

Portfolio Management

Overview

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A Portfolio Review is conducted to achieve multiple Goals

Value vs. Cost

To understand the potential value and associated costs of compounds in the pipeline

Depth of Understanding

To gain real and concrete knowledge of the scientific and commercial issues facing each compound in clinical development

Choices & Agreement

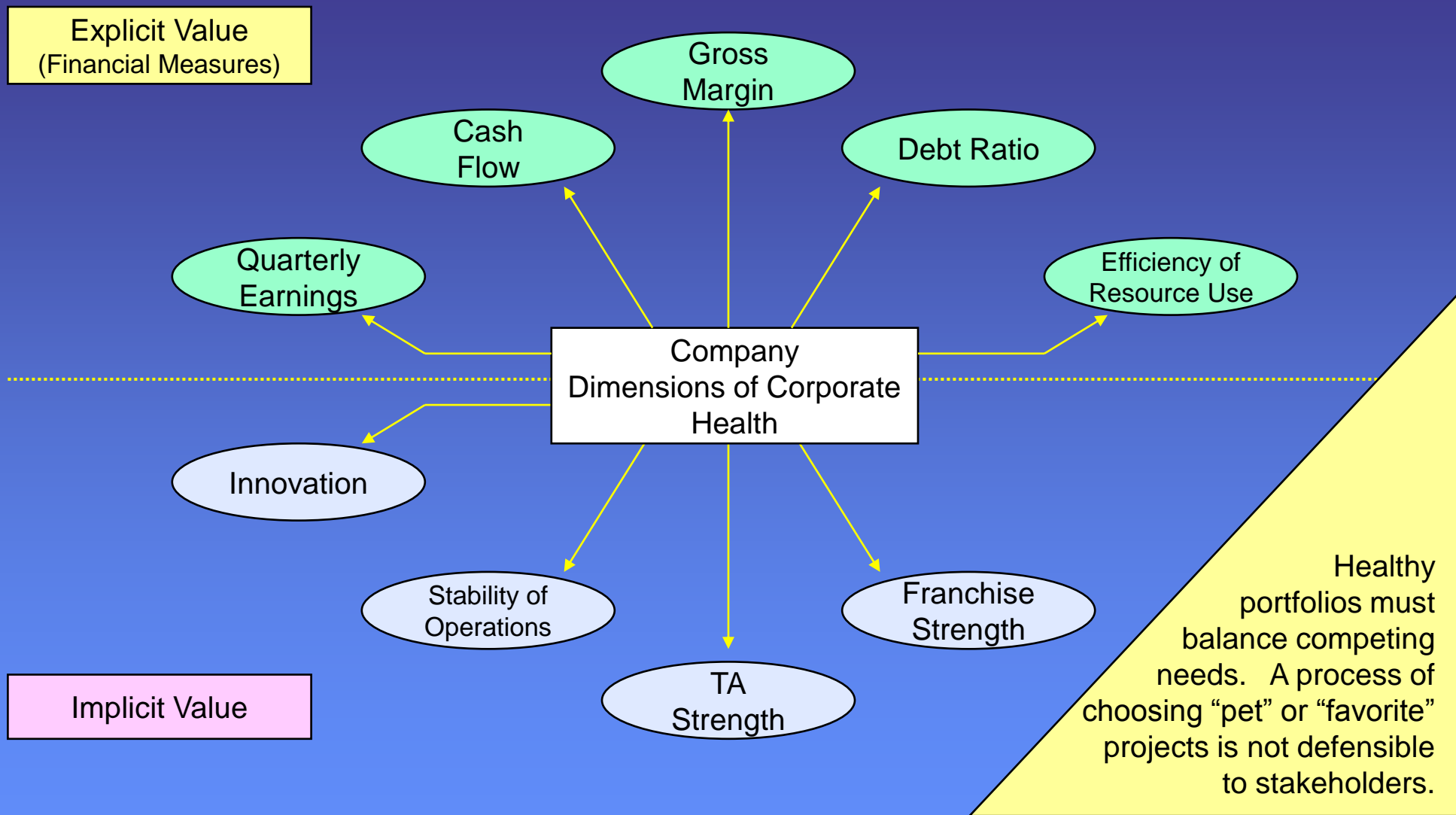
To agree on the novel compounds which will continue to be supported in early stages, and to prioritize the late-stage and line - extension efforts

Implications & Action

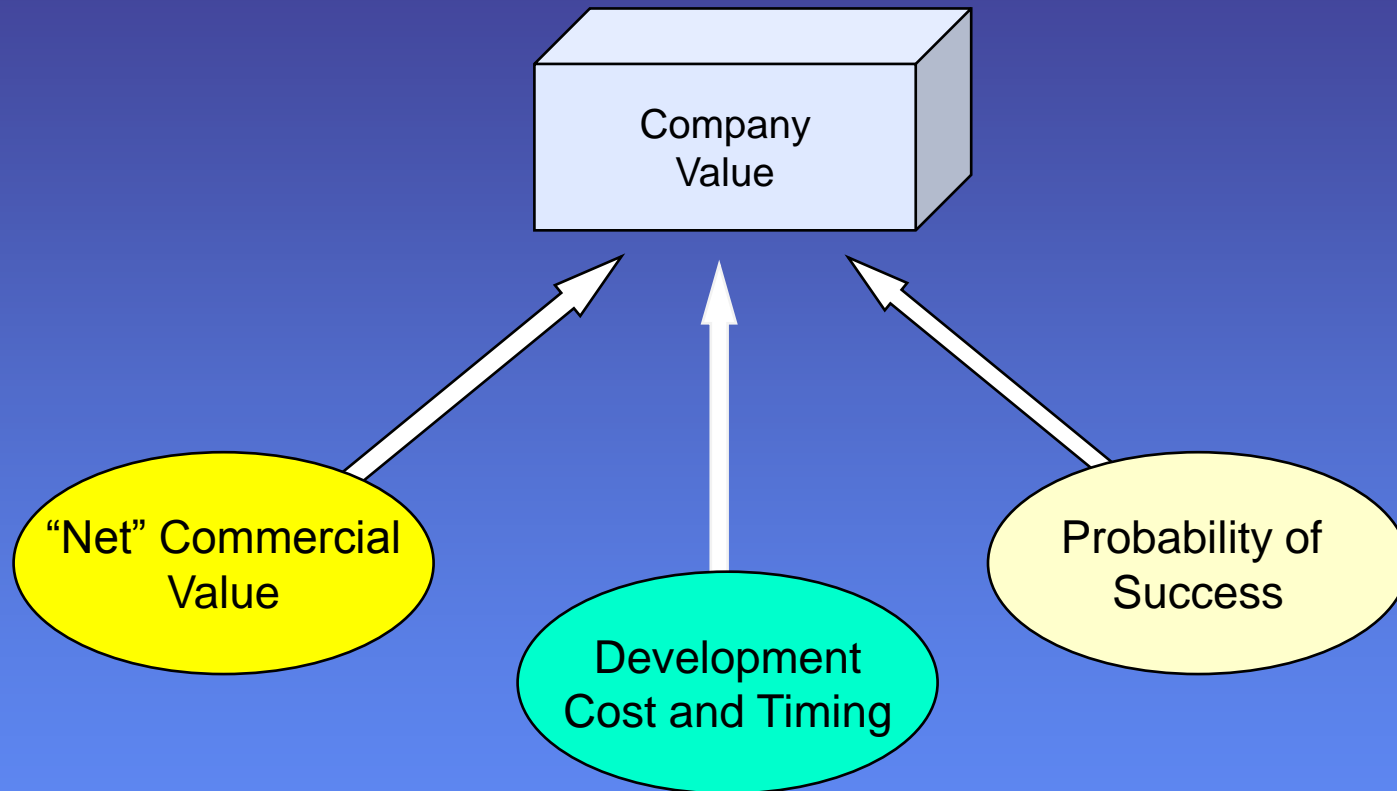
To understand the implication of these choices on the operations of the Company.



The Challenge of Portfolio Management is to create a Mix of Projects resulting in a “healthy” Company now and in the Future



The Validity of a Portfolio is only as good as the Quality of Evaluation at the Project-Level



Multiple Functions participate and coordinate within the context of the Project-Team to arrive at a Project Evaluation.



Net Present Value (NPV) and R & D Productivity Index

**“R&D
Productivity Index”**
↙

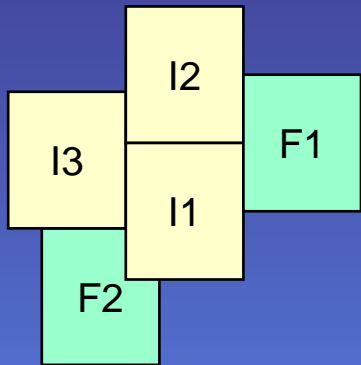
	Value Total NPV	Investment	Value / Investment
Project 1	\$500M	\$100M	5
Project 2	\$50M	\$5M	10

The optimal choice of which project to fund becomes a function of the overall R&D available funds, and risk/return profile of the portfolio desired.



