

# *How SmithKline Beecham Makes Better Resource Allocation Decisions*

## Background for 2024 SDP Conference Participants

- Client Organization: SmithKline Beecham Pharmaceuticals, May-Oct, 1995 (prior to merger in 2000 that formed Glaxo SmithKline)
- Direct Clients: Dr. Paul Nicholson, Worldwide Head of Development  
Dr. J. P. Garnier, COO (and later CEO of Glaxo SmithKline)
- Need: Decision quality in allocating resources across late-stage (Ph II / Ph III) development portfolio
- Portfolio: 20 projects across 4 therapeutic areas (CNS, Cardiovascular, Oncology, Anti-Inflammatories) and two continents (UK and US)
- SDG Project Team (based in London): George Corrigan, Konstantin Fiedler, Iwan Van Vijfeijken, Graham Jeffery, Mark Chang, Sandy Wrobel (Project Leader), Tom Keelin (Project Supervisor)
- Harvard Business Review (HBR) Article, 1998: Initiated in 1996 by a call out of the blue from Dr. Paul Sharpe (CNS therapy area head). Became one of HBR's most widely distributed articles of all time.

# *How SmithKline Beecham Makes Better Resource Allocation Decisions*

Prepared by:

Dr. Thomas W. Keelin

Managing Partner, Keelin Reeds Partners

Based on “How SmithKline Beecham Makes Better Resource Allocation Decisions,” *Harvard Business Review*, Mar–Apr ’98.



# Topics

**Today, we will address...**

**... and conclude that ...**

SB's starting point

SB's resource allocation problem was similar to that faced by many large businesses.

Results (18 months later)

SB achieved trust, alignment, commitment to action—and a new investment strategy that would not have been achieved otherwise.

Ingredients of success

There's no silver bullet. Success requires many elements—all working together effectively.

Putting it all together

A business process that mines added value on an ongoing basis can be developed through practical, proven, incremental steps.

# *SB's resource allocation problem was much like that faced by many large businesses.*

- A portfolio of businesses (or complex projects) requires investments.
- The business areas are technically complex and risky, interdependent, and face significant competition and uncertainty in the marketplace.
- The information needed to allocate resources resides with business area “champions” —who view themselves as competing for resources.
- The resource allocation decision process is strained—
  - By the difficulty of communications across a multinational, multi-business area organization
  - By organizational resistance to change
  - By cynicism: “Your business area is as good as the performance you can put on at funding time.”

*While SB had recognized this problem for years, it was becoming more acute.*

- More good ideas than resources available to fund them
  - “We are living through an industrial revolution in biology.”
- Tightening resource constraints in light of competitive pressures on corporate earnings
- The new product portfolio “will be cut back to provide for other corporate priorities. We have no choice.”

*Previously, SB had tried many management approaches to address this problem—and learned a lesson from each one.*

- Top management: “call the shots”
  - Lesson: No one manager could possibly know enough to do this well.
- Senior management: “decide behind closed doors”
  - Lesson: Decisions get recycled based on lack of organizational buy-in.
- Business area managers: “peer review and consensus”
  - Lesson: Championing and posturing undermine trust among fundamentally well-intentioned colleagues.
- Outside expert portfolio recommendations
  - Lesson: Recommendations from outsiders do not get implemented for lack of credibility and organizational buy-in.

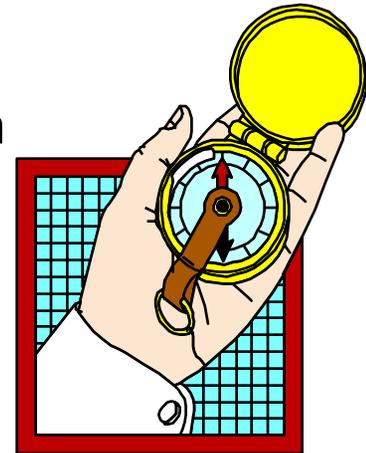
# *SB had tried many evaluation methodologies.*

- Democracy: prioritizing by a show of hands
  - Lesson: Lack of belief that best decisions had been reached.
- Technology: multi-attribute prioritization, electronic voting ... lessons
  - These added sophistication without adding quality.
  - “This is pseudoscience.”
- Modeling: NPV analysis, “options analysis,” Monte Carlo...many lessons:
  - “Inconsistent analyses are worse than none.”
  - “Garbage in, garbage out.”
  - “Figures don’t lie, but liars can figure.”
  - “Just one input...”
- Default: “management gut feel”
  - Lesson: No sound way to reconcile differing perspectives. No way to know which way is “true north.”

# *Instead of continuing to “live with” these problems, SB chose to tackle them head on.*

To achieve both...

- Technically sound compass—pointing out the right direction
  - Good investment alternatives
  - Sound evaluations
    - Appropriately accounting for complexity and risk
    - Based on reliable information inputs
- Organizational commitment to action
  - Across business areas, organizational levels, and geography



To avoid common failure modes...

- Technically sound recommendations, but no one follows them (e.g., a typical result of good backroom analysis)
- Organizational commitment to action, but not in the right direction (e.g., a typical result of good facilitation without full value-based understanding)

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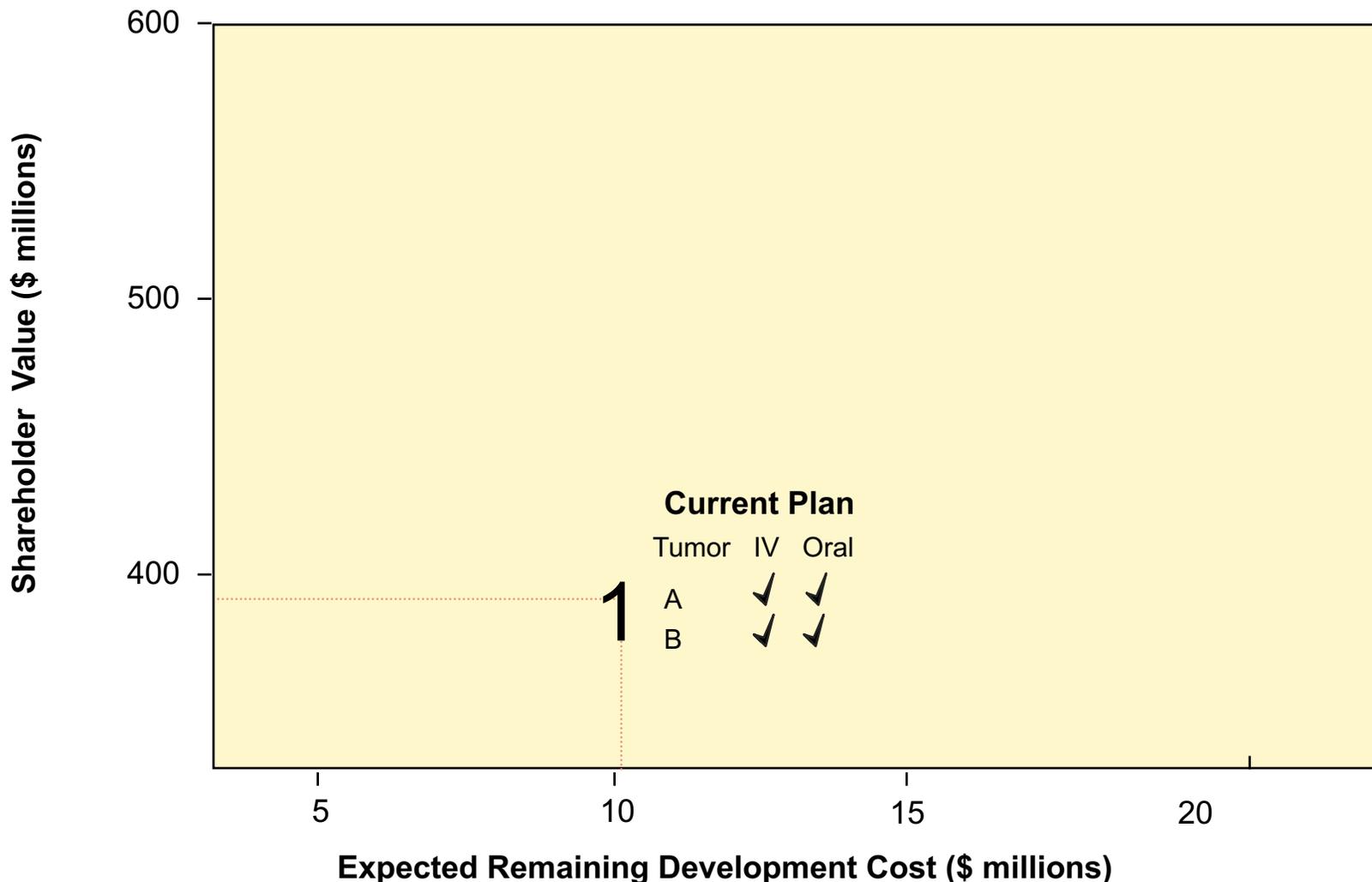
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Putting it all together

A business process that mines added value on an ongoing basis can be developed through practical, proven, incremental steps.

