

LES 2004 Spring Meeting

Workshop
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One Up on Wall Street: New Lessons on IP Valuation, Strategy and Due Diligence

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Discussion Topics

- **Introduction: Is Wall Street on the right track in dealing with IP?**
- **Our essential theme: “back to basics”**
 - *Ron Laurie -- Technical/legal perspective*
 - *Dan McGavock -- Financial/valuation perspective*
- **Top Ten Reasons Why Investment Bankers Don’t Consider Target’s IP in Pricing M&A Deals**
- **Real world examples to highlight...**
 - *Common mistakes*
 - *Lessons learned*
 - *“New” and/or useful tools and approaches*

Reasons Why Investment Bankers Don't Consider Target's IP in Pricing M&A Deals

1. IP is too complicated/abstract/intangible (*“show me the financials”*)
2. IP value is too uncertain (*as if predicting future earnings for knowledge-based companies isn't*)
3. IP valuation methodologies are not “generally accepted” (*some information is generally better than no information*)
4. IP valuation requires an analysis not only of the Target's IP position, but that of its competitors (*yes, and your point is...?*)
5. In high-tech (as opposed to bio or pharma), ultimately IP isn't that important (*ask Microsoft about that – Eolas + Intertrust = \$1 Billion*)

Reasons Why Investment Bankers Don't Consider Target's IP in Pricing M&A Deals

6. The market has already valued the IP via the stock price (*yeah, wanna buy a bridge?*)
7. IP value is reflected in the cash flow projections (*really, who put it in?*)
8. IP value is reflected in the purchase price premium (*ditto*)
9. Can't get access to critical IP info until after price is set and diligence starts (*not true for what is often the most important category of IP, i.e., issued patents and published patent applications*)
10. The real intangible value is in the heads of the employees; if they leave there goes the IP (*if that's really true maybe you should pass on the deal*)

Reasons Why Investment Bankers Don't Consider Target's IP in Pricing M&A Deals

11. The value of the target's IP depends on who the buyer is (*same is true for other value metrics, e.g., cost savings flowing from consolidation*)
12. The value of the target's IP depends on how the buyer is going to use it, e.g., exclude competitors via litigation, create a licensing profit center, defensive use, i.e., cross-licensing (*why not value IP based on each of the alternative strategies?*)
13. We have spent countless hours talking to the world's smartest technology visionaries about the synergies that will result from the merger (*the best technology without good IP protection provides only lead-time advantage*)
14. IP presents a binary legal issue, if the target "has all the IP it needs," (in terms of freedom to operate), then there is no issue. If it doesn't, then this is a good reason to walk away from the deal (*this views IP as strictly a risk factor, not as a value driver*)
15. Overpaying based on inflated IP valuation - viewed in hindsight by unhappy investors - creates an unnecessary liability risk, without any offsetting benefit in the form of incremental fees (*how does IP help me pay for my kid's prep school?*)

New Accounting Terms

	<u>Old</u>	<u>New</u>
Q: What's EBIT?	<i>Earnings before interest and taxes</i>	<i>Earnings before irregularities and tampering</i>
Q: What's EBITDA?	<i>Earnings before interest, taxes, depreciation, and amortization</i>	<i>Earnings before I tricked the dumb auditor</i>
Q: What's EPS?	<i>Earnings per share</i>	<i>Eventual prison sentence</i>

Case Example #1: Second Round Financing

Investment Highlights

- *“Revolutionary Technology”*
- *“Dramatic and Demonstrable Cost Savings”*
- *“Strong Patent Protection”*
- *“Technology Fully Developed for Certain Applications”*
- *“Small But Growing Customer Base”*
- *“Huge Market: Three Key Market Segments”*
- *“Initial Funding Provided by Highly Strategic Investor Group”*

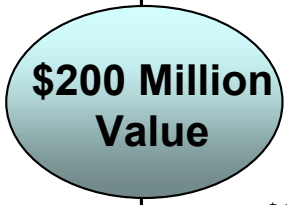
**Seeking Equity
Capital to Fund
Further
Development**

Case Example #1: Company's Valuation Model

<i>\$ in Millions</i>	2004	2005	2012	2013	Total
Total Revenue	\$2	\$10	\$444	\$541	
Operating Profit	(\$10)	(\$7)	\$336	\$418	
Operating Profit %	-574%	-70%	76%	77%	
NOPLAT	(\$10)	(\$7)	\$209	\$259	
NOPLAT %	-574%	-70%	47%	48%	
Operating Cash Flows	(\$10)	(\$7)	\$207	\$257	
Operating Cash Flow %	-574%	-70%	46%	48%	
PVF	0.8771	0.6747	0.1075	0.0827	
NPV	(\$9)	(\$5)	\$22	\$21	\$200

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Case Example #1: Isolating Value Drivers

Market Applications	Included?	Order of Development		Years to Develop		Development Cost		Max. Market Penetration	
		Current Assumption	Override	Current Assumption	Override	Current Assumption	Override	Current Assumption	Override
Market 1A	Include	1		1				4.0%	
Market 1B	Include							4.0%	
Market 1C	Include							4.0%	
Market 1D	Include							4.0%	
Market 2A	Include	3		1		3,000,000		4.0%	
Market 2B	Include							4.0%	
Market 2C	Include							4.0%	
Market 2D	Include							4.0%	
Market 3A	Include	4		2		7,000,000		4.0%	
Market 3B	Include	2		2		4,000,000		4.0%	

“Low Royalty Rate”

“Only 4% Market Share”

Market Applications	Equipment Price		Annual Royalties/Unit	
	Current Assumption	Override	Current Assumption	Override
Market 1A	\$40,000		\$20,000	
Market 1B	45,000		20,000	
Market 1C	45,000		25,000	
Market 1D	80,000		35,000	
Market 2A	20,000		10,000	
Market 2B	20,000		10,000	
Market 2C	20,000		10,000	
Market 2D	60,000		25,000	
Market 3A	75,000		35,000	
Market 3B	60,000		30,000	

“High Discount Rate”

