

Valuation

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Technology is a Tool for Doing Something



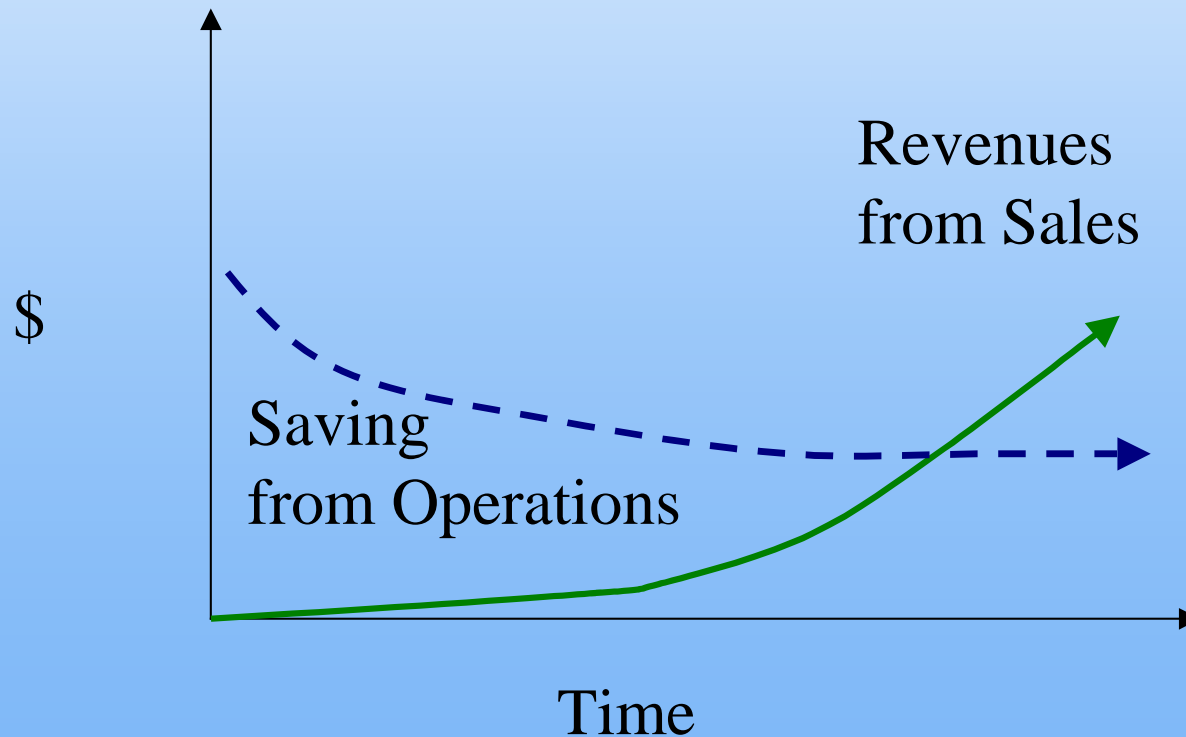
Useful

Over and Over and Over and Over Again

Deal Make Sense Where They Increases Payoffs

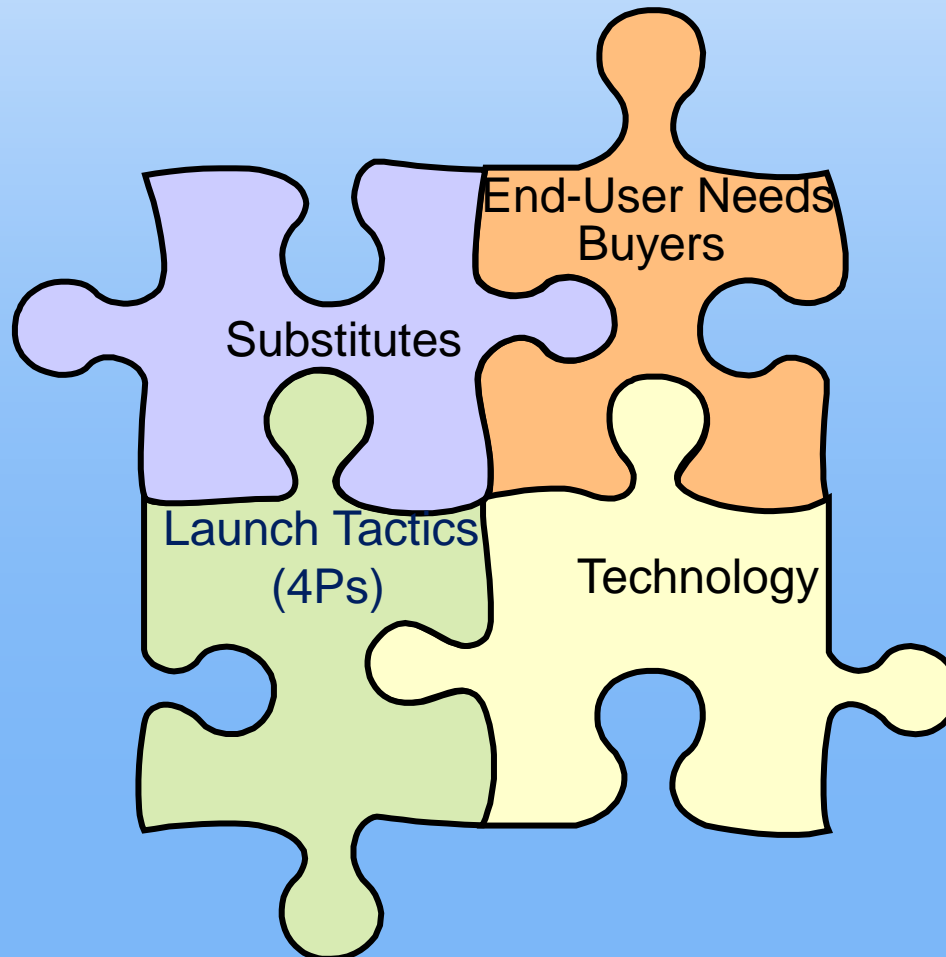
\Customer You \	Customer Wants Deal	Customer Walks
You Want Deal	\$10m, \$0.5m	\$0.0m, -\$0.05m
You Walk	\$0.1m, -\$0.05m	-\$0m, -\$0m