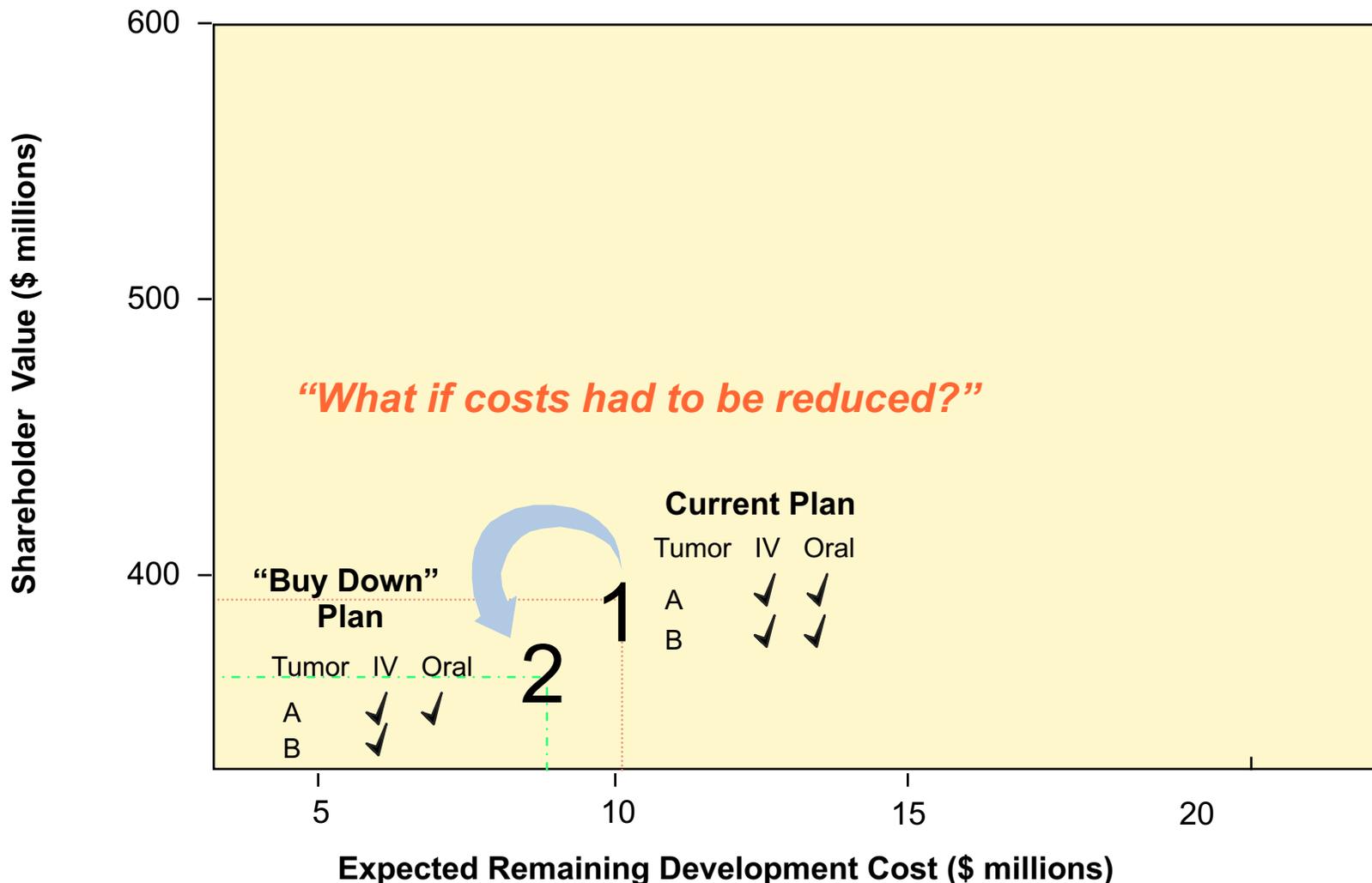
# *At the project team level, developing investment alternatives yielded enthusiasm, insight, and added value. (I)*

**“Creating \$100 million in added value while reducing costs by \$2 million.”**



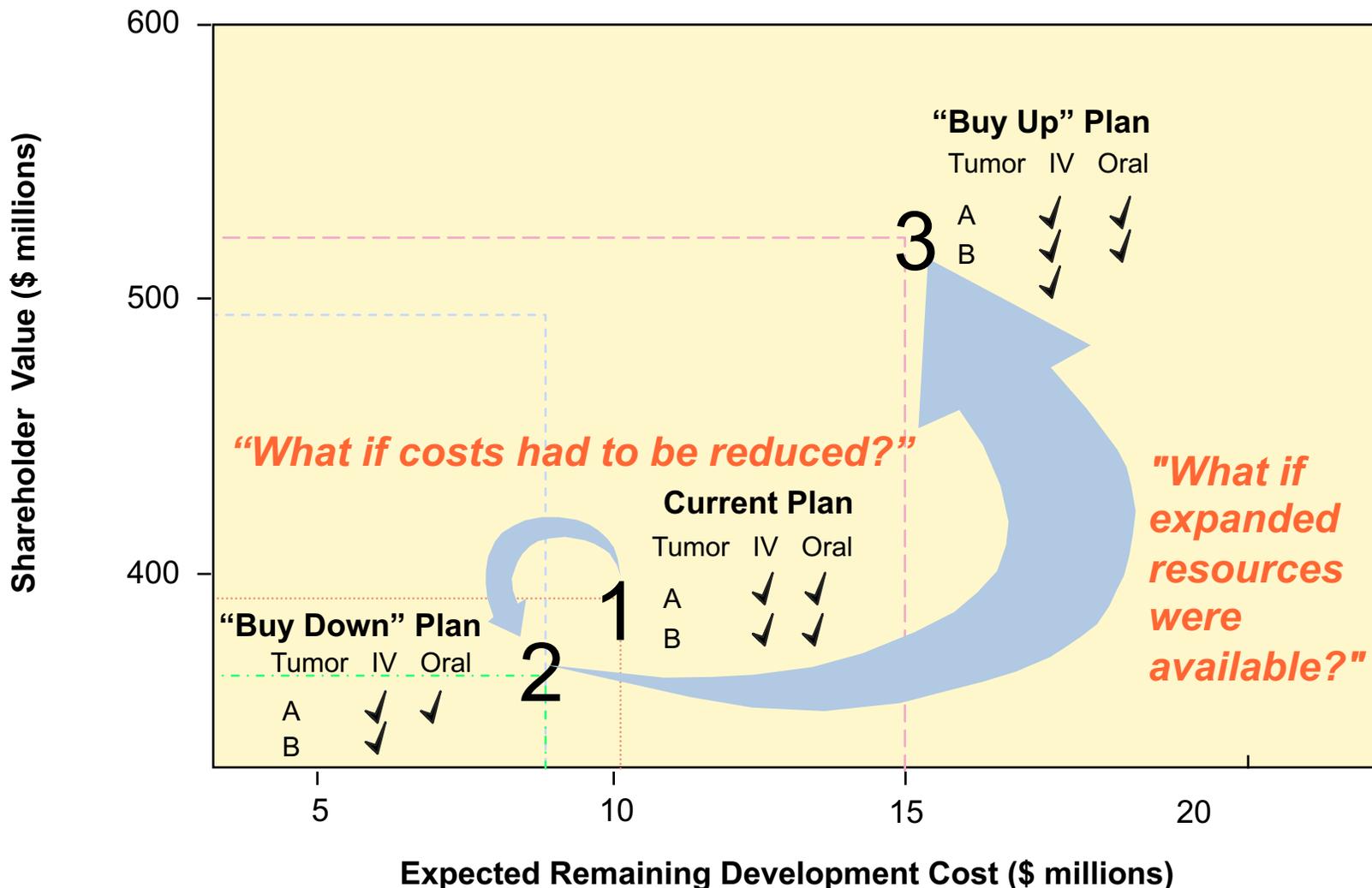
# At the project team level, developing investment alternatives yielded enthusiasm, insight, and added value. (II)

