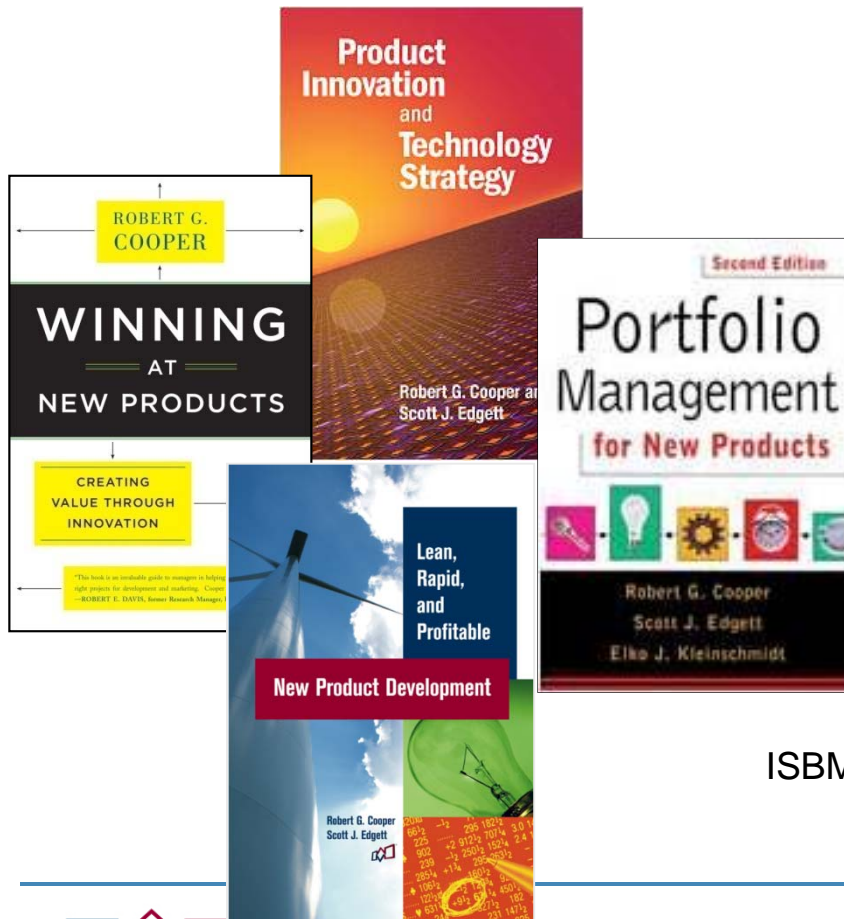


# Innovation Strategy & Portfolio Management

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**With: Dr. Robert G. Cooper**

Creator of the Stage-Gate® System

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# Introductions



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PPM MASTERCLASS WITH  
**DR. ROBERT G.  
COOPER**

Innovation Strategy  
and Portfolio  
Management

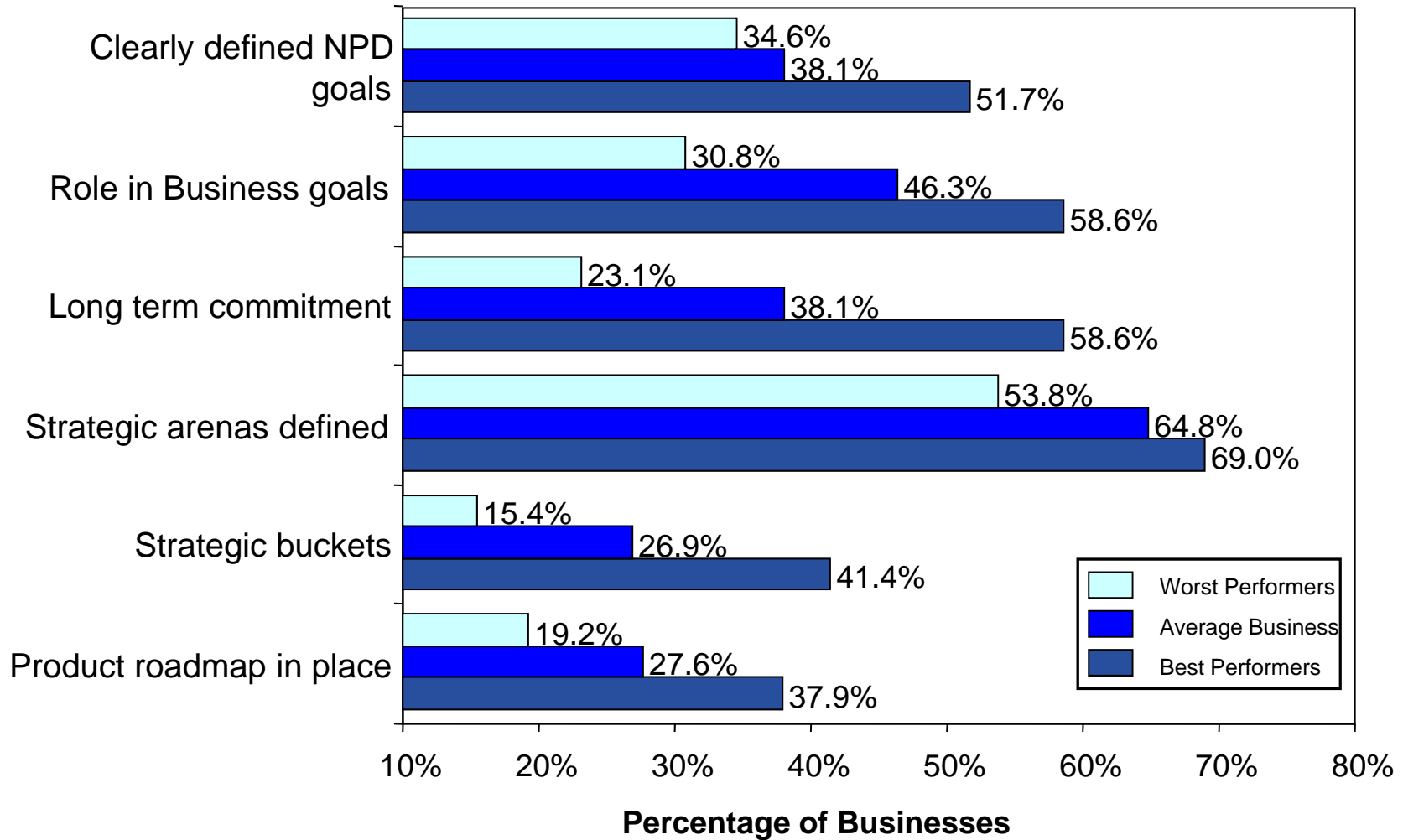
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# The Innovation Diamond & The Four Vectors That Drive Successful Innovation