Money Can Be Made where Customers Can Be Found

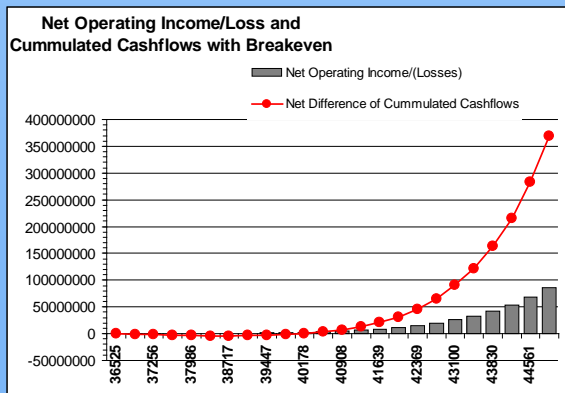
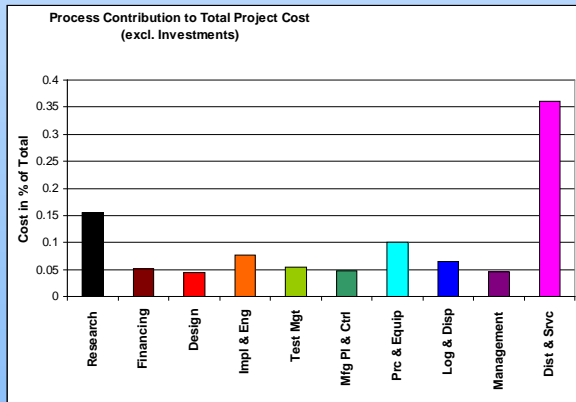


(Life or death needs such as health, environment, or military requirements and aesthetics/taste for consumer items are the exceptions.)