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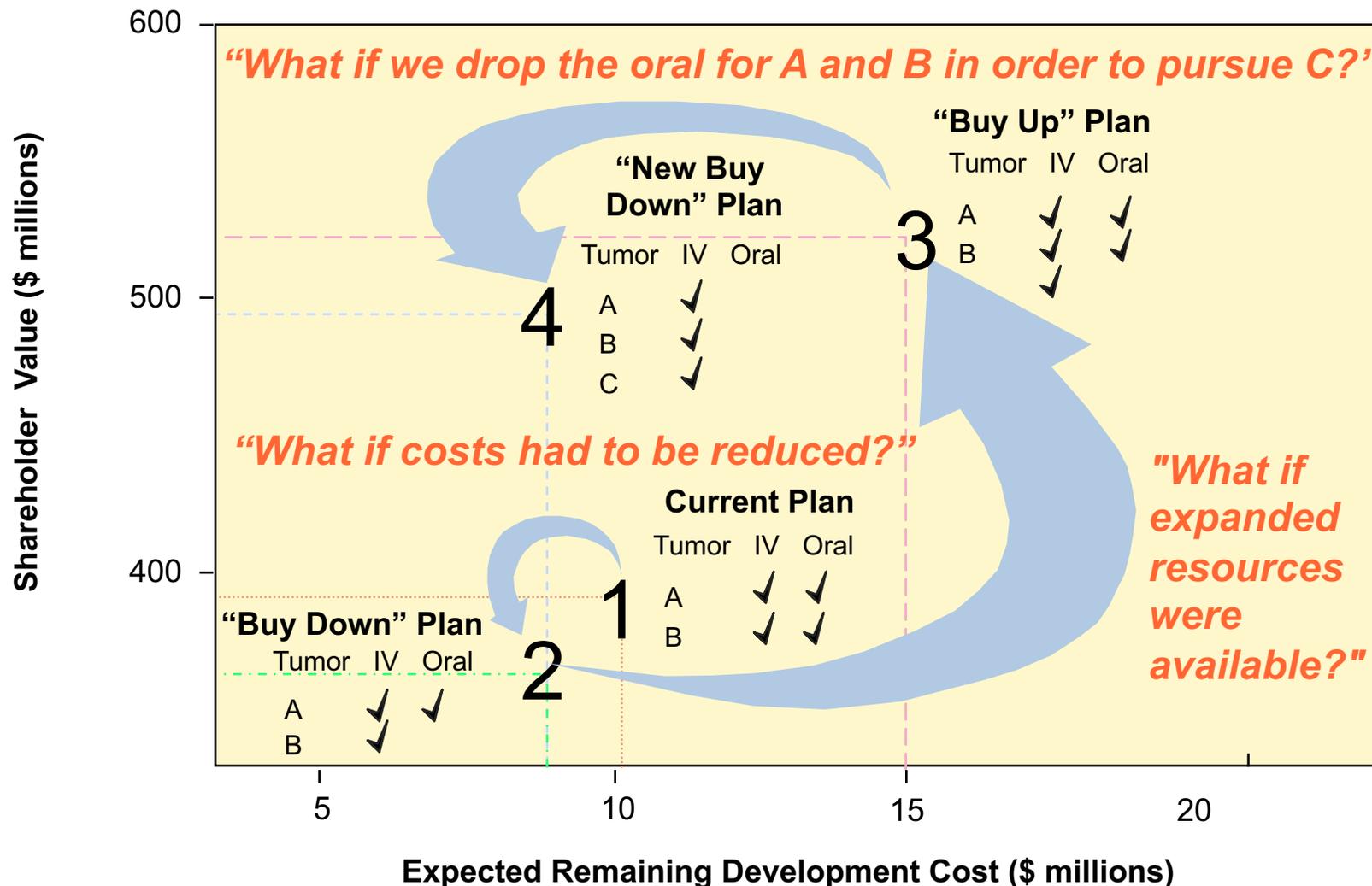
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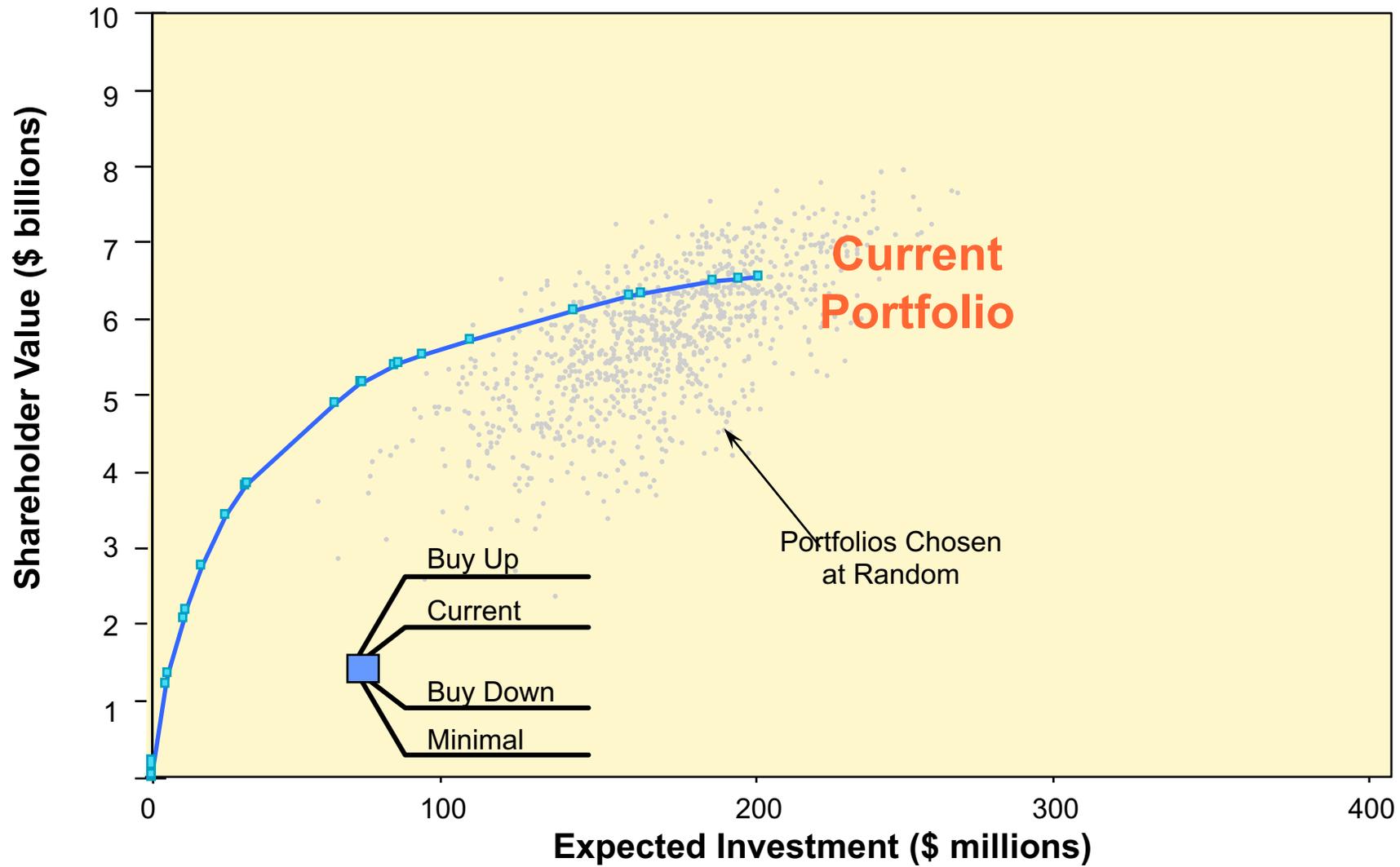


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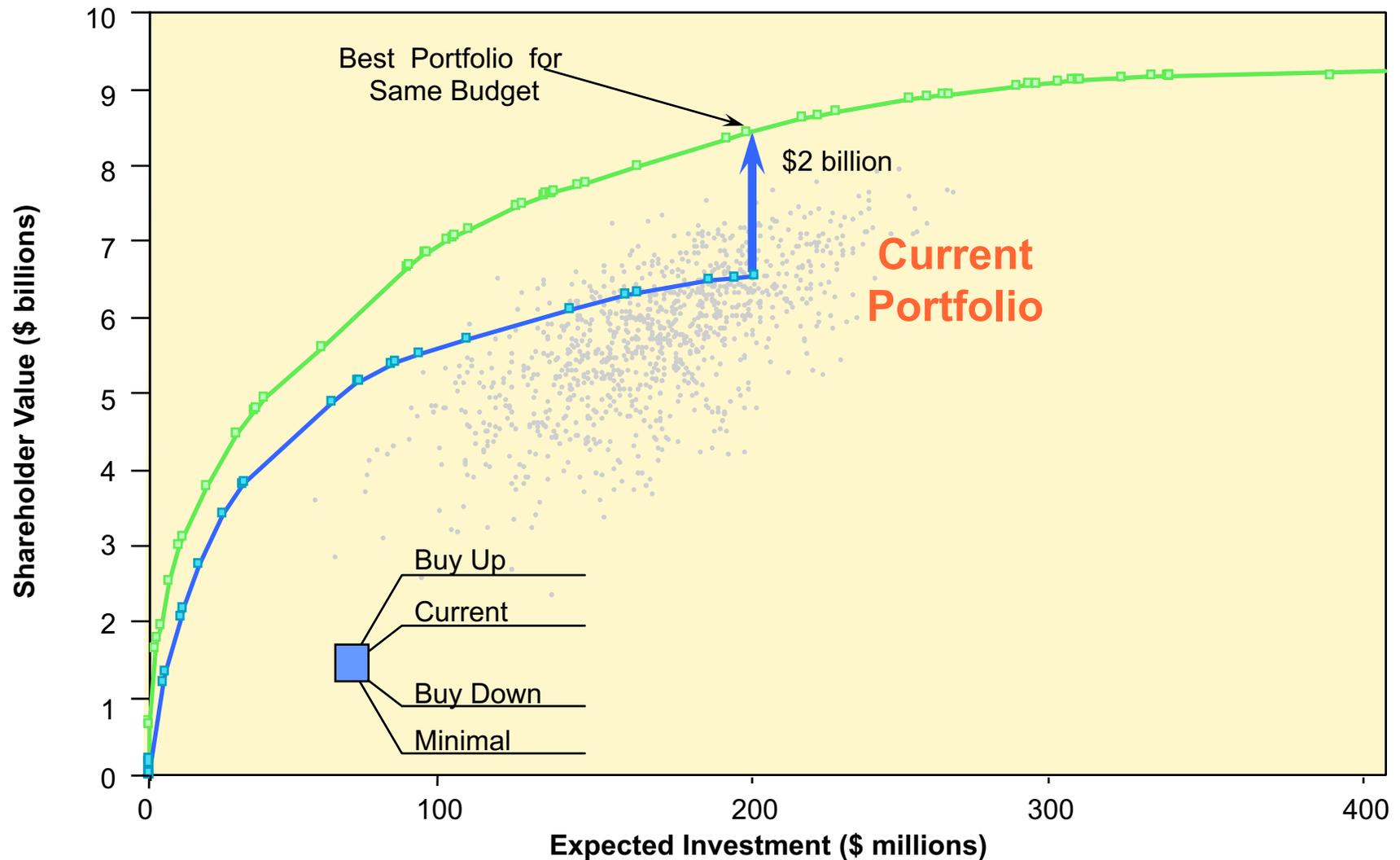