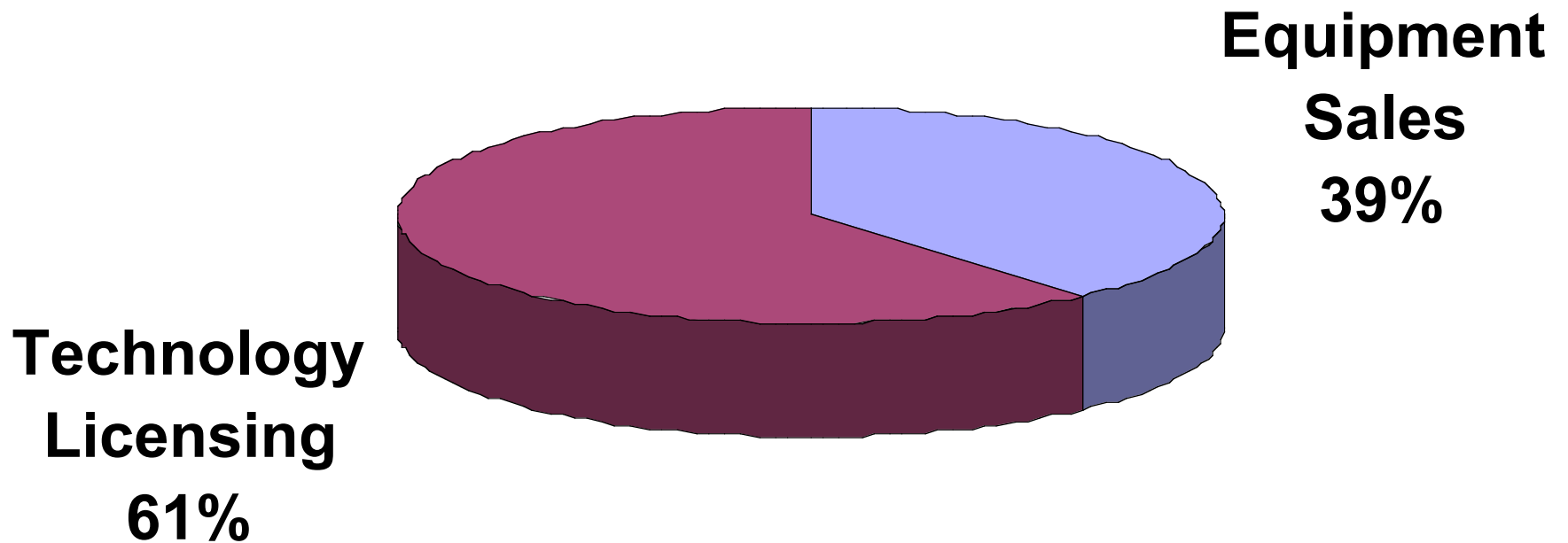
	Current Assumption	Override
Discount Rate	35.0%	
COGS as % of Equip. Rev.	50.0%	
Annual Operating Costs	3,000,000	
Other operating Exp. as a % of Licensing Revenue	30%	

NPV of CF under Current Assumptions	\$200,000,000
Required Financing	\$27,000,000

