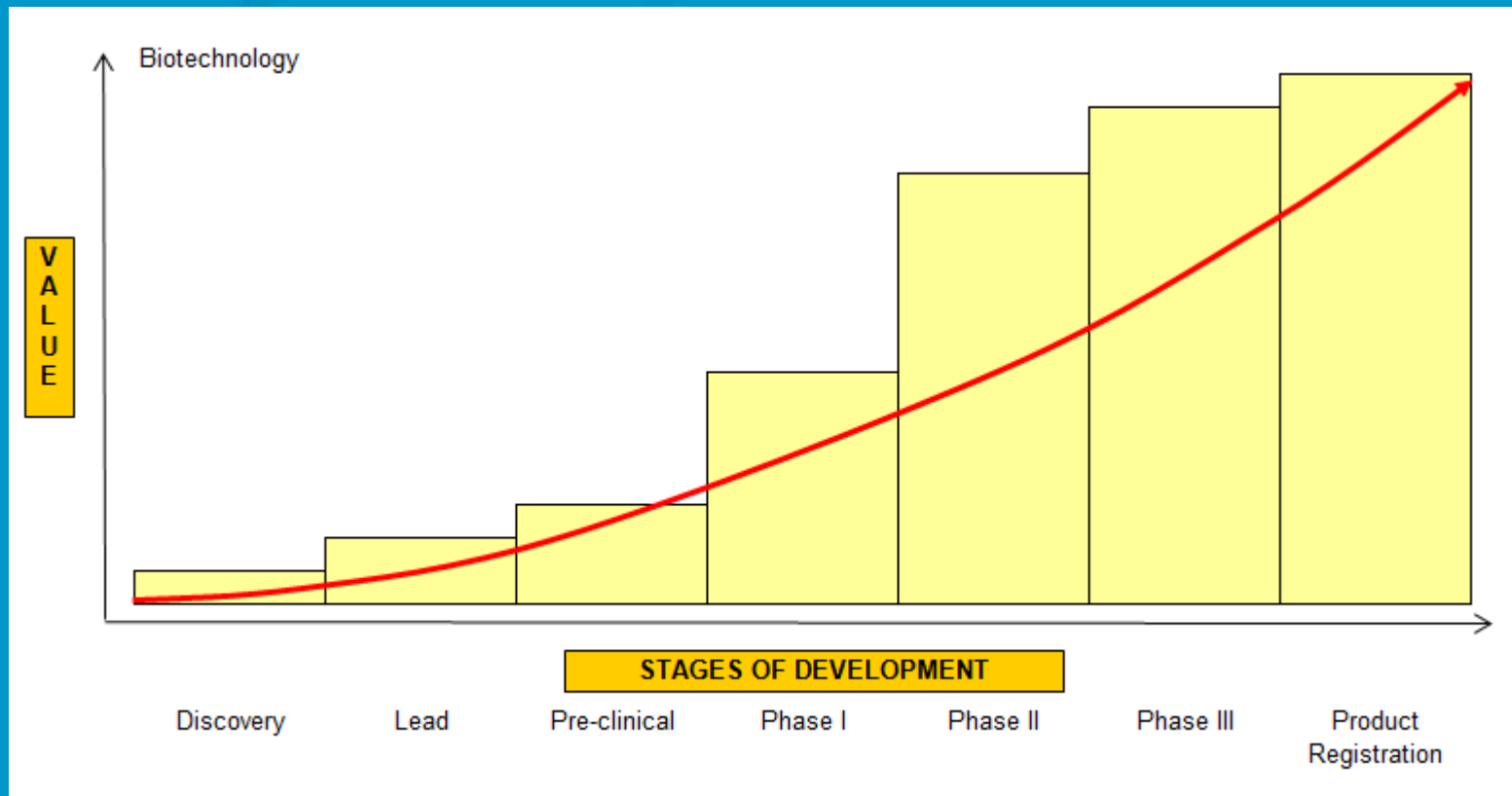




What affects value ?