To increase Flexibility, a project should be defined as the smallest Unit of Value supported by a unique development plan

Aggregated "Project"



Value/Investment

5
(Avg)

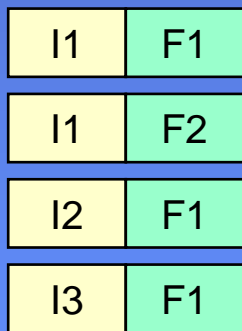


Decision



If Sr. Mgmt cannot determine the value of separate components of a large plan, the only feasible decision could be to stop the entire program.
All or nothing approach!

Disaggregated Projects



10
2
6
1



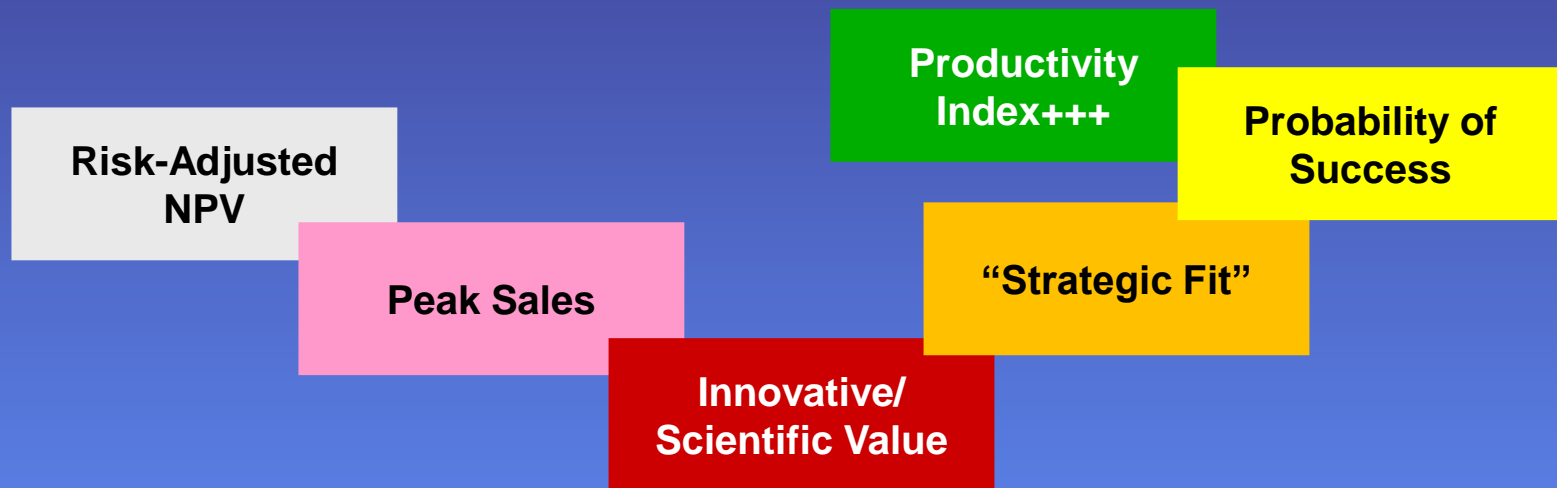
Desegregation of multiple indications and formulations to the "smallest unit" is essential for the differentiation in terms of "productivity" of investment analysis.

***Note: "I" means "Indication", "F" means "Formulation."**



Balancing a Set of Financial and Subjective Measures

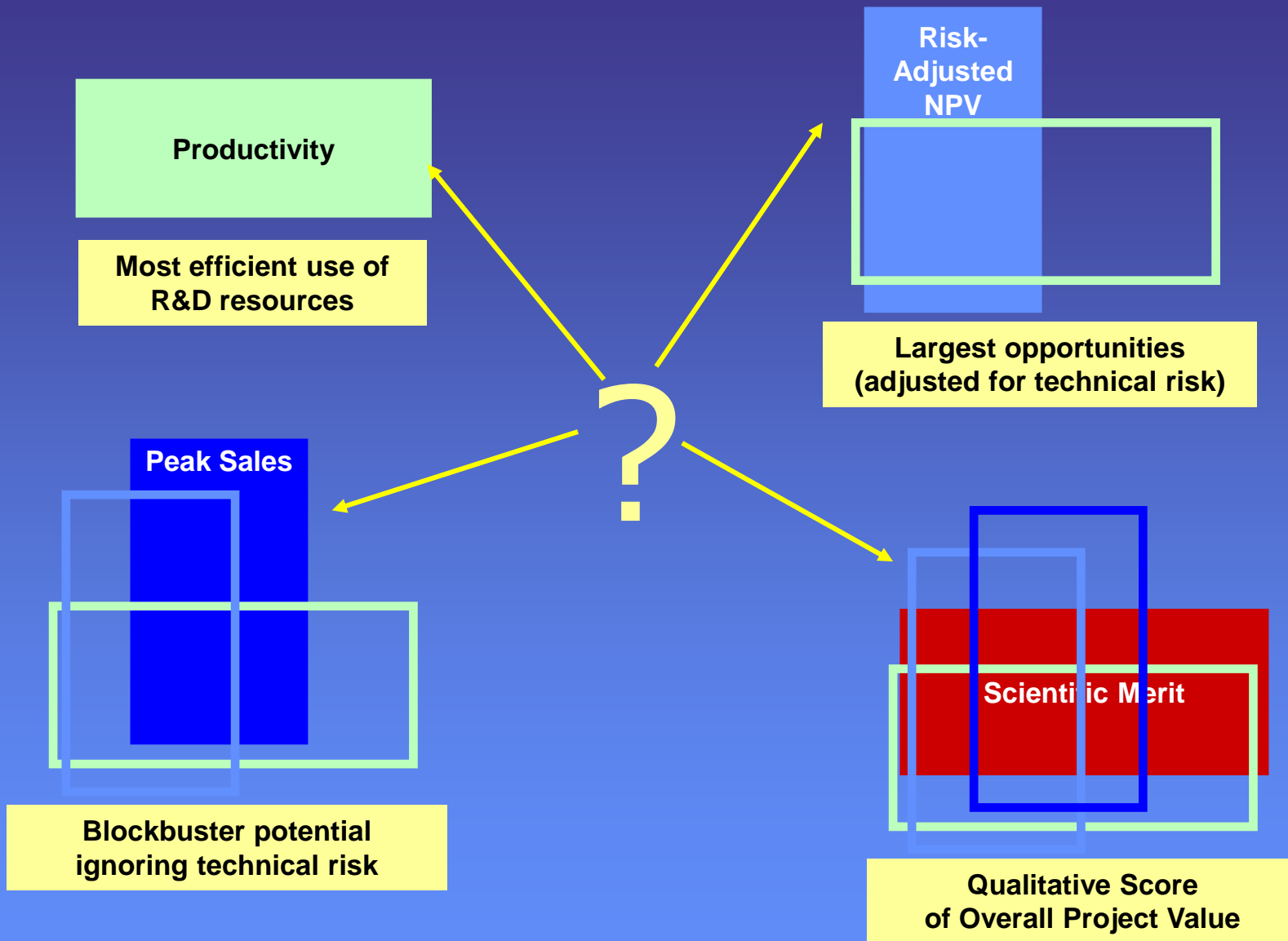
Value Dimensions



This process will allow management to reach consensus quickly on many compounds, and focus time and energy on those which required deeper debate and consideration



Alternative Measures lead to different Prioritizations.



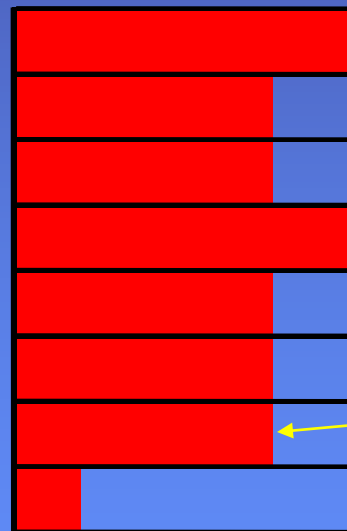
Display of relative Attractiveness on specific Value Metric

- For any given Value Metric, the Portfolio can be divided into highest-to-lowest quintiles.
- For each project, "Best" or "1st" Quintile has 5 of 5 boxes colored. "Worst" or "5th" quintile has only a single Box colored.

