

# An Analytic Model for DoD Investment & Divestment Decisions

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**May 2015**

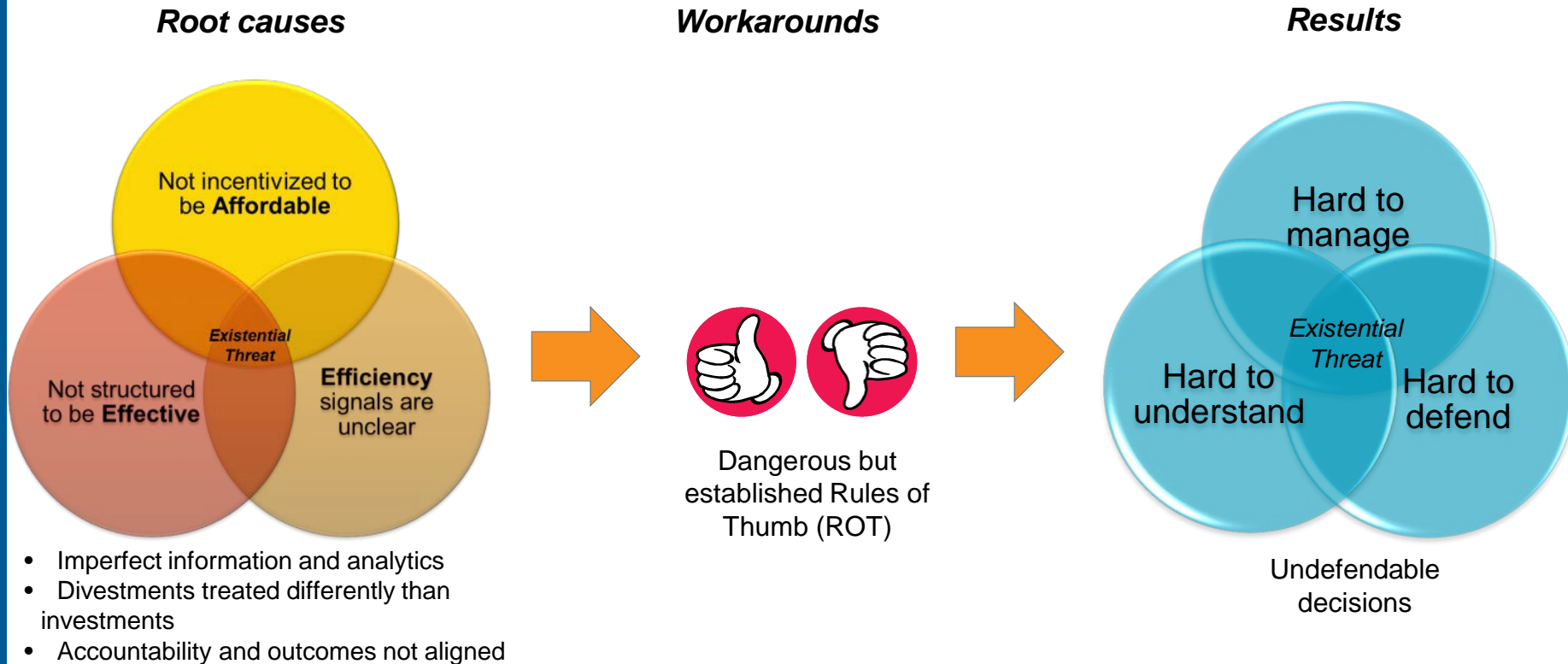
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# Problem: *DoD finds it difficult to prepare for and responsively enact Divestments*



