

Valuing Relevant Information When It May Be Ignored

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Expected Value of Imperfect Information (eVOI) Is Systematically Biased

Biases in eVOI

- eVOI undervalues studies in some ways
 - Prediction vs. study vs. study generator
 - Side-effects
 - Advocacy
 - Fairly well-known

****eVOI Overvalues Information When the Prediction May be Ignored****

- Ignored predictions always possible
- Chances often quite large
- Stakes are high

Why a Prediction May Be Ignored

- Sponsor does not fully control the decision
- Sponsor changes/leaves.
- Sponsor themselves may selectively utilize

Why a Prediction May Be Ignored

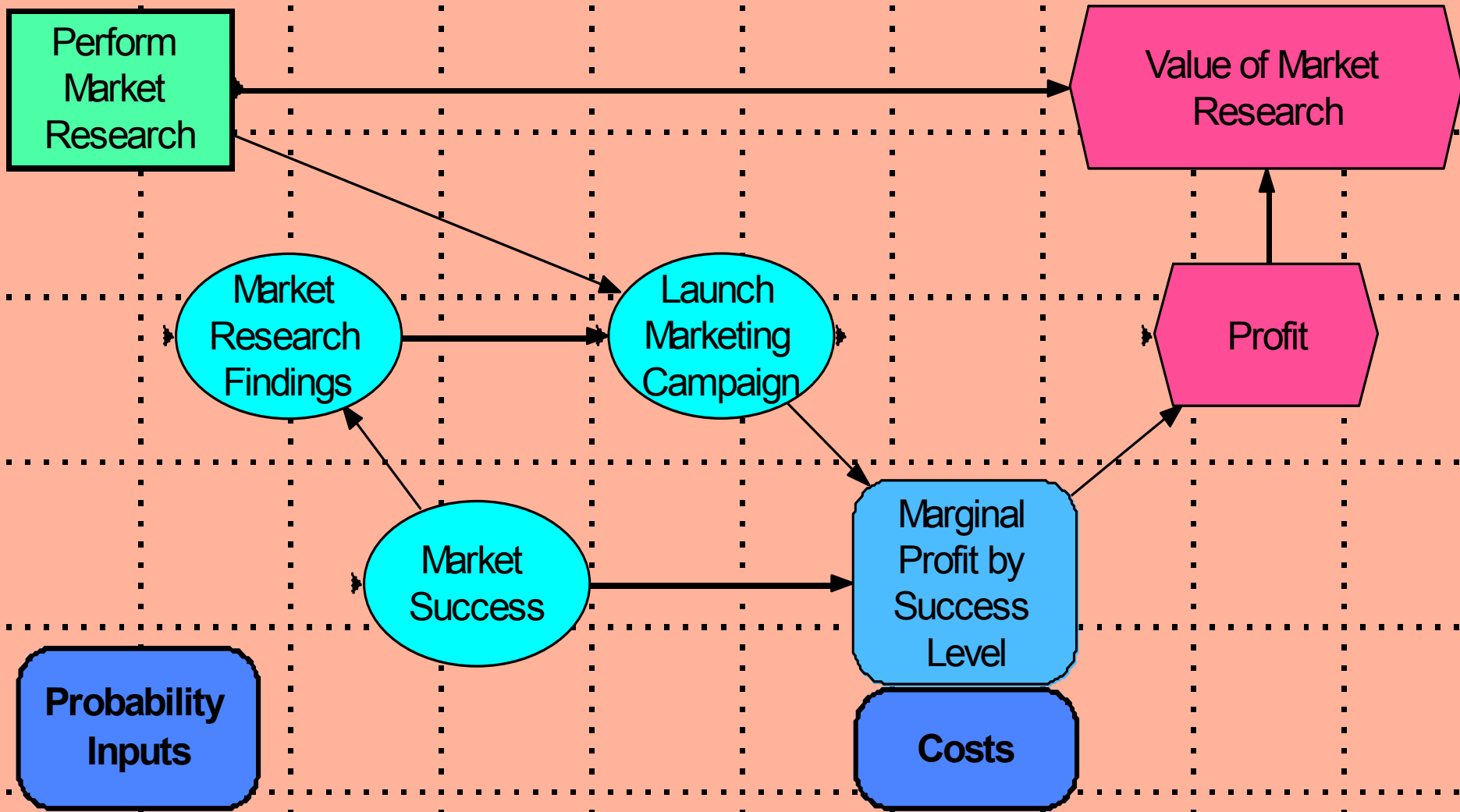
- Communication failure
- Political sabotage
- Misinterpretation