Risk - Value & Stage of development

- Value analysis is the same for biotech

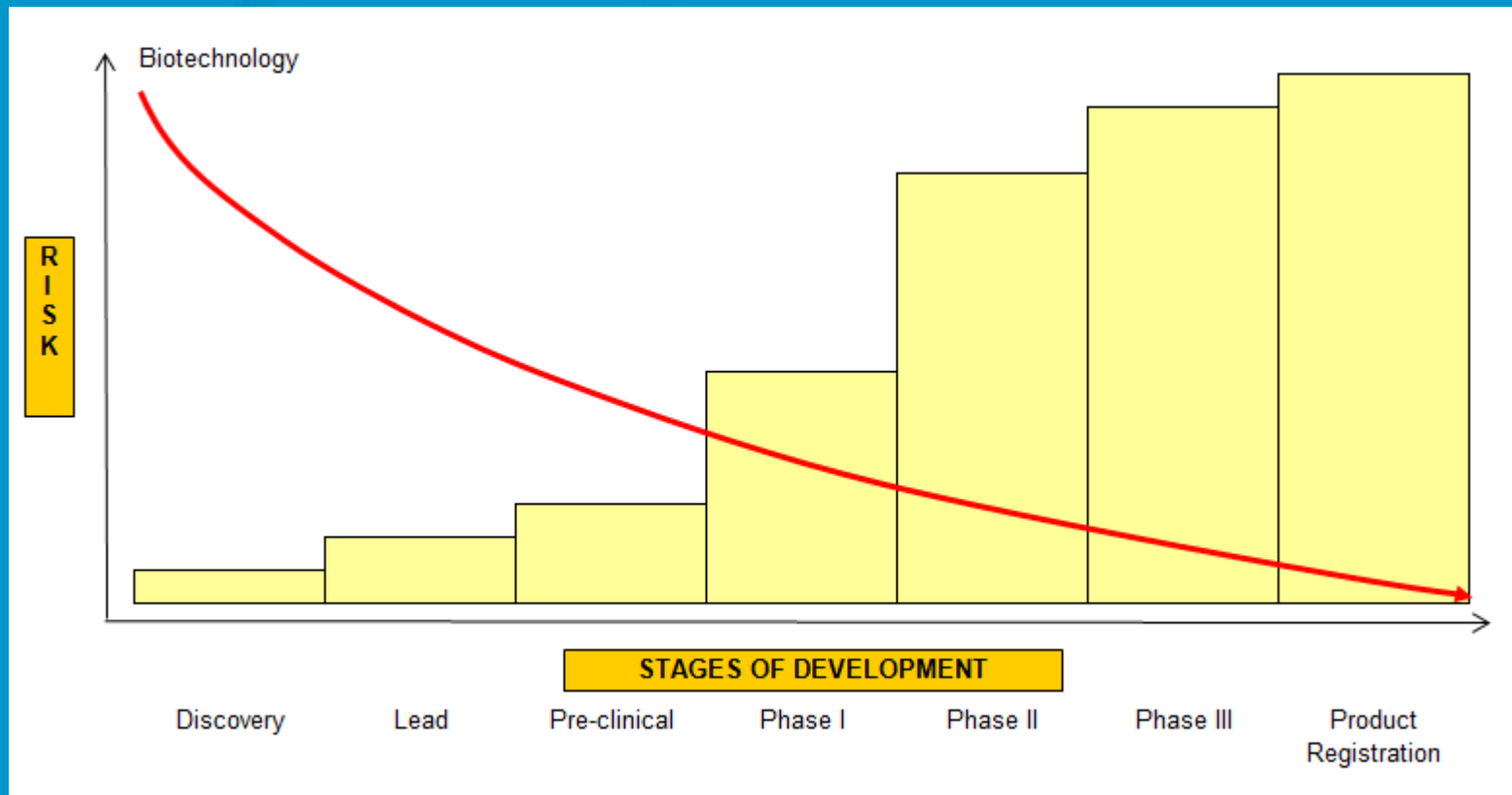




What affects value ?

Risk - Value & Stage of development

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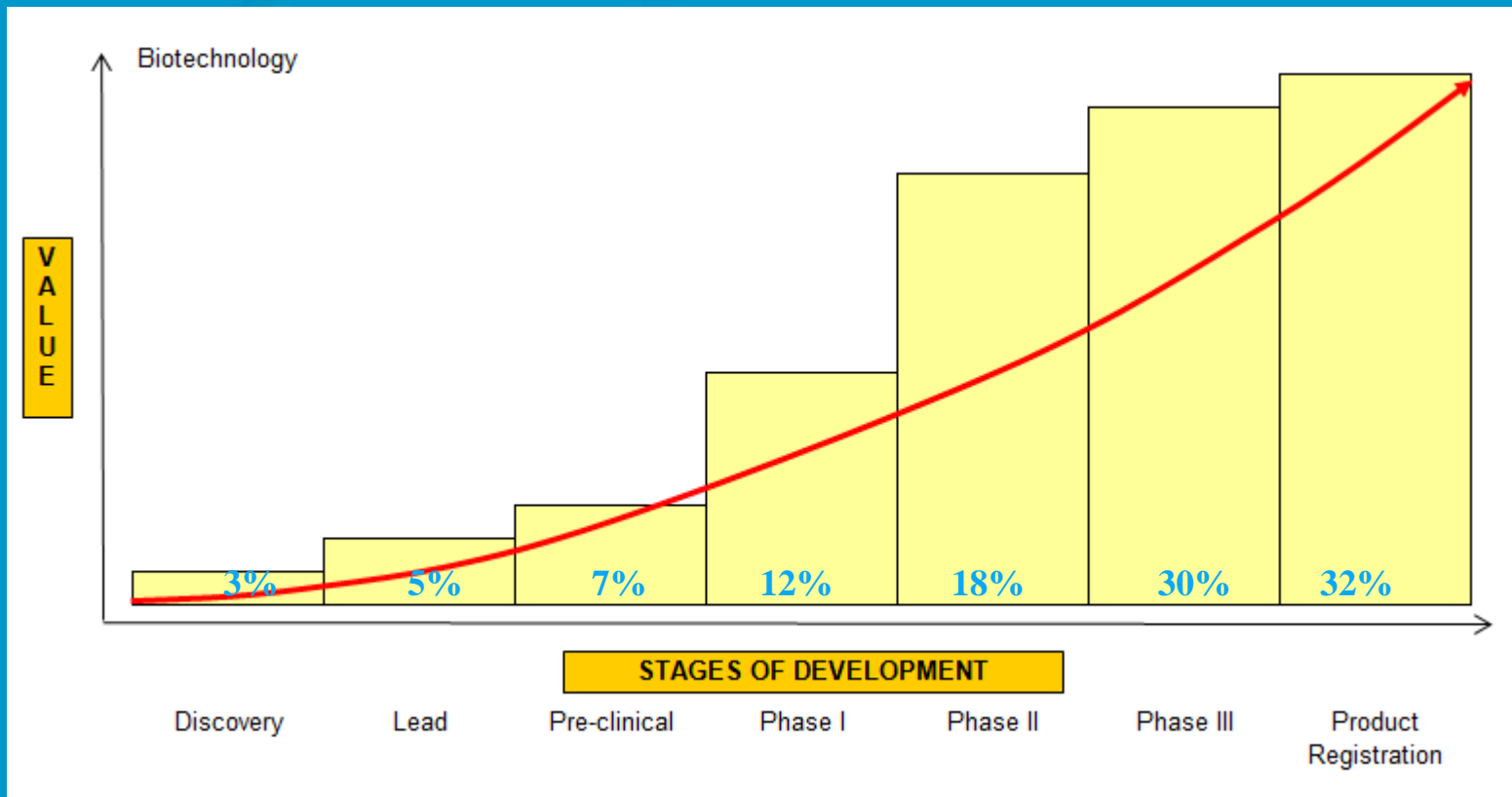




What affects value ?

Risk - Value & Stage of development

- At what stage in the development of the IP is the transaction done ?
 - The earlier the stage, the lower the value – the lesser the price





What affects value ?

Risk - Value & Stage of development

- For a Licensor to maximise the value of its IP
 - It needs to take the IP as further along the development pathway as it can
- The further the Licensor takes it along the development pathway
 - The lesser the risk associated with the licensee's development investment
 - The greater the Licensor's return should be
 - (corresponding to lower return to licensee)
 - The greater the value of the IP
- The earlier the Licensor enters into a license (or sale) transaction:
 - The greater the risk to a licensee's development investment
 - The lower the Licensor's return should be
 - (corresponding to higher return to licensee)



Historical cost

- In this valuation method, the actual cost of bringing the IP into existence is calculated:
 - Direct costs
 - Salary costs and on costs of scientists
 - Cost of consumables
 - Out of pocket expenses to
 - Contractors
 - Travel and accommodation etc
 - Indirect costs – the capital cost of infrastructure
 - Labs
 - Labs equipment
 - Library,
 - Buildings, computers, roads, administration etc