# *Developing alternatives expands the value frontier relative to the current portfolio.*

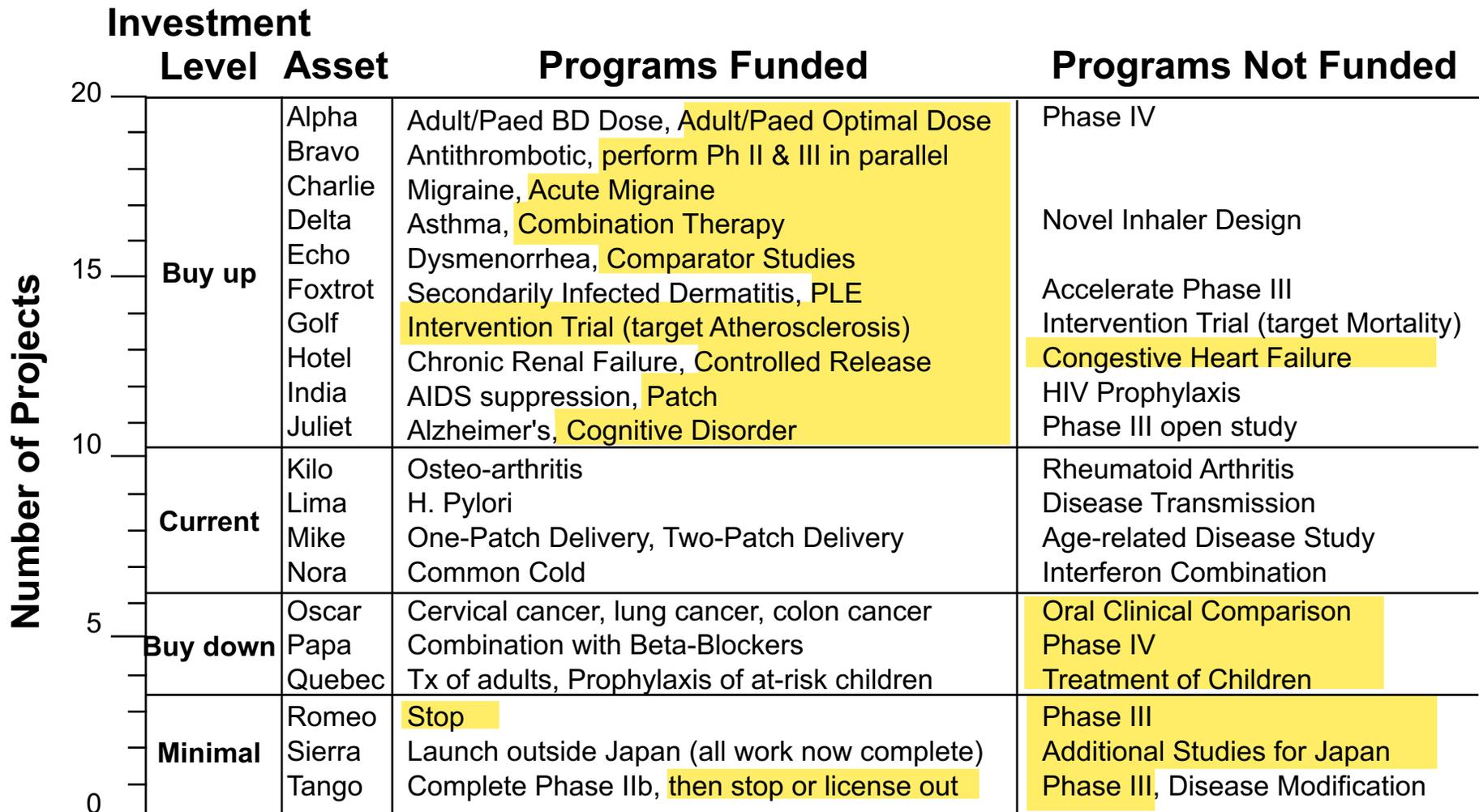


With 20 projects and 80 alternatives in total, there are more than  $10^{12}$  possible portfolio choices.

*The best investment portfolio within the same budget would increase overall value by 30%—about \$2 billion — the equivalent of finding a new blockbuster drug!*



*The best portfolio consisted of alternatives that were practical and doable but required different resource allocations for most projects.\**



Changes to "current" development plans

\* This conclusion was stable over a wide range of analyses of sensitivity to global variables, including price trends in future health care management, corporate discount rate, and corporate risk tolerance.

## *When these results were considered by top management, a powerful conversation ensued.*

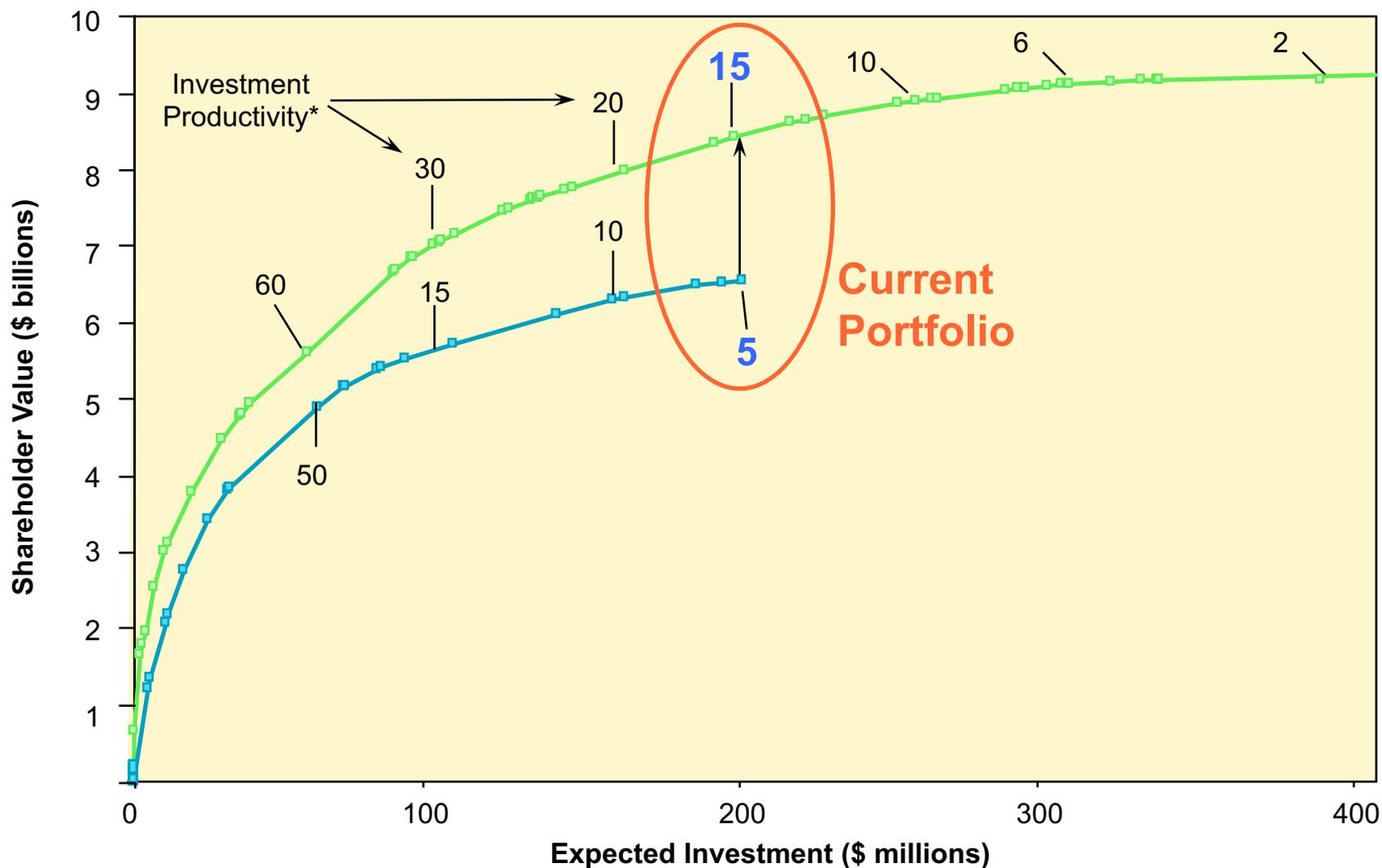
The “buy up” and current alternatives were discussed and agreed without dissent.

Then the “buy-down” and “minimal” options were considered:

- Chairman: “Do we agree also to cut back on ‘Oscar?’”
- Project champion: “No, we should not cut back on Oscar. This project is extremely valuable to us. Here’s why... (long list of reasons)”
- Chairman: “Is there anything about what you have told us that has not been captured in the process and analysis up to this point?”
- Project champion: “Well, no. But I just didn’t want us to forget about how valuable this project is.”
- Chairman: “We agree that Oscar is valuable. But we have learned from this effort that we have more valuable uses for the same resource.”

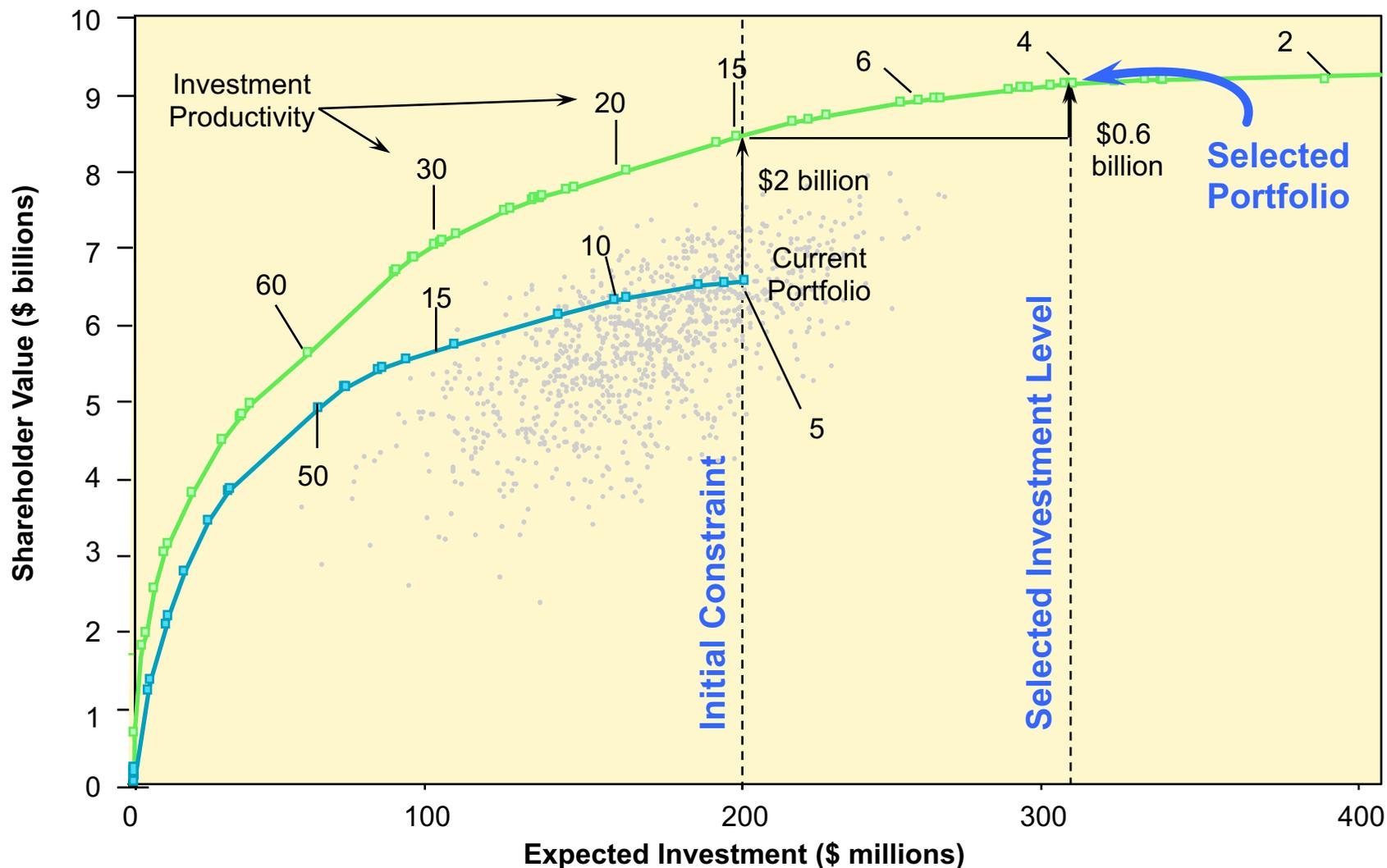
This ended a potentially explosive discussion. The other “buy-down” and “minimal” alternatives were discussed and soon agreed.