# Outline: How do we fix it?

Leverage the successes of others

Develop a model

Recommend Changes

Model for *divestment* decisions



- Reward shared awareness
- Track decisions
- Institute divestment panels

# Summary:

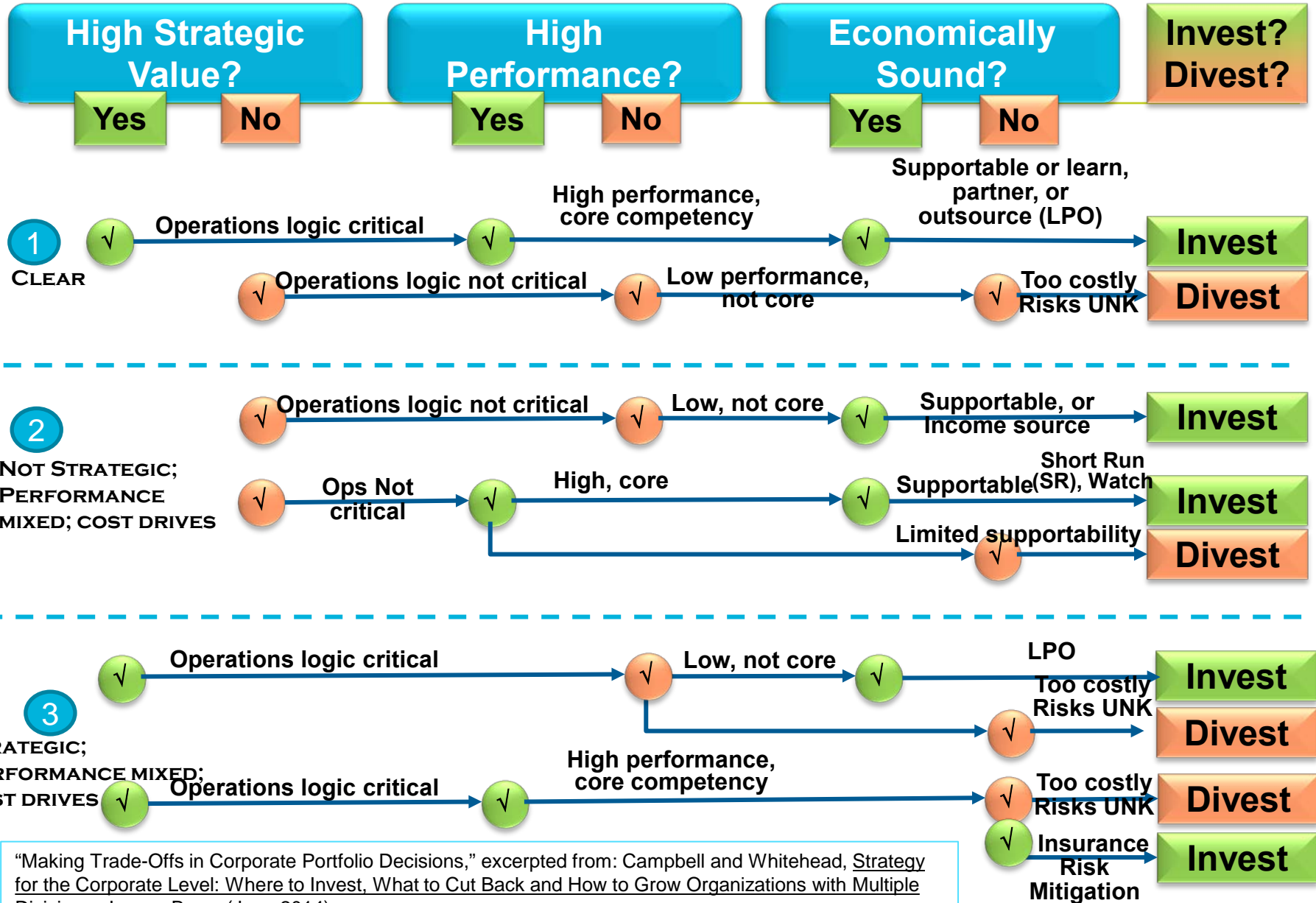
Poor Analytics → Omitted Criteria → Cognitive Bias\* → ROT → BP\*\* → Y/N