Historical cost

- My invention's historical cost is accurately assessed at \$500,000
 - Is its value \$500,000 ?
 - Is that the price that I should be willing to sell it for ?
 - Is that the price that a buyer should be willing to buy it for ?
- No to all those questions
- Value is
 - What is a willing (but not desperate) seller willing to sell for, and what is a willing (but not desperate buyer) willing to buy for ?
 - Historical cost is not that
- The market
 - Pays for value
 - Does not pay for the seller's costs
- All other valuation methods are market based



Historical cost

- What purpose does historical cost serve ?
 - Not useful to value the IP
- Historical cost is not a basis to make valuation decisions
- But historical cost may be useful as a decision making tool
- It might be
 - the basis for putting IP in the balance sheet
 - useful to know to make informed decisions
 - Useful to calculate replacement cost



Replacement Cost

- Replacement cost is the cost of replacing the IP
- Replacement cost may be the same as the historical cost, but that is unlikely
- Historical cost may be too high
 - Cost of following unproductive lines of investigation
 - Inefficiencies
 - Technological advancement in intervening years may be such that the same steps can be accomplished at reduced cost
- Historical cost may be too low
 - Inflation over time
 - Some unproductive lines of investigation may be likely to be followed



Replacement Cost

- Replacement cost may be closer to a market rate set value of IP
- Question asked by the Buyer
 - If I had to reproduce this IP what would it cost me ?
- Historical cost of IP is \$500,000
- Replacement cost of IP is fairly assessed at \$750,000
- Q: Would the buyer be prepared to pay \$750,000 for that IP ?
- A: Maybe– it might make sense to do so
- Or
 - Will the Buyer seek to pay less than \$750,000
 - Will the Seller seek more than \$750,000 ?



Industry Standards

- An industry standard is a standard price for something, set by the market
- The scope of negotiation is relatively narrow
 - A seller does not want to sell for less than the industry standard
 - A buyer does not want to buy for more than the industry standard
- Example: renting a commercial office in a business district in a specific city
- There are industry standards for rent per m² in particular grades of buildings
 - Grade A: 600 – 750
 - Grade B: 450 – 600
 - Grade C: 300 – 450
- Within Grade B there is a standard for rent depending on outgoings
 - Outgoings included: 550 – 600
 - Outgoings not included: 450 – 550



Industry Standards

- Within Outgoings included, there is a standard for rent depending on state of repair and presentation, etc
 - Well repaired and presented: 575 – 600
 - Some work required: 550 (or less) – 575
- The industry standard for a commercial office in a Grade B building, with outgoings included, well presented, is a narrow scope of \$575 to \$600
- Very little to negotiate
- Buyer's decision to choose a particular office influenced by such matters as
 - Convenience to public transport, car parking, coffee shops, restaurants
 - Convenience to colleagues
 - look, feel and style of building
 - look, feel and style of street etc



Industry Standards

- What makes this valuation methodology reliable for commercial office rent?
- Many transactions going on, all the time
- Prices in transactions are public knowledge and well known to both seller and buyer
- What is on offer can easily be compared
 - Compare a Grade A building to another Grade A Building, compare a Grade B building to another Grade B building etc
 - Compare outgoings inclusive or exclusive
 - Compare state of repair and presentation
- A lot of people know of the transactions
- Information is easily ascertainable
- Bargaining power or strength of the parties relatively small impact on outcome



Industry Standards

- Can this valuation methodology be useful to value IP ?

Leasing Office Space	Licensing IP
Many transactions	<i>Few or no transactions</i>
Financial terms public knowledge	Financial terms often not public knowledge
What is offered easily compared	What is offered difficult to compare
A lot of people know of the transactions	Few people (or no one) knows of transactions
Information easily ascertainable	Information not easily ascertainable
Bargaining power small impact on outcome	Bargaining power often a large impact on outcome



Industry Standards

- For IP: few transactions
 - Lack of knowledge of terms of few known transactions
 - Inability to compare Technology A with Technology B
 - Inability to compare state of development of two technologies
 - Etc
- Means that it is impossible to deduce an industry standard
 - (An exception is human biotechnology - discussed later)
- Therefore need to deal cautiously with various statistics and published tables of royalty rates etc
- Nice to know – but they would not influence a decision on what the value of a deal might be



Industry Standards

Royalty Rates and Successful Licensee Profits

Industry	Median Royalty Rate	Average Operating Profits	Royalty as % of Profit Rate
Automotive	5.0%	11.3%*	44.1%
Chemicals	3.0%	12.0%	25.0%
Computers	2.8%	8.3%	33.3%
Consumer Goods	5.0%	18.4%	27.1%
Electronics	4.5%	13.1%	34.3%
Energy & Environment	3.5%	9.2%	38.1%
Food	2.3%	14.2%	15.8%
Healthcare Products	4.0%	18.5%	21.6%
Internet	5.0%	10.4%	48.0%
Machine/Tools	3.4%	9.6%	35.0%
Media & Entertainment	9.0%	-13.5%*	-66.7%
Pharma & Biotech	4.5%	25.8%	17.4%
Semiconductors	2.5%	31.9%	7.8%
Software	7.5%	25.1%	21.4%
Telecom	5.0%	14.5%	34.5%
Total	4.3%	18.8%	26.6%



Industry Standards

Industry	Average	Median	Max	Min	Count
Chemicals	4.7%	4.3%	25.0%	0.1%	78
Internet (incl software)	11.8%	8.8%	50.0%	0.3%	88
Telecom (excl Media)	4.9%	4.5%	15.5%	0.4%	73
Consumer Gds, Rtl & Leis	5.5%	5.0%	28.0%	0.1%	98
Media & Entertainment	9.1%	5.0%	50.0%	2.0%	25
Food Processing	3.2%	2.8%	10.0%	0.3%	38
Medical/Health Products	6.1%	5.0%	77.0%	0.1%	376
Pharma & Biotech	7.0%	5.0%	50.0%	0.0%	458
Energy & Environment	5.0%	5.0%	20.0%	1.0%	107
Machines/Tools	5.2%	4.5%	25.0%	0.5%	90
Automotive	4.3%	3.5%	15.0%	0.5%	59
Electrical & Electronics	4.2%	4.0%	15.0%	0.5%	139
Semiconductors	4.3%	3.0%	30.0%	0.0%	75
Computers & Office Equip	5.3%	4.0%	25.0%	0.2%	73
Software	11.5%	6.8%	70.0%	0.0%	147
Industry Summary	6.40%	4.80%			1,924



