MELNIK Oded Business Advisory Ltd.

20 Minutes on IP Valuation

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11 June 2013

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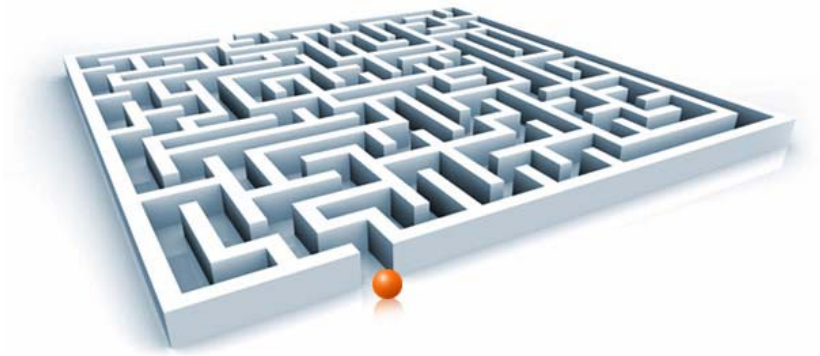
Agenda

- Valuation Approaches
- Price and Value – the Endowment Effect
- Real Options
- Valuation Methods – in Practice
- Patents Valuation



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Valuation Approaches

- Cost
- Market
- Income

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Income Approach – Example:

- A 

company
- Expected EXIT – **5** years
- Future value upon EXIT **- $100m**
- High risk ➔ Discount Rate = **60%**

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Income Approach

$$PV = \frac{FV\ (\$100M)}{[1 + Discount\ Rate(60\%)]^{Years\ till\ Exit\ (5)}} = \$9.5M$$

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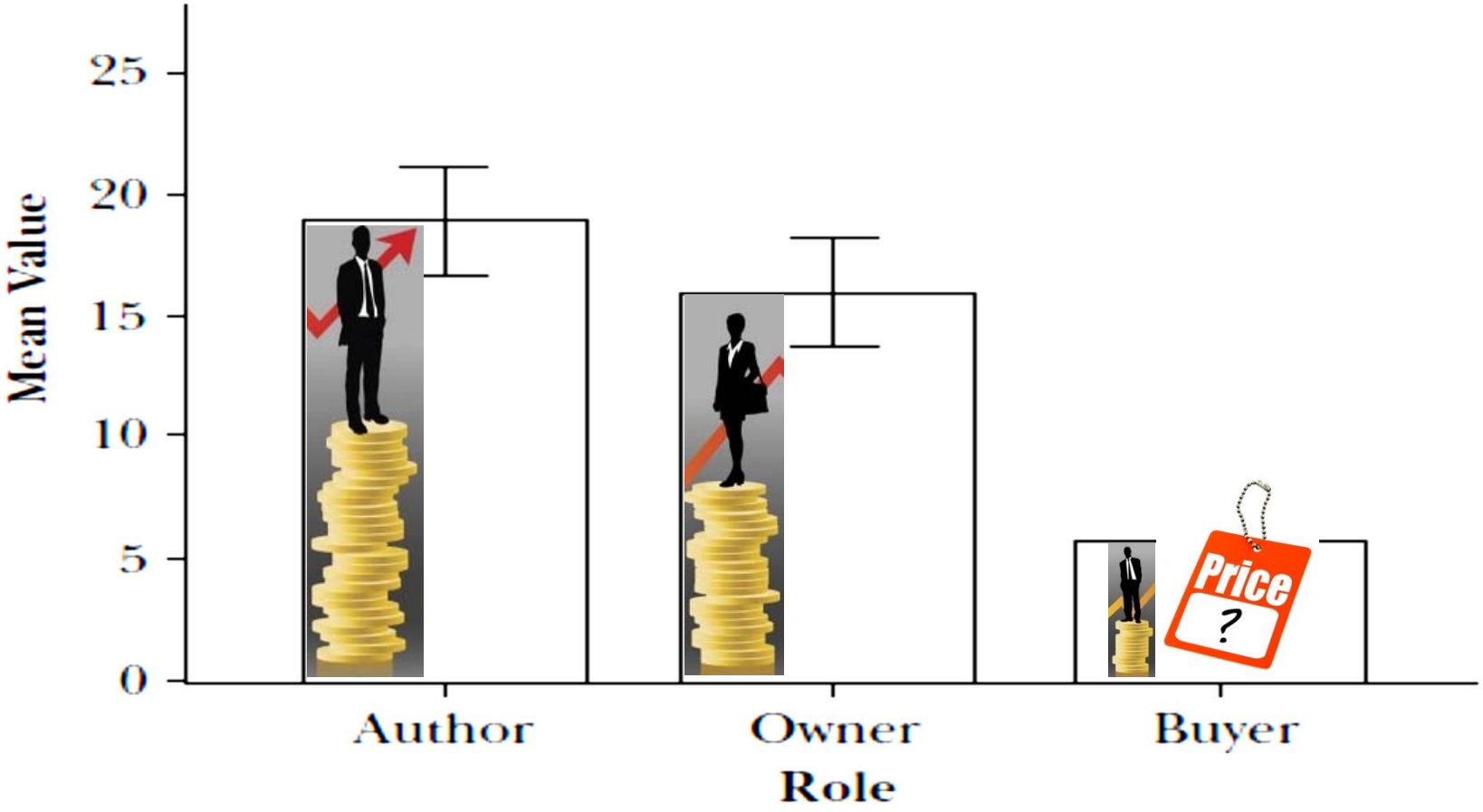
Price & Value

- **Price –** What one pays for an asset

- **Value –** An estimation of the price to be paid for an asset.