*The best portfolio showed a threefold increase in investment productivity, making additional investment in this portfolio more attractive relative to other corporate uses of capital.*



\* Investment productivity = Incremental shareholder value/Incremental expected development investment.  
This is “bang for the buck” or “value for money.”

*Ultimately, SB chose to increase development investment by roughly 50%, corresponding to an added shareholder value of \$2.6 billion.*



“In the end, we estimated that our portfolio was worth \$2.6 billion more than it was when we started. This was powerful confirmation that our efforts were worthwhile.”

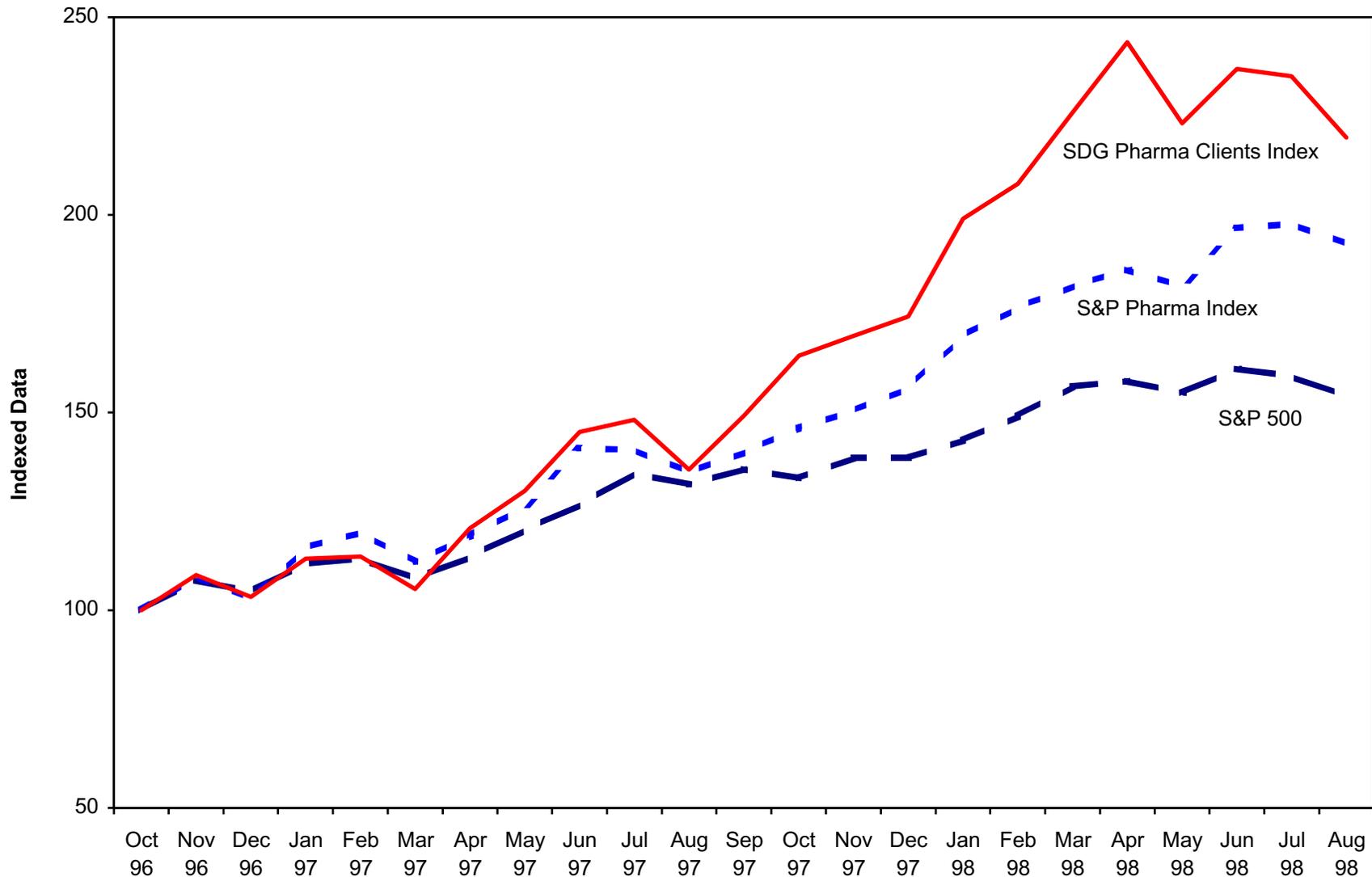
—Paul Sharpe

Vice President and Director

SmithKline Beecham

# *SDG's asset portfolio management clients have been among the top performers in their industry.*

**SDG Pharma Client\* Stock Price Performance Relative to S&P and Pharma Indices**



\*Includes client organizations who are fully implementing SDG's approach to resource allocation and portfolio management

## *This effort produced many additional benefits for the client organization.*

- A commonly shared philosophy, language, and framework for communication about portfolio management decisions
- Results that were clear and credible—across functions and levels in the organization from project teams to top management
- Tangible, credible evidence that resources were being spread too thin and that greater concentration on highest value opportunities was needed
- “Improved cross-functional communication—especially between R&D and marketing”
- “Increased creativity in development, leading to numerous insights and higher-value focus”

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## **... and conclude that ...**

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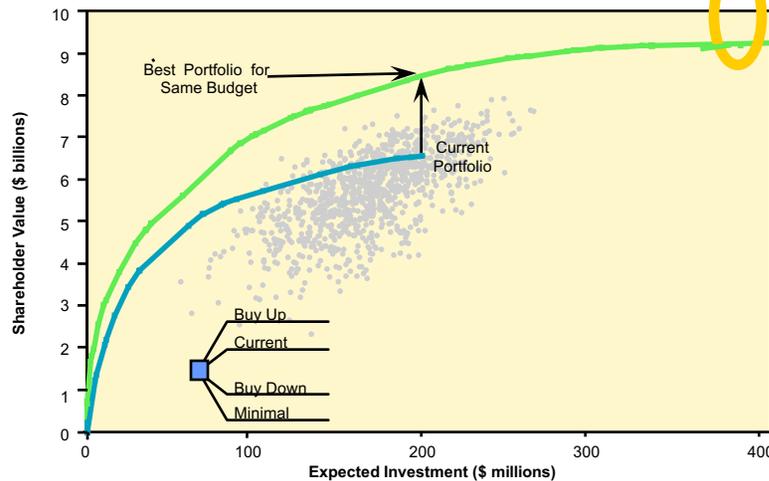
SB achieved trust, alignment, commitment to action—and a new investment strategy that would not have been achieved otherwise.

There's no silver bullet, but rather many elements—all working together effectively.

A business process that mines added value on an ongoing basis can be developed through practical, proven, incremental steps.

*Similarly, a sustained improvement in value creation requires a system of elements that all work together...*