Revenue Example

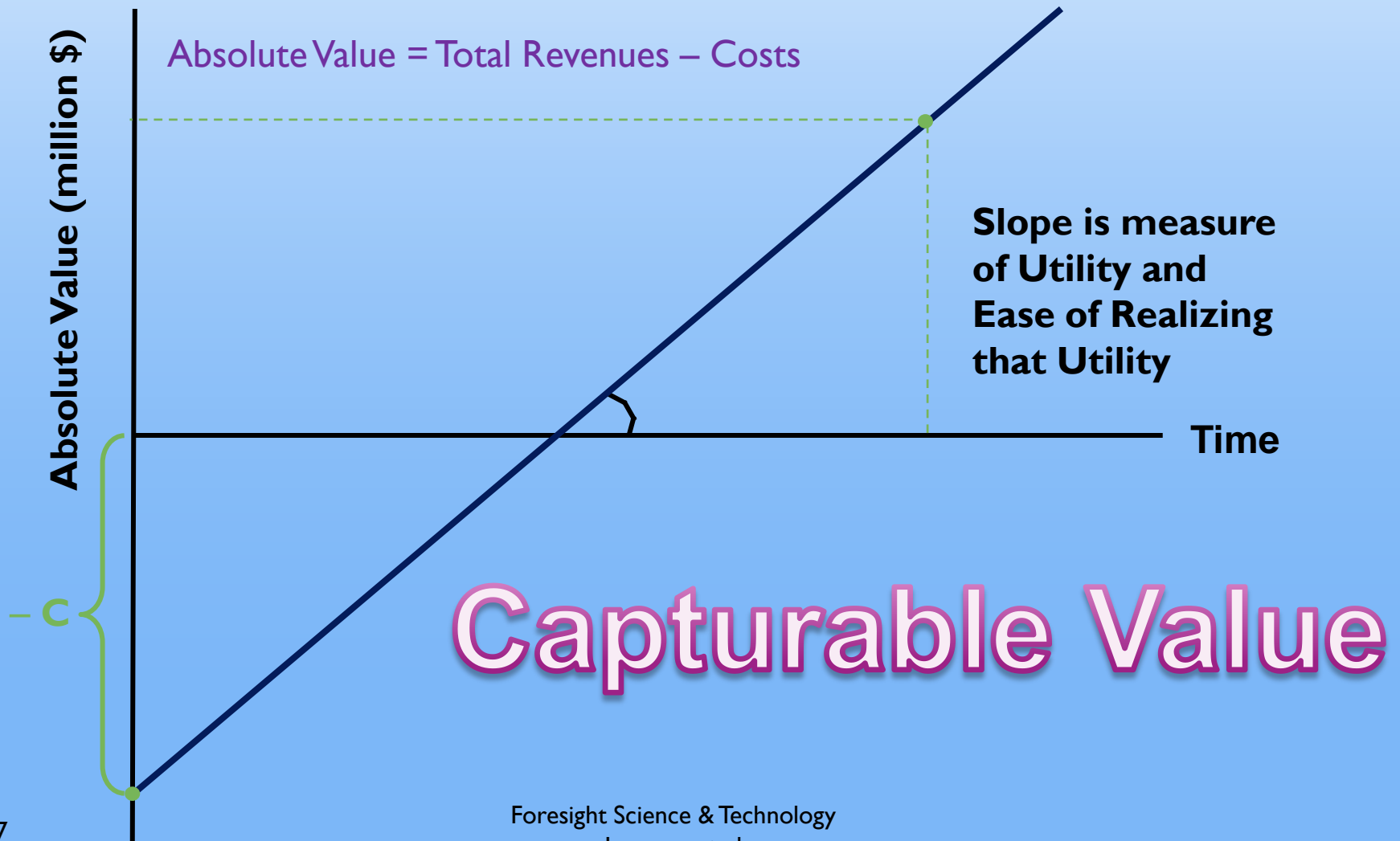


Net (Free) Cash Flow

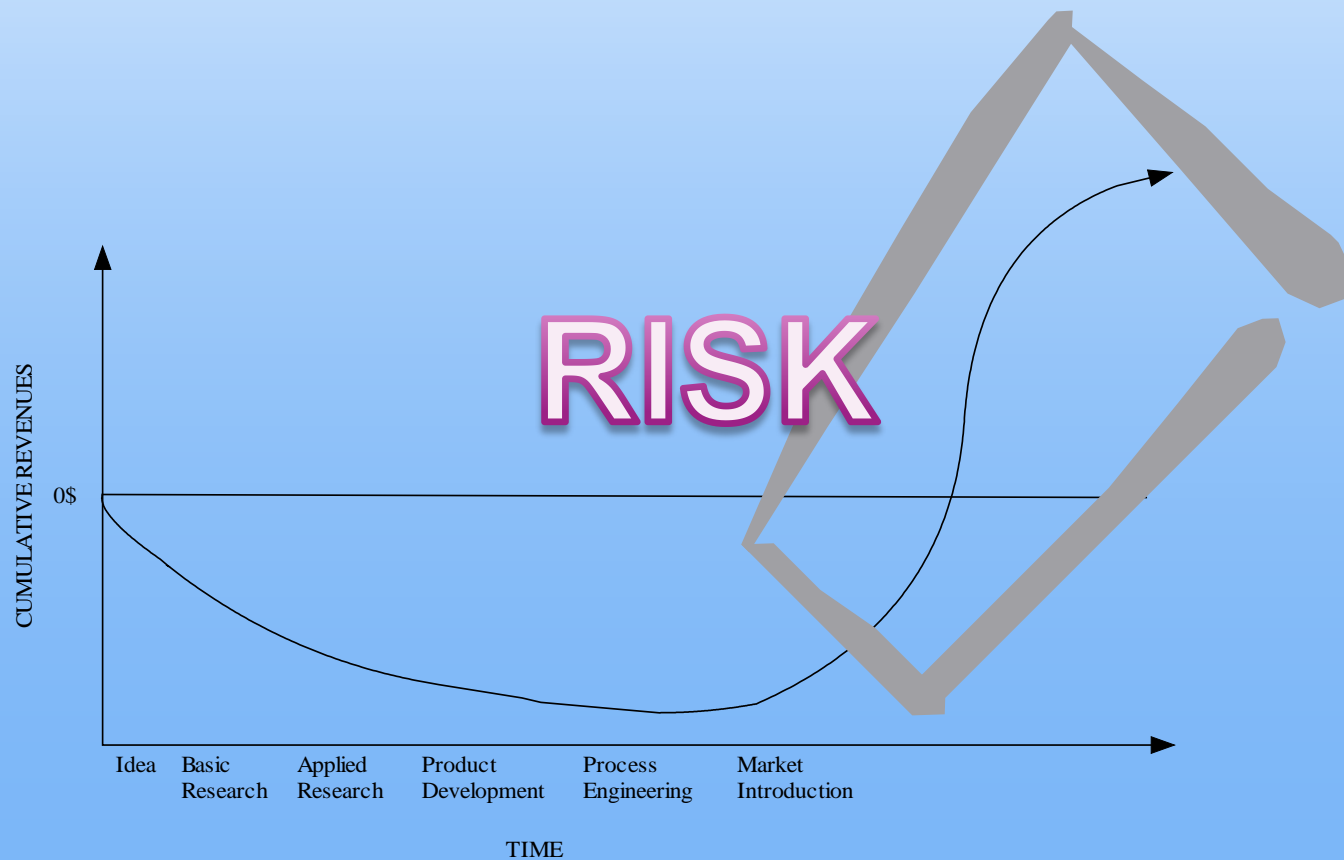


- The substantive process drives the cost calculation
- The cost calculation, together with the revenue projections, drives the net value
- Your share of the net value is your payoff