The Endowment Effect



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Methods for Valuing Bio-Med Enterprises

- Discounted Cash Flow (DCF)
- Risk Adjusted Net Present Value (rNPV)
- Real Options (RO)
- Comparables (Comp.)

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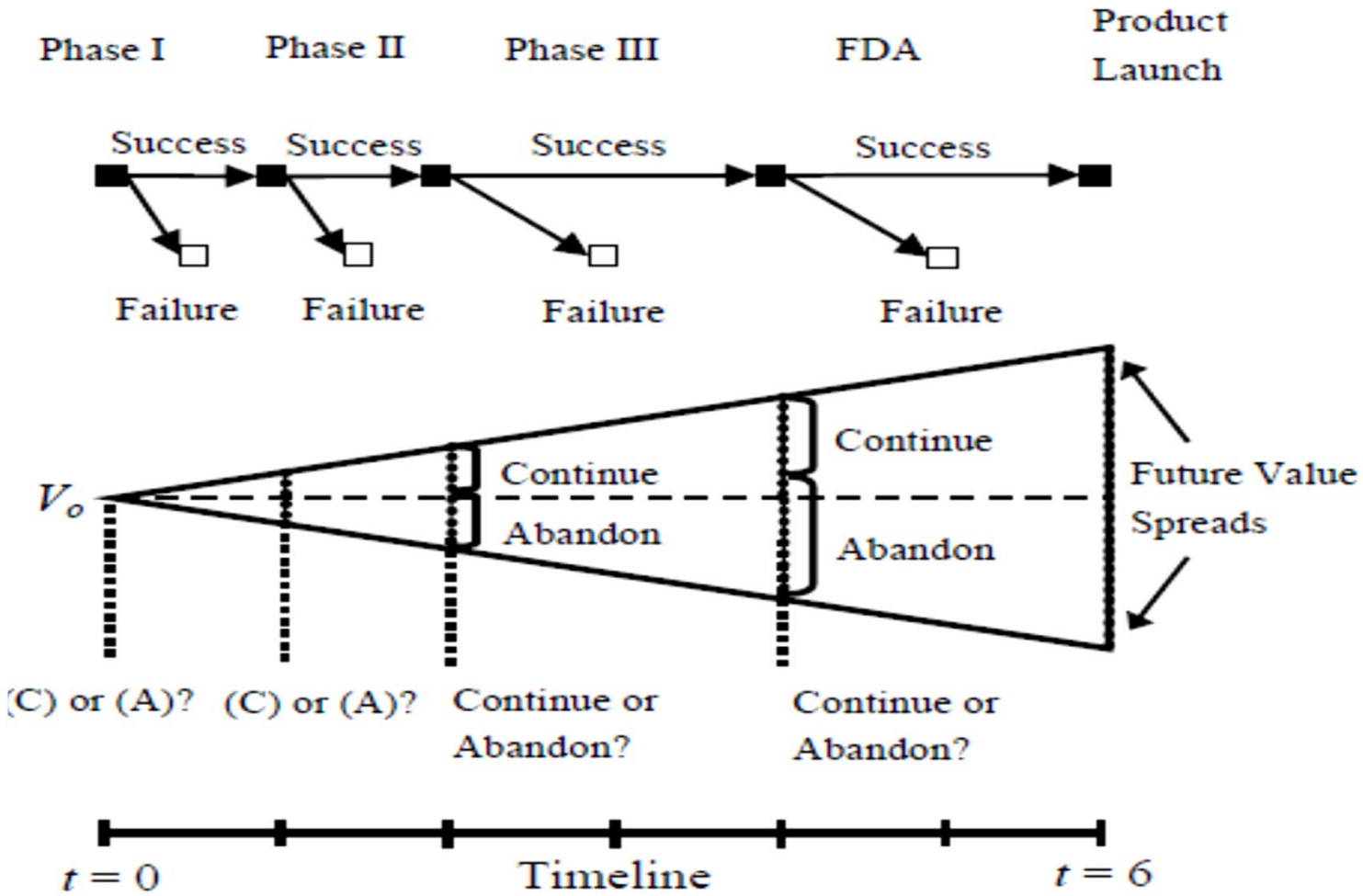
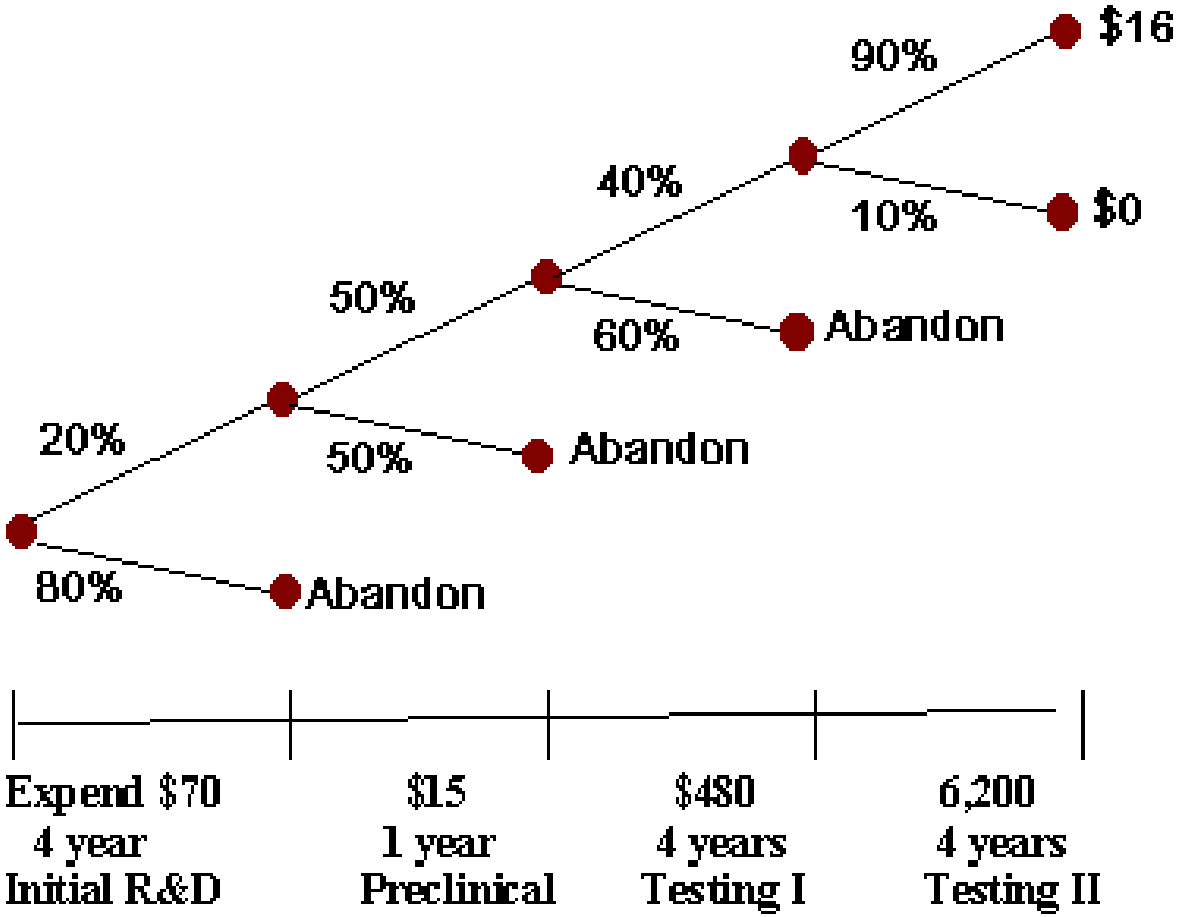
Real Options