| Omitted Criterion                      | Cognitive Bias                                                                                       | DoD Rules of Thumb for Divestment                                                                                     | Recommended Best Practices                                                                                                                         | Model Y/N Criterion                                            |
|----------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Organizational and Operational Impacts | Reasoning by Analogy                                                                                 | <ul style="list-style-type: none"> <li>Take from those who have a lot</li> <li>Cut “fairly” (salami)</li> </ul>       | Dedicate a (small) full-time team to Divestment planning                                                                                           | Mission Critical?                                              |
| Performance Viability                  | <ul style="list-style-type: none"> <li>Illusion of Control</li> <li>Escalating Commitment</li> </ul> | <ul style="list-style-type: none"> <li>Use trigger events to re-baseline</li> <li>Penalize the transparent</li> </ul> | Plan the details of a divestment transition for the timeframe needed                                                                               | Core Competency?<br>High performance?<br>Modernization Impact? |
| Economic Value                         | Single outcome calculation                                                                           | <ul style="list-style-type: none"> <li>Pay for new w/ unrelated funds</li> <li>Congressional favor</li> </ul>         | <ul style="list-style-type: none"> <li>Account for the de-integration costs</li> <li>Track key variables to calculate a comparable SROI</li> </ul> | Cost effective?<br>Secondary effects?<br>Deadweight?           |

\*Irene M. Duhaime and Charles R. Schwenk, “Conjectures on Cognitive Simplification in Acquisition and Divestment Decision Making,” *Academy of Management Review*, 1985, Vol, 10, No. 2, 287-295;

\*\*Michael C. Mankins, David Harding, and Rolf-Magnus Weddigen, “How the Best Divest,” *Harvard Business Review*, October 2008.

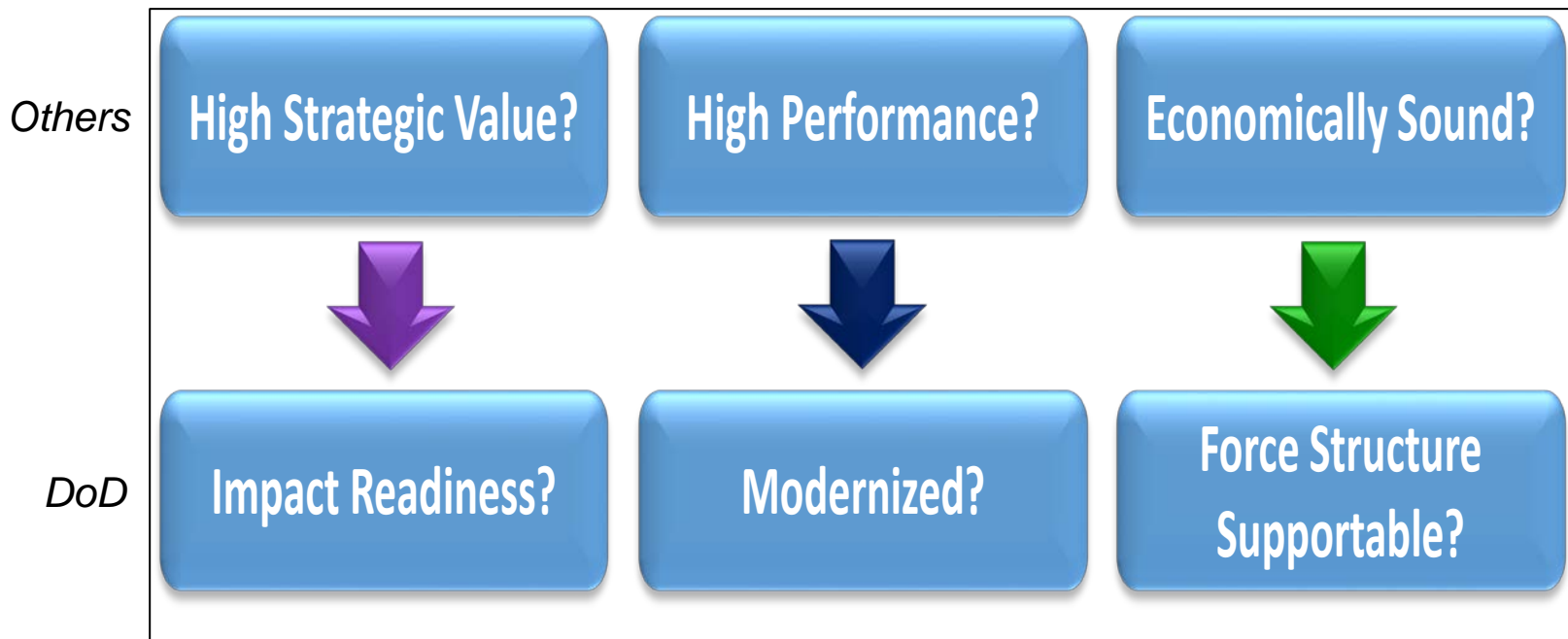
# INVEST OR DIVEST? MIXES OF THREE CRITERIA