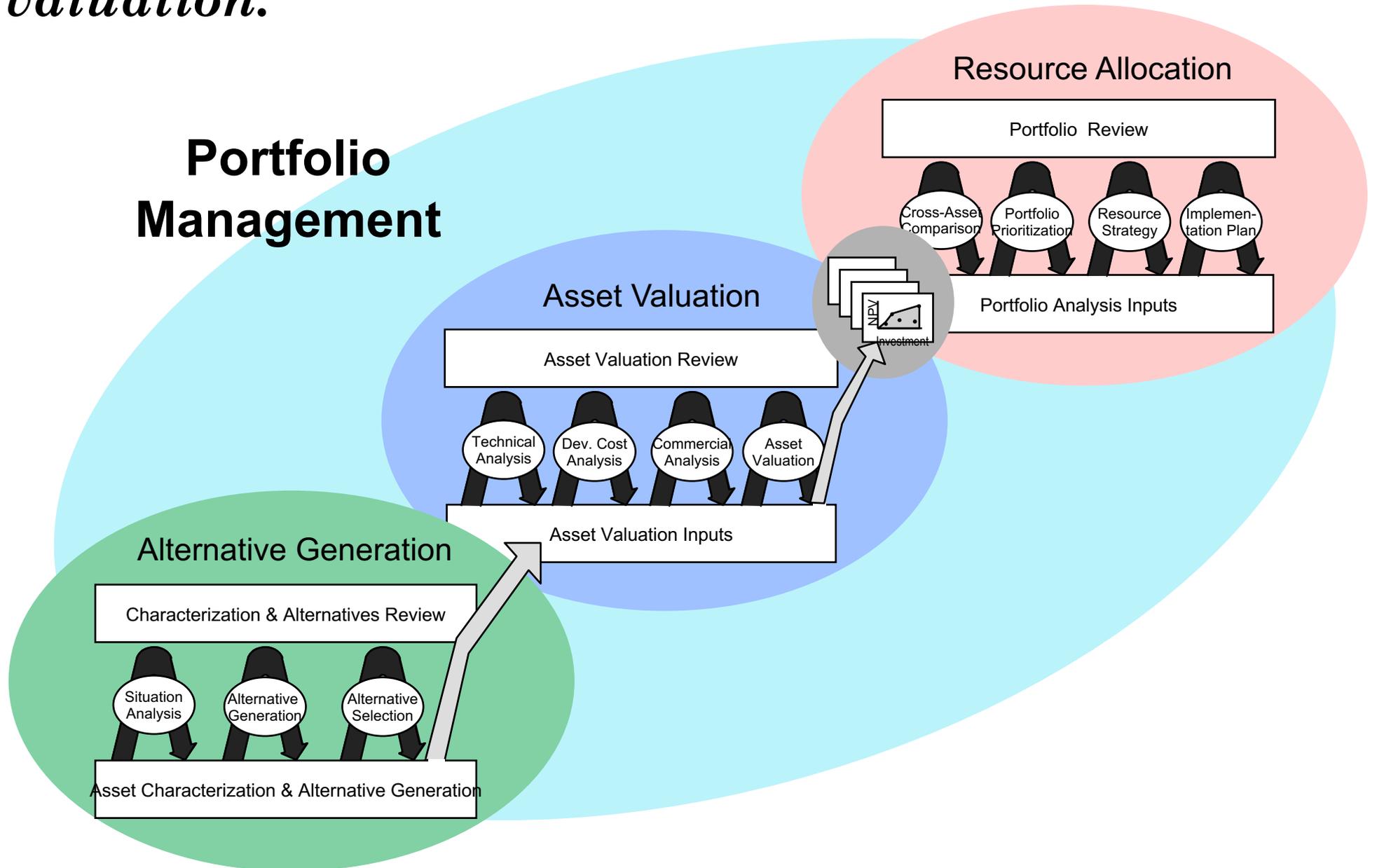
- Committed organizational leadership
- Credible valuation methodology
- Range of investment alternatives
- Credible inputs—handling uncertainty
- Excellent facilitation
- Sound process design
- Effective process leadership
- Workable supporting systems



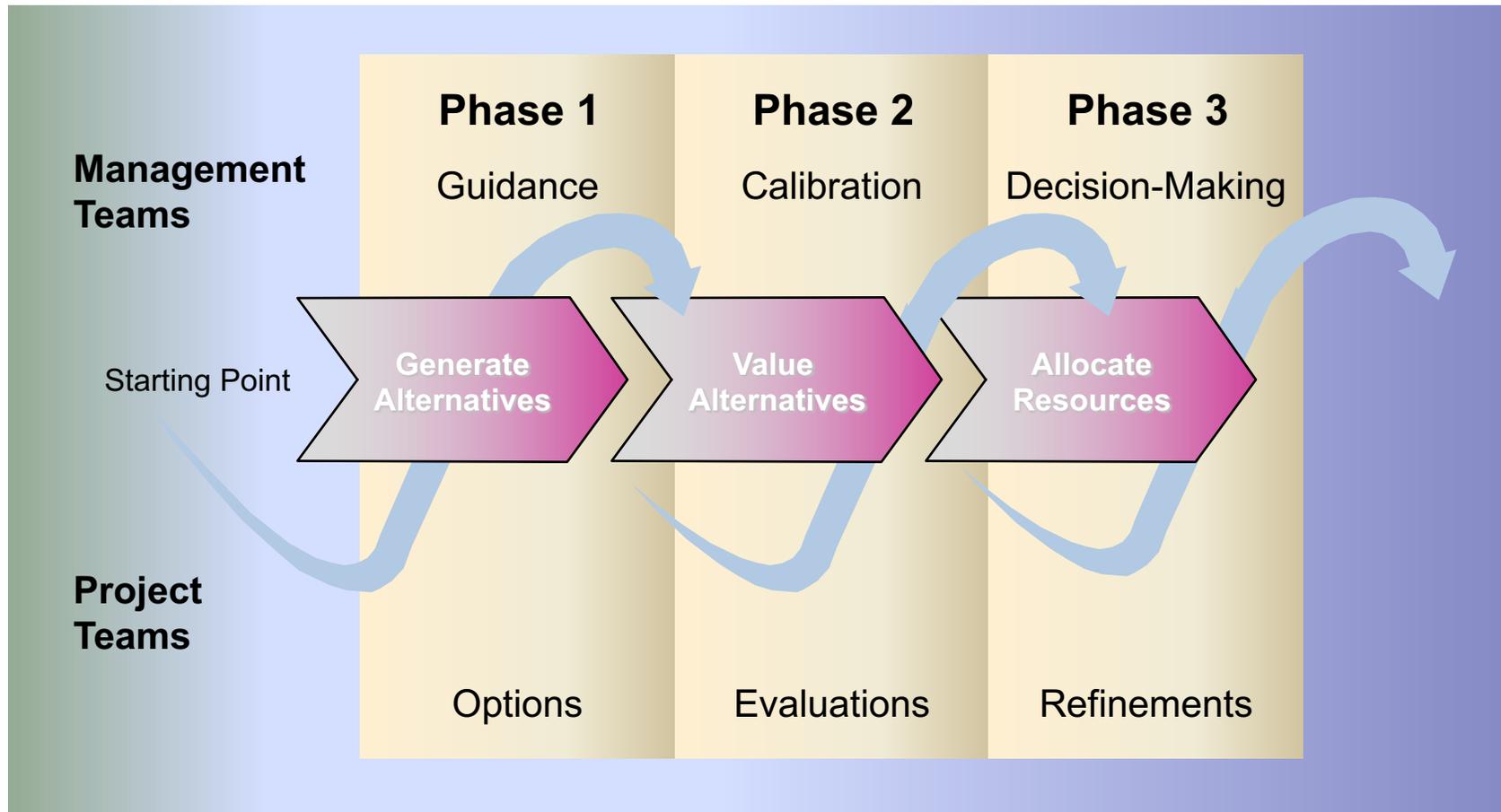
*...and if an element is missing or not well connected to other elements, the value frontier reverts to the current momentum of the organization.*

# Effective resource allocation requires underlying effectiveness in alternative generation and asset valuation.

## Portfolio Management



*A well-designed, well-led decision process builds the buy-in and commitment of the relevant stakeholders.*



# *A balanced and credible set of alternatives is a powerful enabler to effective portfolio management.*

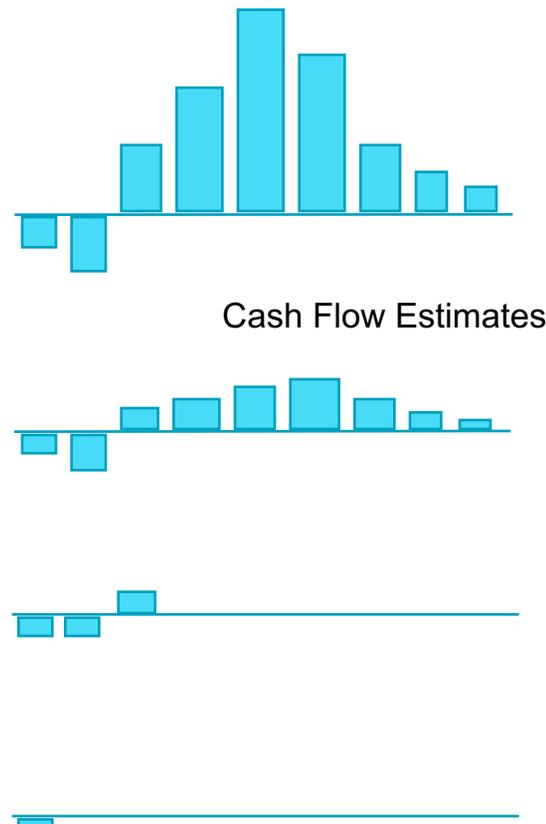
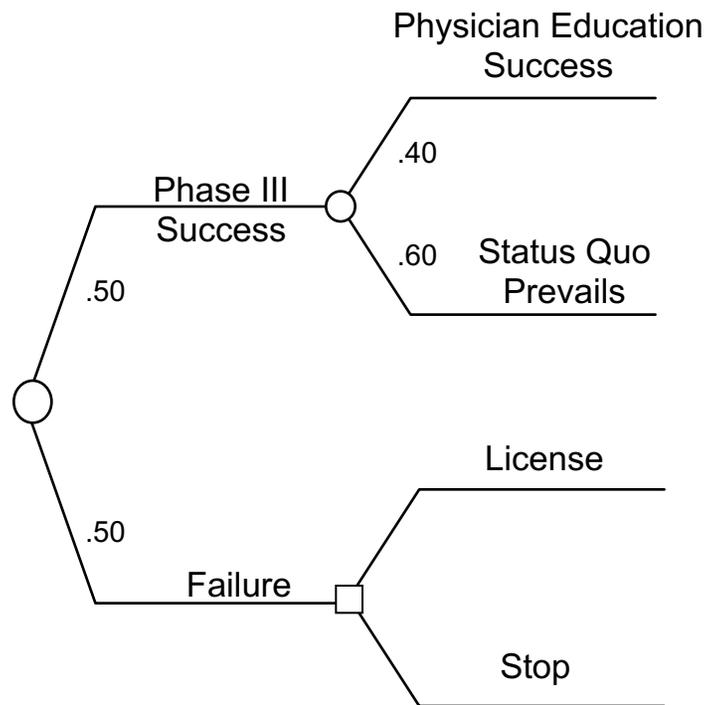
<b>Project</b>	<b>Current</b>	<b>Buy Up</b>	<b>Buy Down</b>	<b>Minimal</b>
<b>Alpha</b>	<ul style="list-style-type: none"> <li>• Target launch for hypertension</li> <li>• Initiate long-term outcome study in Phase IIIb</li> <li>• Conduct Phase III comparator studies</li> </ul>	In addition to Current, 2 alternatives: A) Pursue PLE with patent extension B) Accelerate NDA filing	<ul style="list-style-type: none"> <li>• Current, but eliminate Phase IIIb long-term outcome study</li> </ul>	<ul style="list-style-type: none"> <li>• Stop all development activity after Phase IIb</li> <li>• Pursue license-out opportunity</li> </ul>
<b>Beta</b>	<ul style="list-style-type: none"> <li>• Target launch for prostate cancer in US &amp; Europe 3Q99</li> <li>• Start a comparator study vs. major competitor April 1997 (not to be included in regulatory file)</li> </ul>	<ul style="list-style-type: none"> <li>• Current, but add mortality study</li> </ul>	<ul style="list-style-type: none"> <li>• Not applicable</li> </ul>	<ul style="list-style-type: none"> <li>• Stop all development activity</li> <li>• Pursue license-out opportunity</li> </ul>
<b>Gamma</b>	<ul style="list-style-type: none"> <li>• Target file date for Alzheimer's: Sept. 1998</li> <li>• Pursue seven Phase IIIa studies in parallel</li> <li>• Pursue one comparator study</li> </ul>	In addition to Current, 3 alternatives: A) Perform two disease modification studies starting Jan. '97 B) Perform two disease modification studies starting Oct. '97 C) Perform two disease modification studies starting April '98	Two alternatives: A) Current, but perform two fewer Phase IIIa studies B) Current, but drop comparator study	<ul style="list-style-type: none"> <li>• Stop all development activity after Phase II</li> <li>• Pursue license-out opportunity</li> </ul>