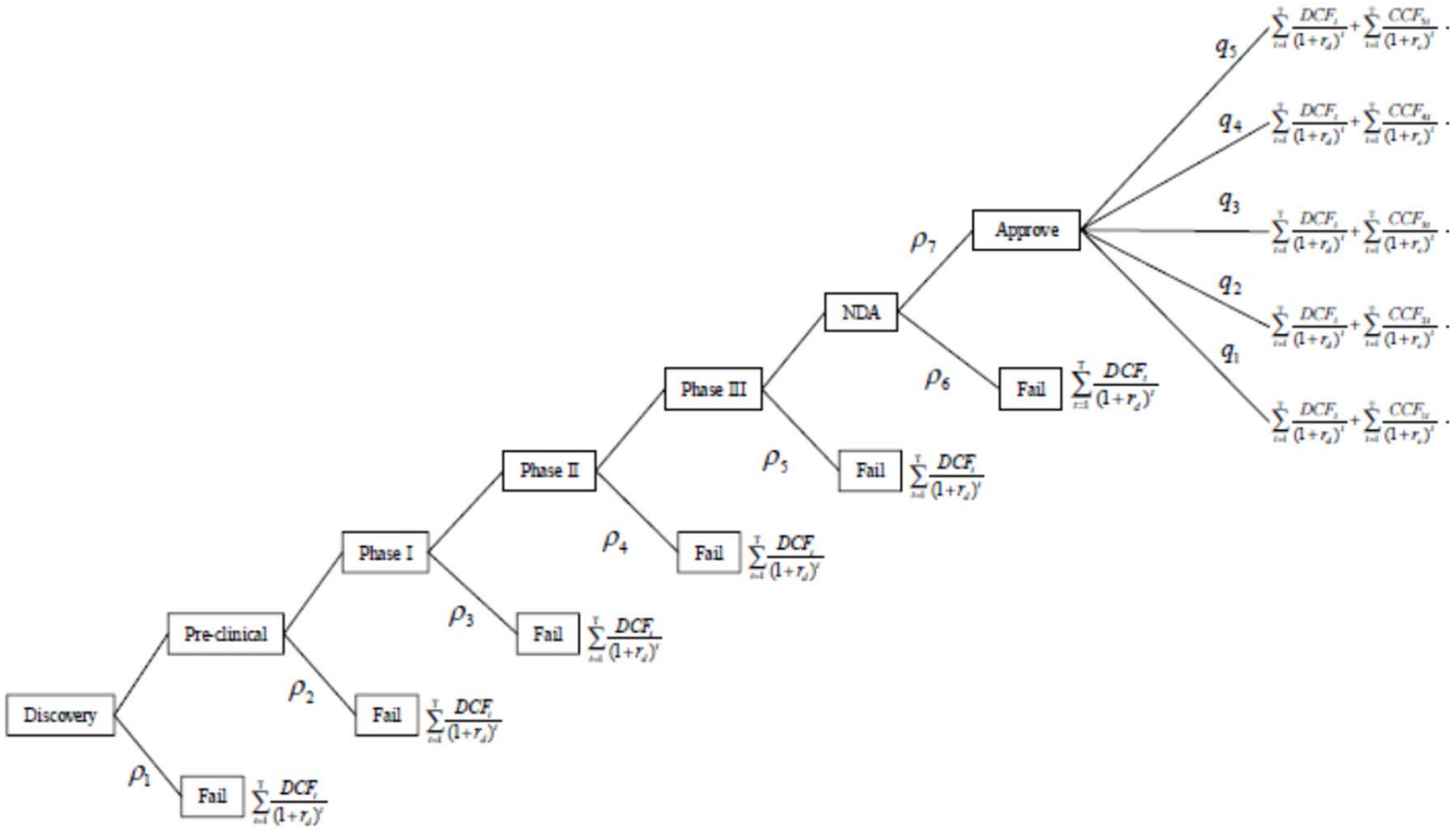
Source: Risk Management in Real Options Based Pharmaceutical Portfolio Planning by M.J. Rogers, A Gupta and C. Maranas.