Industry Standards

Licenses by Industry: Probability of Ranges

License In	0-2%	2-5%	5-10%	10-15%	15-20%	20-25%	>25%
Aerospace	50%	50%					
Automotive	52.50%	45%	2.50%				
Chemical	16.50%	58.10%	24.30%	0.80%	0.40%		
Computer	62.50%	31.30%	6.30%				
Electronics		50%	25%	25%			
Energy		66%				33%	
Food/Consumer		100%					
General MFG.	45%	28.60%	12.10%	14.30%			
Gov't/University	25%	25%	50%				
Telecommunication/Other	40%	37.30%	23.60%				

License Out	0-2%	2-5%	5-10%	10-15%	15-20%	20-25%	>25%
Aerospace		40%	55%	5%			
Automotive	35%	45%	20%				
Chemical	18%	57.40%	23.90%	0.50%			
Computer	42.50%	57.50%					
Electronics		50%	15%	10%		25%	
Energy		50%	15%	10%		25%	
Food/Consumer	12.50%	62.50%	25%				
General MFG.	21.30%	51.50%	20.30%	2.60%	0.80%	0.80%	2.60%
Gov't/University	7.90%	38.90%	36.40%	16.20%	0.40%	0.60%	
Telecommunication/Other	11.20%	41.20%	28.70%	16.20%	0.90%	0.90%	0.90%



Industry Standards Biotechnology

- These conclusions not necessarily applicable to biotechnology

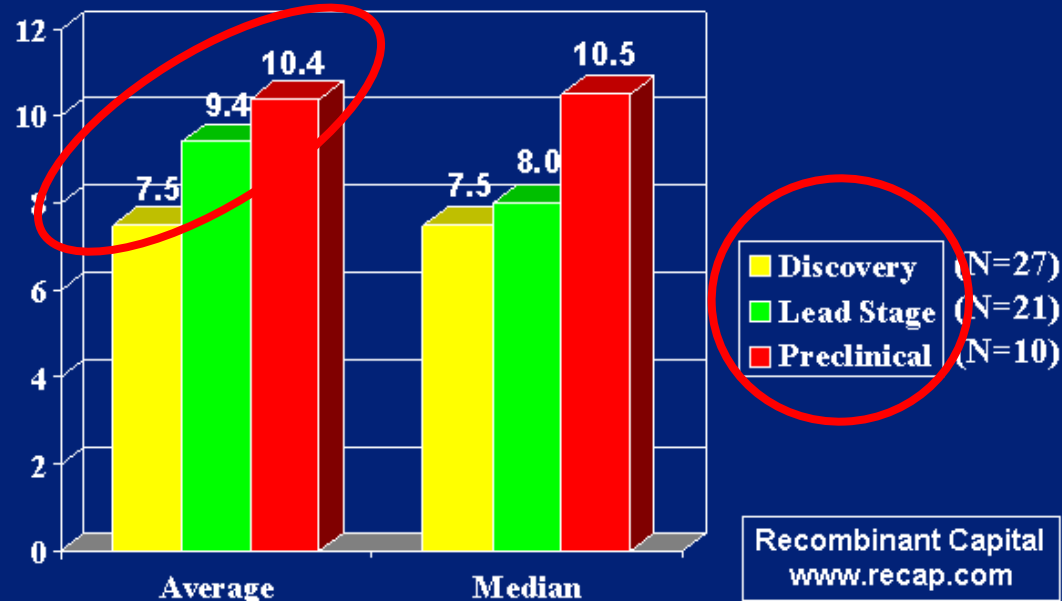
Licensing IP except biotechnology	Licensing biotechnology
<i>Few transactions</i>	<i>Many transactions</i>
Financial terms often not public knowledge	Financial terms are (or will be) public knowledge
What is offered difficult to compare	Easy to compare
Few people (or no one) knows of transactions	Everyone knows of transactions
Information not easily ascertainable	Information very easily ascertainable
Bargaining power often a large impact on outcome	Bargaining power less of an impact on outcome, given industry standards



Royalties on Therapeutic Drugs

Back-End Payments in Biotech Alliances

Average & Median Effective Royalty Rates* (N=58)



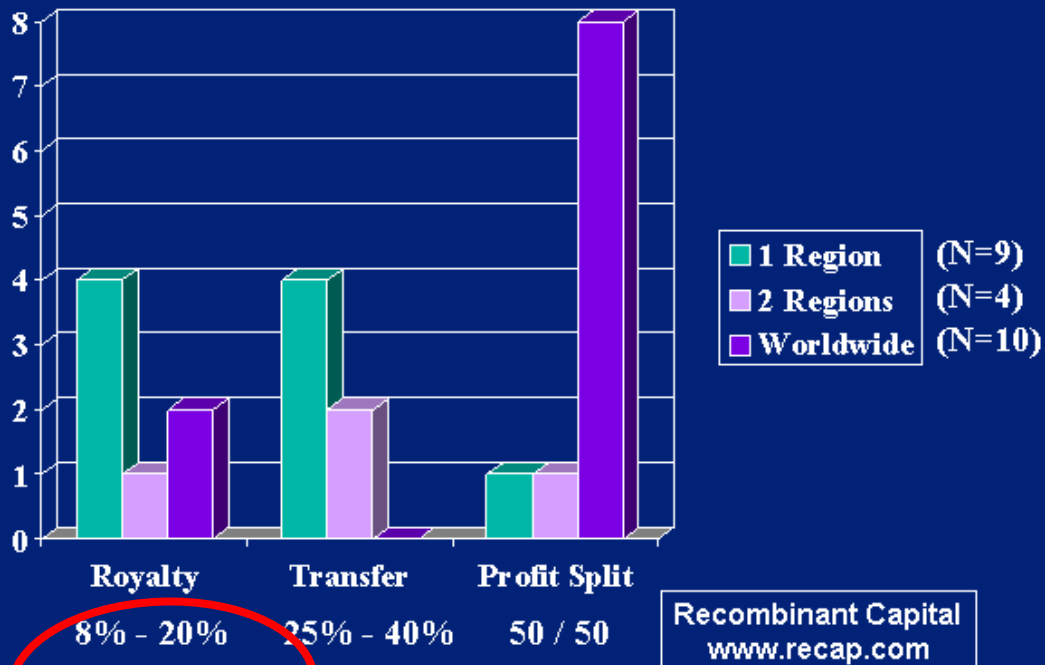
*Effective Royalty Rate Assumes \$500M in Annual Sales