Project

Project 15
Project 12
Project 07
Project 22
Project 16
Project 55
Project 01
Project 89

Peak Sales

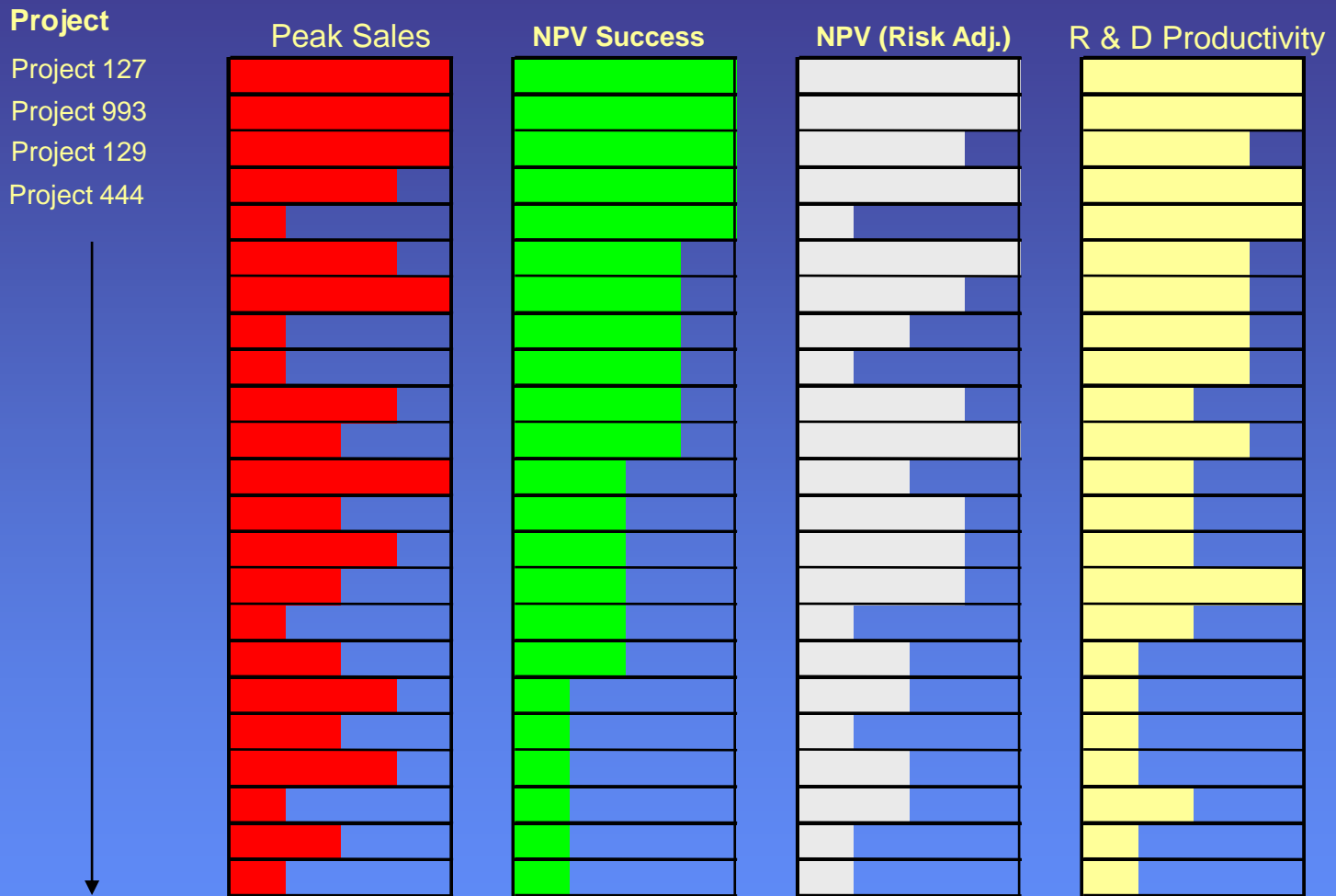


Project ranked in top quintile based on peak sales

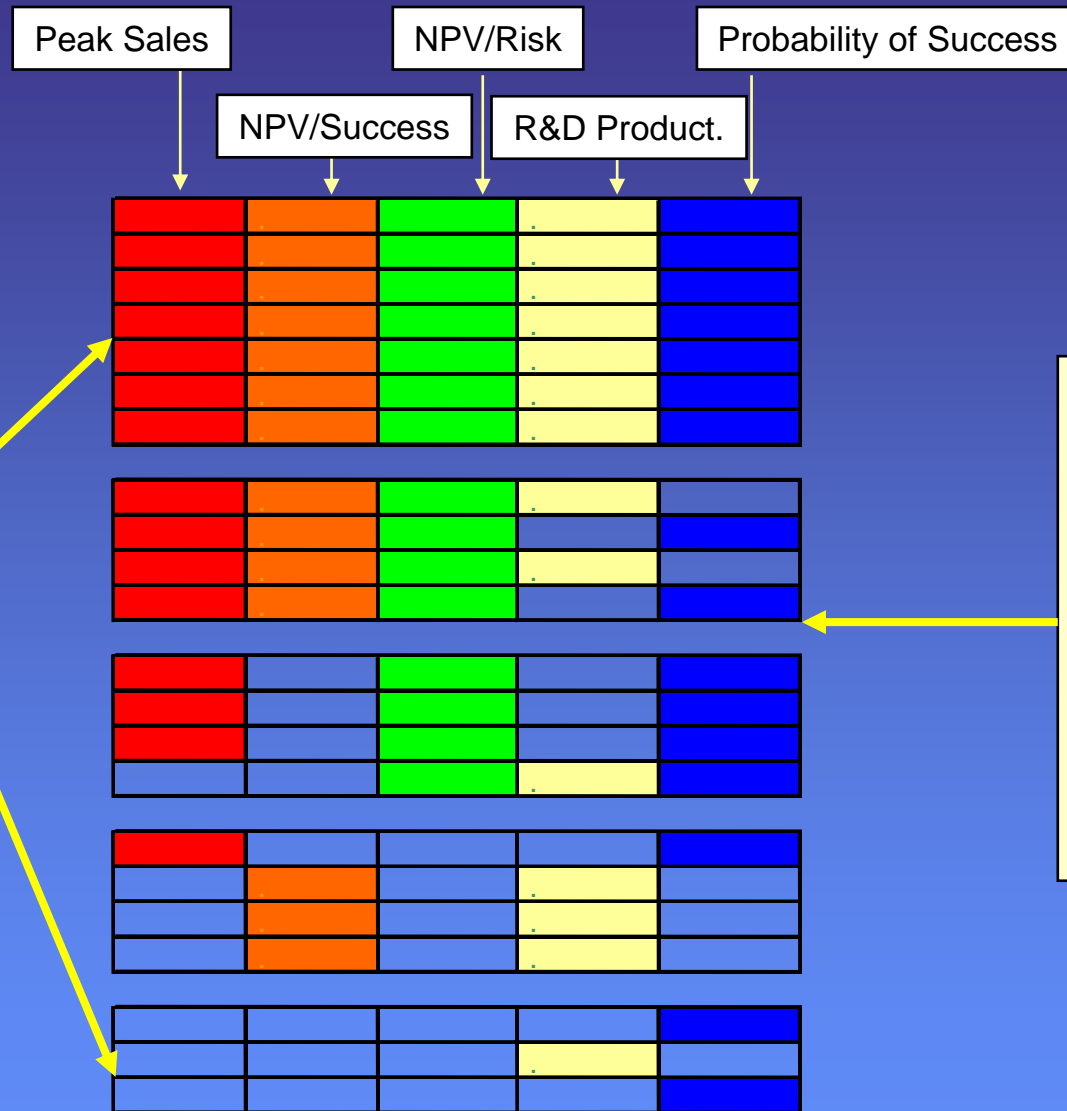
Project ranked in 4th quintile based on peak sales



All Projects ranked by NPV



Cross-Metric Comparison reveals Projects which are valuable in multiple Dimensions

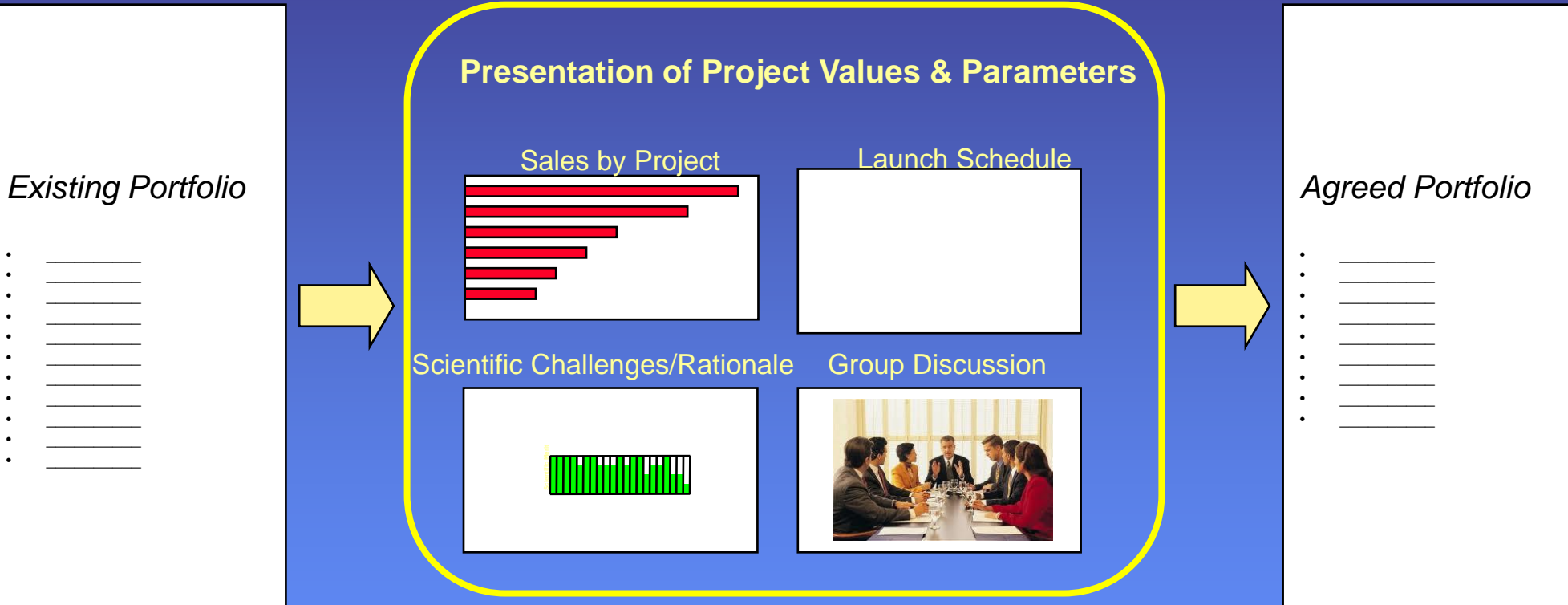


The status of projects at each end of the spectrum are likely to be sources of quick agreement.