“Making Trade-Offs in Corporate Portfolio Decisions,” excerpted from: Campbell and Whitehead, *Strategy for the Corporate Level: Where to Invest, What to Cut Back and How to Grow Organizations with Multiple Divisions*, Jossey-Bass, (June 2014).

# Applying Proven Divestment Approaches to DoD







*Simplify the logic, require yes/no answers, and track the data*



CBO, "Approaches for Scaling Back the Defense Department's Budget Plans," Mar 2013, p. 13.  
Found at: [http://www.cbo.gov/sites/default/files/cbofiles/attachments/43997\\_Defense\\_Budget.pdf](http://www.cbo.gov/sites/default/files/cbofiles/attachments/43997_Defense_Budget.pdf)

# Selecting Investment Sets for Divestment

 = Opt to Keep     = Opt to Divest

| Criteria Area                                     | Factor                             | Discriminator                                                                                                                                             | Acceptance                                                     | In/Divest?                                                                                                                                                                                               |
|---------------------------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High Strategic Value or Readiness                 | Operations Logic Critical          | Investment set meets critical equipping, training, operations needs for current / future missions of COCOM forces or vital to accomplishment of QDR Goal. | Mission Critical?                                              |                                                                                                                       |
|                                                   |                                    |                                                                                                                                                           | Mission Essential or Support?                                  |                                                                                                                       |
| High Performance or Modernization                 | Core competency?                   | Validated Requirement                                                                                                                                     | a. Included on Unified Command Integrated Priority list?       | At least three, or b. and c.<br>                                                                                      |
|                                                   | High performance?                  | Performance in array of KPP metrics*                                                                                                                      | b. Average above threshold?                                    |                                                                                                                                                                                                          |
|                                                   | Modernization impact?              | Impact on Balance of investment types                                                                                                                     | c. \$ profile defensible w/ Mod needs                          | Only two, and not b. and c.<br>                                                                                       |
|                                                   |                                    |                                                                                                                                                           | d. Investment worth technical risk?                            |                                                                                                                                                                                                          |
| Economically Sound or Force Structure Sustainable | Cost Effective                     | Cost is supportable, LPO outsourced, or is income                                                                                                         | Advantageous NPV?                                              | <i>Answer for each</i><br><br> |
|                                                   | Secondary Effects (SE) + Insurance | Intended externalities, unintended consequences                                                                                                           | Are SE measureable? Do they add/subtract so NPV is worthwhile? |                                                                                                                                                                                                          |
|                                                   | Deadweight                         | Deadweight impact over-rides investment impact                                                                                                            | Does intervention matter to outcome?                           |                                                                                                                                                                                                          |

\*Capability Performance; Force Protection; Survivability; Sustainment (Reliability, O&S costs); Net-Readiness; Training; & Energy.

