



Five Essential Keys to Successful Portfolio Management

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Overview of Portfolio Management

Overview

BASIC CRITICAL POINTS

- *The R&D portfolio is the future of the company.*
- *To manage it is to distribute scarce resources across a set of projects as well as across a set of project strategies.*
- *Priorities must be established and difficult choices must be made.*

Overview

MANAGEMENT REQUIREMENTS

- *Because of 'surprises', good management means flexibility.*
- *Of critical importance is that senior management understand the principles, the objectives, and the knowledge to make correct choices.*

Overview

THE GOAL

- *The ultimate aim is to create value and to do it over time.*
- *If a pharmaceutical does it well, then it will be successful.*
- *The optimal portfolio is one which (1) maximises expected value today and into the future, (2) addresses risk (attrition), and (3) optimally distributes resources.*

The Five Essential Keys

The Five Essential Keys

SELECTION CRITERIA

To qualify as a key, each factor had to meet the following criteria:

- It had to relate to all R&D projects, not just a subset.*
- Corporate management could elect 'not to pursue' the factor.*
- If the company didn't do it (by accident or by design), it would not be successful?*

Key #1 - Corporate Buy-in

This means that both management at all levels and project team members understand and are willing to follow the principles of Portfolio Management.

This is key for two simple reasons...

Key #1 - Corporate Buy-in

Management -

The Decision Making Process is the 1st Step in Achieving Goals and Objectives.

Making correct portfolio choices, project strategies, resource allocations, and timings are the responsibility of Corporate Management.

Decision makers must understand the nature of decision making under uncertainty as well as the quantitative measures that lead to success.

Key #1 - Corporate Buy-in

Project Teams -

The Best Decision Requires the Best Information Available

Information is data that is put in a form that allows goals and objectives to be pursued.

Providing correct project data is the responsibility of project team members and no one else. These individuals represent expert knowledge which is the best information available to decision makers.

Key #1 - Corporate Buy-in

Without corporate buy-in, *Portfolio Management* does not exist. As an alternative, one may ask oneself, “Do I feel lucky?!”

‘Dirty Harry’

Key #2 - Risk Management

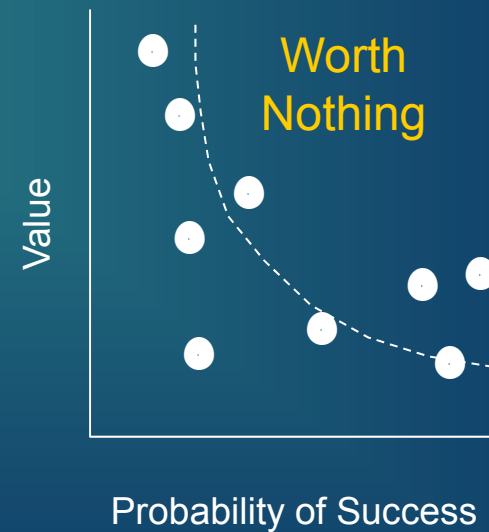
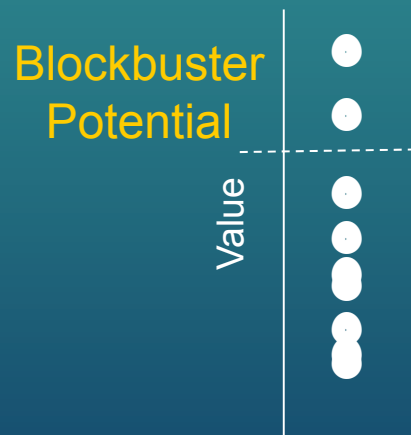
The need to manage risk appears obvious, but (1) it is not always done and (2) when it is done, it is not always done correctly.

We will consider:

- 1. What happens when 'risk' is not assessed or used.*
- 2. Why some do not want to assess or use 'risk'.*
- 3. What are 'right' and 'wrong' ways in which to use it.*

Key #2 - Risk Management

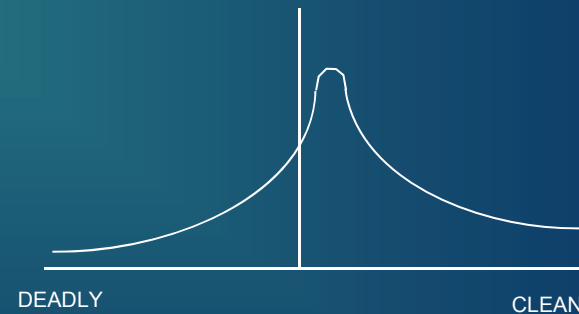
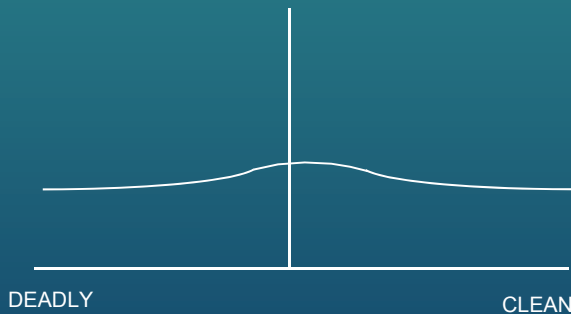
- 1. What happens when 'risk' is not assessed or used.*