Royalties on Therapeutic Drugs

Back-End Payments in Phase II Alliances

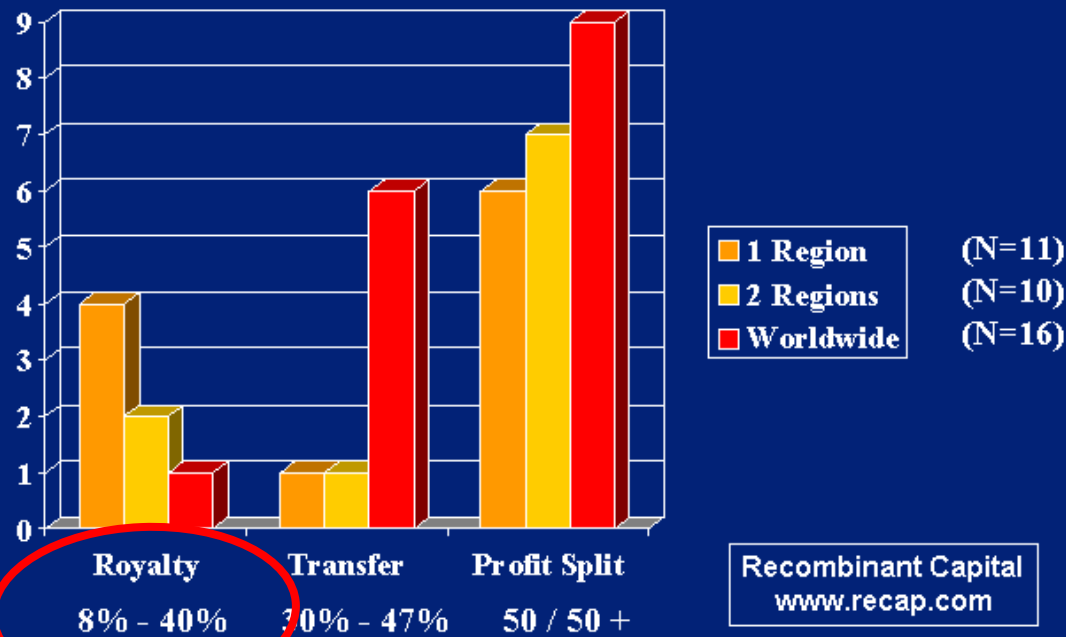
By Size of Licensed Region (N=23)



Royalties on Therapeutic Drugs

Back-End Payments in Late Stage Alliances

By Size of Licensed Region (N=37)





25% Rule

- Operation:
- Relies on a prediction of the net profit or margin
- If the sale price is changed, but the overheads remain unchanged, the royalty rate increases

Anticipated Sales Price of Product				100.00
Cost of Goods			55.00	
Administration and overhead			<u>15.00</u>	
			70.00	
Net Profit or Margin				<u>30.00</u>
25% of Pre-tax net profit				<u>7.50</u>
Royalty =	100	x	<u>7.50</u>	= 7.50%
			100.00	

Anticipated Sales Price of Product				120.00
Cost of Goods			55.00	
Administration and overhead			<u>15.00</u>	
			70.00	
Net Profit or Margin				<u>50.00</u>
25% of Pre-tax net profit				<u>12.50</u>
Royalty =	100	x	<u>12.50</u>	= 10.42%
			120.00	



25% Rule

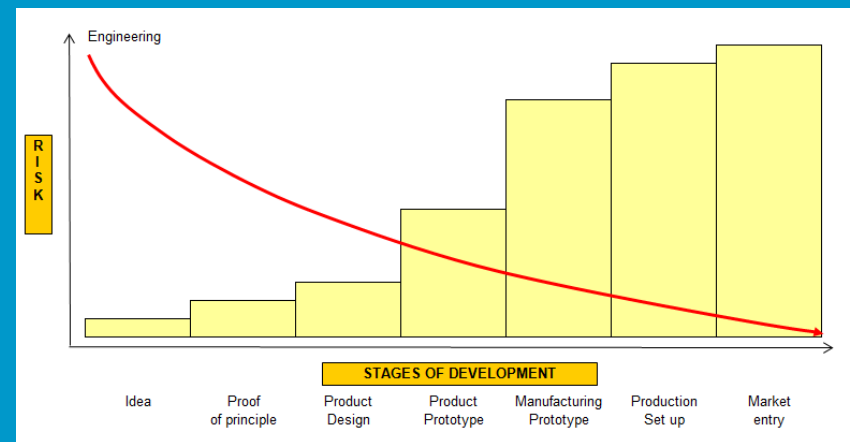
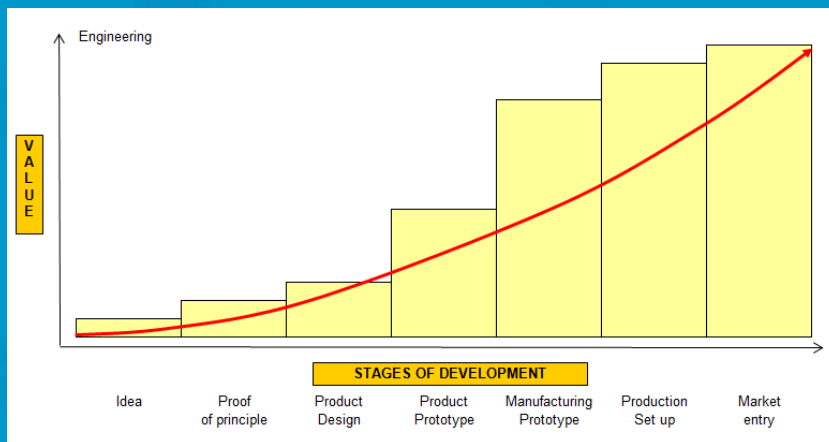
- How reliable can the 25% rule be ?
 - Only as reliable as the data used to apply it
- How is anticipated sale price to be assessed ?
 - Licensor and Licensee will be likely to assess differently
- What factors may influence the sale price over time ?
- How many assumptions are factored into a calculation of Cost of Goods
 - How reliable are those assumptions and figures ?
- How many assumptions are factored into the cost of administration etc ?

- Parties may have quite different assumptions and data
- But that is the case as well in a DCF analysis
- The more robustly it is done, the more reliable it may be



25% Rule

- Some other limitations
- Application of the rule assumes
 - a granted patent
 - Product is fully developed and market ready
- What allowance should be made for an early stage technology ?





25% Rule

- Discounting for early stage technology
- By how much should we discount?
- What factors will suggest a discount of
 - 50%
 - 60%
 - 70%
 - 80%
 - 90% ?