Those that are only selected by a sub-set of criteria should be the focus of further discussion. They will provide the food for more detailed considerations such as operational impacts, launches, and strategic intent.

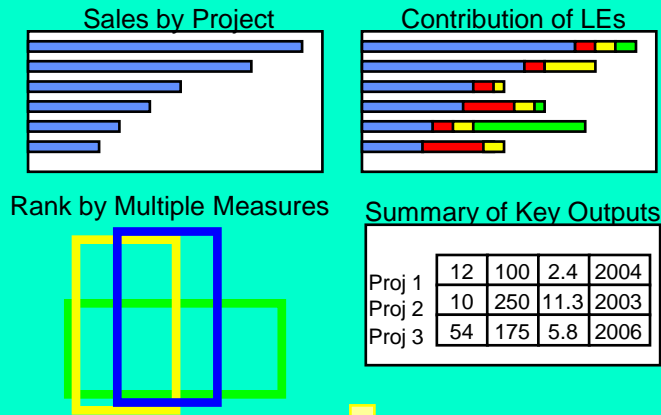


Process for Selection and Prioritization



Portfolio Management overall Process

Step One Indicators of Project Value

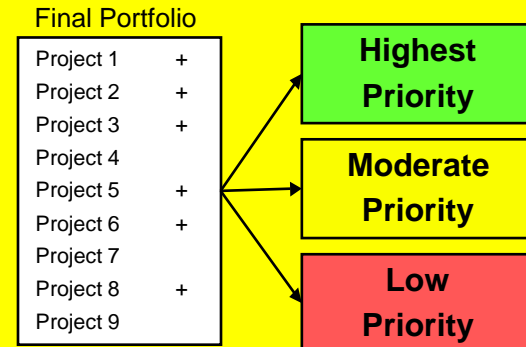


Step Two Design Proposed Portfolios

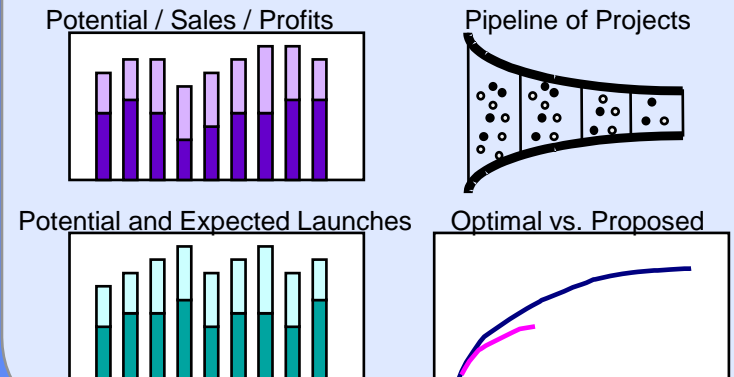
Proposed Portfolios

Project 1	+
Project 2	+
Project 3	+
Project 4	+
Project 5	+
Project 6	+
Project 7	+
Project 8	+
Project 9	+