# *Value consists of forward-looking possibilities and probabilities—including real options.*

## Probabilities

## Possibilities

## Assessments



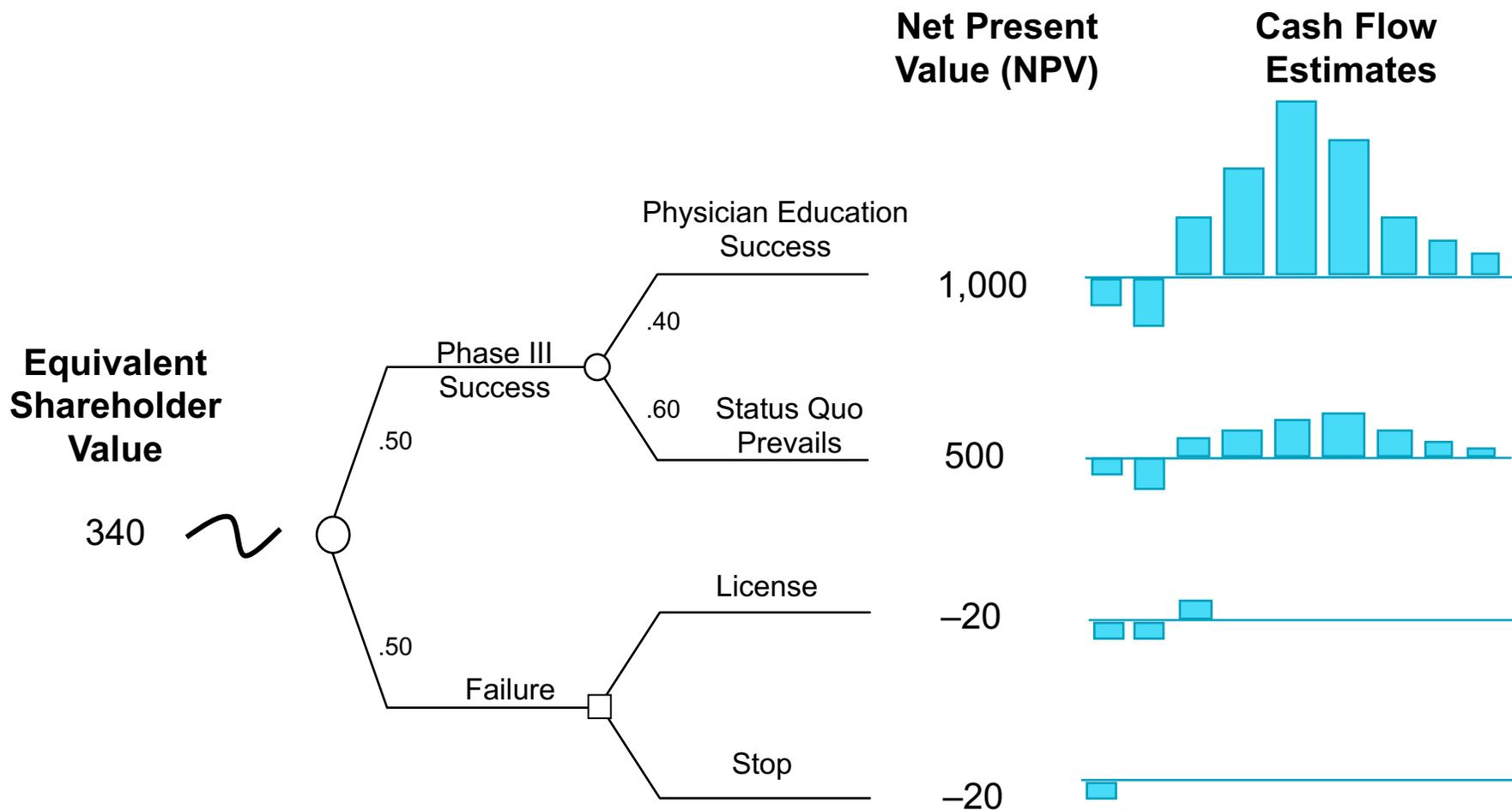
- Competitive Profile
- Peak Sales
- Duration of Sales
- Prices
- ⋮
- Cost