Anticipated Sales Price of Product		100.00
Cost of Goods	55.00	
Administration and overhead	15.00	
	<u>70.00</u>	
Net Profit or Margin		30.00
25% of Pre-tax net profit		<u>7.50</u>
Royalty =	100 x $\frac{7.50}{100.00}$	= 7.50%
Discount for early stage technology	50%	3.75%
	60%	3.00%
	70%	2.25%
	80%	1.50%
	90%	0.75%



25% Rule

- 25% Rule is a starting point
- Factors that may suggest that the result should be adjusted :
 - Decrease
 - Lack of exclusivity
 - Further R&D
 - Regulatory and compliance matters
 - A highly competitive market
 - High plant production costs
 - High marketing costs
 - Extraordinary capital expenditure that has to be incurred
 - Volatile margin
 - Increase
 - A robust patent position
 - Access to ongoing know how and trade secrets
 - R&D Program by licensor and prospect of improvements
 - Marketing networks and leads
 - Marketing assistance
 - Proven track record



25% Rule

- How reliable is it ?

“As a general rule of thumb, a royalty of 25 percent of net profits is used in license negotiations”

WL Gore and Associates v. International Medical Prosthetics, 1984

Damages awarded for infringement of Polaroid’s instant camera patent: \$909,457,567.00 represented 60% of anticipated profits

Polaroid Corp. v. Eastman Kodak Co. 1991

“This court now holds as a matter of Federal Circuit law that the 25 percent rule of thumb is a fundamentally flawed tool for determining a baseline royalty rate in a hypothetical negotiation. Evidence relying on the 25 percent rule of thumb is thus inadmissible under Daubert and the Federal Rules of Evidence, because it fails to tie a reasonable royalty base to the facts of the case at issue”

Uniloc USA Inc v. Microsoft Corp
4 January 2011



Benchmarking or Comparables

- Benchmarking or comparables
 - Something is worth \$X because something else that is similar to it achieved \$X in the market place
 - The closer the similarity, the closer to \$X
 - The further away the similarity, the further away from \$X
- This is the same principle by which real estate is valued
- All 3 houses renovated one year ago
- House on the left sold 6 months ago for \$500,000
- House on the right sold 3 months ago for \$510,000
- How much is the house in the middle worth ?





Benchmarking or Comparables

- This valuation methodology relies on
 - Locating
 - comparable technologies
 - the subject matter of comparable deals
 - the terms of those deals
 - Making an assessment of
 - the degree of similarity of
 - the technology, or
 - the market that the technology's product addresses
 - the state of development of that technology with our own technology
 - Judging the extent to which we will permit ourselves to be influenced by the terms of that deal



Benchmarking or Comparables

- Step 1 is to locate information about comparable deals
- How?
- Identify other people / companies that have similar or comparable technology
- Did they
 - develop it
 - License it out
 - License it in
 - Sell it
 - Buy it
- Ask the scientist
 - The scientist knows the relevant industry in the field of science



Benchmarking or Comparables

- Search
 - Websites of those companies
 - The press releases in those websites
 - Press release databases
 - <http://www.prnewswire.com>
 - <http://www.businesswire.com>
 - <http://www.prweb.com/>
 - <http://www.reuters.com/>
 - commercial databases
 - <http://www.medtrack.net/research/default.asp>
 - www.recap.com
 - www.royaltystat.com
 - www.royaltysource.com



Benchmarking or Comparables

- Result of search:
 - From press releases we learn:
 - That there was a deal done
 - The date of the deal
 - Name of licensor
 - Name of licensee
 - Nature of the technology licensed
 - This helps us to now
 - locate the financial terms of that deal
 - ascertain the state of development of that technology to compare it to our own



Benchmarking or Comparables

- Step 2:
- Locate the financial terms of those transactions:
 - What was the royalty rate ?
 - What up front payments were made ?
 - What milestone payments were made ?
- How do we do that ?
 - The Edgar database
 - <http://www.sec.gov/edgar.shtml>
 - <http://www.edgar-online.com/DataDocuments/SECFilings.aspx>
 - <http://freedgar.com/>
 - <http://yahoo.brand.edgar-online.com/default.aspx>
 - www.tenkwizard.com



Benchmarking or Comparables

- Searching for this data builds a picture of
 - Comparable technology
 - Different packages of financial terms achieved
- How many comparable deals do we need ?
- Would we permit ourselves to be influenced by just one comparable deal ?
 - By two ?
 - By three ?
 - By ten ?



Benchmarking or Comparables

- Step 3:
- Assess the similarities and differences between
 - Our technology
 - The technologies in those comparable deals
- Sources of information:
 - Knowledge of the scientist
 - Company's website
 - Scientific literature
 - Industry literature
 - Google



Benchmarking or Comparables

- Step 4:
- Assess all the data
- make an objective assessment of the extent to which we will permit ourselves to be influenced

- Greater the similarities, the more we may permit ourselves to be influenced
- More distant the similarities, the less we may permit ourselves to be influenced, if at all

- Be guided by the data to make an objective assessment of the ranges for
 - royalty rate
 - up front payments
 - milestone paymentsfor our own technology



Risk Adjusted Discounted Cash Flow

- Methodology is based on the income approach
 - that is, the value of IP is directly related to the income (profits) that the IP can generate
- High profits = high value
- Low profits = low value
- Everything that affects income (profits) needs to be factored into the calculation