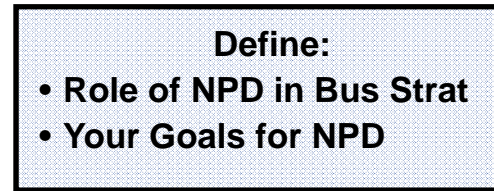
# A Product Innovation Strategy to Guide the NPD Effort



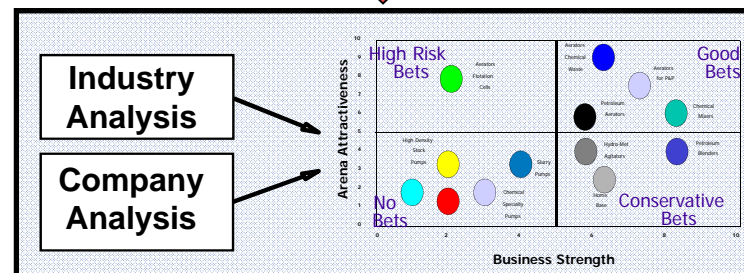
Best performers articulate a product innovation strategy

# Major Steps in Defining Product Innovation Strategy

## 1. Define Goals for NPD

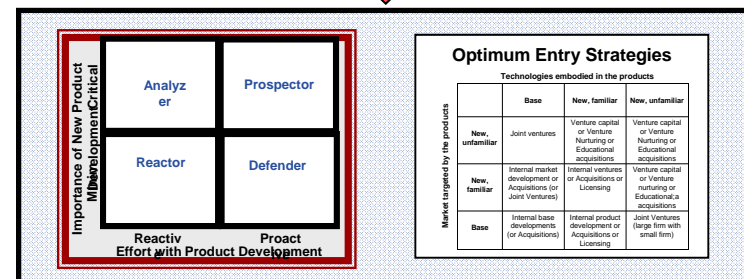


## 2. Select Strategic Arenas – Areas of Strategic Focus



## 3. Attack Plans:

- Investment strategy
- Strategic Thrust
- Entry Strategy



# Next Steps in Defining Product Innovation Strategy

- 4: Resource Commitment & Strategic Portfolio Decisions**
- Deployment
  - Strategic Buckets
  - Strategic Product Roadmap



**Product Roadmap**

**Resource Commitment to NPD**

- The Strategic Role of Your Business
- Strategy, Goals and Task Approach
- Competitive Parity
- Spending Level Based on Demand from Active Projects

**Strategic Buckets**



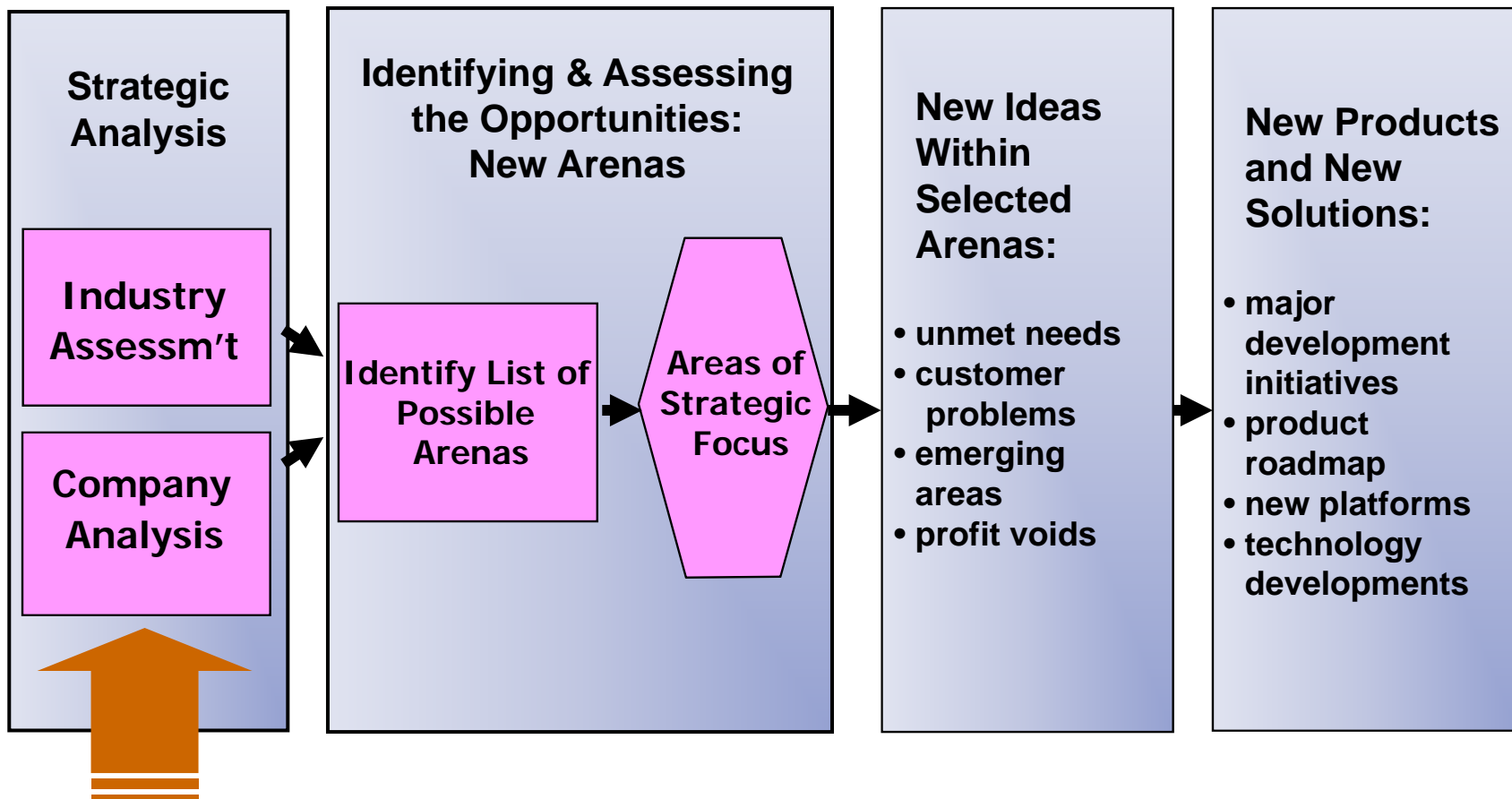
- 5. Tactical Portfolio Decisions**
- Project selection (Go/Kill)
  - Project prioritization
  - Resource commitments to projects

**Prioritized List of Active & On Hold Projects**

Project	Rank (Priority Level)	Total Project Score	Portfolio Balance Factor	Adjusted Total Project Score
Soya-44	1	80	1.10	88
Encapsulated	2	82	1.00	82
Legume N-2	3	70	1.10	77
Spread Ease	4	75	1.00	75
Charcoal-Bole	5	80	0.90	72
<b>Projects on Hold</b>				
N2-Fix	1	80	1.00	80**
Slow-Release	2	70	1.10	77*
Multi-Purpose	3	75	.90	68
etc...	etc...			