Real Options (cont.)



Source: Valuation of a Biotechnology Firm by D. Kellog, J. M. Charnes and R. Demirer

Real Options (cont.)



Source: Valuation of a Biotechnology Firm by D. Kellog, J. M. Charnes and R. Demirer

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Success Probabilities

R&D Stage	Years in Stage	Conditional P Success
Discovery	1	60%
Pre Clinical	3	90%
Phase I	1	75%
Phase II	2	50%
Phase III	3	85%
FDA Filing	3	75%
Post-Approval	9	100%

Valuation Methods for BioMed in Practice

Source: Biostrat

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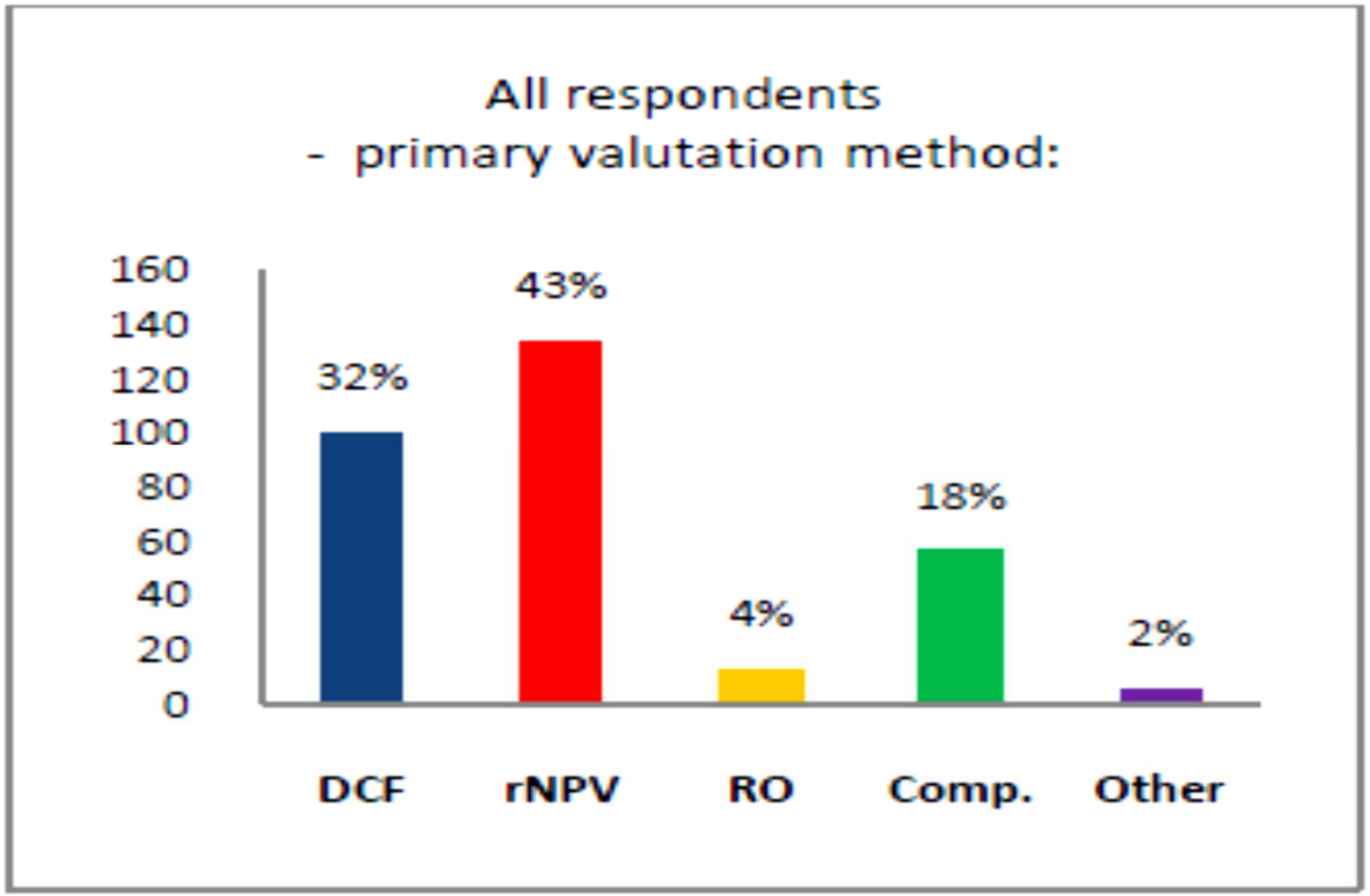
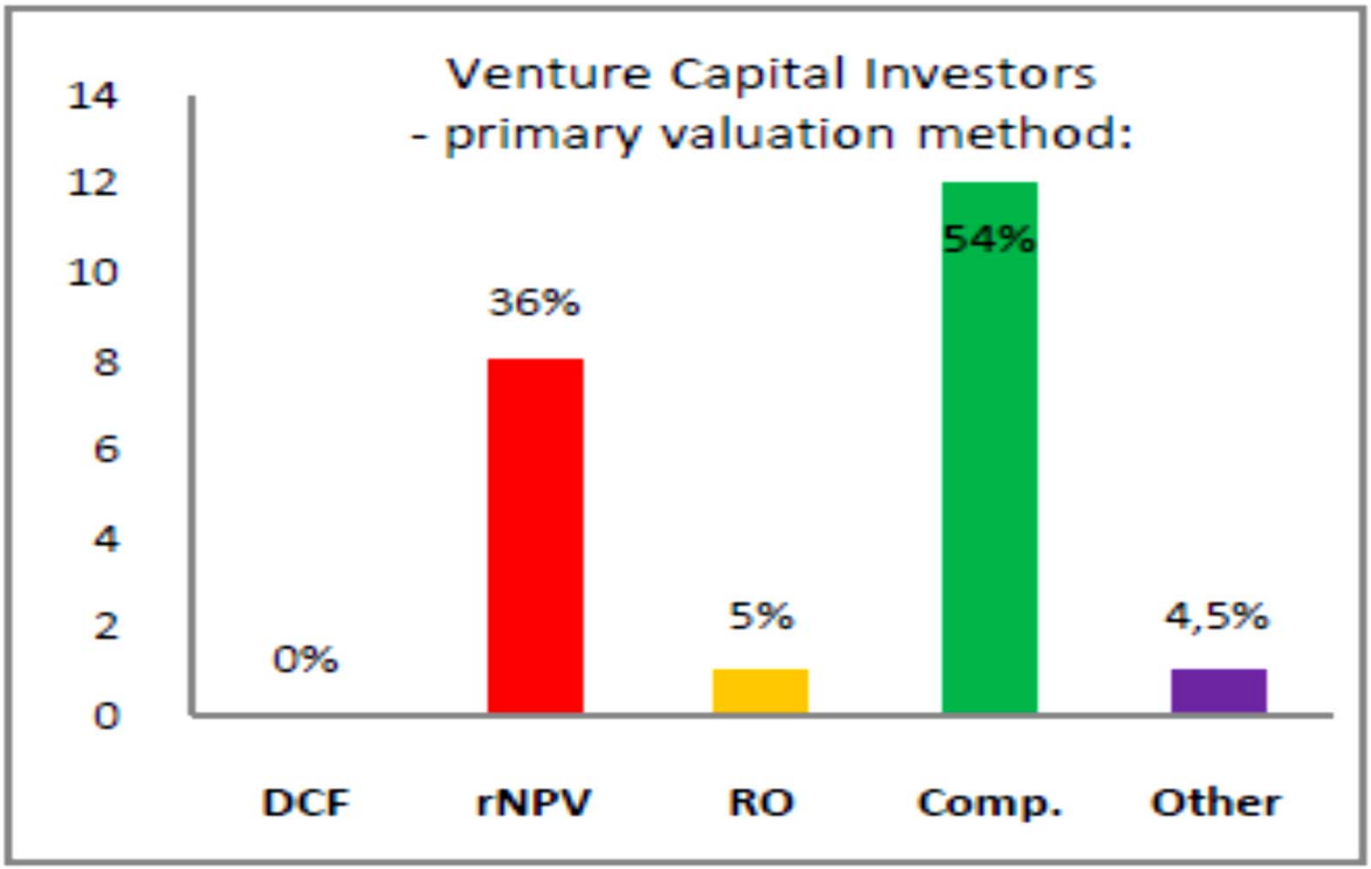
Valuation Methods for BioMed in Practice



Source: Biostrat

Valuation Methods for BioMed in Practice (Cont.)



Source: Biostrat

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Valuation Methods for BioMed in Practice (Cont.)

"Other":

- Amount spent to build the company/assets
- Monte Carlo simulations
- Soft /qualitative factors (management etc.)
- Hybrid of different methods

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In Practice

- **Valuing a drug developing company**
  - At the end of Phase II
  - Market potential – known
- **Methods used**
  - rDCF
  - Comparables

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Patents & Royalties

- A patent provides the patent holder with the **right to sue for infringement**.
- A patent has **no intrinsic value** independent of the value of a business.
- A patent's **economic value** stems from the way it is used.