Step Four Agree on Final Portfolio



Step Three Implications of Proposed Portfolios



Portfolio Management Output / Results Management Decision Making

Project & Portfolio

Visualization Concepts

to support / guide

the Decision making Process

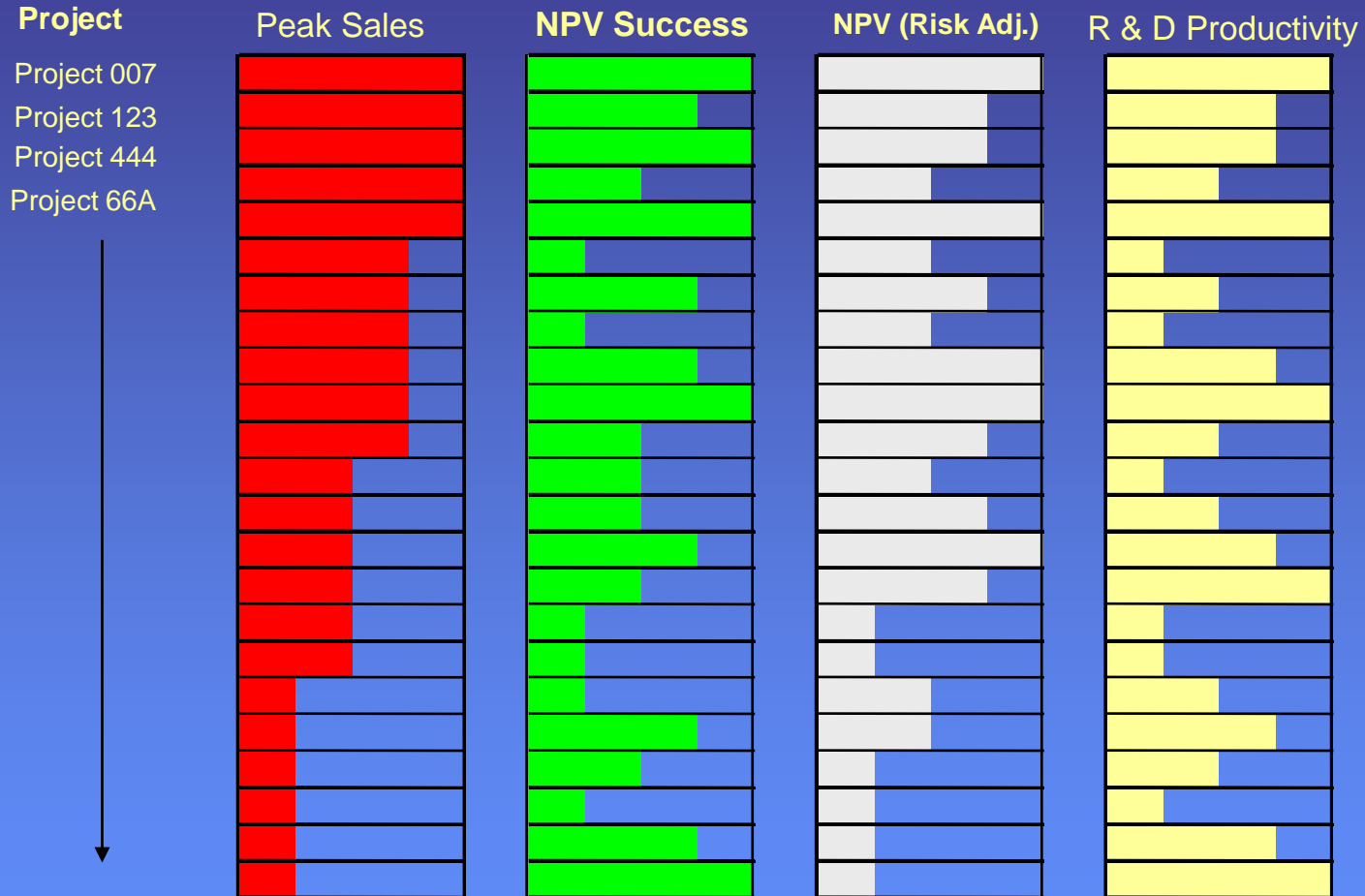


Summary of Key Output by Project

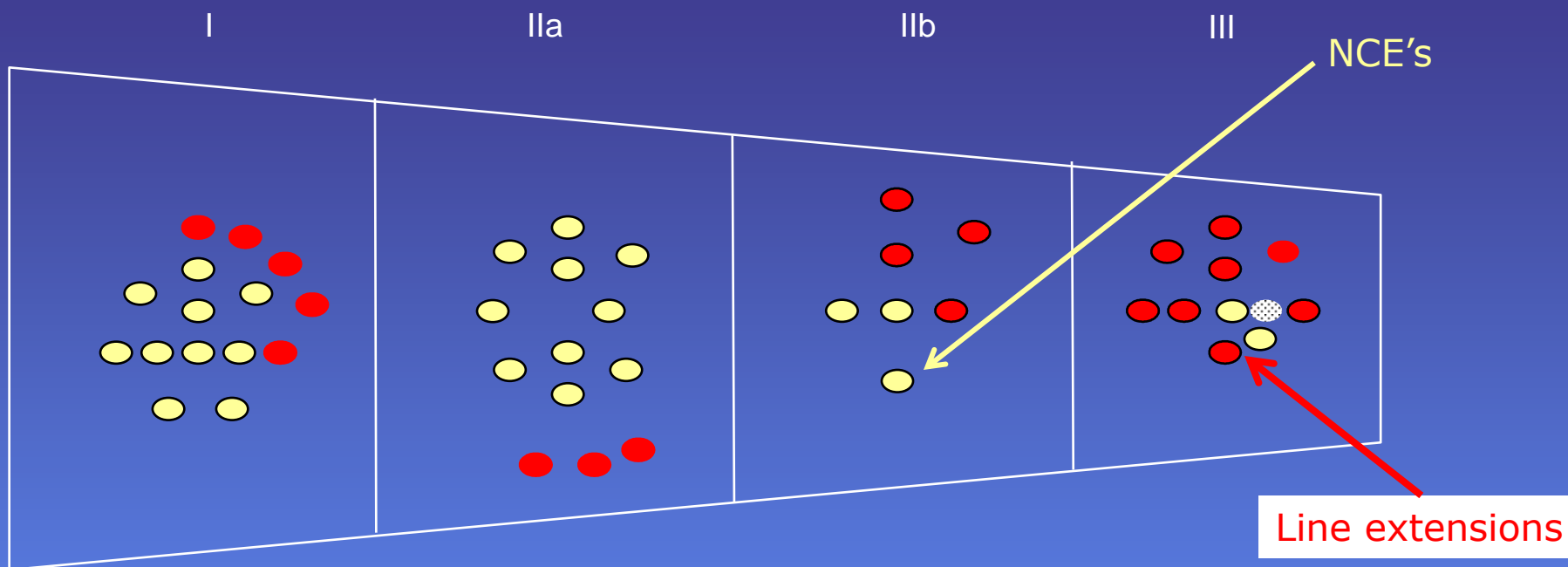
Project	Launch Timing	Peak Sales (MM \$)	NPV (given success)	NPV (risk adjusted)	External Cost (20012)	Total Development cost (2012)
Project 66	2013	75	250	125	4	6
Project 4733	2015	190	1200	800	3	7
Project 340	2016	255	800	400	2	4
Project 007	2014	1200	2000	900	0	2
Project 1211A	2013	3500	4500	1500	1	1.5
Project 456A	2016	2900	4000	1000	0	1.5



All Projects ranked by Peak Sales also other Dimensions of "Attractiveness" are visible



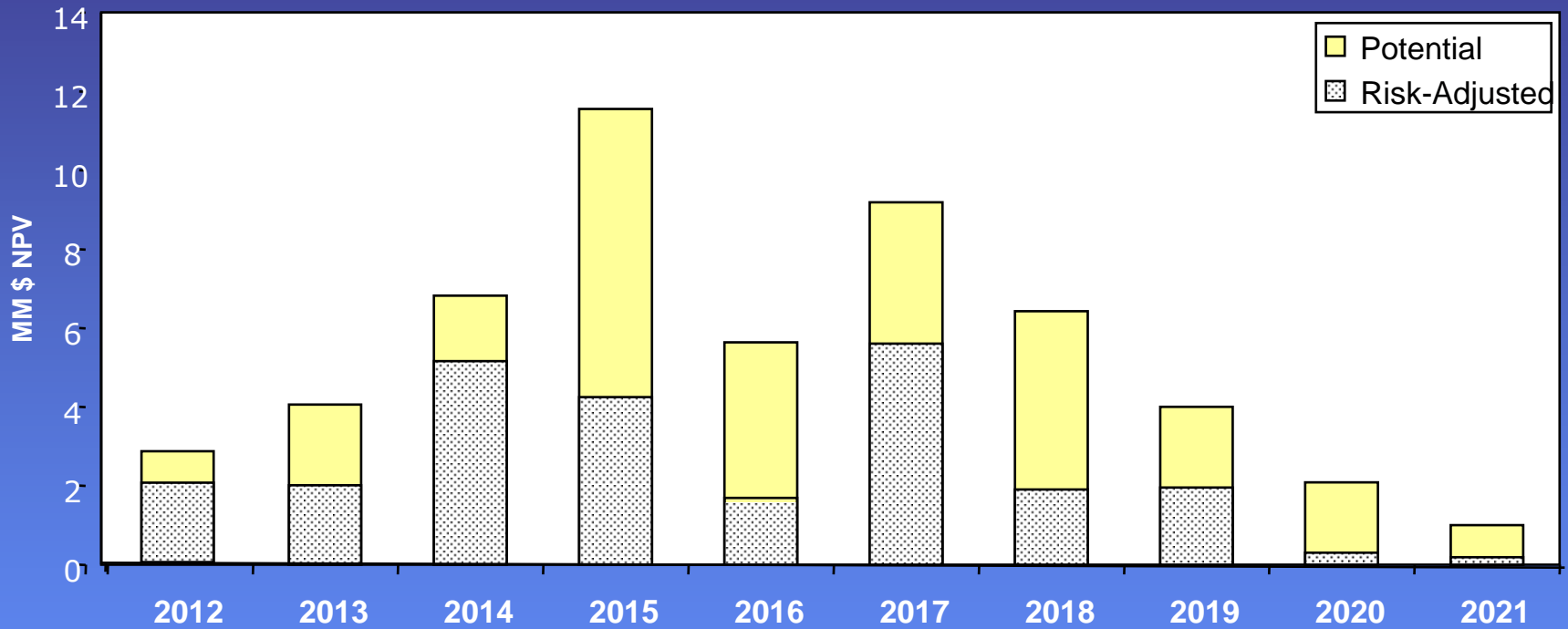
Compounds / Projects by Phase of Development



New Chem <ul style="list-style-type: none"> •Proj 123 •Proj 344 •Proj 555 •Proj 666 •Proj 777 •Proj 1000 •Proj 1200 •Proj 1300 •Proj 1400 •Proj 1500 	Line Ext. <ul style="list-style-type: none"> •Proj 60 •Proj 70 •Proj 80 •Proj 90 •Proj 100 	New Chem <ul style="list-style-type: none"> •Proj 4555 •Proj 2345 •Proj 888 •Proj 7666 •Proj 4222 •Proj 9988 •Proj 7345 •Proj 3911 •Proj 6299 •Proj 5733 	Line Ext. <ul style="list-style-type: none"> •Proj 7533 •Proj 6299 •Proj 3992 	New Chem <ul style="list-style-type: none"> •Proj 5991 •Proj 7391 •Proj 4559A 	Line Ext. <ul style="list-style-type: none"> •Proj 7554A •Proj 4982B •Proj 560A 	New Chem. <ul style="list-style-type: none"> •Proj 1441 •Proj 422A 	Line Ext. <ul style="list-style-type: none"> •Proj 7554A •Proj 4982B •Proj 560A •Proj 4477 •Proj 3366 •Proj 3119 •Proj 88A •Proj. 1900B
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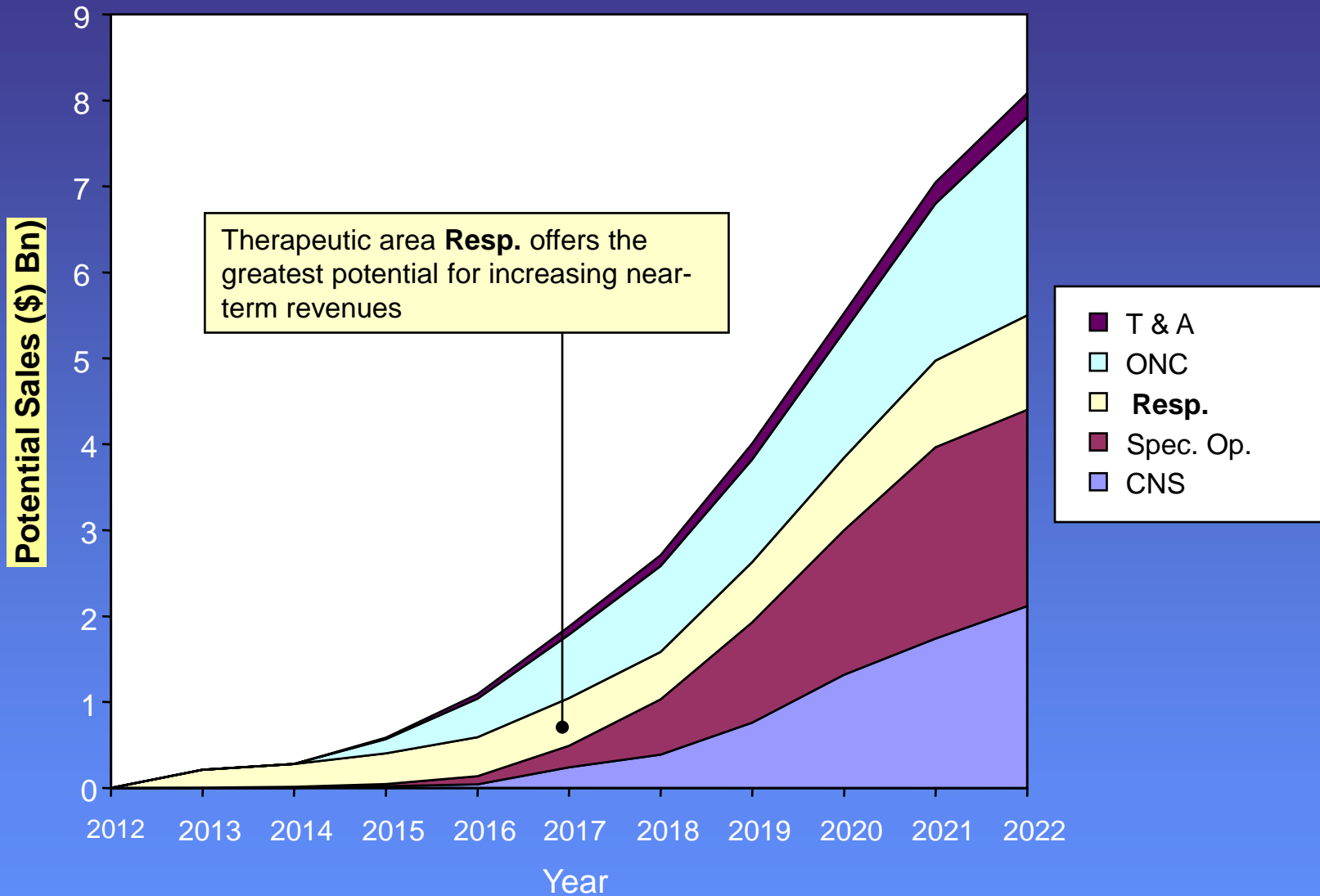
NPV Potential versus Risk-Adjusted NPV