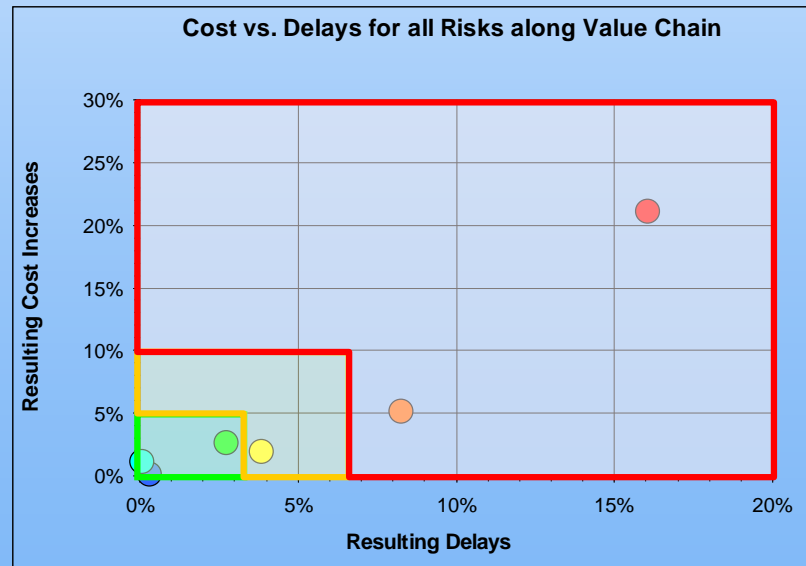
We What to Know How Much and When



Valuations are Always Sketchy



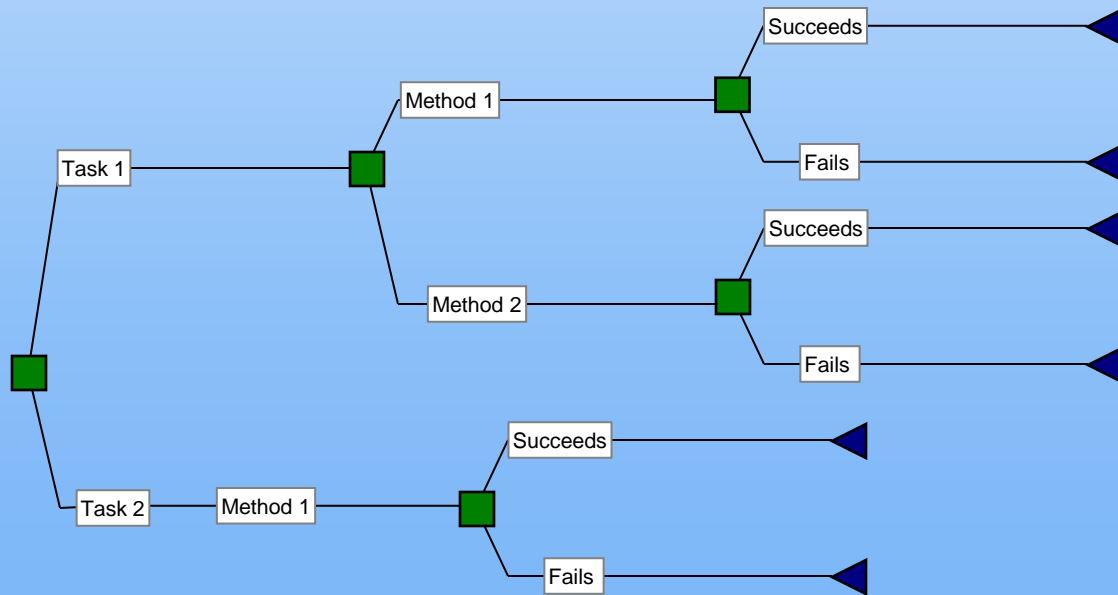
Discounted Cash Flow



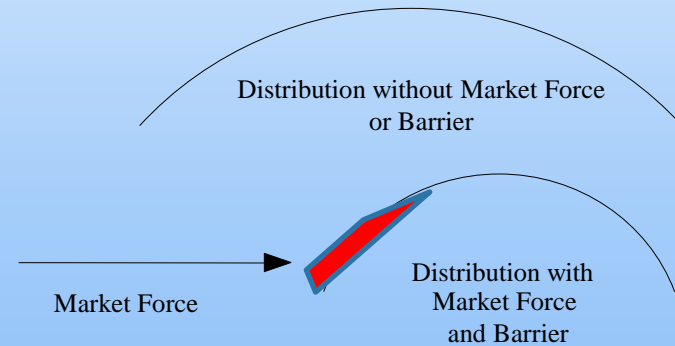
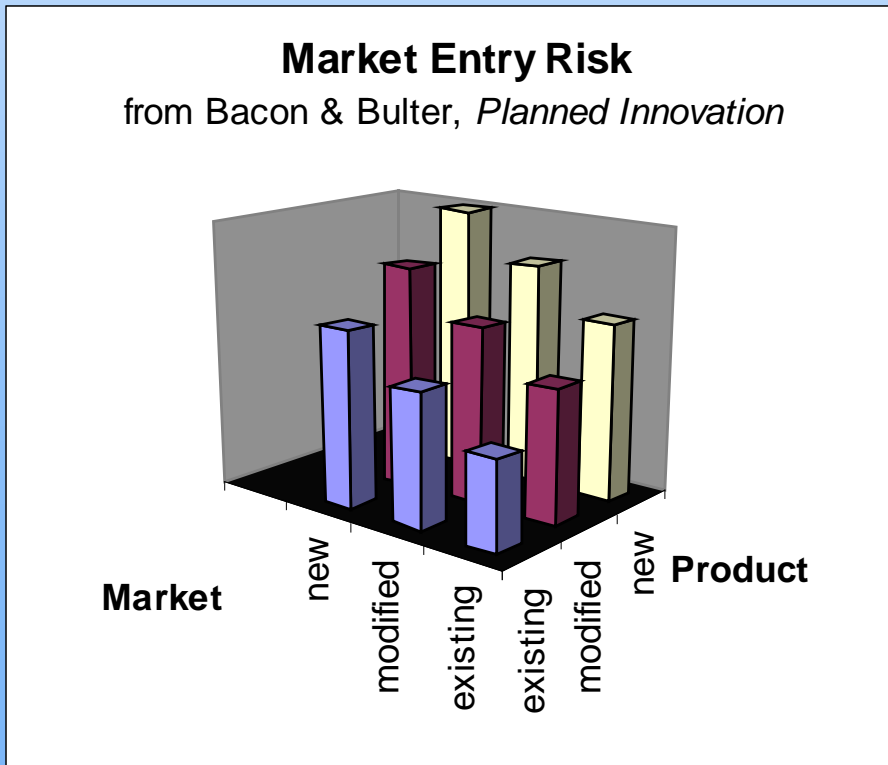
Targets and Means Matrix

		Objectives					Action Plan			
		Objective 1 (Reduce/Increase)	Objective 2	Objective 3	Objective 4	Objective 5	Resources Required	Who?	Measure	Time Line J F M A M J J A S O N D
	Task 1									▲ ← ▲
	Task 2									
	Task 3									
	Task 4									
	Task 5									
		Progress								