# The Major Steps in Defining Your Arenas of Strategic Focus



# Industry & Market Analysis

**Develop a map of the value chain – upstream & downstream from you**

**Undertake an industry structure analysis**

**Identify your customers' industry drivers and potential shifts in these drivers**

**Undertake trend analysis**

**Mapping – show me the money!**

**Assess the Impact of Disruptive Technologies**

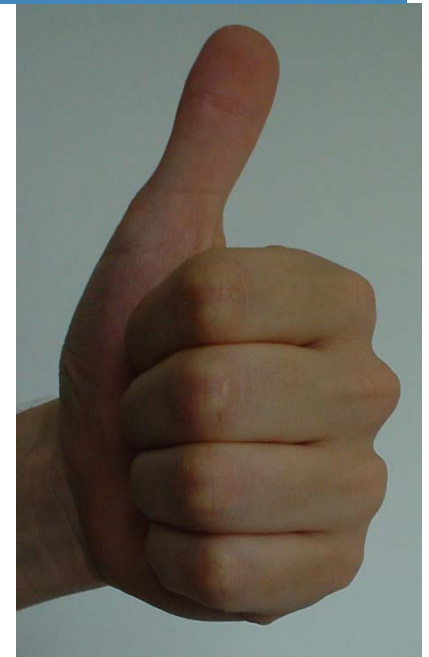
**Employ Peripheral Visioning**

The goal is to uncover potentially attractive arenas which might become high priority strategic arenas for you

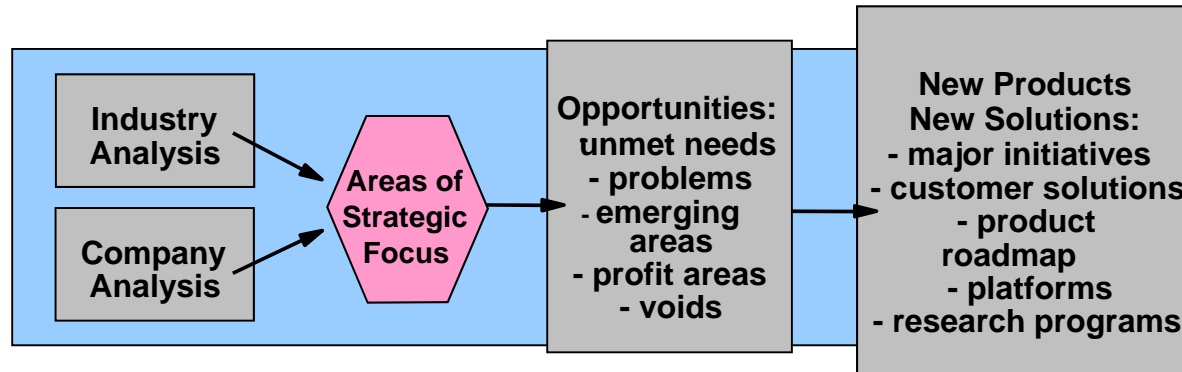
# Conduct a Core Competency Assessment

## What is a Core Competency?

- ❑ **A company's core competency is defined as something it can do better than its competitors**
- ❑ **It is critical to:**
  - Enabling the firm to create new products and services
  - Achieving competitive advantage
- ❑ **A core competency has three characteristics:**
  1. It provides potential access to a wide variety of markets
  2. It should make a significant contribution to the perceived customer benefits
  3. It should be difficult for competitors to imitate



# Next, Identify Possible Arenas



## Strategic Arenas can be...

- Markets or segments, sectors
- Product types, product lines, product classes
- Technologies
- Or any combination of these (e.g. product-market matrix)