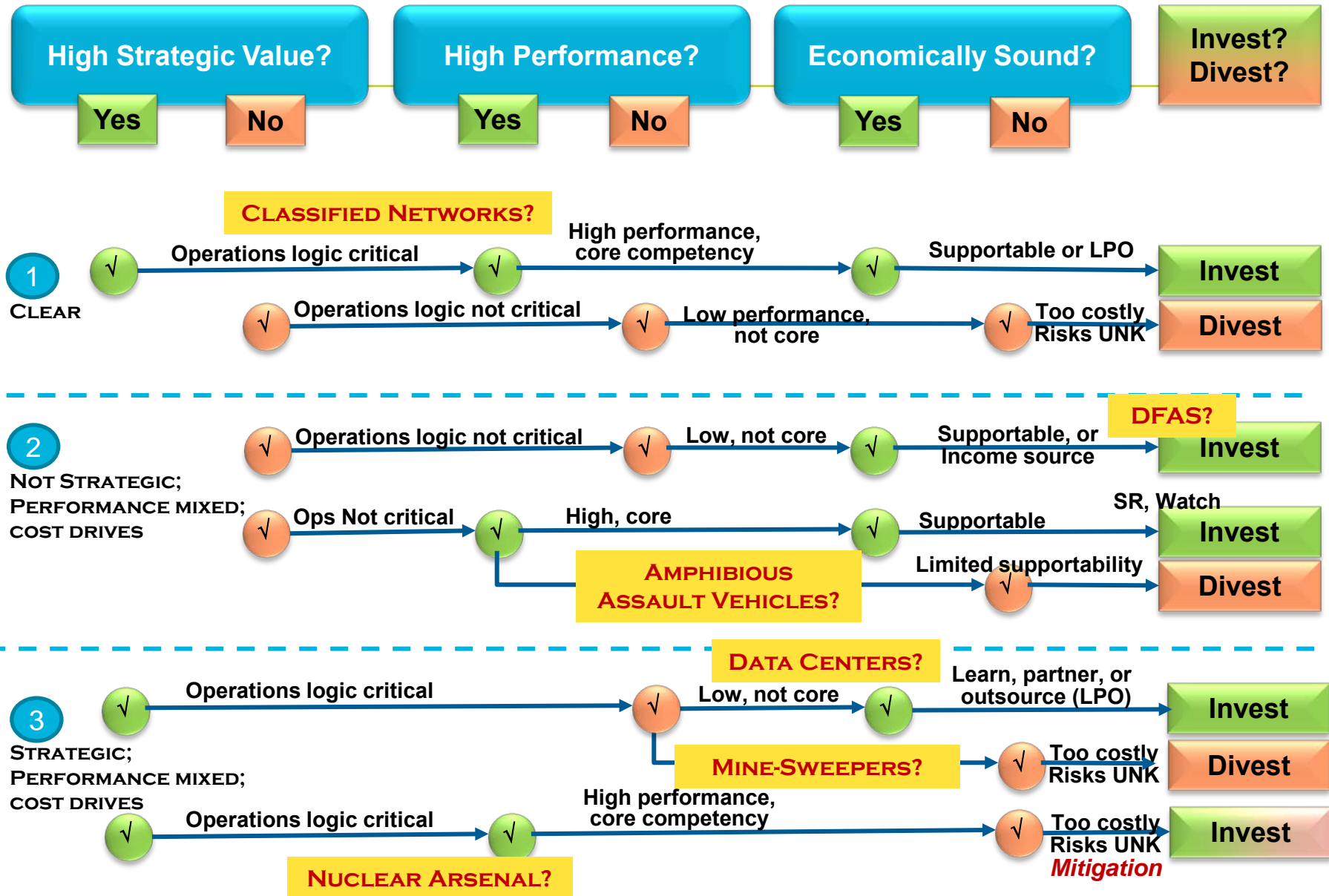


# What are All The Combinations?

*Intuitive? Reflective of ROT? "Seeing criteria profile"*

| Criteria Area                                     | Factor                       | Discriminator                                                                                                                                                             | Acceptance                                                     | Invest | Invest | Invest | Invest | Invest | Divest | Divest | Divest | Divest |
|---------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| High Strategic Value or Readiness                 | Operations Logic Critical    | Investment set meets critical equipping, training, and operations needs for current or future missions of critical COCOM forces or vital to accomplishment of a QDR Goal. | Mission Critical?                                              | Y      | N      | N      | Y      | Y      | N      | N      | Y      | Y      |
|                                                   |                              |                                                                                                                                                                           | Mission Essential or Support?                                  | N      | Y      | Y      | N      | N      | Y      | Y      | N      | N      |
| High Performance or Modernization                 | Core competency?             | Validated Requirement                                                                                                                                                     | a. Included on Unified Command Integrated Priority list?       | Y      | N      | Y      | N      | Y      | either | Y      | N      | Y      |
|                                                   | High performance?            | Performance in array of KPP metrics*                                                                                                                                      | b. Average above Threshold?                                    | Y      | N      | Y      | N      | Y      | N      | Y      | N      | Y      |
|                                                   | Modernization impact?        | Impact on Balance of investment types                                                                                                                                     | c. \$ profile defensible w/ Mod needs                          | Y      | either | Y      | Y      | Y      | N      | N      | either | either |
| d. Investment worth technical risk?               |                              |                                                                                                                                                                           | Y                                                              | either | Y      | either | either | either | either | either | Y      |        |
| Economically Sound or Force Structure Sustainable | Cost Effective               | Cost is supportable, LPO outsourced, or is income                                                                                                                         | Advantageous NPV?                                              | Y      | Y      | Y      | Y      | either | N      | N      | N      | N      |