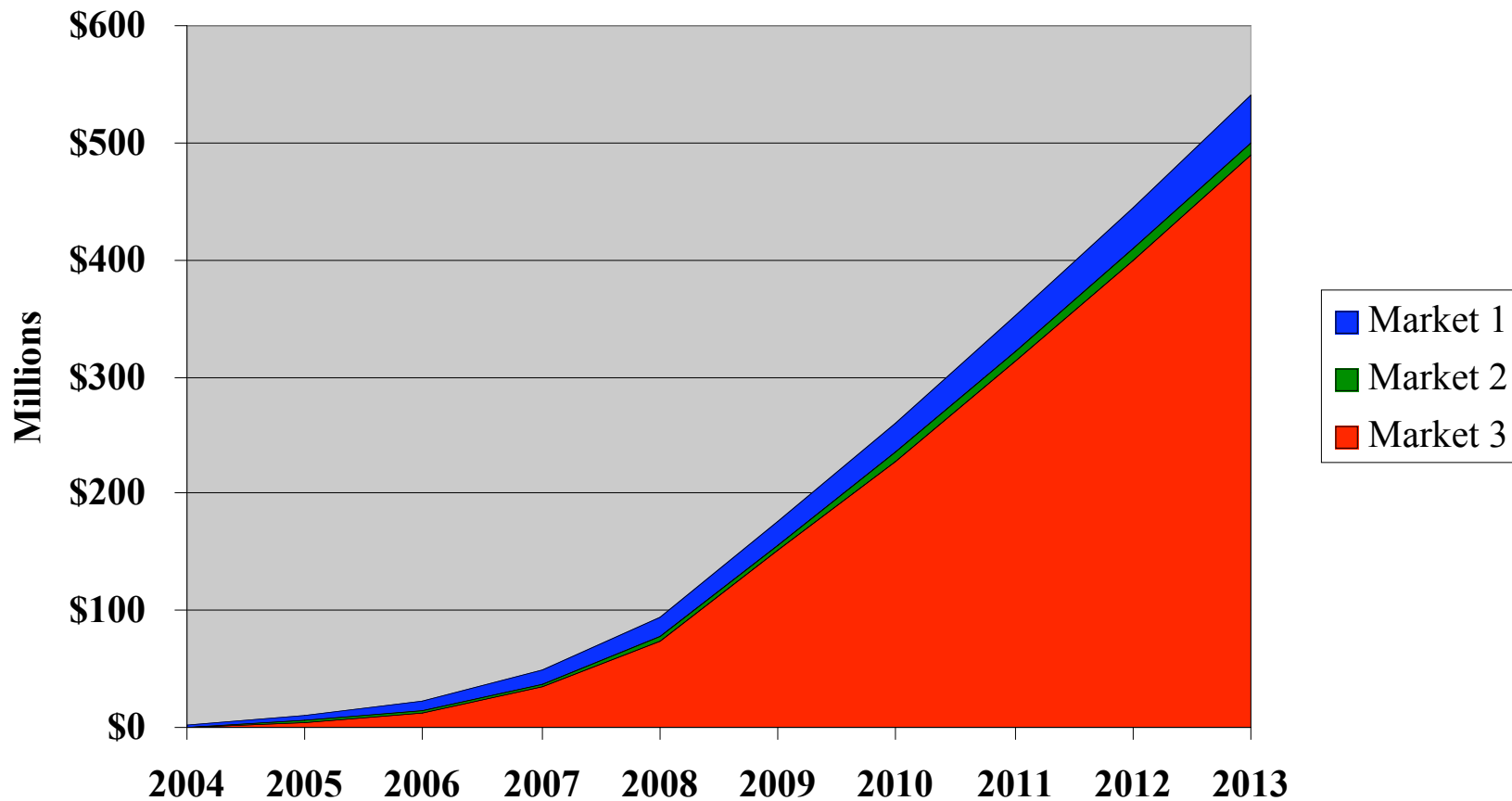


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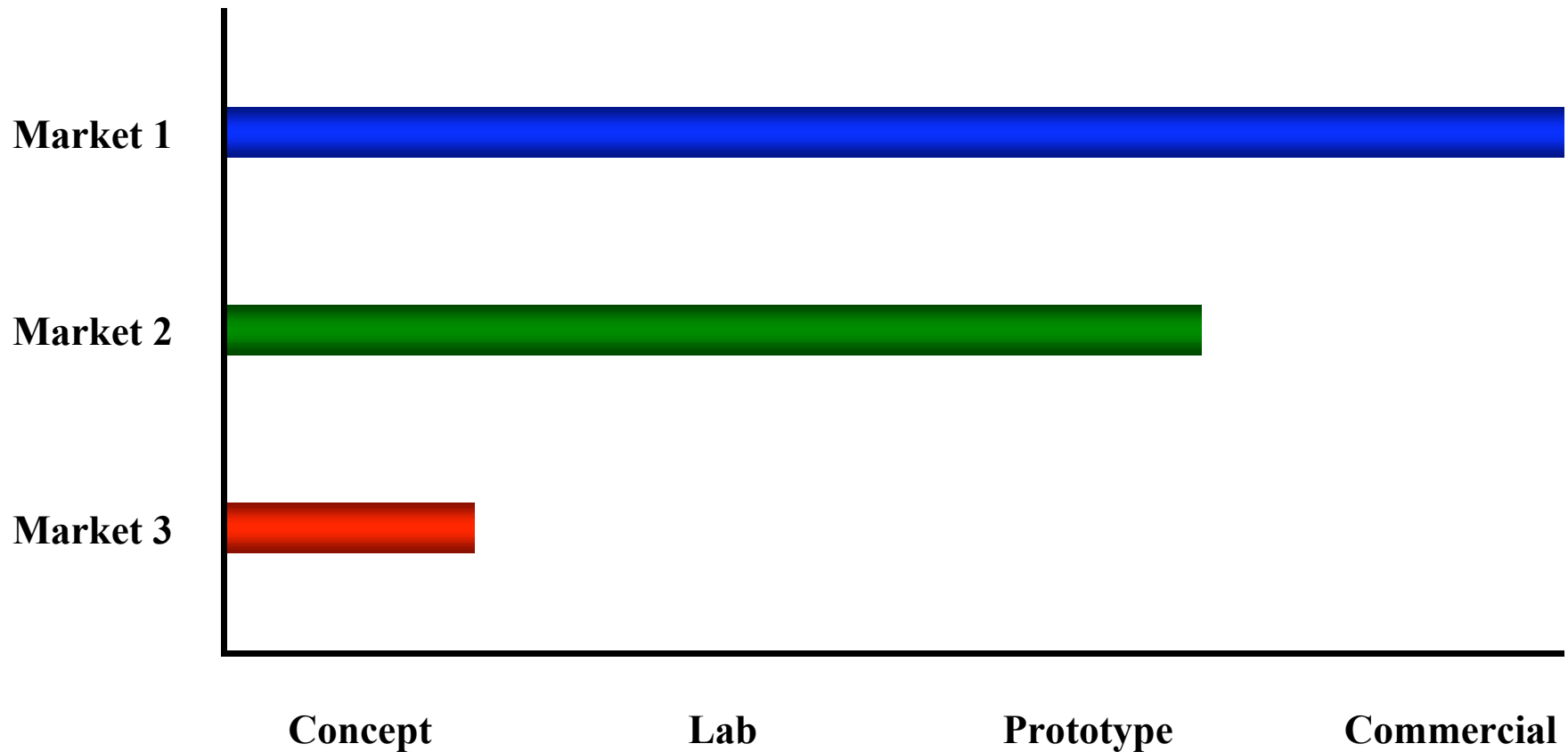
Case Example #1: Source of Value



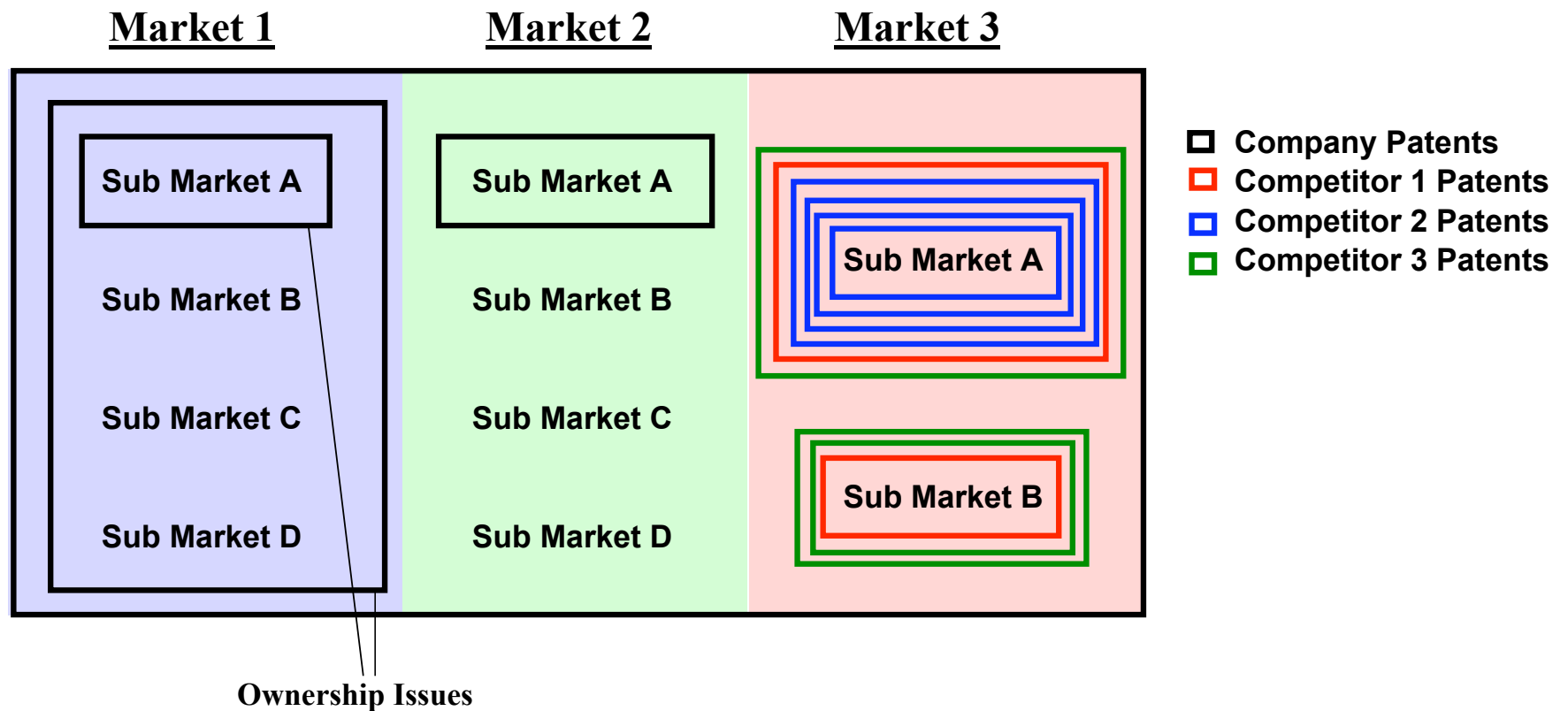
Case Example #1: Breakdown of Licensing Revenue