Proj 123	Proj 567	Proj 744
Proj 444	Proj 99	Proj 666
Proj 512	Proj 441	Proj 411
Proj 39	Proj 72	Proj 553
		Proj 662

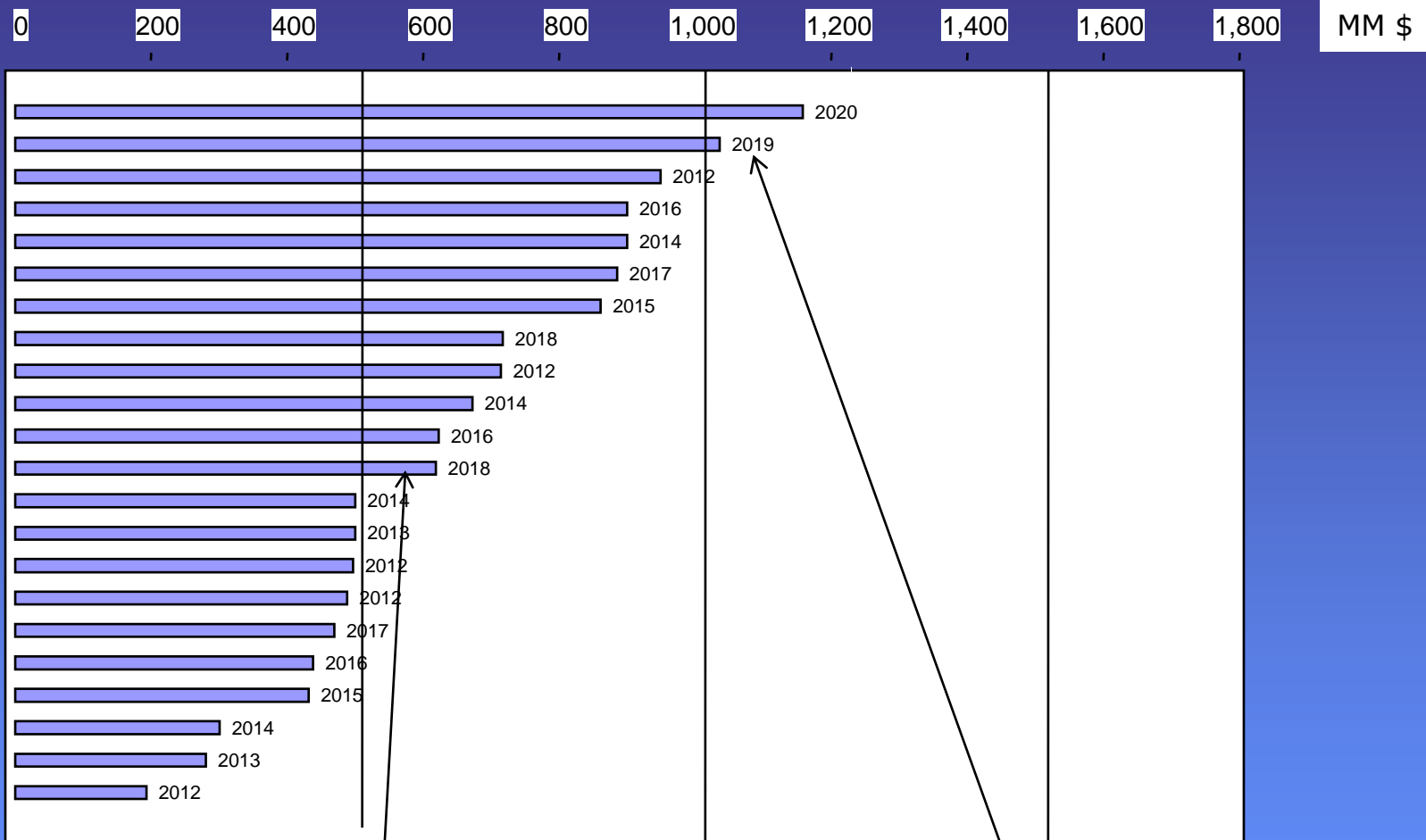


Potential Net Sales Contributions by Therapeutic Area



Peak Sales by Project based on to Target Product Profile

Peak Sales (non risk adjusted)



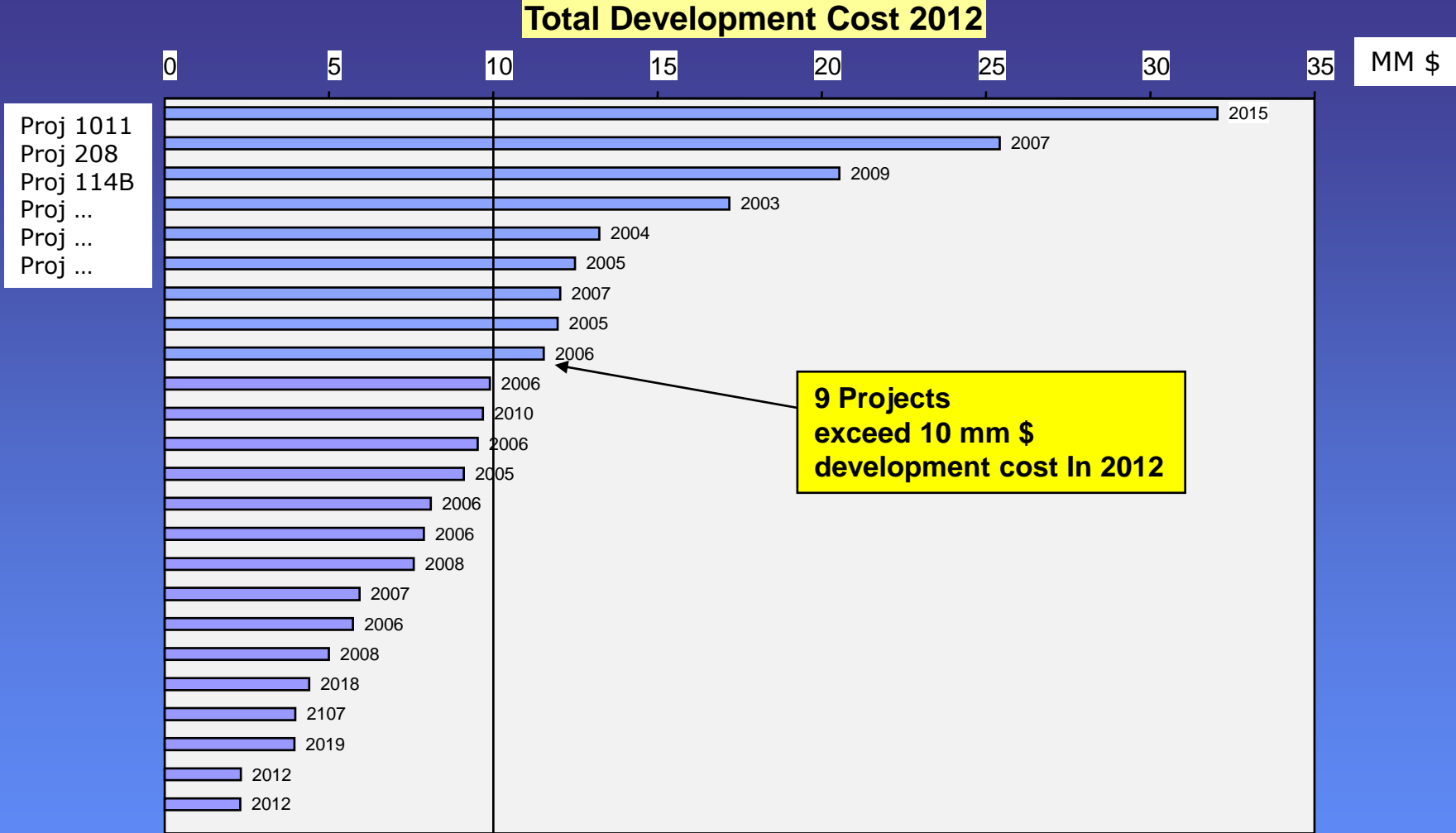
Proj. 1433
 Proj. 2200
 Proj. 219A
 Proj. ...
 Proj. ...