|                                                   | Secondary Effects+ Insurance | Intended externalities, unintended consequences                                                                                                                           | Are SE measureable? Do they add/subtract so NPV is worthwhile? | either | Y      | Y      | Y      | Y      | either | N      | either | either |
|                                                   | Deadweight                   | Deadweight impact overrides investment impact                                                                                                                             | Does intervention matter to outcome?                           | Y      | Y      | Y      | Y      | Y      | either | either | either | either |

# INVEST OR DIVEST? *EXAMPLES DISCUSSION*



# Summary: How do we fix it?

**REFLECT ON  
MODELS OF  
HUMAN CHOICES**

**ORGANIZE FOR  
SIMPLE USE**

**CHANGE THE  
CONVERSATION**

Model for  
*divestment*  
decisions

Leverage the  
successes of  
others

Develop a  
model

Recommend  
Changes



Research complex spaces  
with high stakes:

- Social value constructs
- Human Factors
- Insurance Constructs
- Commercial for profit environments
- Economic models

- Identify current short comings
- Simplify the logic
- Incorporate best practice
- Apply DoD Concepts

- Reward shared awareness for improved analytics
- Track investment vs. divestment decisions and data points
- Institute divestment panels

# BACKUP

# Investments Decisions Are Not the Same as Divestment Decisions

*“The thought of giving up a once-treasured possession can be an emotional exercise for anyone, even if the object of affection has outlived its use. As investors, we can find it difficult to sell a once-favored holding—even more difficult than the decision to purchase it.”<sup>1</sup>*

- **Why? Self Interest and emotion: Pride, anxiety, neglect, greed, or power. “Anyone with money can buy stocks, but only smart people can sell them”<sup>2</sup>**
- **But the government is not the stock market...**
  - “Public money” (a.k.a., “not yours”) may bear less emotion, but the mindset space is filled with other emotional elements: politics, power, patriotism, and even altruism.
- **Decisions should be made based on ultimate goals**

1. Franklin Templeton Investments. “The Discipline of Buy and Sell Decisions,” <http://mobius.blog.franklintempleton.com>, March 28, 2013.

2. Mark Brown, “Stocks: The Hard Sell,” Moneysense.com, April 26, 2013, at: <http://www.moneysense.ca/invest/stocks-the-hard-sell>.

# Order of Buy $\neq$ Opposite of Order of Sell

## Two reasons, especially in the government

### Lots of data but limited knowledge

- Gestalt: The whole can be greater than the sum of the parts
- Interdependencies *unlikely* to be well understood
- Imperfect information, lack of causality measurement

Causes pause when we divest, as the “whole” must be taken or comes apart

### Weak measures of success

- No common value proposition (e.g., profits or stock prices), normalized value scale, or way to compare impacts of decisions to the “bottom line”
- Size of budgets become \$ meter—does not promote divestment
- The notion of “affordability” is challenging to define/execute