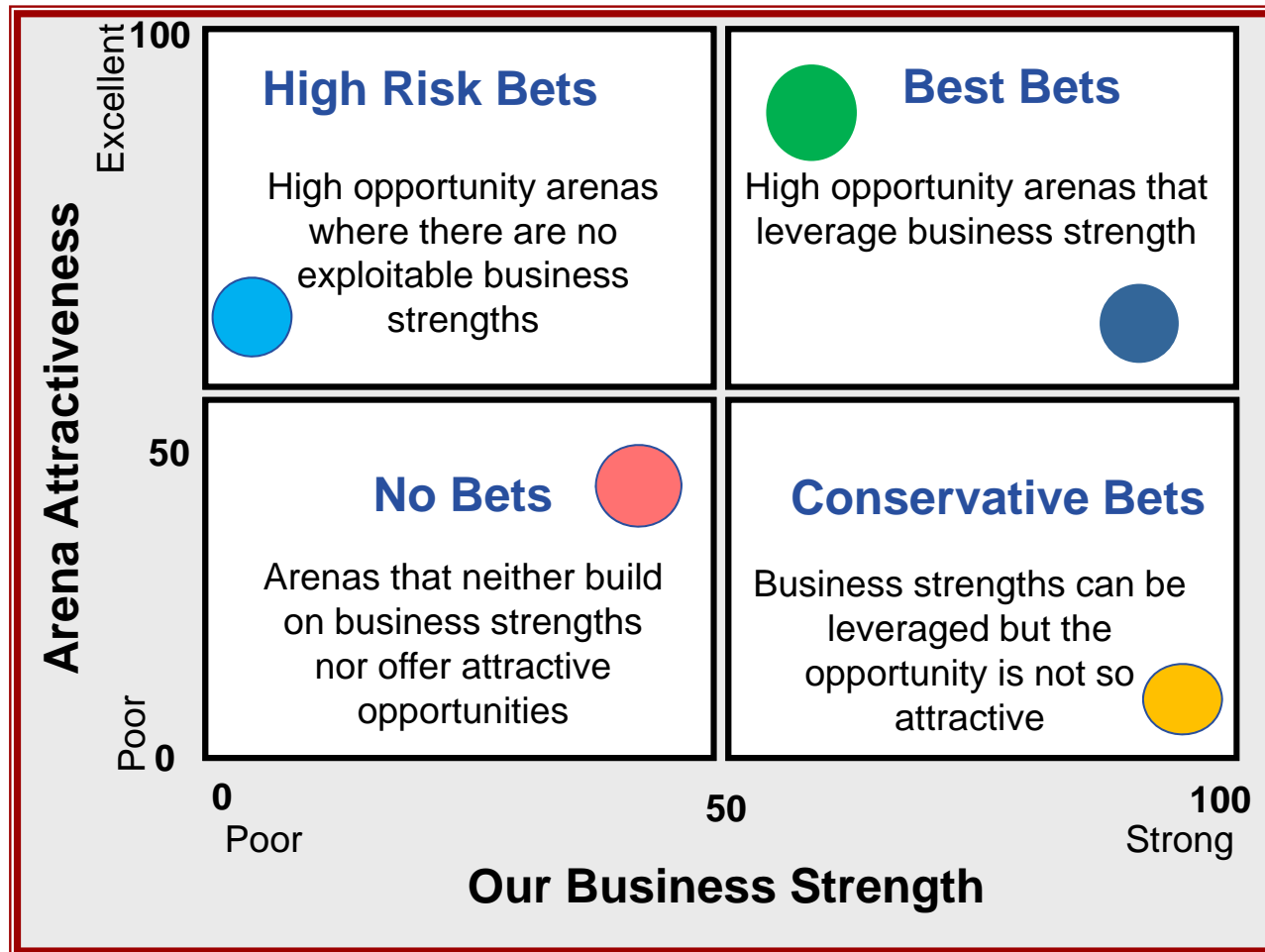
Markets

Products

	Voice	Data	Internet
SoHb	★		★
Medium Business		★	★
Large Business		★	★
Multinationals	★		
Residential			

Identify potentially attractive areas...  
where you might leverage your strengths

# Now Evaluate Each Arena on Two Main Dimensions: Create the “Strat-Map”



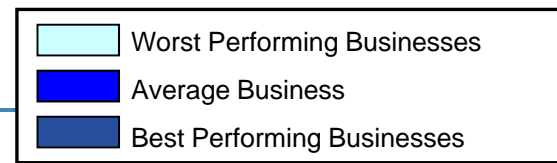
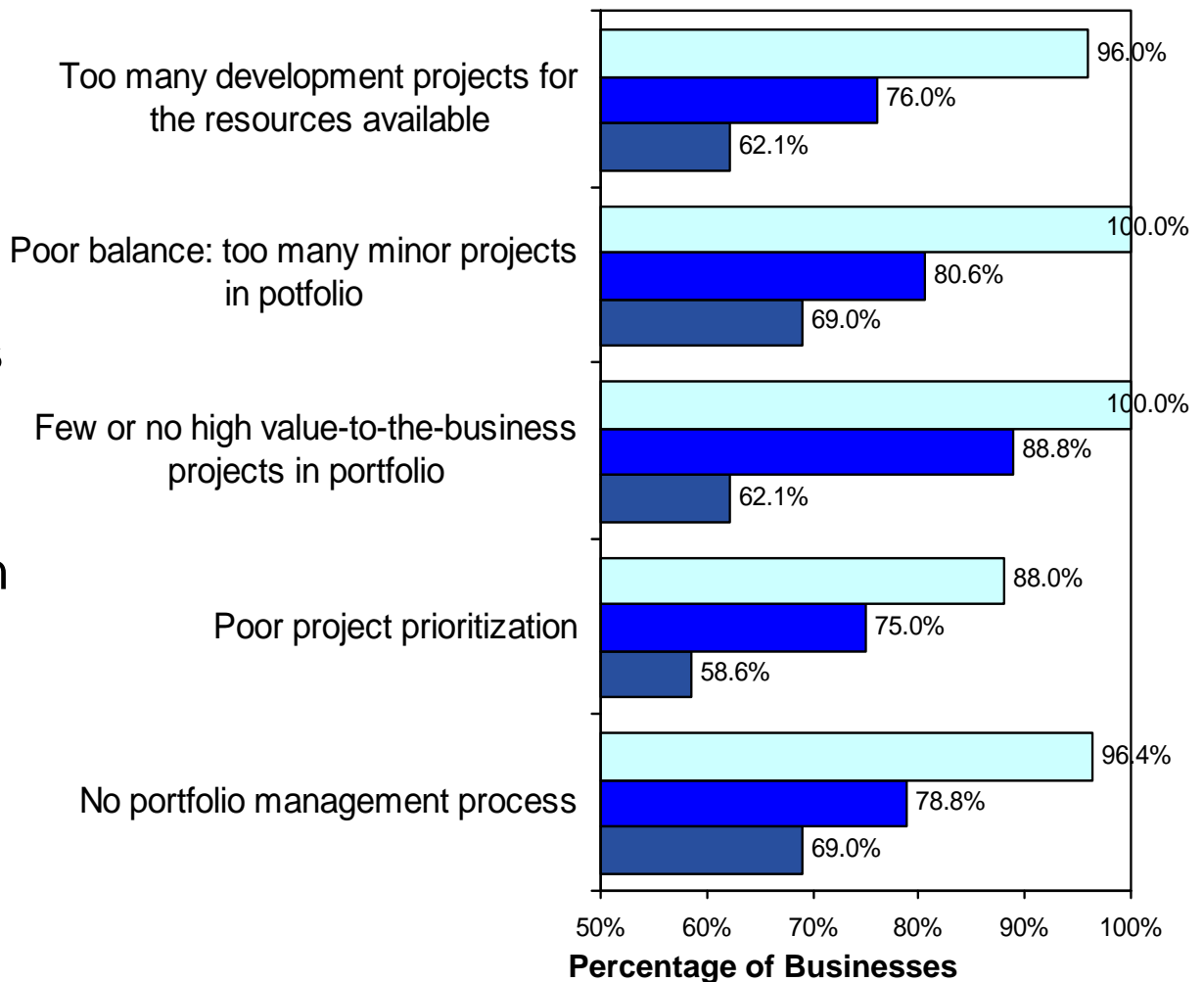
Source: Stage-Gate International