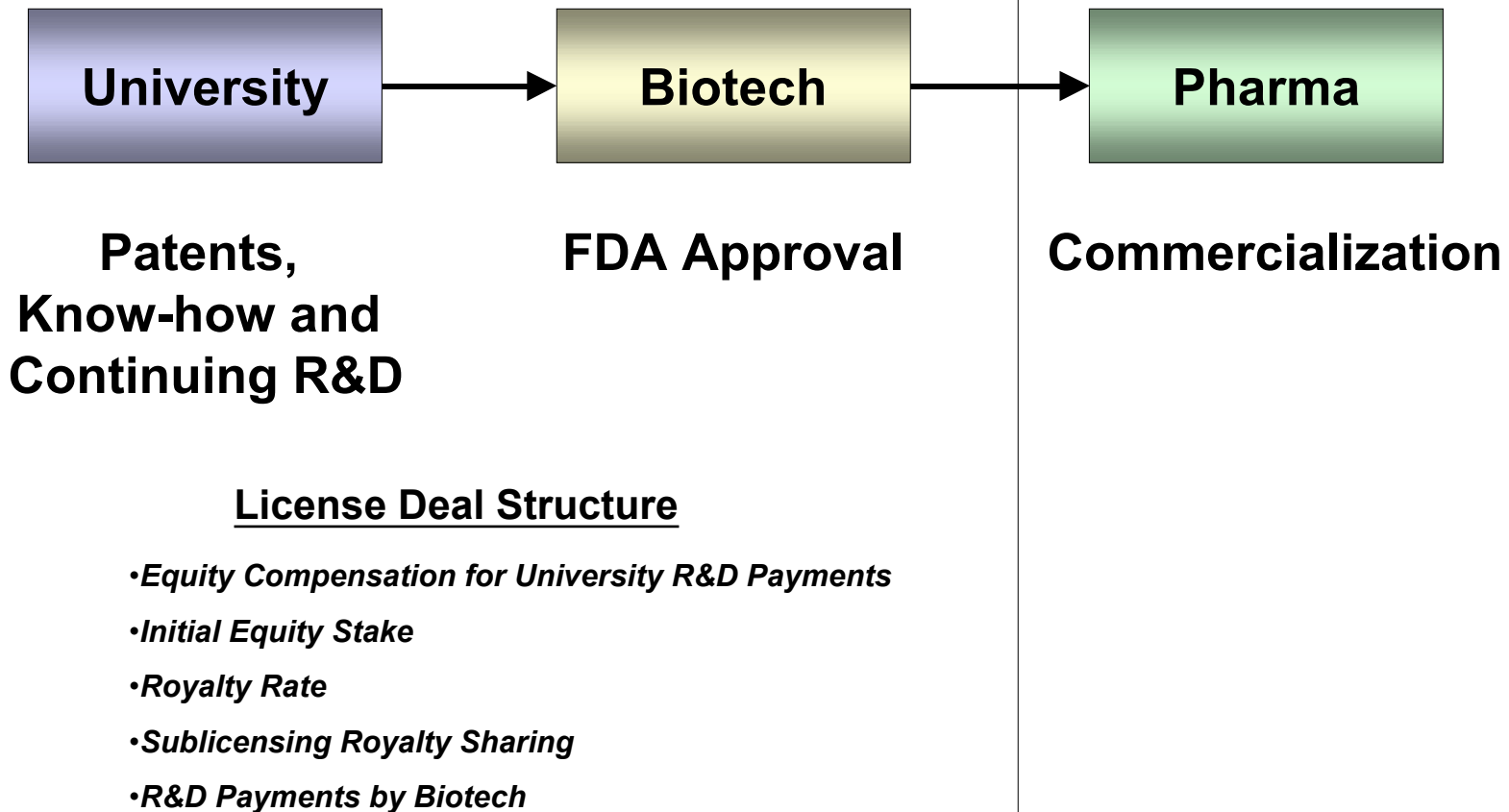
Case Example #1: Stage of Development



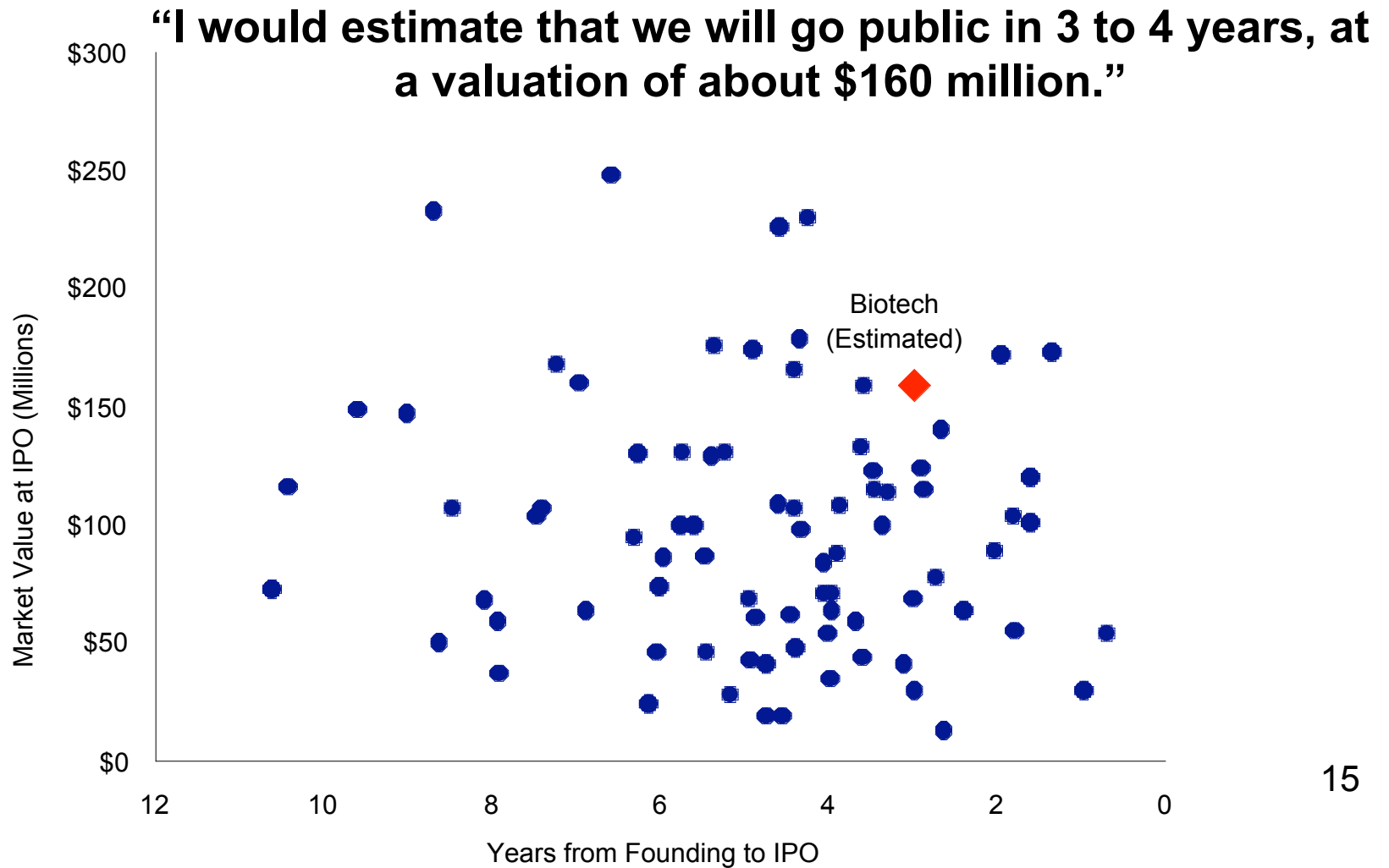
Case Example #1: IP Risk Analysis



Case Example #2: University to Biotech

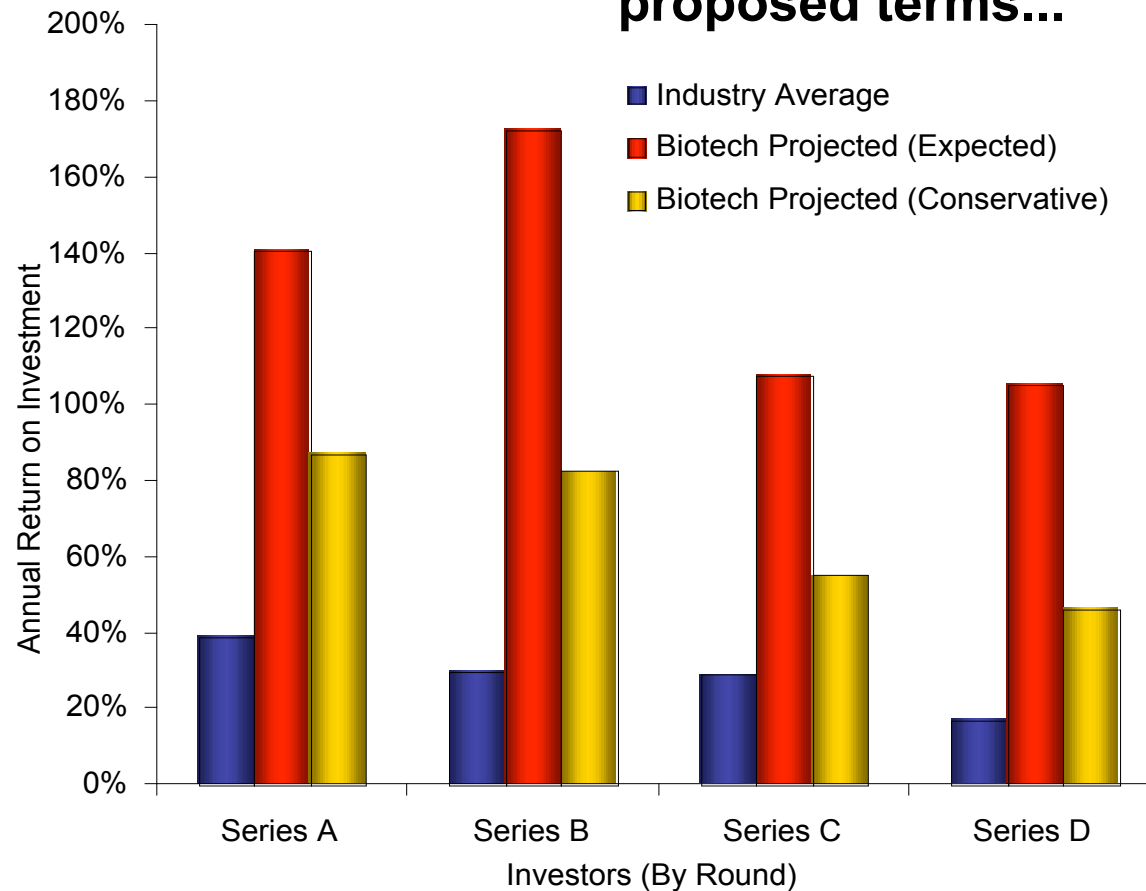


Case Example #2: Investigating Assertions



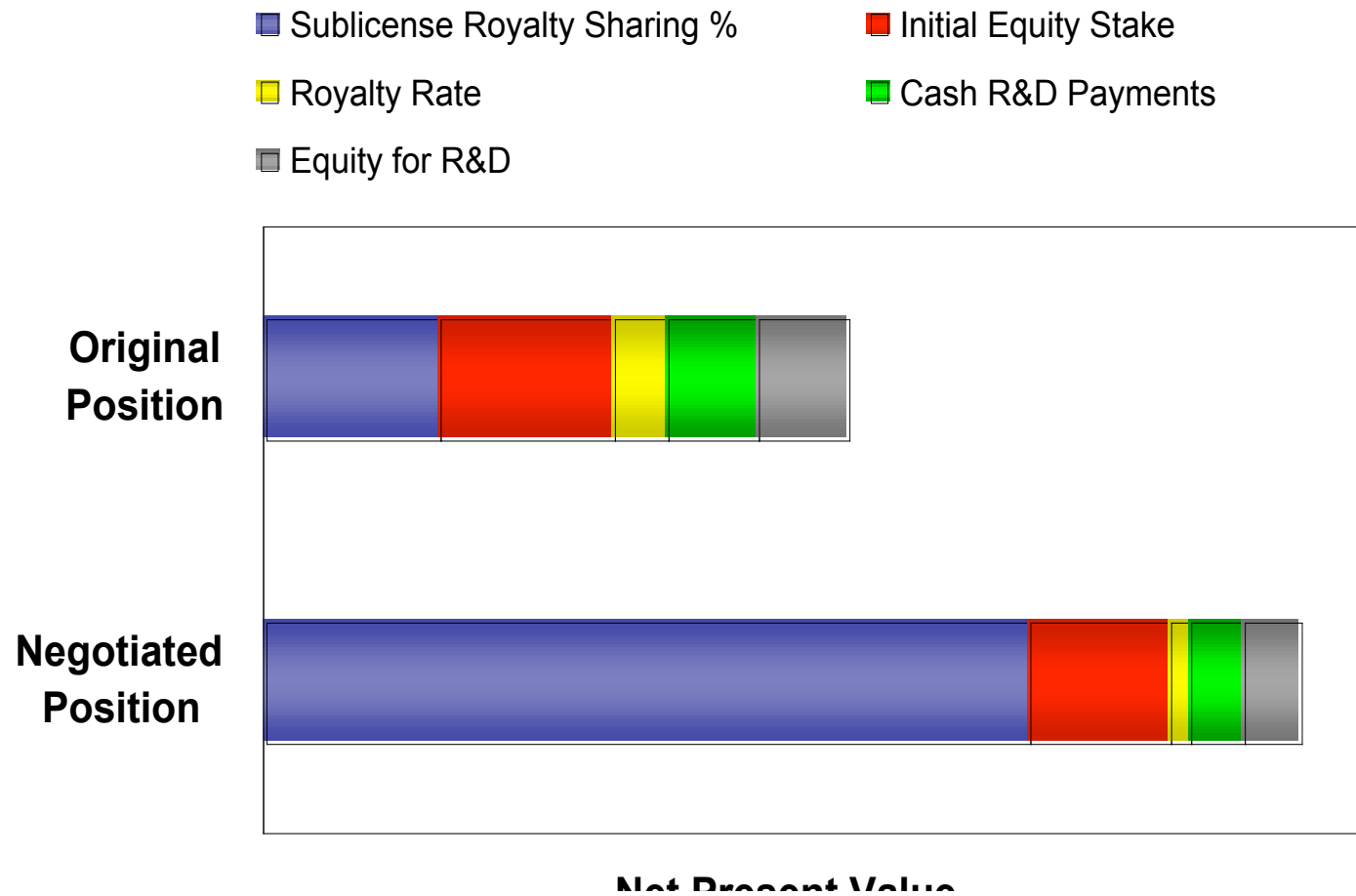
Case Example #2: Investigating Assertions

“I will not be able to raise venture capital under your proposed terms...”



Notes: Industry Average per Recombinant Capital.

Case Example #2: Negotiation Outcome



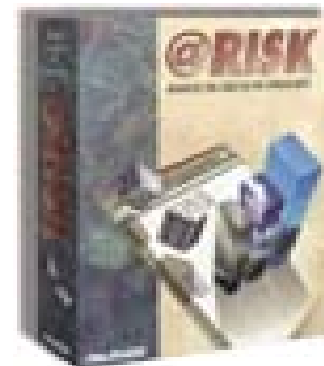
Some Useful IP Valuation Tools and Methods