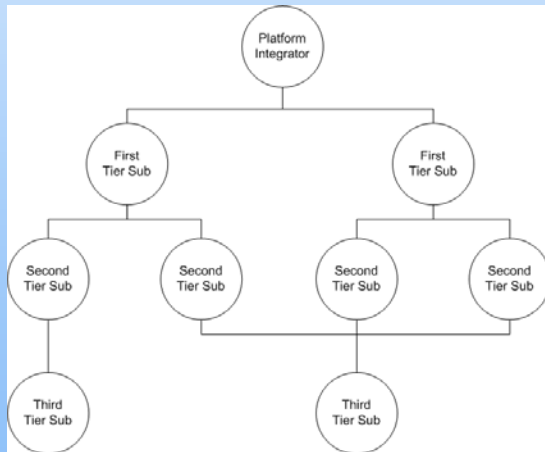
Technical Risk



Market Risk

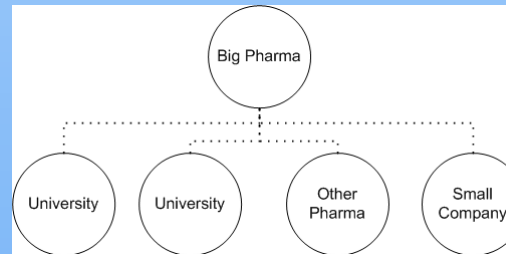
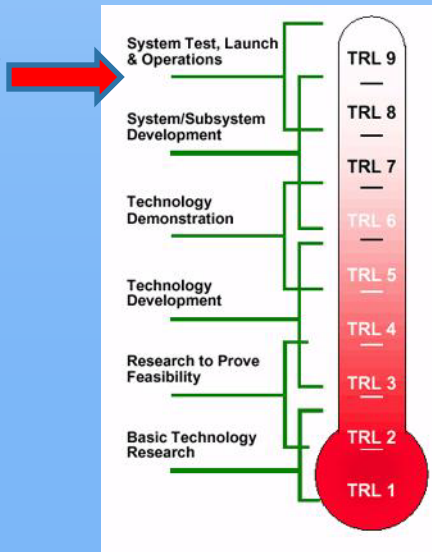


Strategies for Low Risk

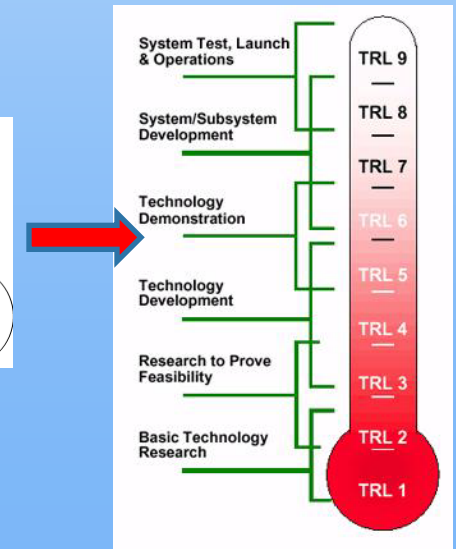


Time to Market
Technical Uncertainty

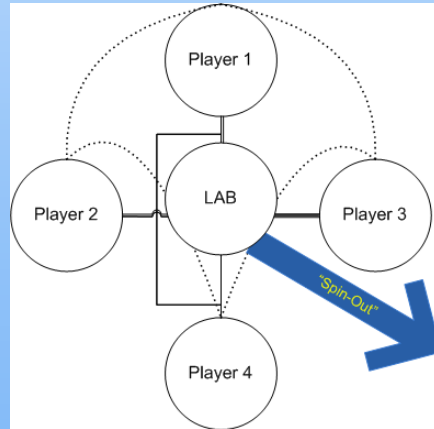
Six Sigma



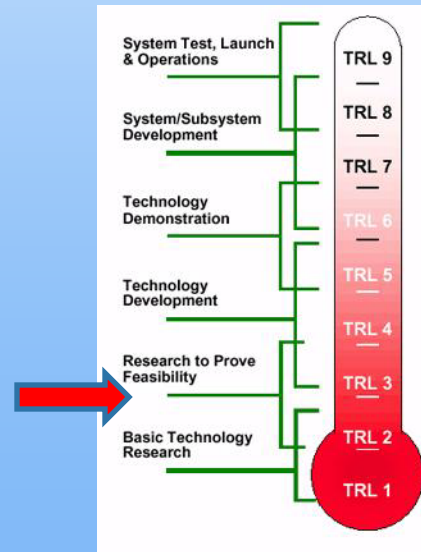
Farm Teaming



Strategy for High Risk



Floating Nets™



Discount Rates

<u>Risk Level</u>	<u>Approximate DR(%)</u>	<u>Description</u>
Risk Free	10-18	Existing product, high demand, building more of the same
Very Low Risk	15-20	New well understood technology for an existing product
Low Risk	20-30	New features, well understood technology into an existing market
Moderate Risk	25-35	New product, well understood technology into market with competition
High Risk	30-40	New product, not well understood technology into an existing market.
Very High Risk	35-45	New product, new technology, new market
Extremely High Risk	50-70	New company, unproven technology, new market