Investment to next decision

Investment to completion

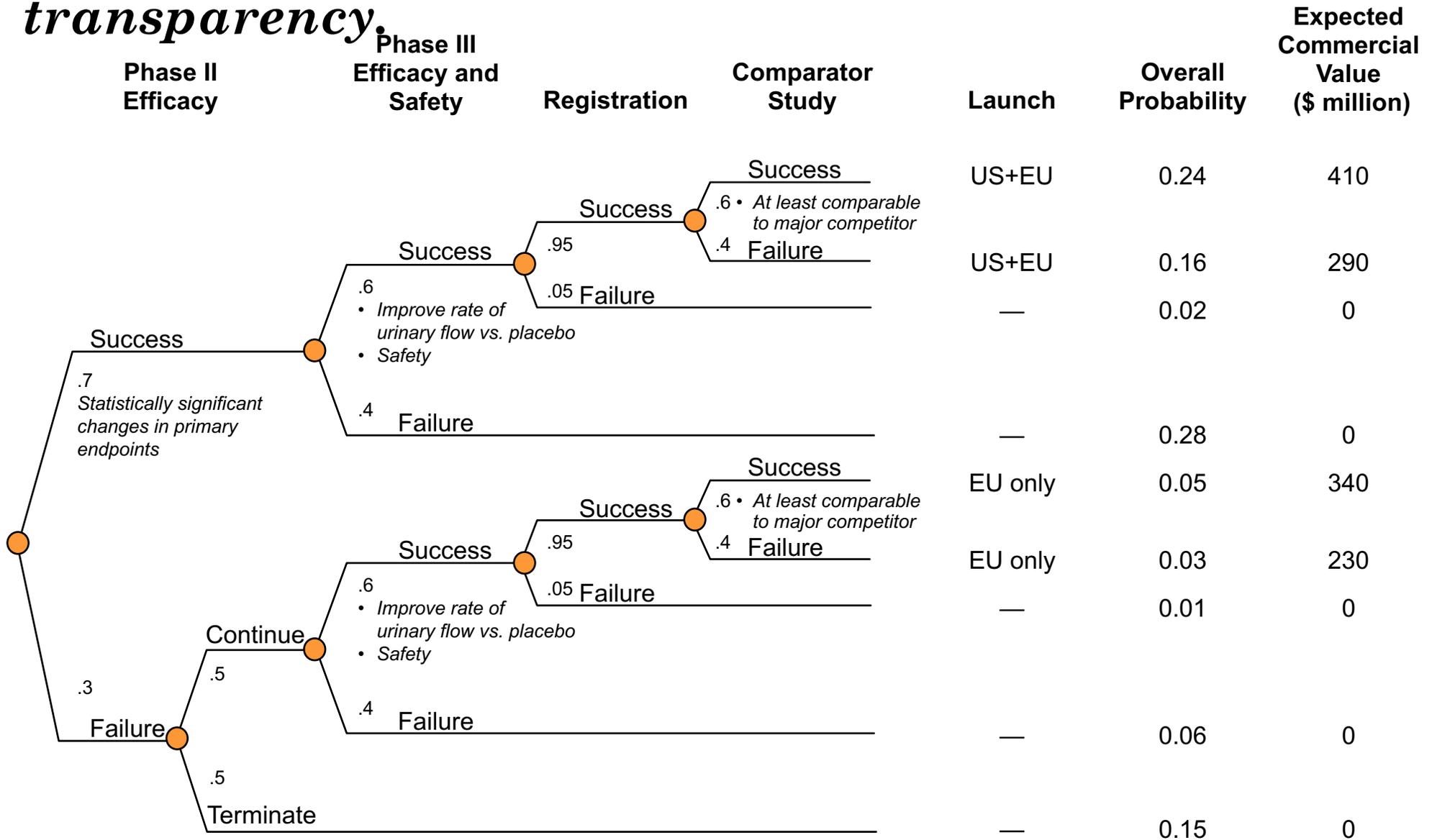
Net in-market cash results

# *Value measurement credibility derives from the principle of “equivalent shareholder value\*.”*

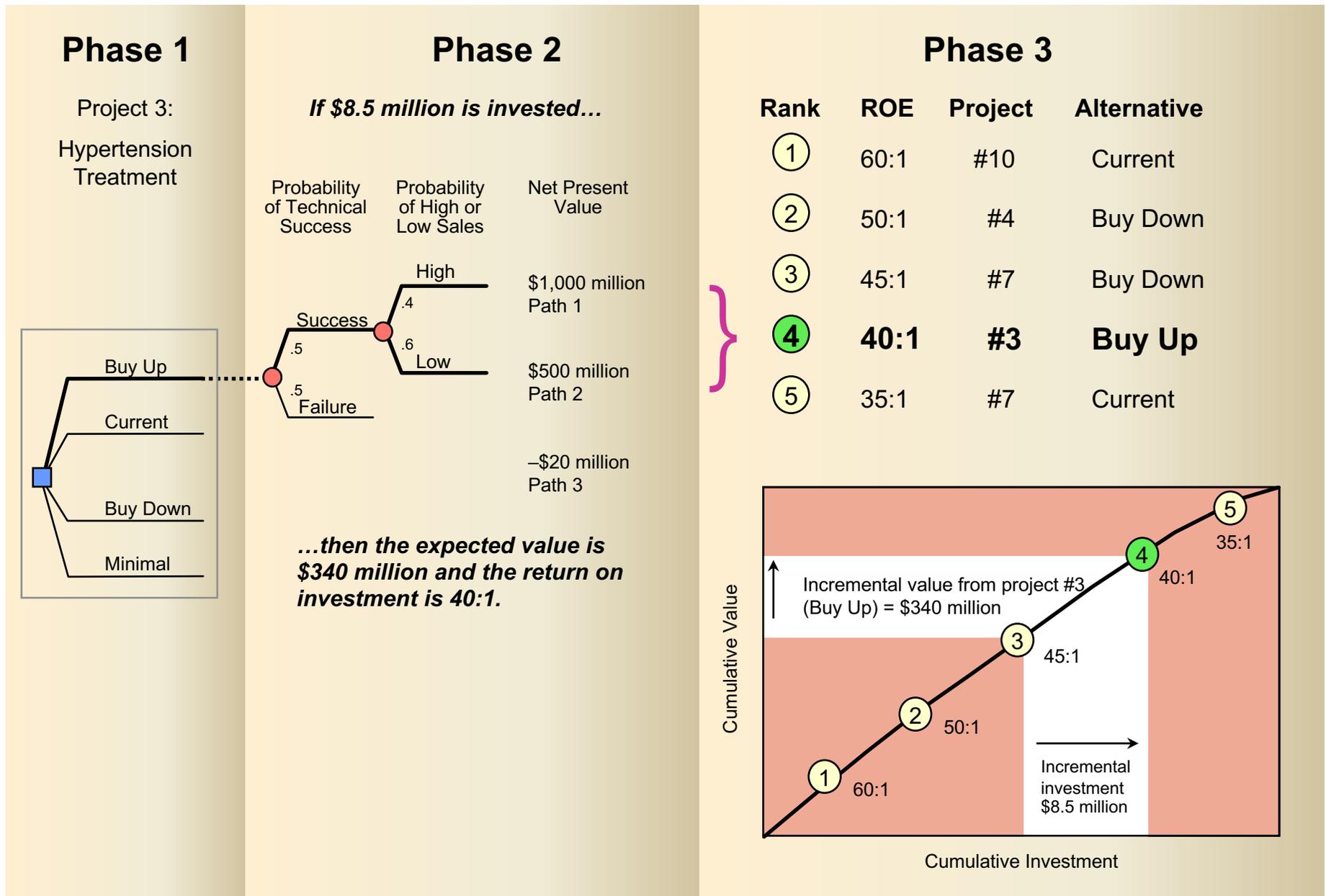


“Equivalent shareholder value” is the amount of added value that would make shareholders indifferent between receiving that value now vs. pursuing the forward-looking possibilities with their associated probabilities.

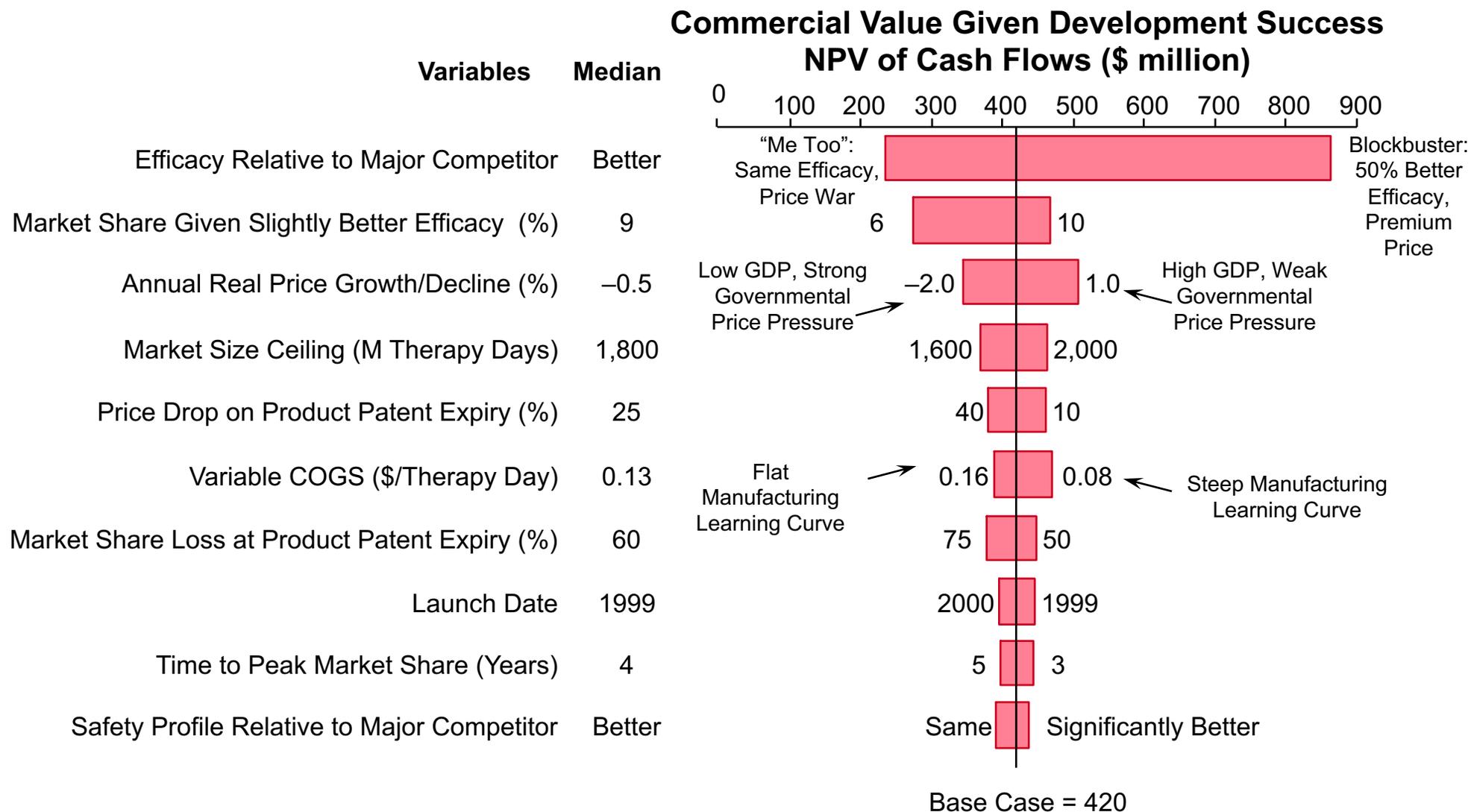
# The appropriate level of detail is determined by what it takes to achieve credibility and transparency.



# Credibility of the valuation methodology derives from sound logic and transparency.



# *Dealing effectively with uncertainty builds trust in the evaluation framework and helps focus attention on value drivers.*



## *To achieve credibility of the inputs, we applied six rules.*

1. Use the same information set for every project—templates consistent in scope but flexible enough to represent the differences among projects and their alternatives.
2. Get information from the most reliable sources—experts from inside and outside the company.
3. Document information “pedigree” —date, place, expert, assumptions, rationale.
4. Engage peer review—across business areas and functions.
5. Validate internal estimates against those of external industry observers and market analysts.
6. Identify the impact of each variable on expected results—to ensure internal consistency of the analyses and shared understanding from project teams to top management.

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# *Improved resource allocation can be accomplished with practical, proven, incremental steps.(I)*

- **Step I: Demonstration**
  - Introduce asset valuation methodology and test on a single complex decision problem
- **Step II: Scoping**
  - Identify gaps in the current methodology and process and then design Step III scope to fill them
- **Step III: Process Design**
  - Develop asset valuation and portfolio analysis methodology
  - Apply to mini-portfolio (typically five to six projects) to
    - Test feasibility of design
    - Gain management commitment by demonstrating value creation potential
    - Prepare the organization for full-scale application
    - Identify improvement needs
  - Design asset and portfolio management decision-making process
  - Improve methodology and process design based on test results

# *Improved resource allocation can be accomplished with practical, proven, incremental steps.(II)*

- **Step IV: Process Implementation**
  - Apply improved asset valuation and portfolio management process across entire portfolio
- **Step V: Process Improvement**
  - Improve methodology and process design based on completed implementation results
- **Step VI: Capability and Infrastructure Development**
  - Design the internal organization, training programs, and systems to transfer technology in-house
  - Design and implement appropriate interfaces and links with other business processes

By tackling the soft issues —  
such as information quality, credibility, and trust —  
SB improved its ability to address the hard ones:  
how much and where to invest.

— *Harvard Business Review*