- **Monte Carlo Analysis**: Computer simulation technique used to determine the distribution of potential values based upon multiple iterations generated by random selection of variables in accordance with a prescribed distribution and within predetermined ranges.
- **Decision (Probability) Tree Analysis**: Assigns probabilities to specific uncertain events to determine expected value based upon range of outcomes.
- **Real Options**: A more rigorous decision tree approach that adjusts either probabilities or discount rates based upon period-specific risk.

Note: For a detailed discussion of these approaches, See "Dealmaking Using Real Options and Monte Carlo Analysis" by Richard Razgaitis. John Wiley & Sons, 2003.

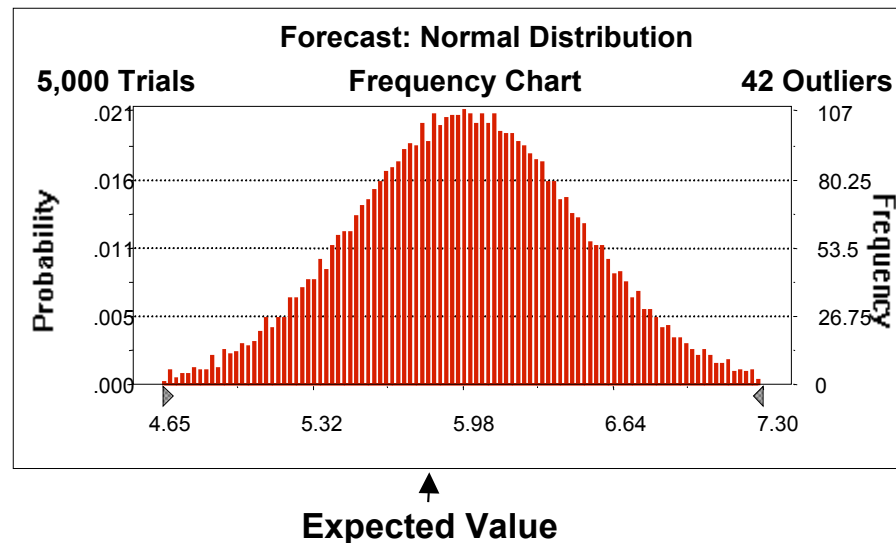
Monte Carlo Method

- A powerful simulation method when uncertainty of essential elements has an important effect on expected outcomes.
- A way of simulating a thousand commercial reruns and understanding the value and risks based upon a study of the outcomes.
- Software tools:

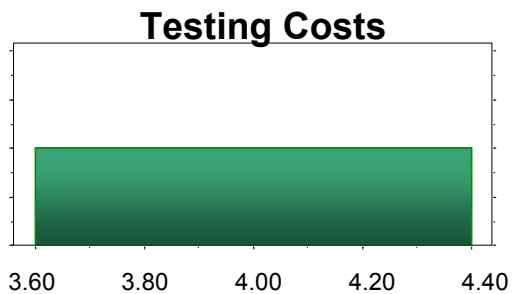


Monte Carlo Method

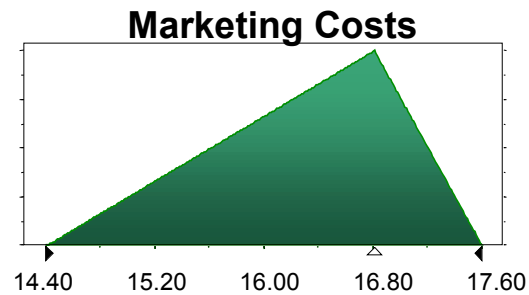
1. Build financial model based on relevant assumptions
2. Assign distributions to key assumptions. In other words, specify assumptions as random variables.
3. Test the sensitivity of the results