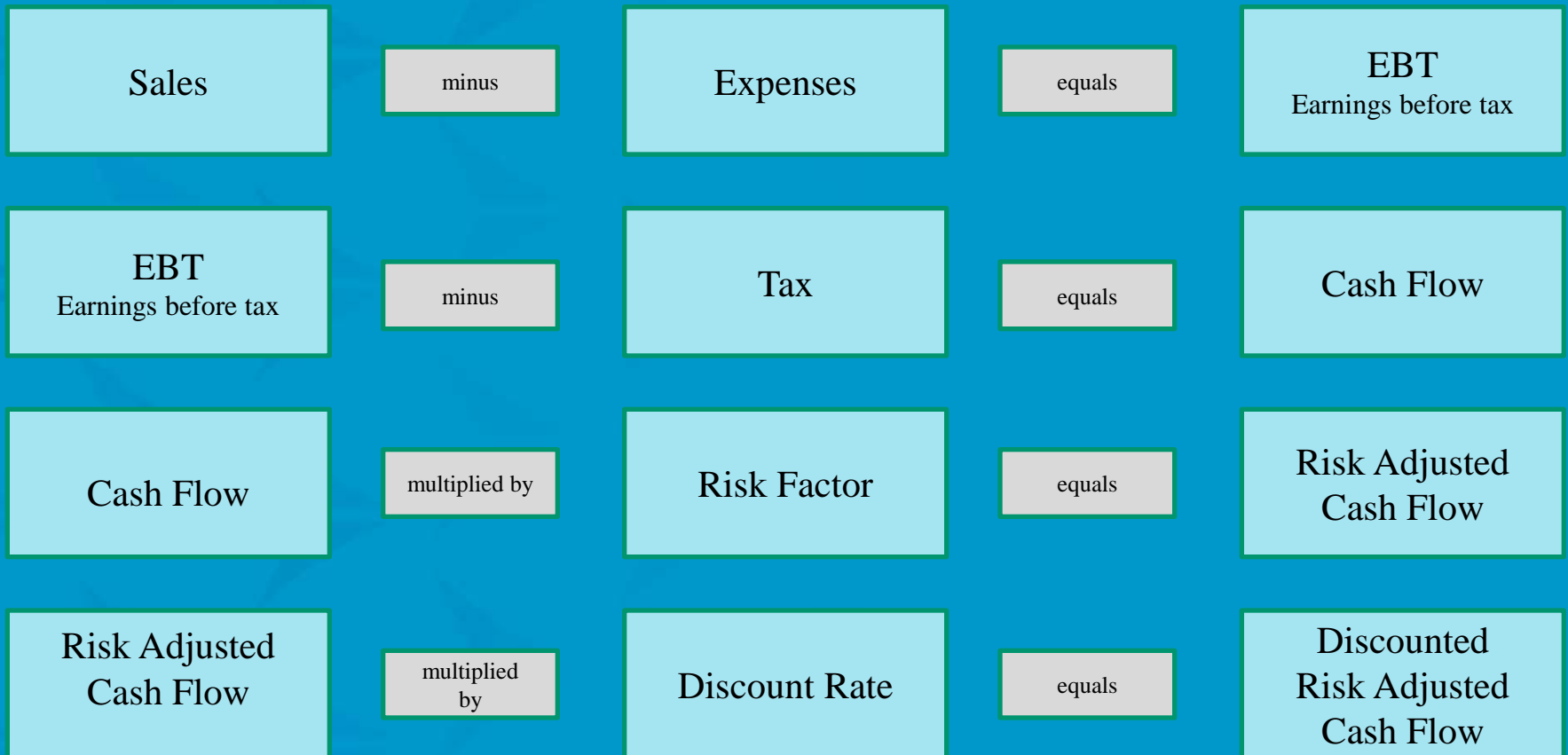


The DCF Formula, in simple terms

- Earnings:
 - Gross proceeds of sales of products
 - Less all the expenses incurred to generate those sales
 - For the remaining life of the patent
- Multiplied by a discount rate
 - To arrive at a present value for that future income
- Multiplied by risk
 - Ie the risk that those earnings may not be realised



Discounted Cash Flow Formula





Discounted Cash Flow Formula

Value of IP = Profit you can make from exploiting the IP

Value of IP = Revenue

less Costs

less Tax

x Risk

x Discount Rate

Value of IP = (Revenue - Costs - Tax) x Risk x Discount Rate



Discounted Cash Flow Sales

- Market Size
- How many consumers ?
 - are there now
 - will there be in the future
- What is published information on the above ?
- What published information might be useful to extrapolate ?
- How many patients are there ?
 - What alternative forms of treatment are there ?
 - True market size for a drug is after other taking into account other forms of treatment



Discounted Cash Flow Sales

- Market Share
 - How many competing products are there now ?
 - How many competing products might there be in the future ?
 - What data / reasoning supports those assumptions ?

- Is there something about this product that makes it superior so as to expect a larger market share than competitors ?
 - Better performance
 - Less side effects
 - Better delivery method

- Is there something about this product that makes it inferior but which also supports a larger market share ?
 - can it be made and sold at a lower price ?



Discounted Cash Flow Price

- What price will the product sell for ?
 - What is the price of similar products in the market now
 - Our product will have to compete with those products, and their price
 - Best guide for price is what is already in the market

- Is Our product superior ?
 - Will it be able to command a premium component in the price ?

 - Is the market price sensitive, so that product superiority cannot command a premium price ?



Discounted Cash Flow Expenses

- Anticipate the expenses

- Expenses before a first sale
 - More R&D Costs / regulatory costs ?
 - Pilot plant
 - Manufacturing plant
 - Administration

- Expenses after sale
 - Cost of goods
 - Dynamically – will costs of materials, components etc change over time ?
 - Marketing
 - Administration
 - Etc

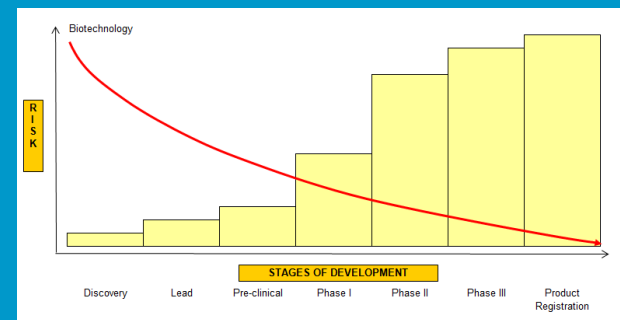
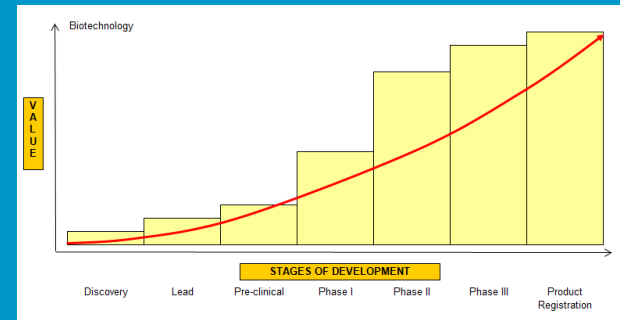


Discounted Cash Flow Risk

- What is a probability factor ?
- A calculation of the likelihood or otherwise of a product successfully passing through its development phases and entering the market place
- Many statistics on the success / failure rate of products through clinical trials

Success / attrition rates of all pharmaceutical products

	Number	Attrition	Success
Phase I	100	25	75
Phase II	75	39	36
Phase III	36	13	23





Discounted Cash Flow Risk

- What is the risk that there will be technical failure ?
- Or, put another way - what is the probability of market entry ?
- Value = (Revenue – Costs) x probability of success
- Revenue = 200
- Cost = 50
- Probability = 30%
- Value = $(200 - 50) \times 30/100$
- Value = $150 \times 30/100$
- Value = 45