Key #2 - Risk Management

2. Why some do not want to assess or use 'risk'.

The typical explanation as to 'why' risk is not assessed is, "It's too inaccurate to be of any use."



'Risk' is actually 'uncertainty' and 'uncertainty' is actually 'confidence'. The word 'inaccurate' is not even relevant as it is actually a distribution of outcomes for which an expert has some, a lot, or no confidence.

Key #2 - Risk Management

3. What are 'right' and 'wrong' ways in which to use risk?

WRONG

Two important factors for determining the worth of a drug are the quality of the science and the commercial value. Both are of equal weight as both are critical for success. AR Pharma (a very large pharmaceutical) has decided to use a 0-10 rating for each factor then add the scores. Projects will be prioritized based on their index out of a possible 20.

Project A -	Science is avg.	Score is	5.
	<u>Comm is avg.</u>	<u>Score is</u>	<u>5.</u>
	Index		10

Project B -	Science is bad.	Score is	0.
	<u>Comm is good.</u>	<u>Score is</u>	<u>10.</u>
	Index		10



Key #2 - Risk Management

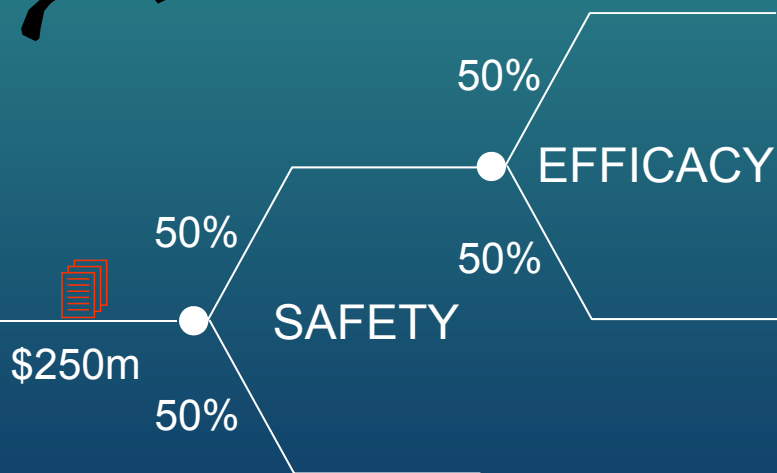


What are 'right' and 'wrong' ways in which to use risk?

RIGHT

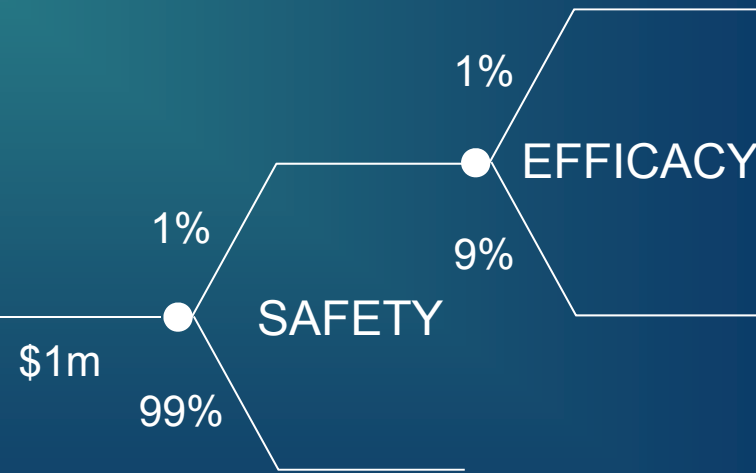
Project A

\$1b



Project B

\$10b



Key #3 - Revenue Stream

- *Blockbusters are nice, but they are far and in between.*

Operating capital is required to sustain any business into the future.

- *Small projects are the 'bread & butter' of a pharmaceutical.*

If strict adherence is paid to selecting the highest valued opportunity, then a pharmaceutical has to ask itself if it will still be around to reap those benefits in the future.