Source: Richard Razgaitis, Early Stage Technology

Six Sigma

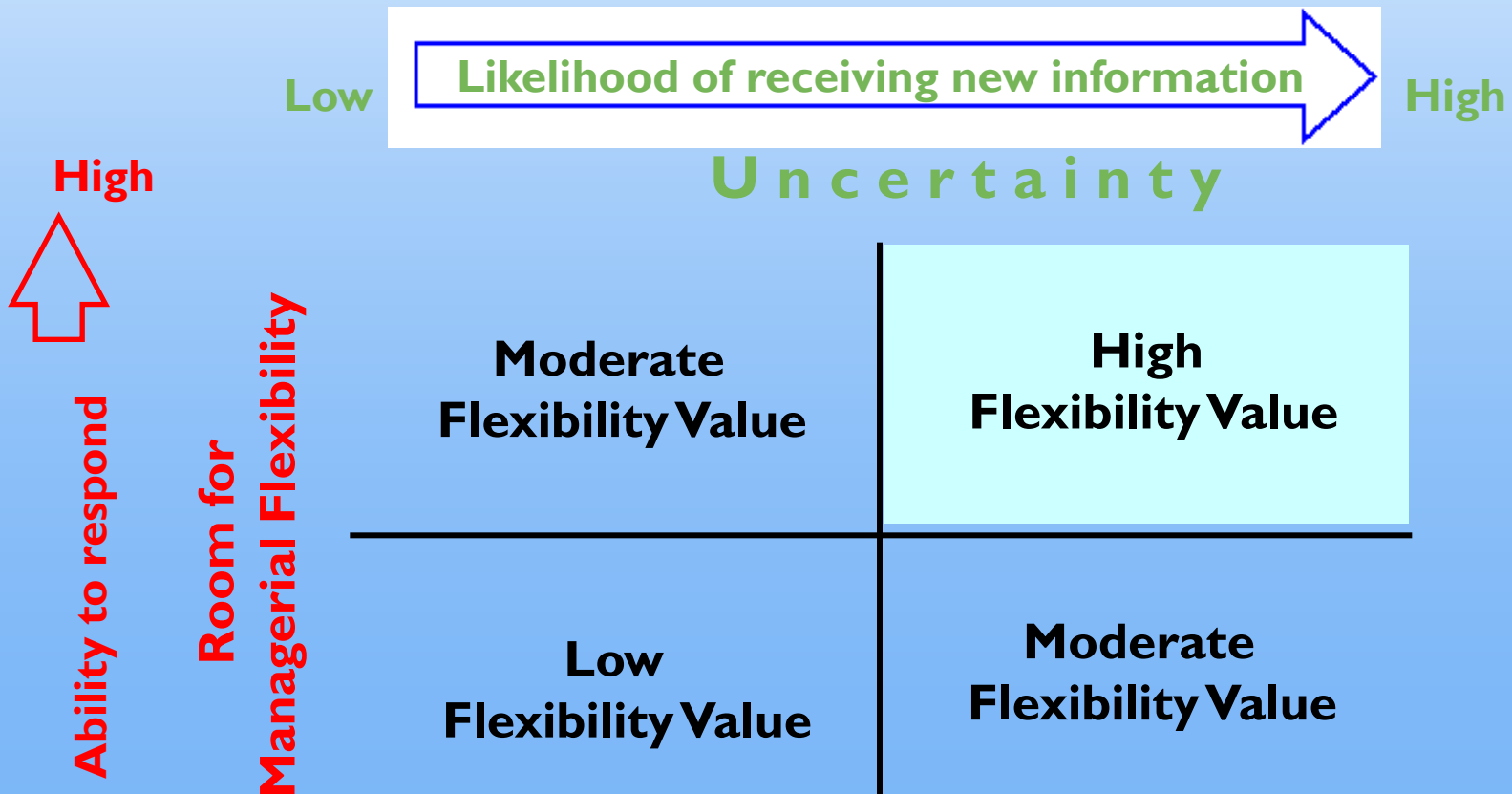
Farm Team

Floating Nets™

Real Option Valuation Makes Sense Where NPV is Near Zero But There is a Strategic Reason to Invest

\ Customer \ You \	Customer Moves Forward	Customer Steps	Customer Abandons
You Moves Forward	>\$15m, >\$10m	\$5m, \$0.05m,	\$0, +-\$0.03m
You Step	\$5m, \$0.05m	+-\$0.03m, +-\$0.03m	\$0, +-\$0.1m
You Abandon	+-\$0.03, \$0	+-\$0.01m \$0	\$0, \$0

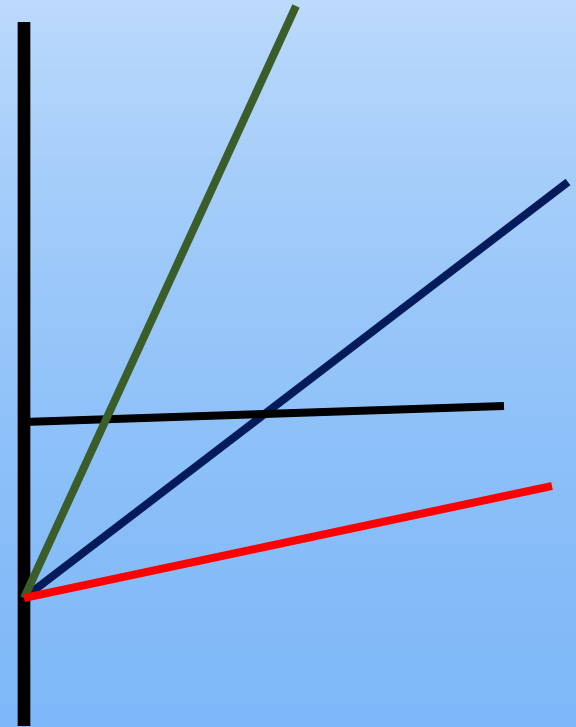
In a Period of Change the Value of Hedging Increases