Discounted Cash Flow

Discount rate

- Money has a time value
 - \$1 today is worth more than \$1 tomorrow;
 - \$1 tomorrow is worth less than \$1 today.
- Why ?
 - Inflation and interest
- If a deal has a value of \$100m over 20 years – what is its value today ?
 - It must be less than \$100m
 - But how much less ?
- A discount rate provides the basis of an answer



Discounted Cash Flow

Discount rate

- I have \$100
- I can invest it for 10%
- What will it be worth in one year's time ?

$$\begin{aligned}\text{Future Value} &= \text{Present Value} \times (1 + \text{interest}) \\ \text{FV} &= \text{PV} \times (1 + 0.10) \\ &= 100 \times 1.1 \\ &= 110\end{aligned}$$



Discounted Cash Flow

Discount rate

- I want \$110 in a year's time
- Interest is 10%
- What amount do I need to invest today ?

$$\begin{aligned} \text{Present Value} &= \text{Future Value} / (1 + \text{discount rate}) \\ \text{PV} &= \text{FV} / (1 + 0.10) \\ &= 110 \times 1.1 \\ &= 100 \end{aligned}$$



Discounted Cash Flow

Discount rate

- The discount rate is the opposite of interest
 - Interest is used to calculate the future value of an amount of money you have today
 - A discount rate is used to calculate the present value of an assumed future amount of money
- Discount can be used:
 - Solely to take into account present value of money
 - That, plus the opportunity cost of capital being tied up
 - Both, plus factor in risk as well



Discounted Cash Flow Risk as well as Discount rate

- What is right discount rate ?

If	Use
Solely to factor in time	5-8%
Time and Opportunity Cost of tied up capital	13-20%

Requires Venture Capital for:	Use
New product - existing manufacturing capability - known technology	25-35%
New product and technology for existing business	30-40%
New business, new product, past seed funding	40-50%
New business, new product, at seed funding stage	50-70%



Discounted Cash Flow

Use in setting license terms

- Based on where along that curve the IP sits at the time of the deal, will influence how the amount of \$58 million is to be fairly shared between the licensor and licensee

Value Sharing		
	Licensor	Licensee
	%	%
Discovery	17.6	82.4
Pre-Clinical	20.1	79.9
IND = Phase I	20 - 40	60 - 80
Phase 11b / III	40 - 60	40 - 60
FDA approval	60 - 80	20 - 40

Source:
Valuation in Life Sciences p 196, p 152
B Bogdan, R Villiger



Discounted Cash Flow

Use in setting license terms

- How does a proportion of \$58 million translate into royalties and other license financial terms?
- Assume Licensor and Licensee share the value 40:60
- 40% of \$58 million to Licensor is \$23 million
- Not as a lump sum
- But as value over time (with the prospect of greater value if there is success)

Value Sharing		
	Licensor	Licensee
	%	%
Discovery	17.6	82.4
Pre-Clinical	20.1	79.9
IND = Phase I	20 - 40	60 - 80
Phase 11b / III	40 - 60	40 - 60
FDA approval	60 - 80	20 - 40

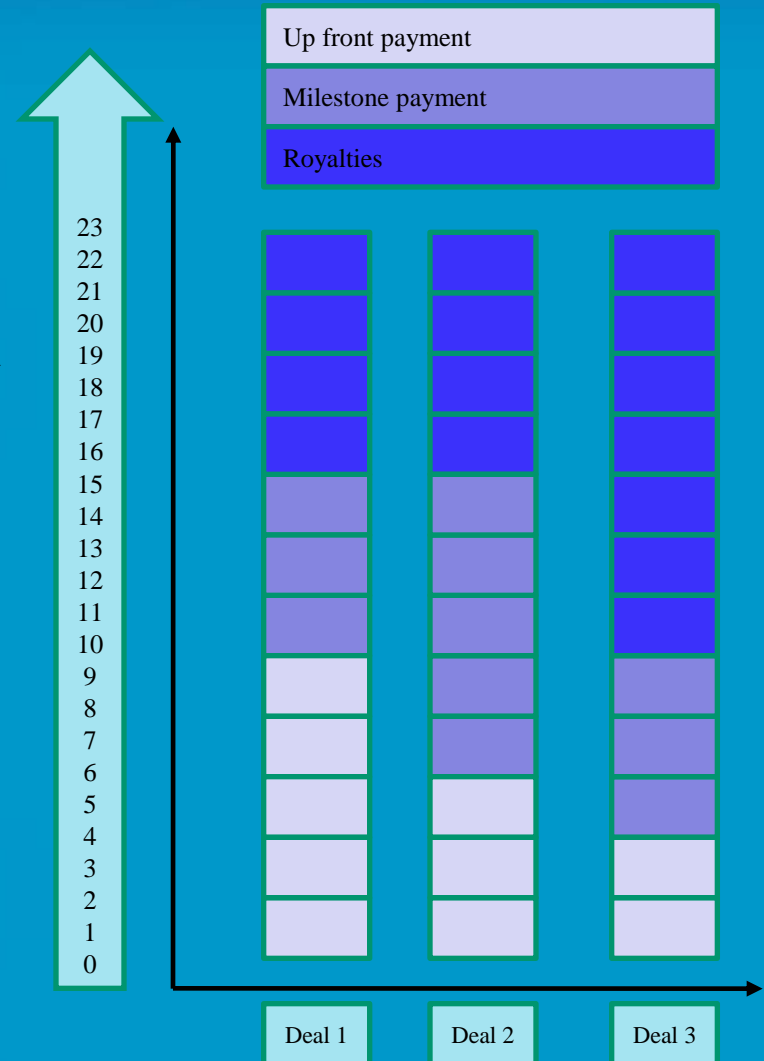
Source:
Valuation in Life Sciences p 196, p 152
B Bogdan, R Villiger



Discounted Cash Flow

Use in setting license terms

- Three transactions
- all worth the same amount - \$23 million
- But they are each fundamentally different
- Deal 1 has an emphasis on up front payment
- Deal 2 has an emphasis on milestone payments
- Deal 3 has an emphasis on royalties
- But all have the same present value
- More of one component means less of another





Discounted Cash Flow

Is it all worth the trouble ?

- Q: Is it worth the trouble doing a DCF analysis?
- A: Whether we think it's a black art or not, that approach is invariably taken in a global licensing deal:
 - Step 1: Value the IP using a DCF analysis
 - Step 2: How much of that value should a licensor get ?
 - Step 3: How should that licensor's proportion be made up ?
 - That is, as between up front payments, milestone payments, and royalties
- If the other party does that analysis, and uses that analysis in a negotiation, *and it will*, a licensor will be disadvantaged in the negotiation if it does not undertake a similar analysis