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The Myth:
'All Patents are Valuable'

is 

Less than **2%** are making money!

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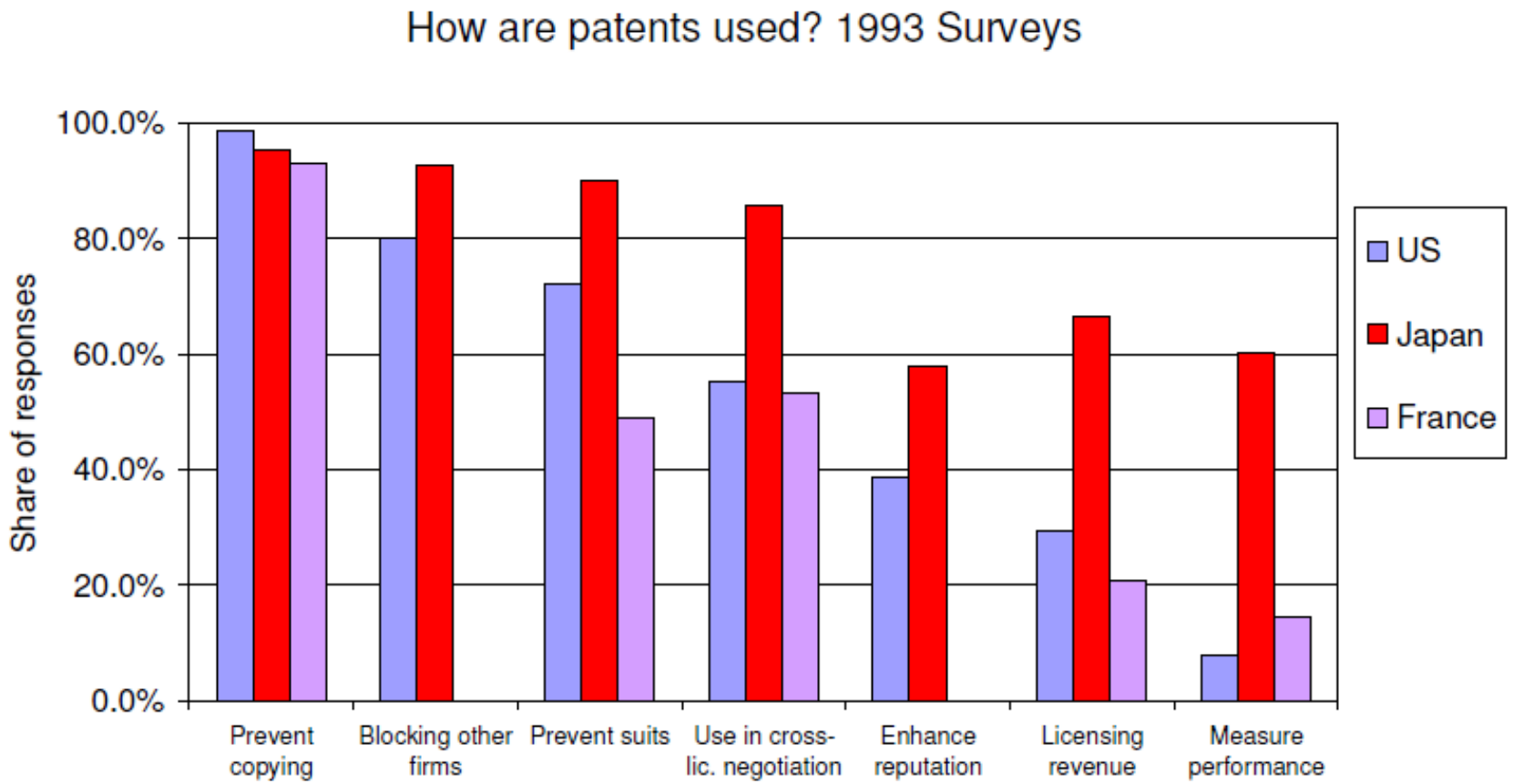
Patents are Used:

- Internally
- Licensing
- Blocking

Patents are Used:



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Methods for Patent Valuation

- **NPV** of royalty / licensing revenue streams
  - '**Relief from royalties**'
- **Comparable** asset sale prices
- **Option valuation** models.

Royalty Rates

LICENSED-OUT ROYALTY RATES AS DETERMINED BY A VOLUNTARY SURVEY

	Royalty Rate Category						
	0–2%	2–5%	5–10%	10–15%	15–20%	20–25%	OVER 25%
Primary Industry							
Aerospace		40.0%	55.0%	5.0%			
Automotive	35.0%	45.0%	20.0%				
Chemical	18.0%	57.4%	23.9%	0.5%			0.1%
Computer	42.5%	57.5%					
Electronics		50.0%	45.0%	5.0%			
Energy		50.0%	15.0%	10.0%		25.0%	
Food/Consumer	12.5%	62.5%	25.0%				
General Mfg.	**21.3%**	**51.5%**	**20.3%**	**2.6%**	**0.8%**	**0.8%**	**2.6%**
Gov't/University	7.9%	38.9%	36.4%	16.2%	0.4%	0.6%	
Health Care Equip.	10.0%	10.0%	80.0%				
Pharmaceuticals	1.3%	20.7%	67.0%	8.7%	1.3%	0.7%	0.3%
Telecommunications				**100.0%**			
Other	**11.2%**	**41.2%**	**28.7%**	**16.2%**	**0.9%**	**0.9%**	**0.9%**

Source: McGavock, et. al., "Factors Affecting Royalty Rates," *les Nouvelles*, June 1992, p. 107. Reprinted with permission from Daniel M. McGavock, Managing Director, InteCap, Inc.