# Questions



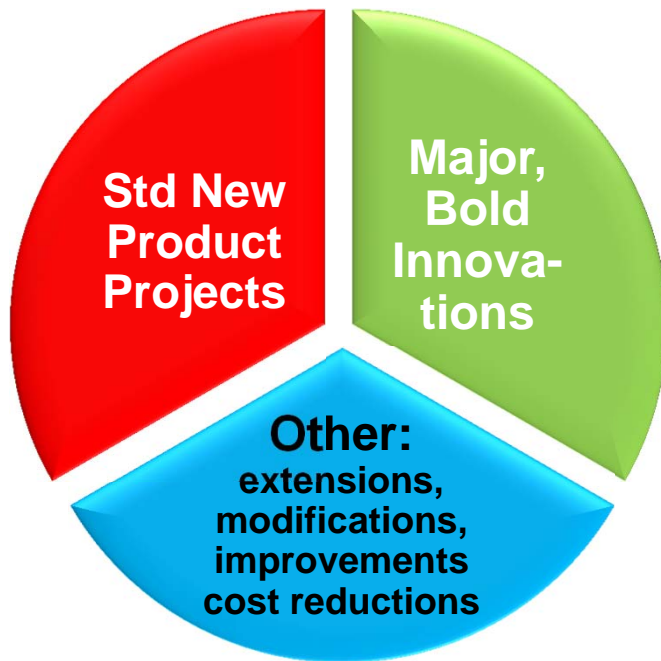
# Portfolio Management: A Major Problem Area

- ❑ Too many projects for the limited resources available
- ❑ Portfolios unbalanced – too many ‘small’ projects
- ❑ Few or no high value projects
- ❑ Poor project prioritization
- ❑ Few businesses have a portfolio management process in place
- ❑ Best performers fare much better on these metrics