12 Group 1 projects expect to exceed 500M \$ in peak sales, given launch.

Expected launch date is noted at the end of each bar

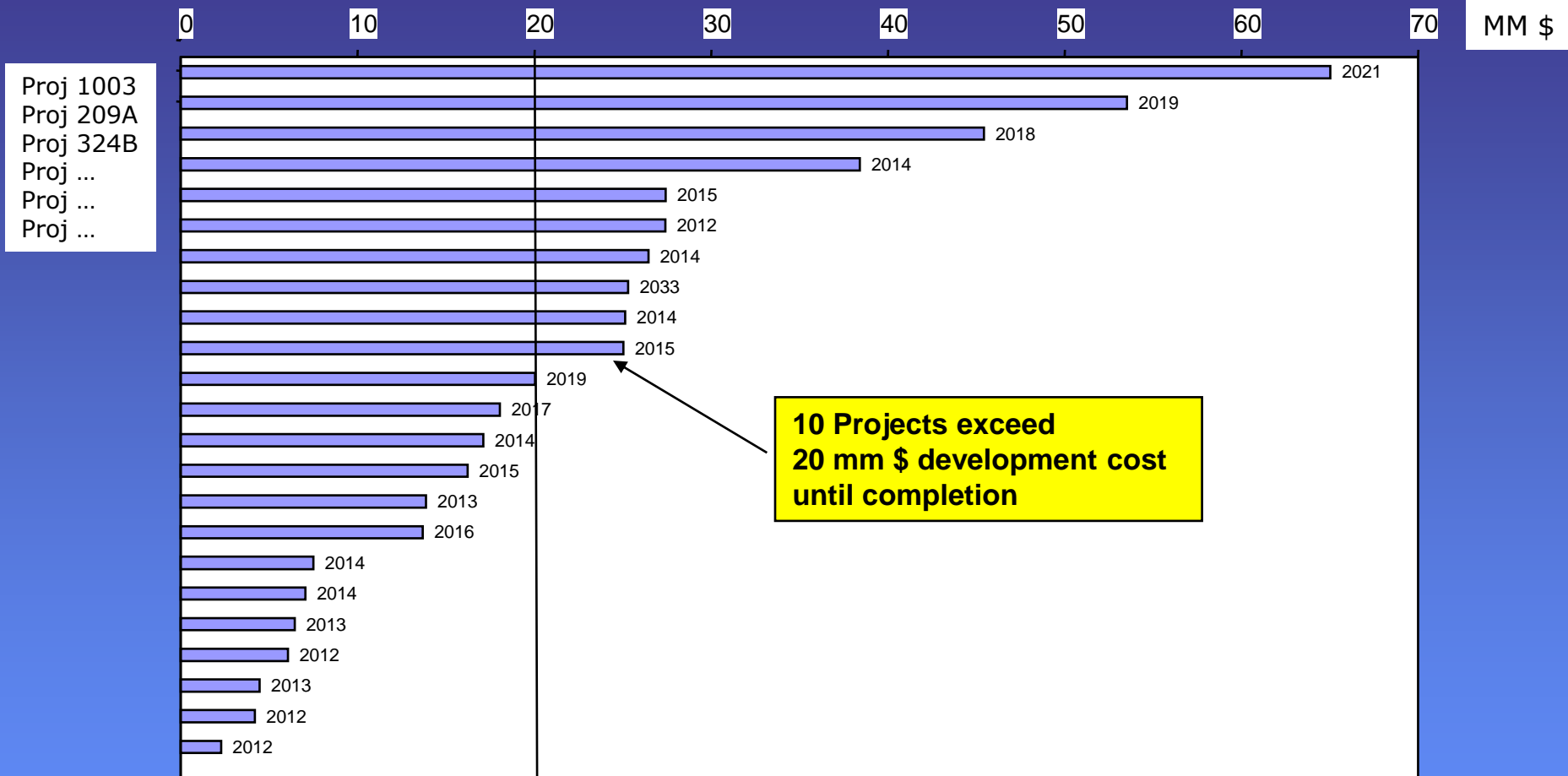


Total Development Cost 2012 (MM \$)

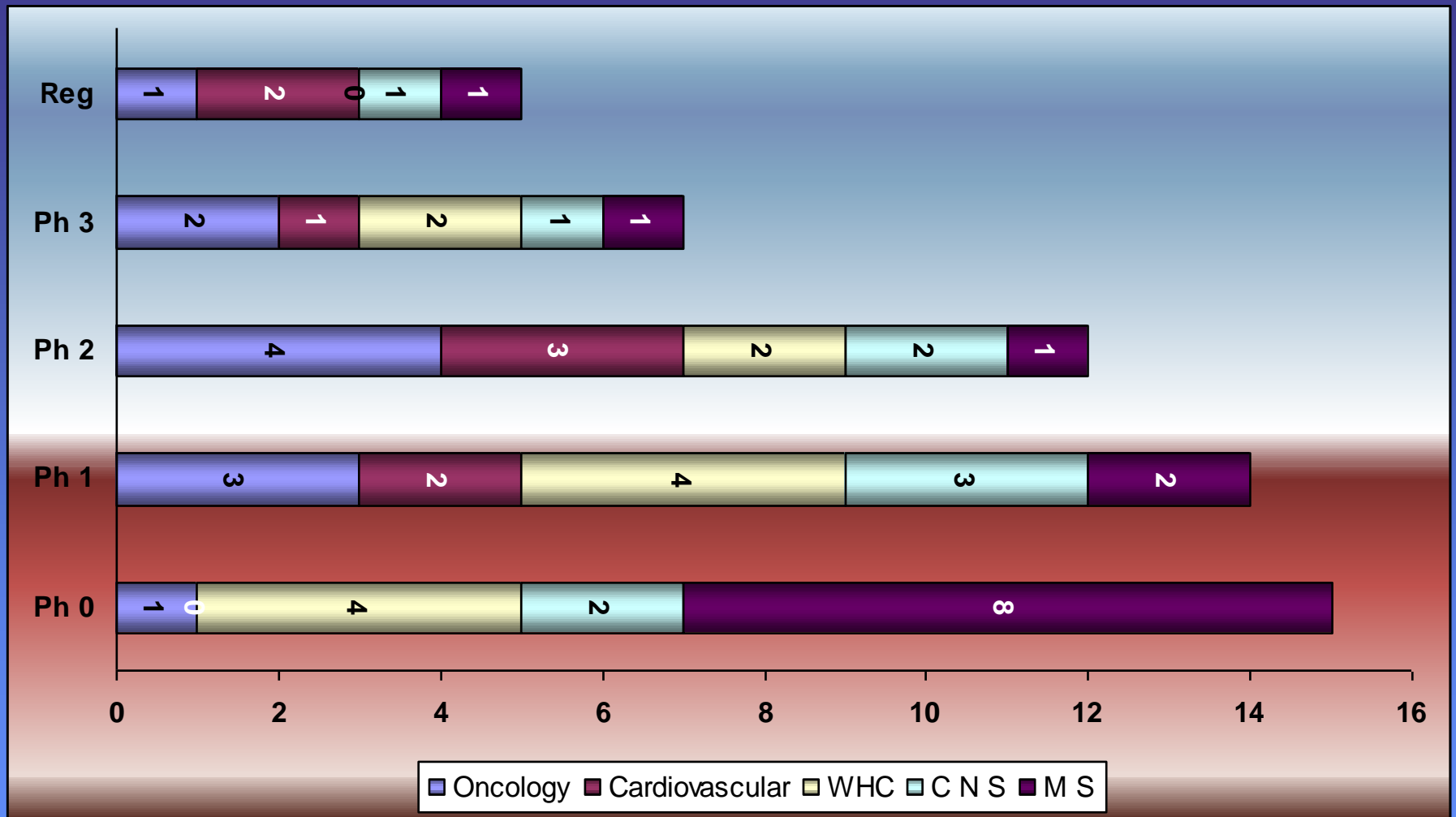


Development Cost to Completion (MM \$)