Hard to defend decisions

# Rules of Thumb: Biases

- Four types of cognitive biases in decision-making, depending on predisposition toward the investment, drive “rules of thumb”<sup>1</sup>

| Investment Activity                      | Cognitive Bias                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Consideration of alternative acquisition | <p><b><u>Reasoning by analogy:</u></b> “In the decision process leading to acquisition, decision makers rely on analogies to simpler situations that may bear little similarity to their strategic problem.”</p> <p><b><u>Illusion of control:</u></b> “In the evaluation of an acquisition, decision makers overestimate the potential impact of their expertise on the acquired unit's performance.”</p> |
| Management of the acquisition            | <p><b><u>Illusion of control:</u></b> (see above)</p> <p><b><u>Escalating commitment:</u></b> “Information on declining performance of the unit triggers rationalization and escalating commitment.”</p>                                                                                                                                                                                                   |
| Consideration of divestment              | <p><b><u>Single outcome calculation:</u></b> “When divestment of a failing unit is finally considered, it quickly becomes the only course of action considered.”</p>                                                                                                                                                                                                                                       |

1. Irene M. Duhaime and Charles R. Schwenk, “Conjectures on Cognitive Simplification in Acquisition and Divestment Decision Making,” *Academy of Management Review*, 1985, Vol, 10, No. 2, 287-295.

# Rules of Thumb: Private Sector Remedies <sup>1</sup>

## Private Sector

- Dedicate a team to divestment full-time, just as you do with acquisitions.
- Establish objective criteria for determining divestment candidates—don't panic and sell for a song in bad times
- Work through all the details of the de-integration process before you divest
- Make sure you can clearly articulate how the deal will benefit the buyer and how you will motivate the unit's employees to stay until the deal is done.

## Observations on DoD

- *DoD has thousands of people that work on strategic and investment planning*
- *Government must still think about fiscal losses*
- *Government should invest to remedy the knowledge shortfall about their investments*
- *Costs of transition and divestment is often captured in DoD, but an under-appreciated because it takes a long time*

1. Michael C. Mankins, David Harding, and Rolf-Magnus Weddigen, "How the Best Divest," *Harvard Business Review*, October 2008.