Marco Antonio Guimarães Dias, Petrobras and PUC-Rio, Brazil, 2003, www.puc-rio.br/marco.ind/

Real Option Value is the Value of the Hedge

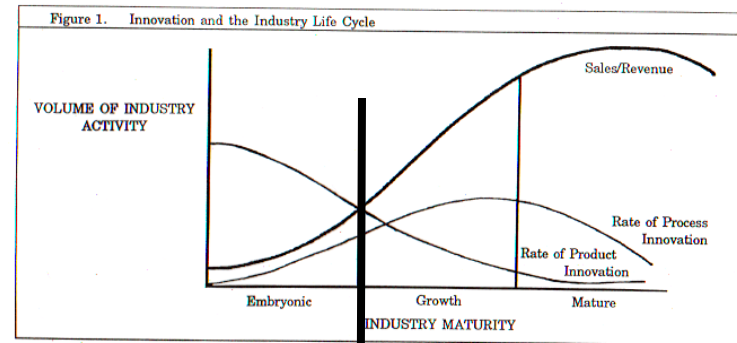
Variety \ Rate of Change	Slow or “ <i>One Time</i> ”	Rapid or “ <i>Faster-Paced</i> ”
Many	Segment Driven Needs (Screwdrivers) <i>Renewable Clean Energy Generators</i>	Dynamic Needs (Fishing Tackle) <i>Batteries</i>
Few	Infrastructure Driven Needs (Hoes) <i>Smart Grid</i>	Social Network Driven Needs (Cell Phones) <i>Hybrid and Electric Vehicles</i>



Based on Sanderson and Uzumeri, *Managing Product Families*, (Iwin, 1997)

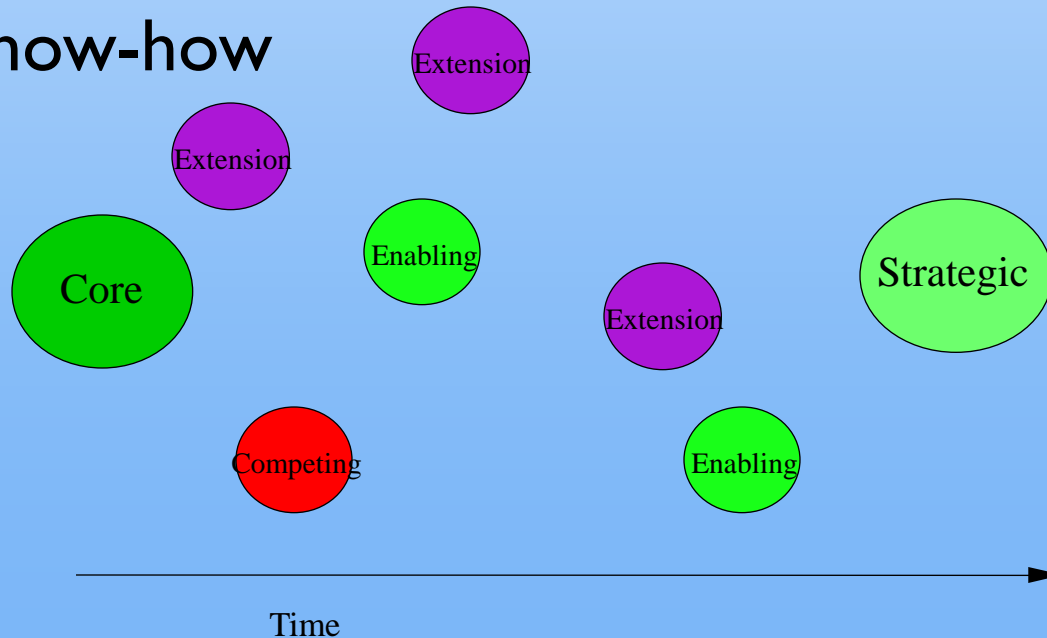
Dominant Designs are the Key to Guesstimates

- Product Innovation Stage
 - Bundle of Features
 - Standard User Interface
- Process Innovation Stage
 - Eliminate Steps
 - Improve Reliability
 - Improve Efficiency of Resource Use



A Products Value is Constrained by the Dominant Design and its Stability

- ▣ Utility \approx Value
- ▣ Bohn Knowledge Level
- ▣ Skills/Know-how



- **Nothing happens without a sale.**
David Speser
- **If opportunity doesn't knock,
build a door.**
Milton Berle
- **A well-defined imagination is the
source of great deeds.**
Chinese Fortune Cookie