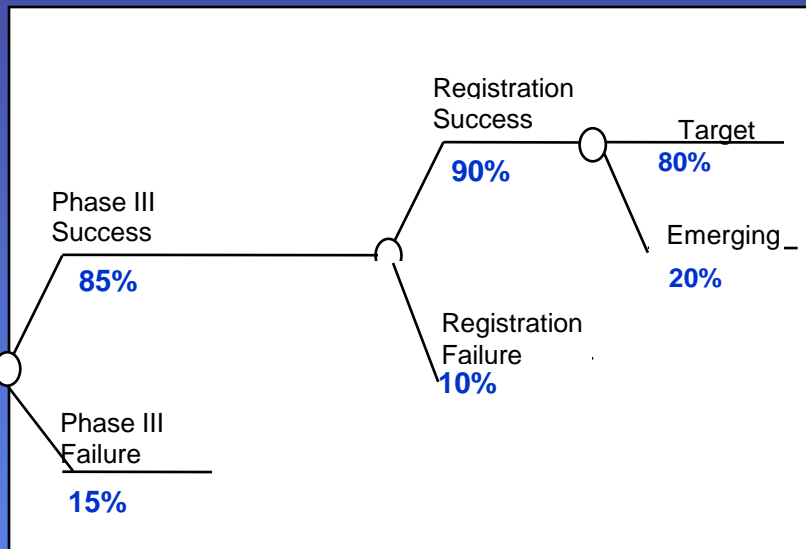
Total Development Cost to Completion



Projects by TA and Phase of Development



Probability of Success and Risk Adjusted NPV

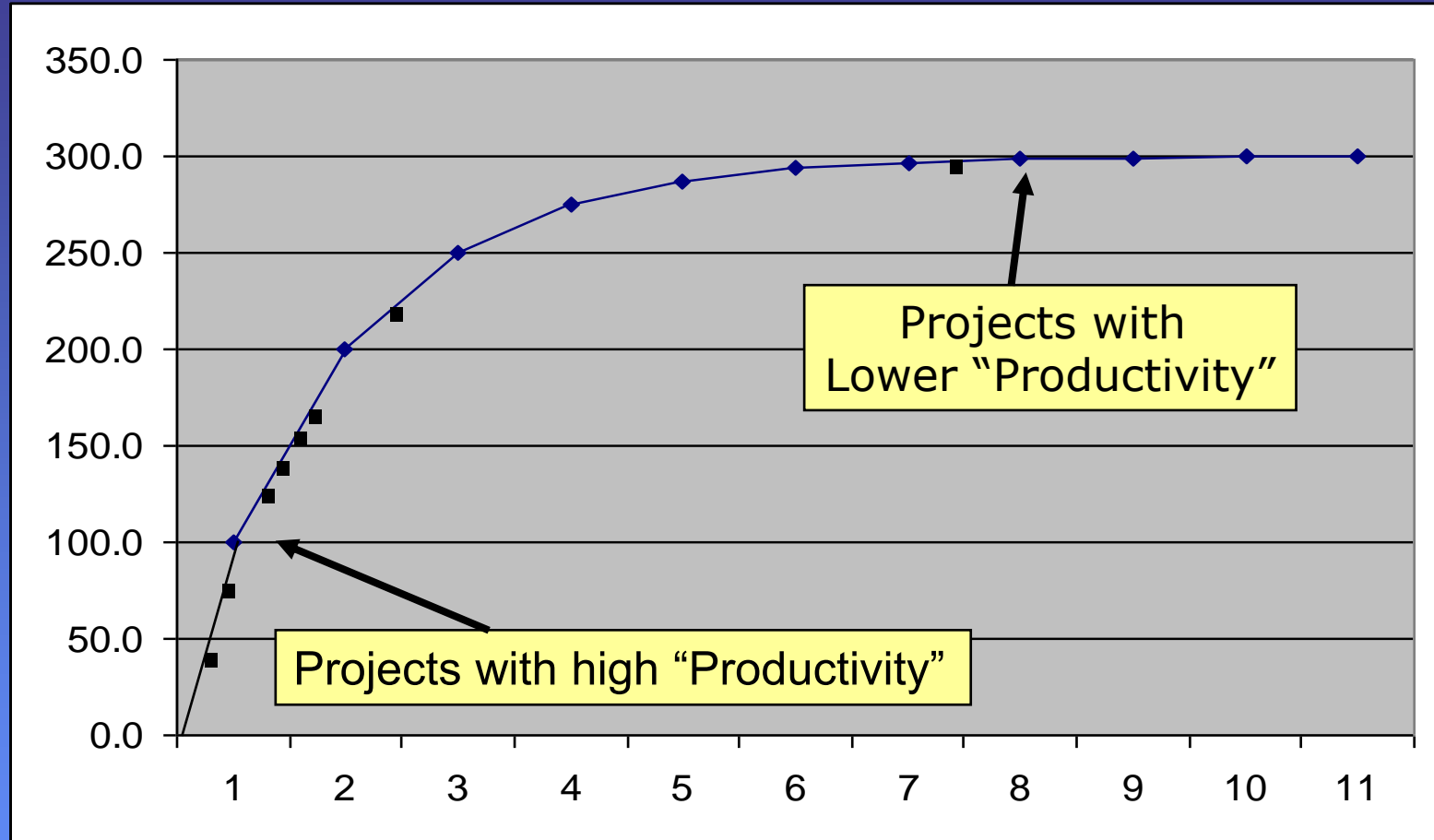


- Every project includes a full, explicit POS analysis through submission
- In many cases, multiple scenarios are described (one of them includes the “Target Product Profile” TPP)
- POS is combined with the commercial valuation to arrive at true Risk-Adjusted NPV.



Productivity by Project Portfolio "Productivity"

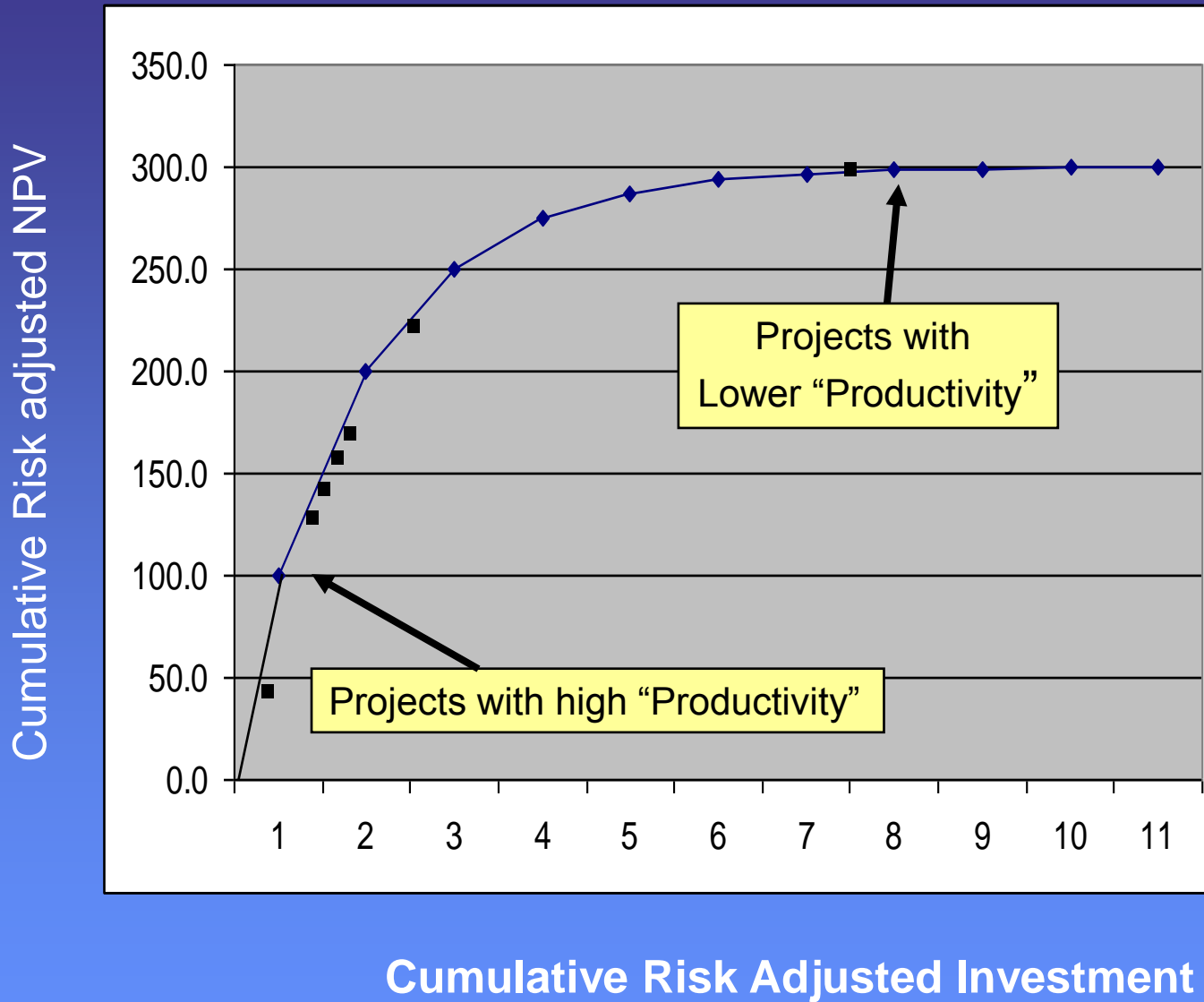
Cumulative Risk adjusted NPV



Cumulative Risk Adjusted Investment



Biggest Return on Investment



Ranking based on R & D Productivity

- 1 project 1023
- 2 project 344a
- 3 project 2775
- 4 project
- 5 project
- 6 project
- 7 project
- 8 project ...
- 9 project ...
- 10 project



Portfolio Management Process

- Kick-off meeting Client with Epicenter Consulting
 - Agreement on overall process, timelines, responsibilities
 - Agreement on Valuation Metrics (Risk adjusted NPV's)
 - Responsibility for forecasting
 - Agreement on tools, communication etc.
 - Client team members, Epicenter Consulting team members
 - Agreement on deliverables
 - Agreement on decision making process
- Client - Epicenter core team
- Project team work
- Regular team review, adjustments
- Preliminary summary of findings
- Final meeting and decisions