Key #4 - Efficiency of Investment

Efficiency is simply a rate of return. That is, it's an index.

If you have one dollar to invest and you are trying to maximize your return, then put it in the project with the greatest ROI.

If you don't do it, your stockholders will and you'll soon find yourself out of business. But ROI is NOT value. What does it mean to the manager of an R&D Portfolio?

Key #4 - Efficiency of Investment

An efficiency index such as ROI or PRODUCTIVITY, can used to pack as much value into a limited space as is possible.

When selecting projects to pursue from a large number, order them by an efficiency measure, then stop when you run out of money. You'll create your highest valued portfolio.

(One caveat is that you can improve total value a bit by using a special mathematical method called integer programming.)

Key #4 - Efficiency of Investment

Other scarce resources such as chemists, drug substance, manufacturing capacity, and time are subject to the same principles of distribution.

Put them into the greatest efficiency projects first!

(If the problem is too complex, remember that integer programming was developed for just such problems.)

Key #5 - Profit

Any business in any universe must make a profit, otherwise value is destroyed. Value destruction falls into the same class as

- *A vacuum (which nature abhors),*
- *Black holes (from which nothing escapes) and*
- *The second law of thermodynamics (a one-way street from which one does not return).*

Conclusion: Portfolio management must clearly create value. All else is nice, but not necessary.

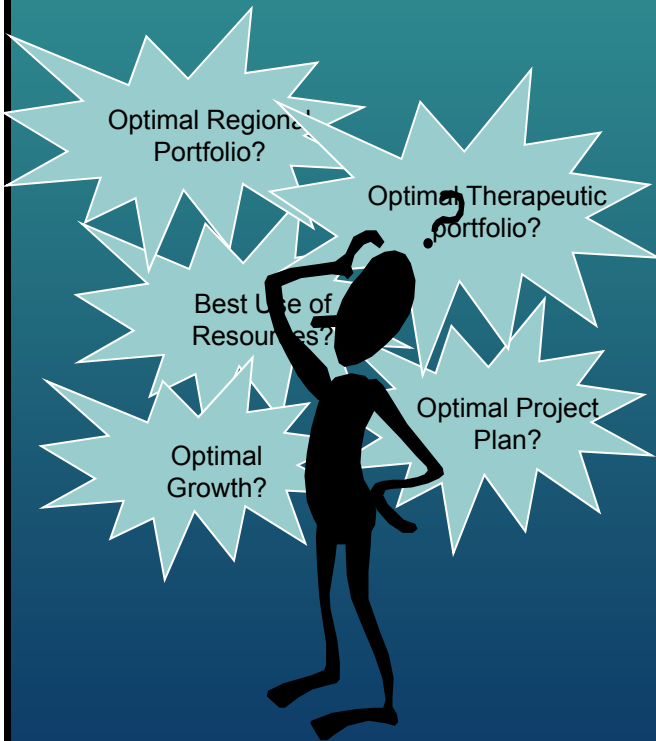
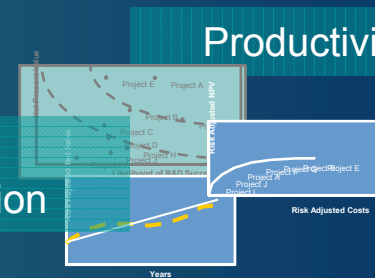
Summary