# Use Strategic Buckets To Translate Strategy Into Strategic Portfolio Decisions

## Best Practice Example



The business's strategy dictates the split of resources into buckets

Management makes strategic choices: resource splits by bucket

- Project types
- Strategic arenas
- Technologies
- Geography

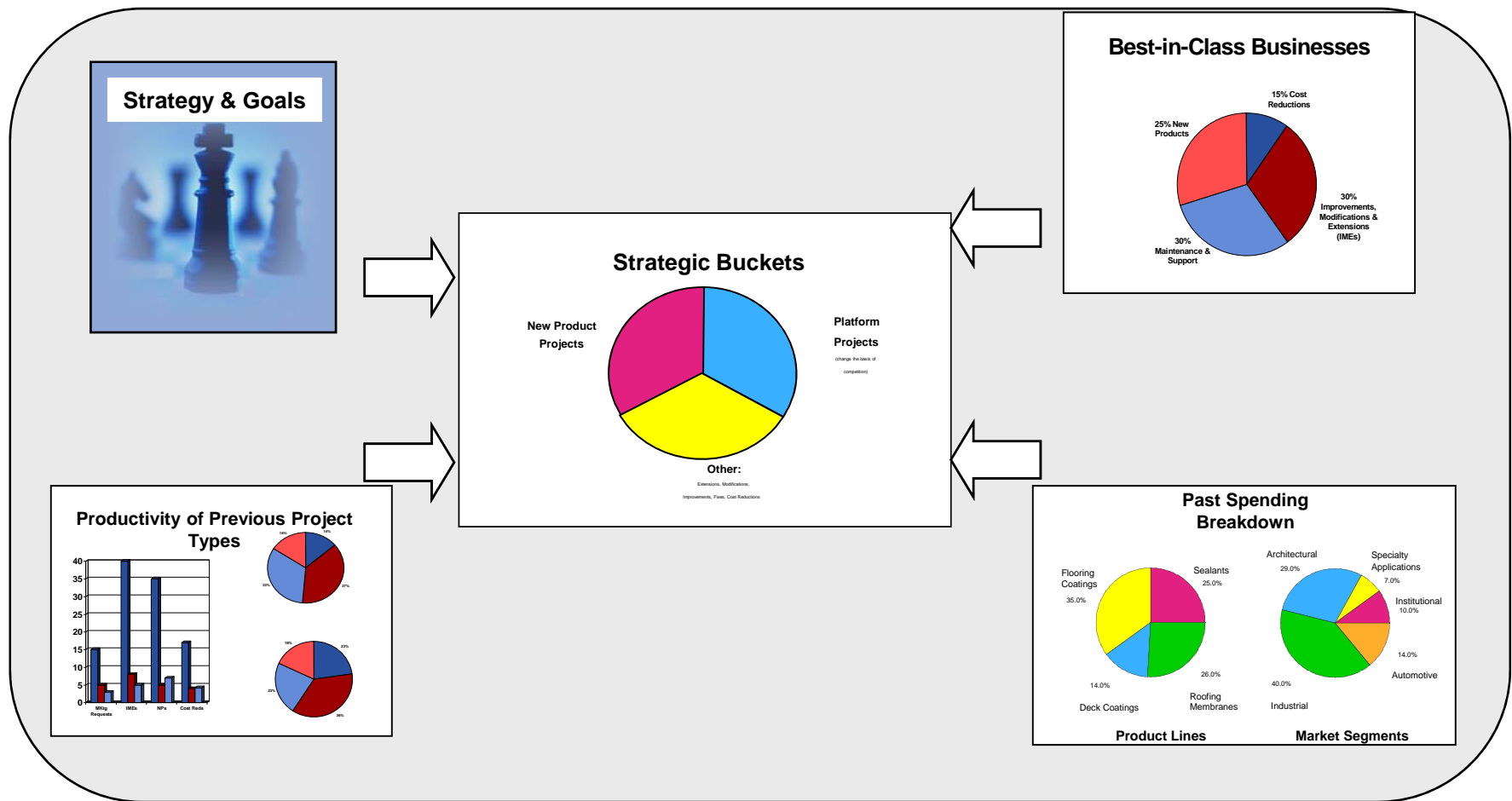
## *Doing Strategic Buckets*

Categorize projects by bucket, then rank in each Bucket until out of resources

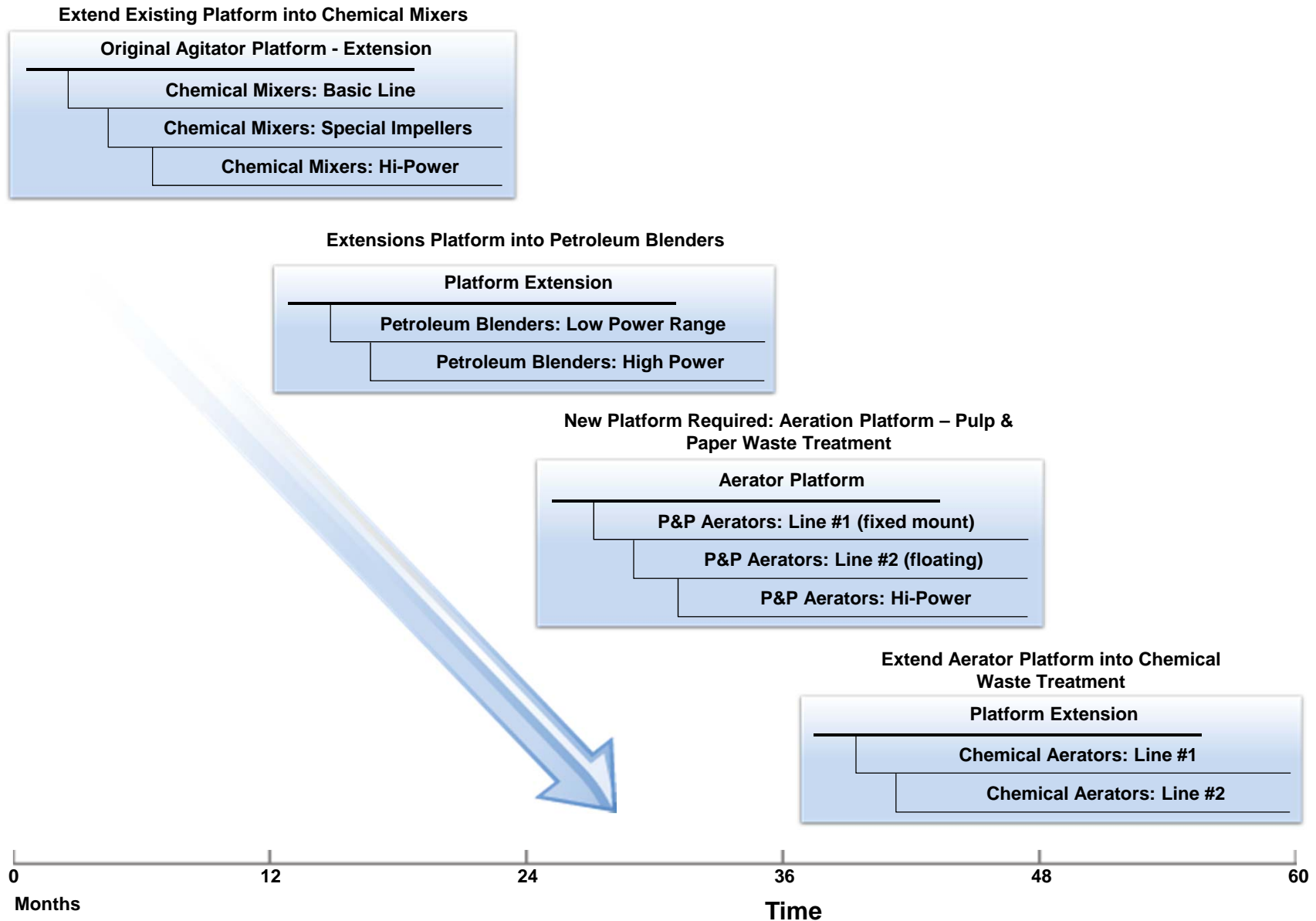
Resource allocation will thus mirror your strategic priorities



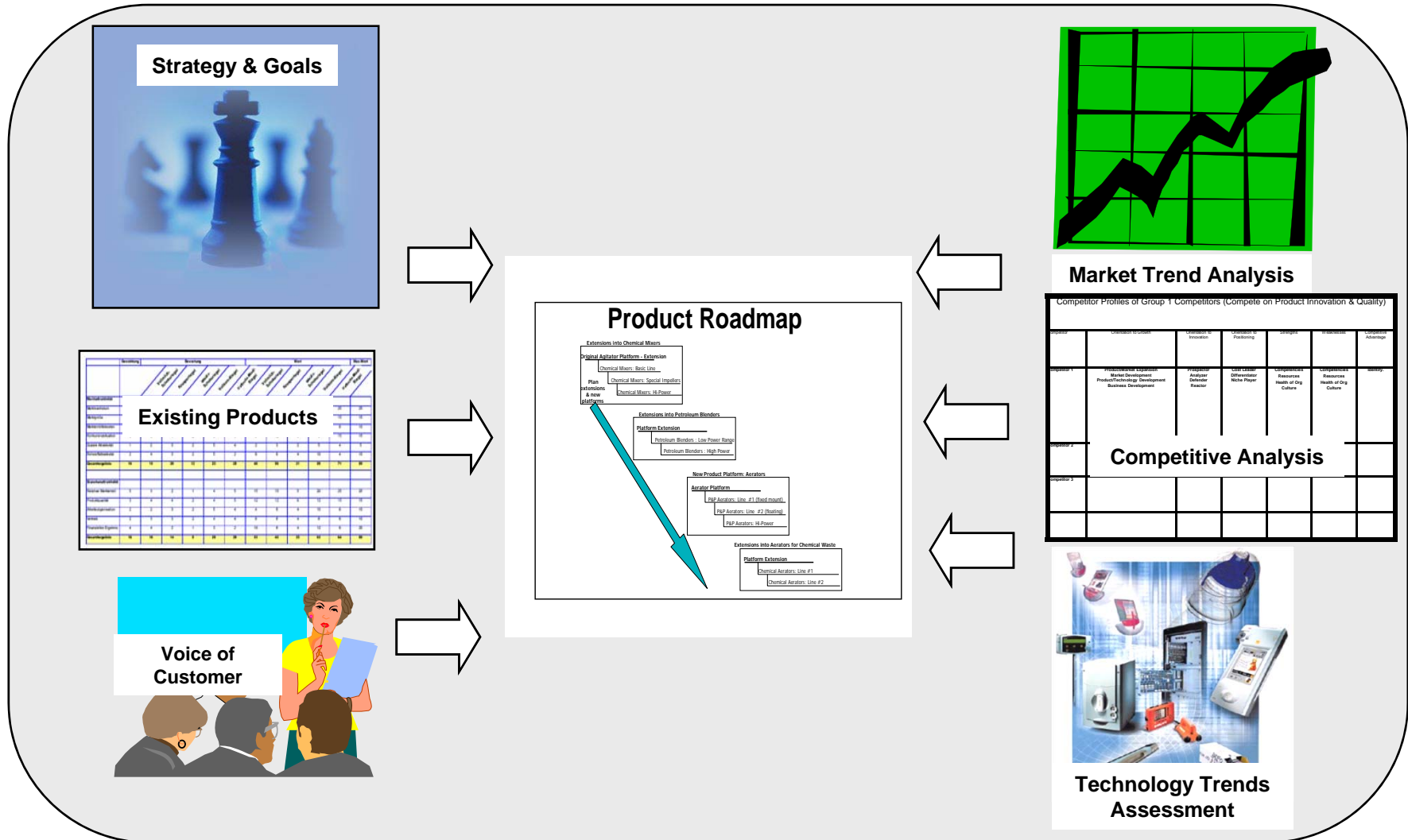
# Inputs to the Strategic Buckets Decision