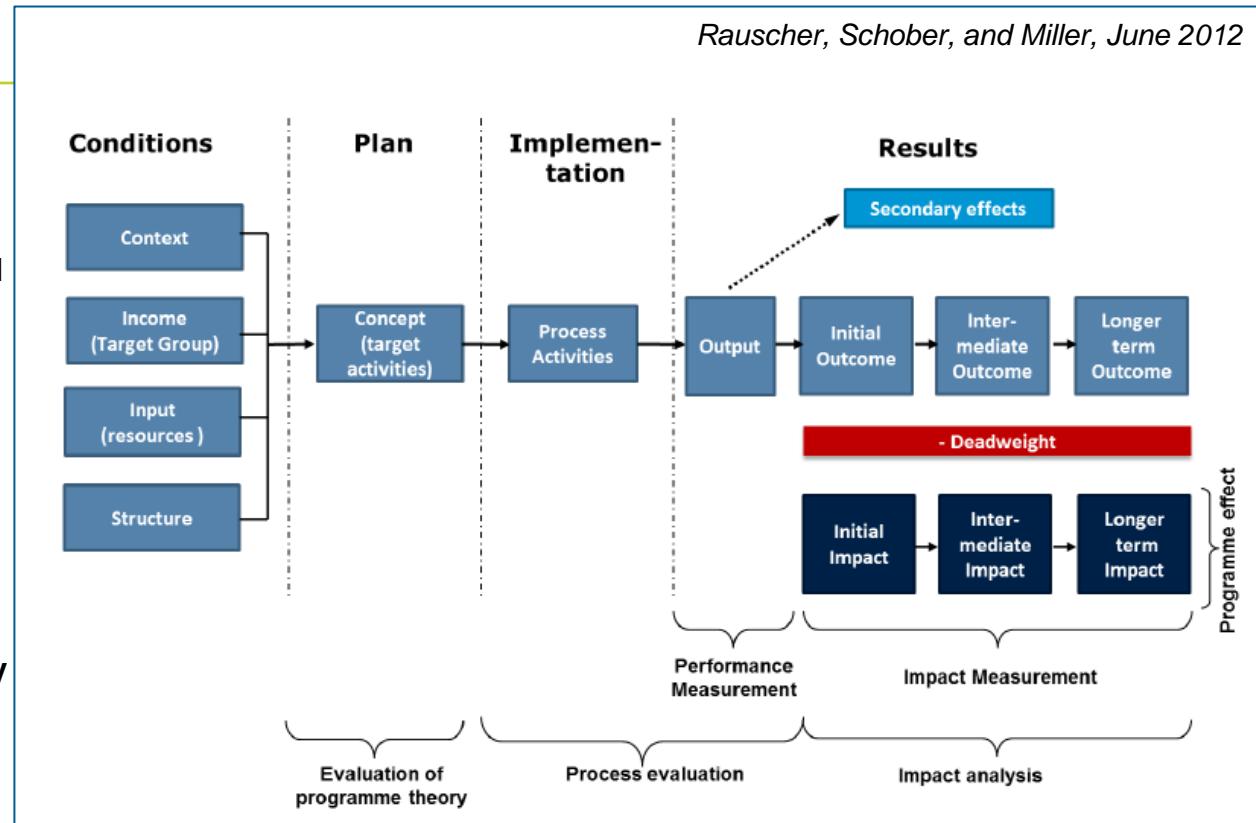


# Rules of Thumb: Government Divestment

| <u>Rule Applied in Government</u>                                                                   | <u>Observation</u>                                                                                                                        |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Those that “seem to have a lot”                                                                     | Goal of bureaucracies is to maximize budgets, yet, proportionally large budgets become a target for redistribution or for “paying bills.” |
| Salami-slice                                                                                        | Programs are cut across the board, with a strict percentage regardless of impact (“sequester”)                                            |
| Programs not sticking to acquisition cost/schedule,<br>e.g., Nunn-McCurdy breaches or near-breaches | Programs often get “re-baselined.” Possibly a divestment, often the same money is spread over time.                                       |
| Those with poorly captured performance                                                              | Programs that measure may be held to a different standard and are not fiscally rewarded for transparency in effectiveness or efficiency   |
| Bias to solve gaps using unrelated offsets                                                          | Refusal to assess baseline for cuts related to gaps, in fear of fiscal penalty biases decisions away from smart cuts                      |
| Congressional disregard or favoritism                                                               | Drives, or saves, many divestment decisions, for all military departments alike.                                                          |

# Logic Model Definitions

- **Context:** Economic, political, and social circumstances
- **Income:** Target group needs
- **Input:** Financial and personnel resources available
- **Structure:** legal and finance characteristics of sponsor
- **Concept:** roles, responsibilities, due dates of targets
- **Process:** targets linked to activities
- **Output:** directly provided contributions of program/activity to achieve the desired impact(s)
- **Outcome(s):** effects or desired conditions of target group after activities completed
- **Impact:** overall effects that are logically, theoretically, or empirically substantiated
- **Secondary effects:** positive and negative effects not intended by program or activity plans
- **Deadweight:** portion of outcome(s) that would have been produced w/o program or activities
- **Time stamps:** (not defined in paper, but offered here)
  - Initial: time taken for initial impacts to be realized
  - Interim: time taken for secondary effects to be observed and quantified or qualified
  - Long-Term: Time taken for relationships between actual impacts and deadweight to be delineated



# Insurance Models\*

Dennis Lebar, "Insurance Investment Rules are Changing, Ready or Not," InformationWeek.com, 9 Sept 2012; Gill Wadsworth and Monica Woodley, "Investment strategy at an Inflection Point?" BlackRock Global Insurance, 2013.

- **Insurance companies pool risk so that the average probability of loss is mediated and competitive premiums can be charged**
- **Actuarial calculations of premiums for coverage and for *gains* from insurance capital required ("r") for profitability depend on the accuracy of these pooling statistics**
- **Insurance models must abide by standards in guidelines to ensure investment diversity/quality for the insured and for investors**
- **Three large problems exist in insurance modeling:**
  - Risk categorization errors: deeper modeling may rate securities lower and subject quality to question, e.g., some bonds are refinanced debt
  - Time: portfolios containing older high-rated securities are stacked with newer, lower rated securities; the average is masked by older and 'timed'
  - Policy: As laws change, previous portfolios get grand-fathered in; this will make portfolio subject to both previous problems, often cause divestment

***Government investments are riddled with risk categorization, time, and policy "generation" issues – called Time Inconsistency***