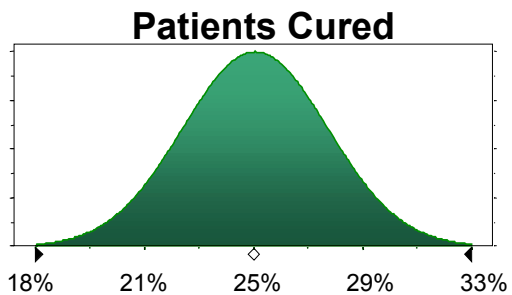
Specific Monte Carlo Assumptions:



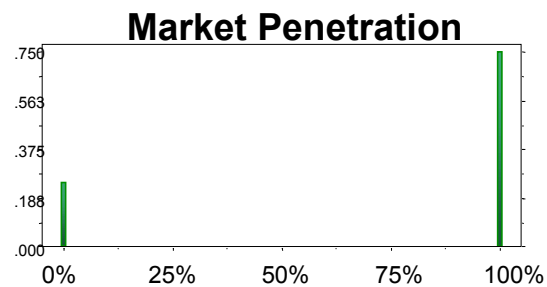
**Uniform
Distribution**



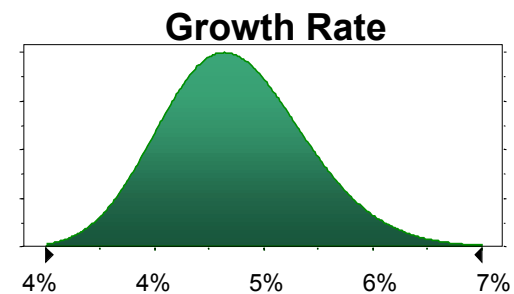
**Triangular
Distribution**



**Normal
Distribution**

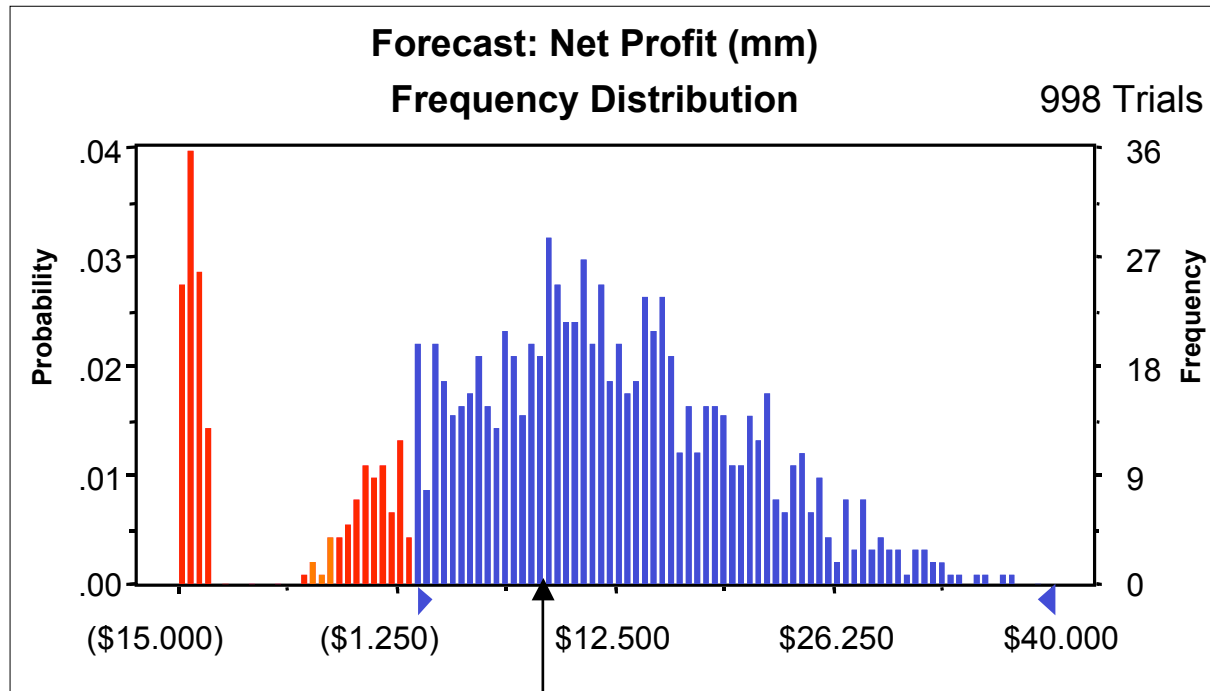


**Custom
Distribution**



**Lognormal
Distribution**

Monte Carlo Simulation Output

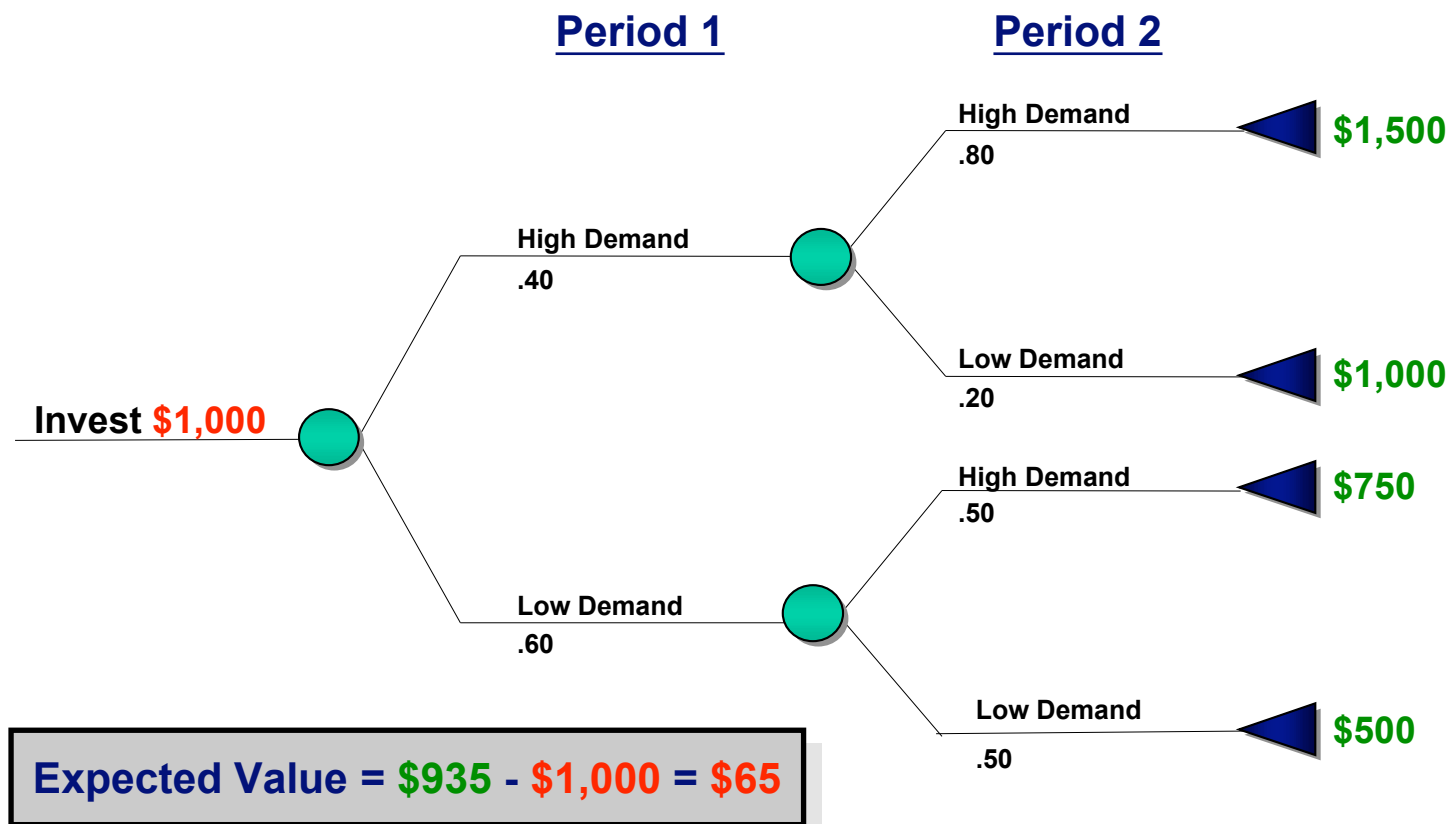


Nominal Outcome

Percentile	
0%	(\$14.939)
10%	(\$12.933)
20%	\$0.617