# Use a Product Roadmap: Map the Major Initiatives

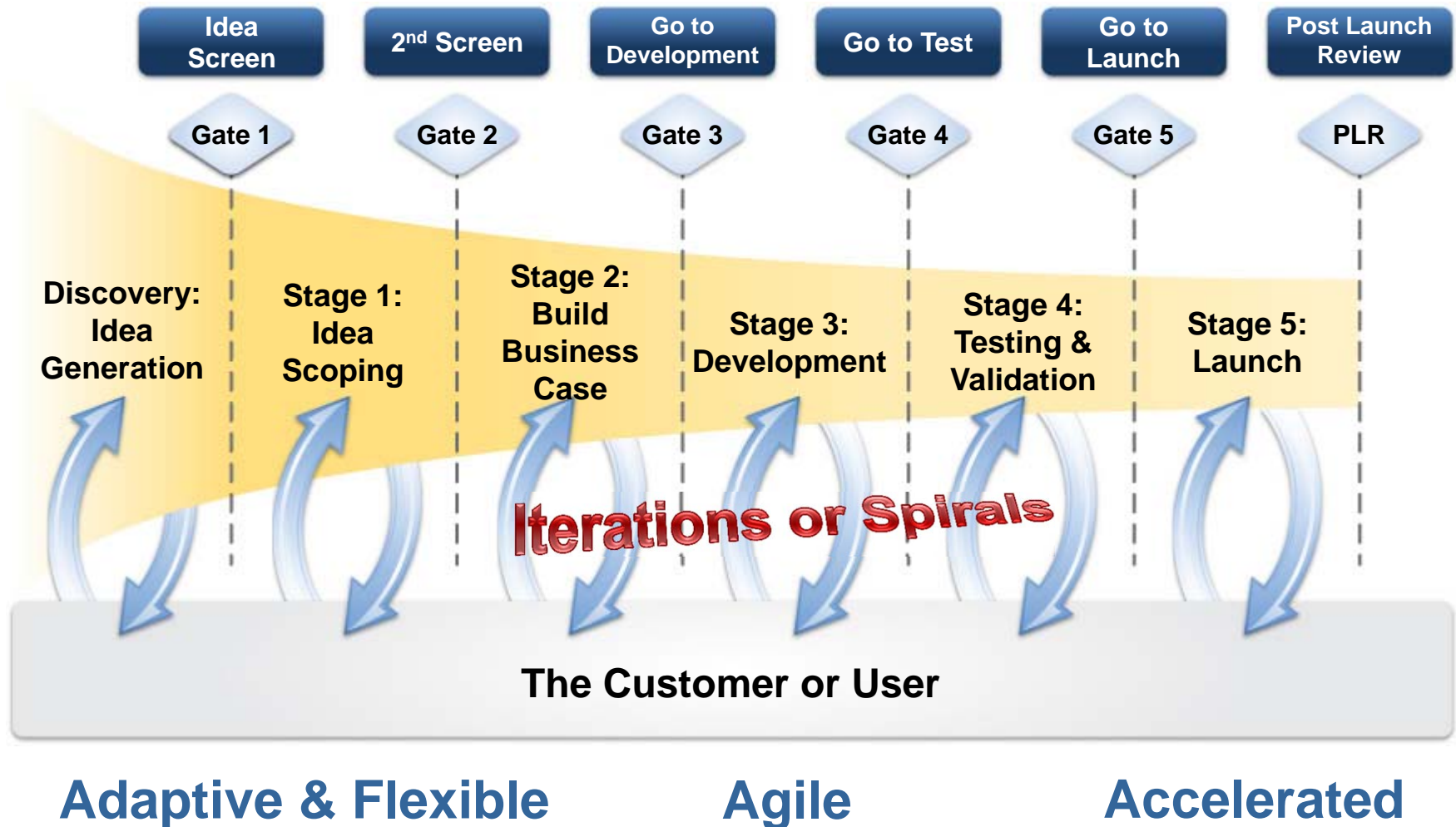


# Inputs to the Product Roadmap



Any  
Questions?

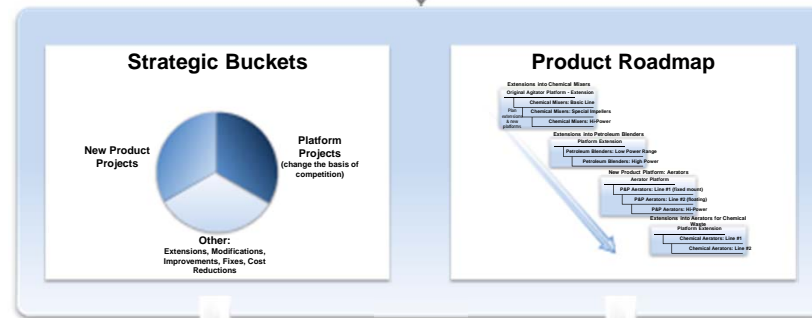
# An Effective & AGILE Idea-to-Launch (I2L) System... With Tough Gates



# Portfolio Management: A Hierarchical Process Driven By Strategy

**Business Strategy &  
Product Innovation  
Strategy**

**1. Strategic Portfolio  
Decisions:  
Strategic Buckets &  
Strategic Product Roadmap**



**2. Tactical Portfolio  
Decisions:  
Project Selection  
(Go/Kill), Prioritization, &  
Resource Allocation**

## Portfolio Review:

- Holistic
- All projects in auction
  - ✓ Right priorities?
  - ✓ Right mix?
  - ✓ Alignment?
  - ✓ Sufficiency?
  - ✓ Resource adequacy?
- By senior management

## Stage-Gate® System:

- Individual projects
- In-depth evaluation
- Quality data available
- By senior management
- Go/Kill decisions made
- Resources allocated

# Three Goals in Portfolio Management

1.

To maximize the value of the portfolio

- Against some company goal:
  - Annual dollar sales
  - Profits; long term profitability; return-on-investment

2.

To achieve the right balance & mix of projects

- Between long term & short, fast ones
- Between high risk & low risk
- Across different project types and market sectors

3.