The 25% ‘Rule of Thumb’

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The 25% 'Rule of Thumb'

Operating profit margins in 2002

Company	Operating margin
Pfizer	36%
Johnson & Johnson	26%
Merck & Co	44%
GlaxoSmithKline	34%
Novartis	24%
AstraZeneca	18%
Eli Lilly	29%
Abbott Laboratories	20%
Wyeth	41%
Bristol-Myers Squibb	17%
Average	**29%**

If we take **25%** ➔ the implied royalty rate is **7.25%.**

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Patents Infringement & Valuation

Reminder:

A patent provides the patent holder with the **right to sue for infringement**.

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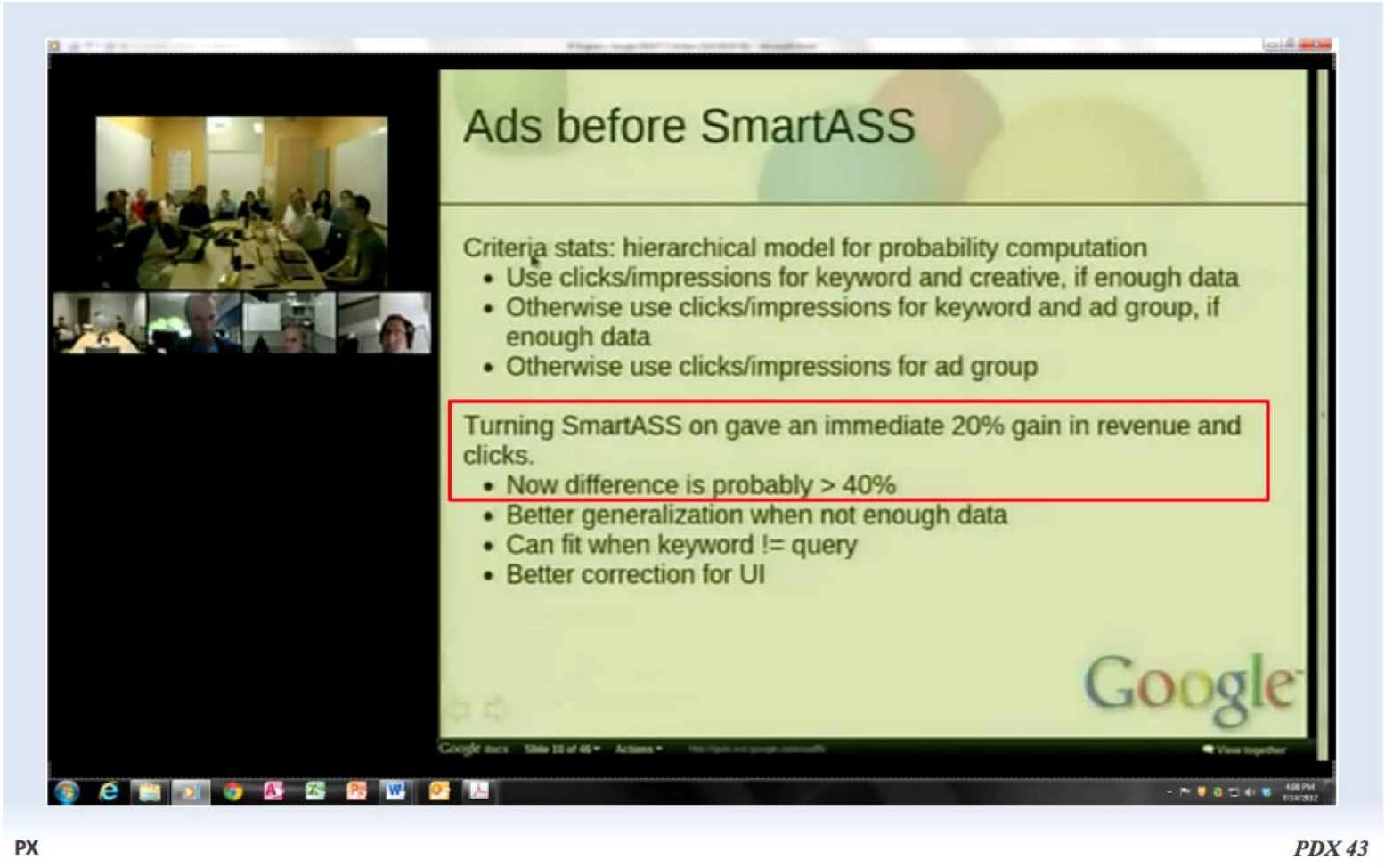
‘Patent Troll’

- VRINGO (VRNG)
  - **Bought** Lycos’ search engine patents **for $3.2m**
  - Sued Google, Microsoft, AOL, and others
  - **Google paid $30m**
  - Microsoft will pay **$1m + royalties: 3.5% - 7%**