30%	\$4.166
40%	\$7.402
50%	\$9.770
60%	\$12.110
70%	\$14.968
80%	\$18.341
90%	\$22.612
100%	\$51.917

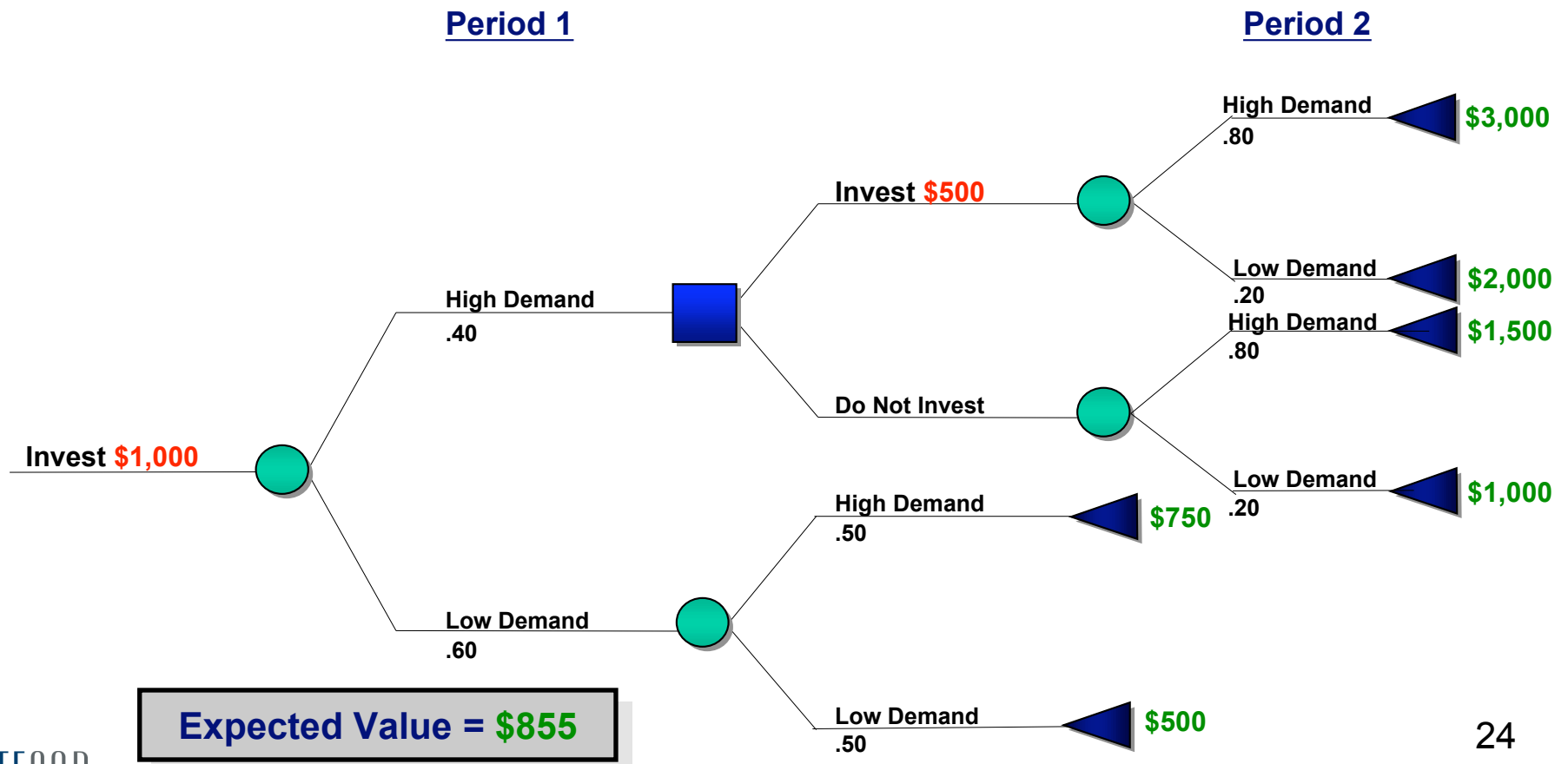
Dealing with Uncertainty: Decision Tree

A simple example: Value of an investment *without* a real option



Dealing with Uncertainty: Real Options

Option: The ability, but not the obligation to act at a specified future time



Some concluding thoughts...

Thank you.

Disclaimer

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