To align the new product effort with the Business Strategy

- Ensuring that projects are 'on strategy'
- That spending reflects the strategic priorities of the Business
- That the business's objectives will be realized thru the list of active projects

# Value-Maximizing Methods: Financial

**NPV (Net Present Value)**  
**Project's Value in \$000**

**Forecast of cash flows for X years**  
**Sum of positive & negative cash flows**  
**Cash flows discounted by  $1 / (1+i)^n$**

**IRR: the ROI as a %**  
**Payback Period (years)**

**IRR Is the value of  $i$  (%) so that  $NPV = 0$**   
**How many years before investment is recovered?**

**Productivity Index**

**Max bang for buck: Calculate output-over-input index**  
**Rank projects by this Index until out of resources**

**Make Go/Kill decisions based on whether  
these financial numbers hit hurdles  
(NPV; IRR; Payback Period)**  
**Rank project by Productivity Index**



# The Challenge: Dealing with Risks

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- ❑ Not every project has a 100% chance of commercial success
- ❑ Any many won't achieve their sales and profit projections
- ❑ Some won't even be developed
  - Hit technical roadblocks
- ❑ How to handle risks & uncertainties
- ❑ Several ways:
  1. Risk adjusted discount factor in NPV calculations
    - Use different values of  $i$  for different project types
  2. Probability-adjusted NPV
    - Factor down the values of some inputs to the NPV calculation
    - By their probability of occurring
    - Example: multiply Sales by a probability (say 75% or .75)
  3. Options Pricing (Real Options or **Expected Commercial Value**)



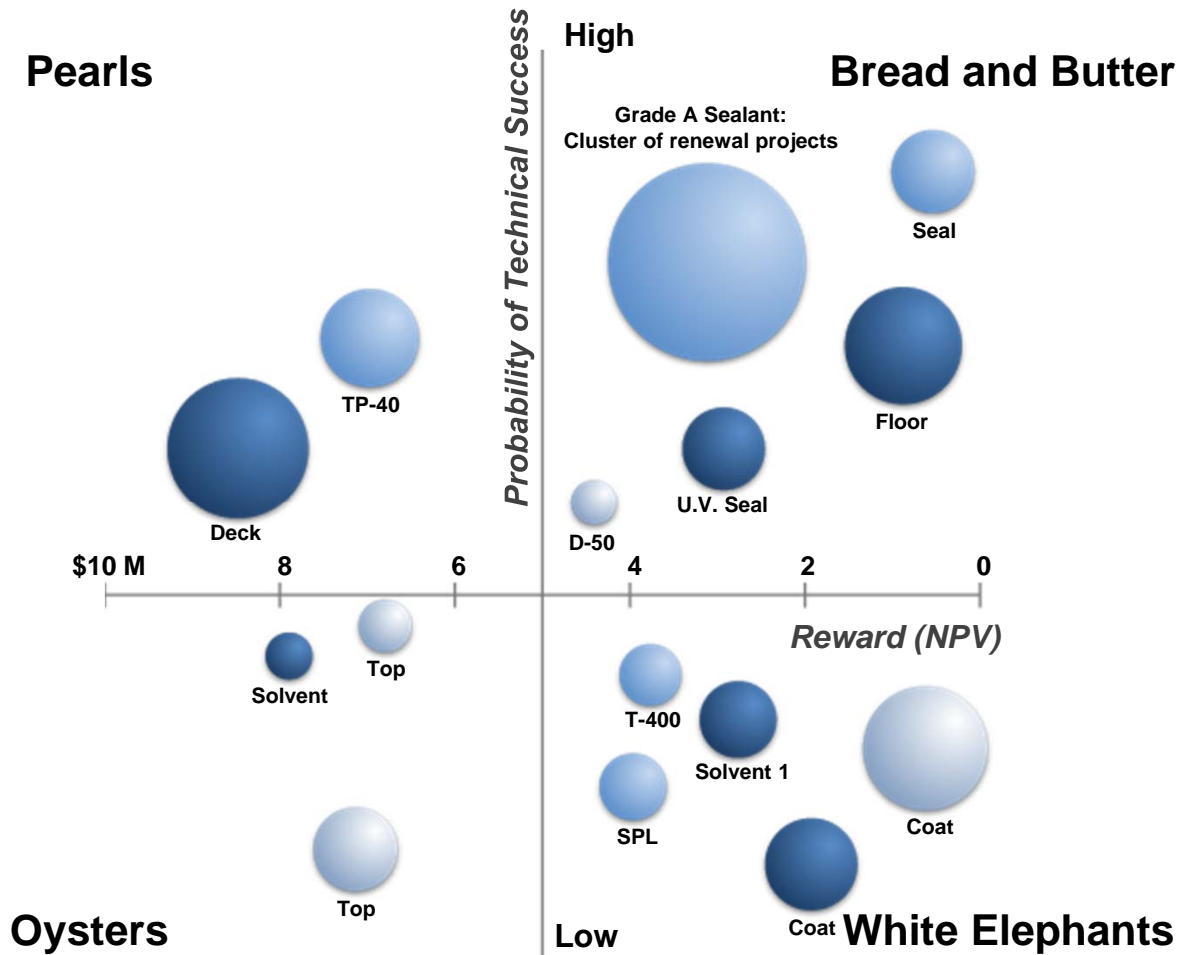
# Value-Maximizing: Profiling Projects – Looking For ‘Markers’ That Predict Success

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- ❑ Based on theory that **qualitative factors** predict NP project success & project value
- ❑ Relies on those factors that are correlated with success and value:
  - Competitive advantage
  - Market attractiveness
  - Leveraging core competencies
- ❑ Systematic intuition? But research-based!
- ❑ **Scoring Model:** A scoring system based on these factors
  - A point count system
  - Use scorecards

Make sure you choose factors that really do discriminate between profitable & unprofitable projects – Can you prove it?

# Assess the Risk-Reward Profile of Your NPD Portfolio

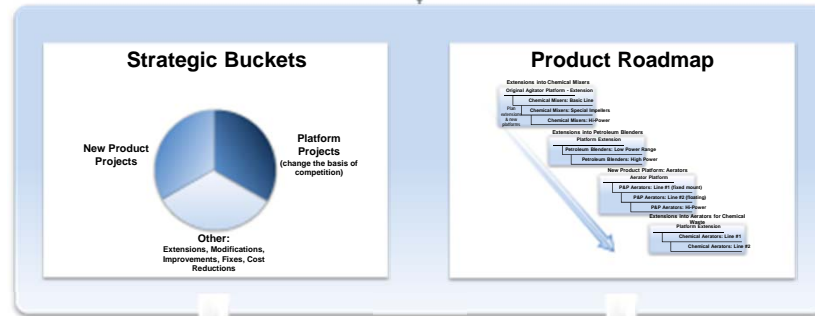


The bubble sizes denote the resources committed to each project. The shading shows the stage in the firm's Stage-Gate® system (light = early stage).

# The Result: An Effective Portfolio Management System

**Business Strategy & Product Innovation Strategy**

**1. Strategic Portfolio Decisions: Strategic Buckets & Strategic Product Roadmap**



**2. Tactical Portfolio Decisions: Project Selection (Go/Kill), Prioritization, & Resource Allocation**

- Portfolio Review:**
- Holistic
  - All projects in auction
    - ✓ Right priorities?
    - ✓ Right mix?
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# Questions



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