Slides based on Google Internal Data



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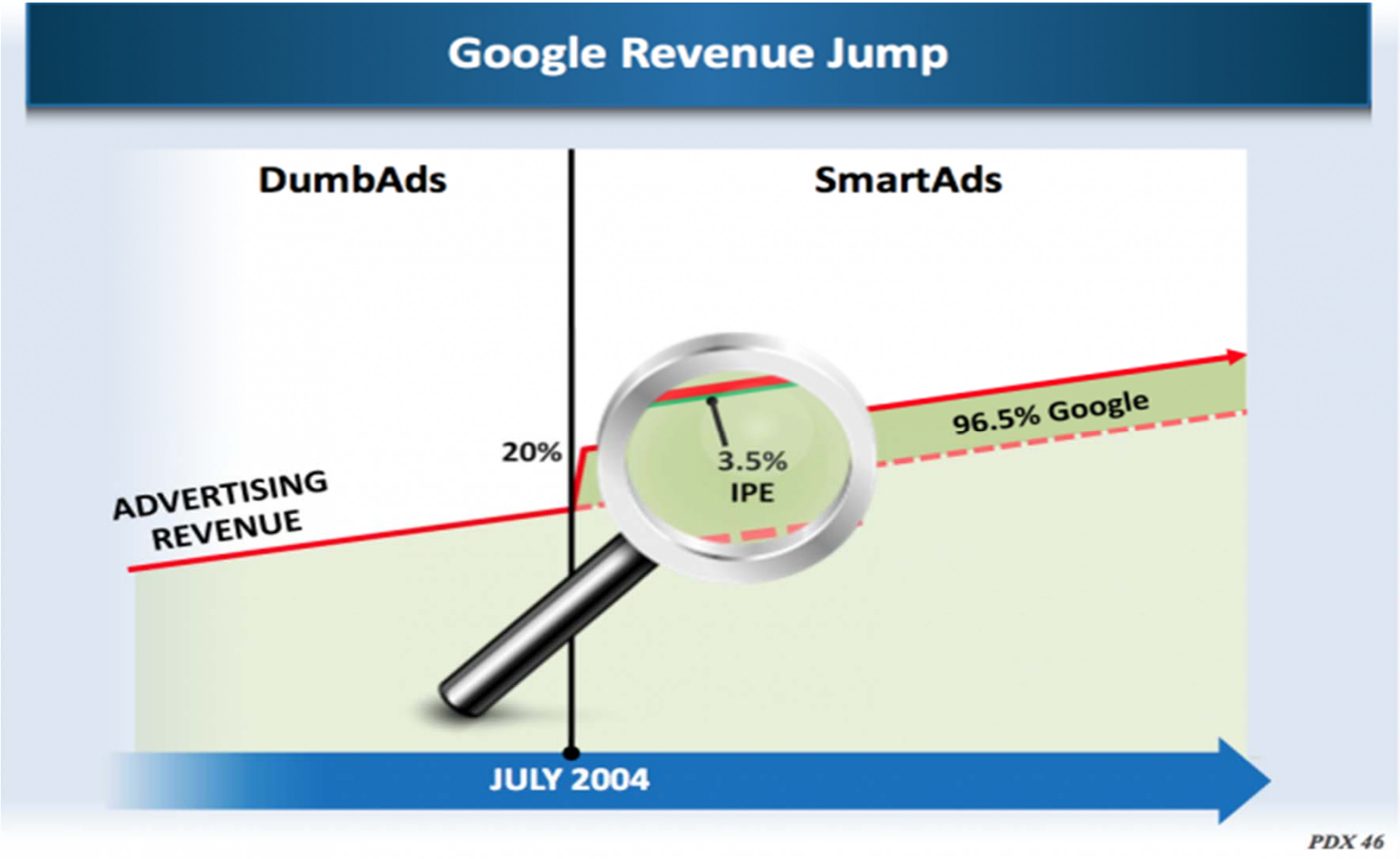

NOKIA Patents

- 124 patent families
- Consideration: **$22m cash + 35% of revenues**

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THANK YOU

Royalty Rates (Cont.)

Licensed Royalty Rates (Late 1980's - 2000)

Industry	No. of Licenses	Minimum Royalty Rate	Maximum Royalty Rate	Median Royalty Rate
Automotive	35	1.0%	15.0%	4.0%
Chemicals	72	0.5%	25.0%	3.6%
Computers	68	0.2%	15.0%	4.0%
Consumer Goods	90	0.0%	17.0%	5.0%
Electronics	132	0.5%	15.0%	4.0%
Energy & Environment	86	0.5%	20.0%	5.0%
Food	32	0.3%	7.0%	2.8%
Healthcare Products	280	0.1%	77.0%	**4.8%**
Internet	47	0.3%	40.0%	7.5%
Machine/Tools	84	0.5%	25.0%	4.5%
Media & Entertainment	19	2.0%	50.0%	8.0%
Pharma & Biotech	328	0.1%	40.0%	**5.1%**
Semiconductors	78	0.0%	30.0%	3.2%
Software	119	0.0%	70.0%	6.8%
Telecom	63	0.4%	25.0%	4.7%
Total	1,533	0.0%	77.0%	