Corporate Buy-in

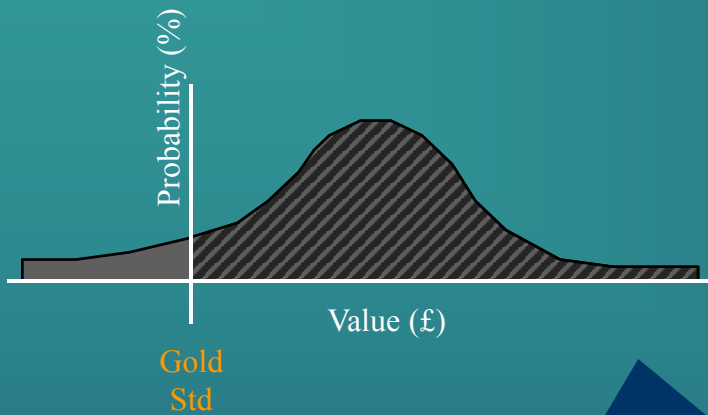
Value
Optimisation

Productivity

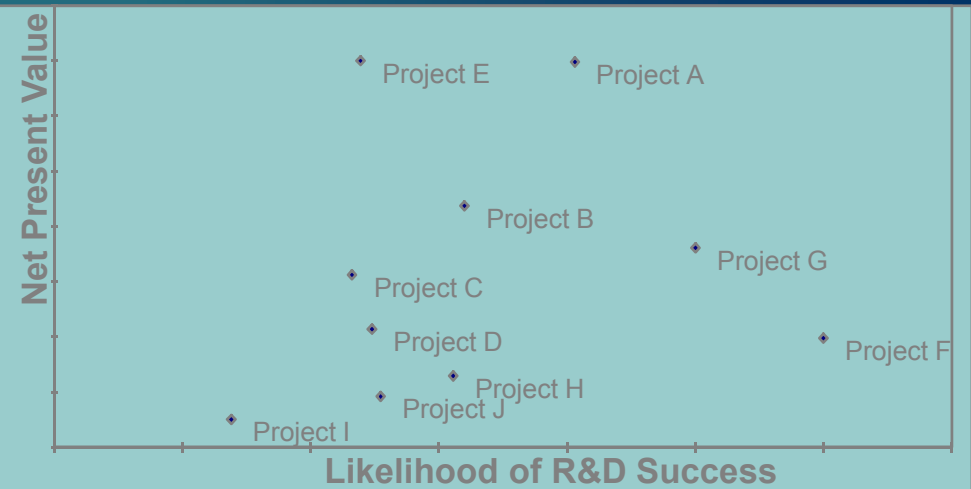
Risk Management



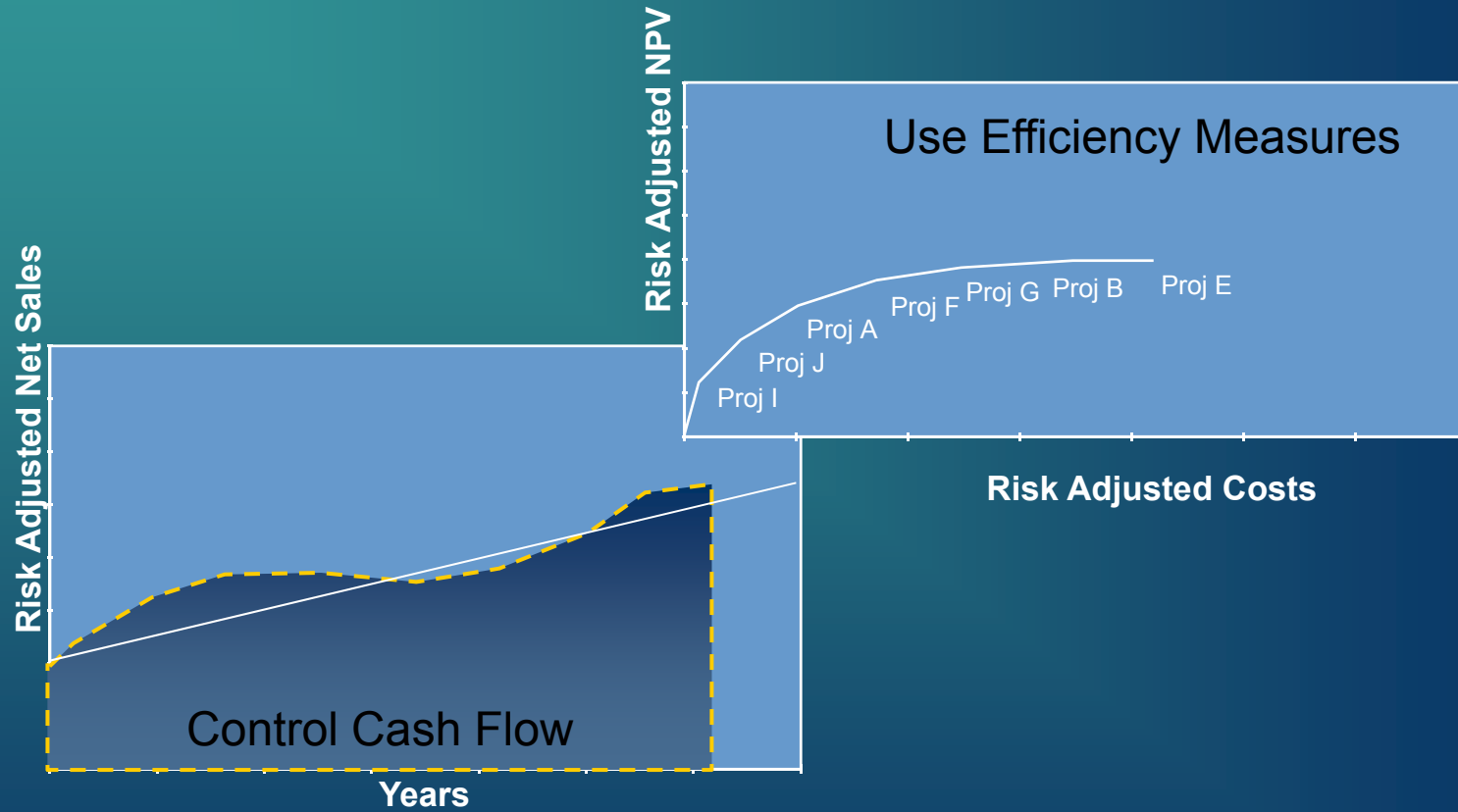
Risk Management



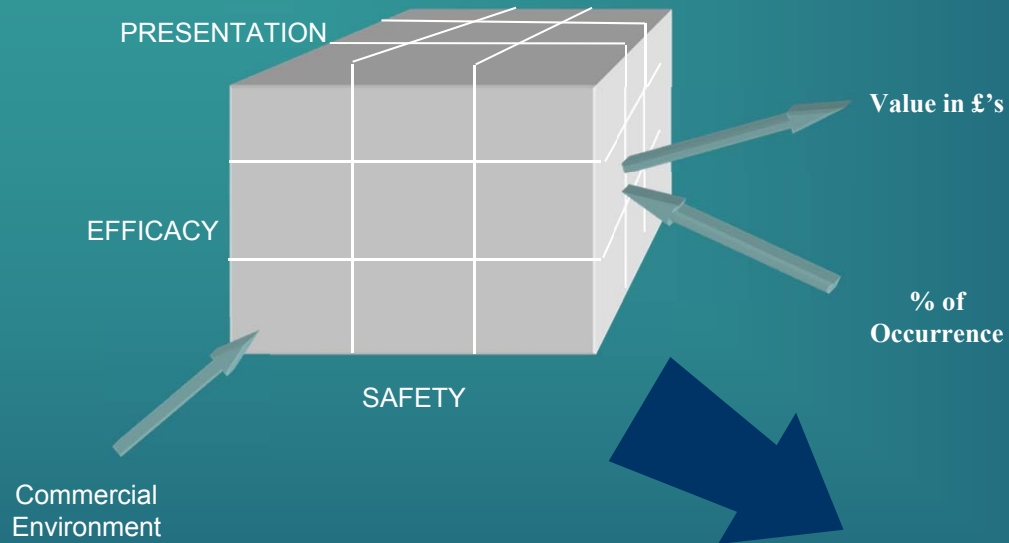
Risk Distribution



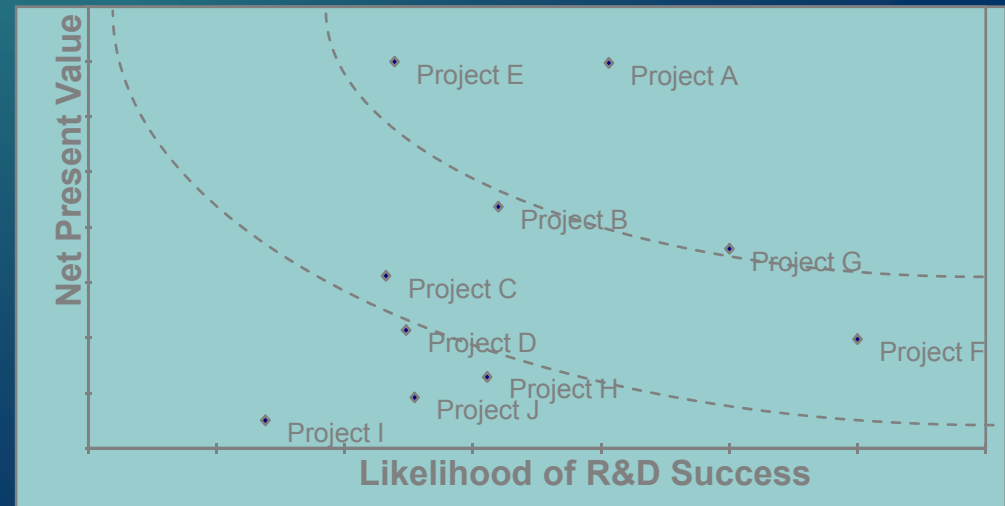
Revenue Stream and Efficiency



Profit



Risk-Adjusted NPV



In Summary

- ❑ The Portfolio represents the future of a company.
- ❑ Success is determined by value creation today and in the future.
- ❑ In the face of uncertainty, the use of 'expected (risk-adjusted) values' tips the odds of winning in favor of decision makers.
- ❑ The 'best' portfolio is that which efficiently distributes resources and maximizes productivity.