**We Seek “Buy-In”
Aggressively, but Do
Not Model the Risks**

Model: Basic VOI Environment

- One decision, one material uncertainty
- Objective well-defined
- Single study sponsor who is not totally in control of decision
- No side-effects, no advocacy
- Market research example
- Modeling tool: Analytica by Lumina Decision Systems

Diagram



Parameters of the Model

Value of Information for a Study When the Results
Have a Chance of Being Ignored by the Decision Maker

Chance of Market Success

0.8

Chance of Launch Given No Mkt Research

0.6

Market Research False Positives

Edit Table

Market Research False Negatives

Edit Table

Decision Maker's Responsiveness to Positive Mkt. Res

Edit Table

Decision Maker's Responsiveness to Negative Mkt. Res

Edit Table

Value of Market Research

Calc



Profit

Calc



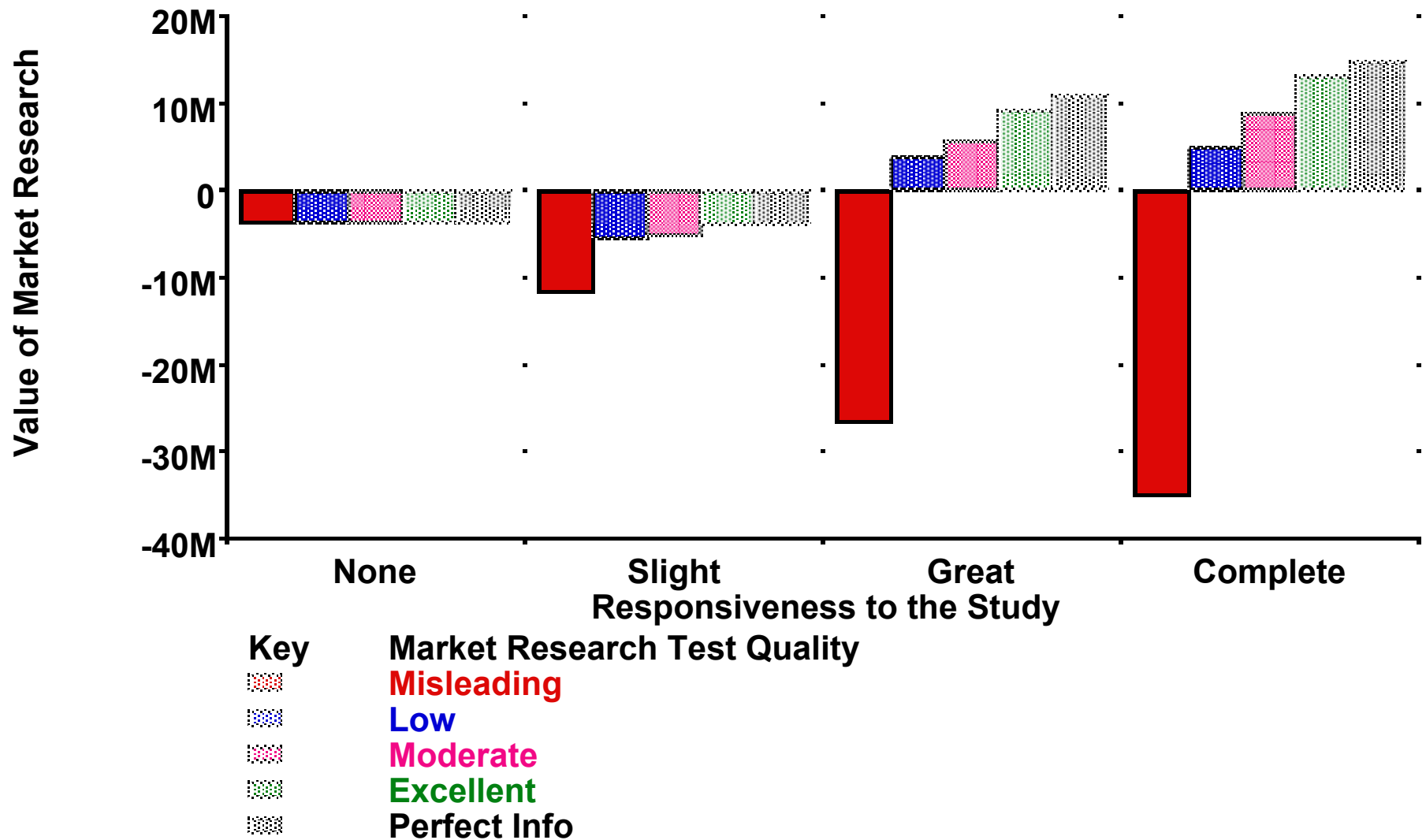
Introduction

Value of Information Model

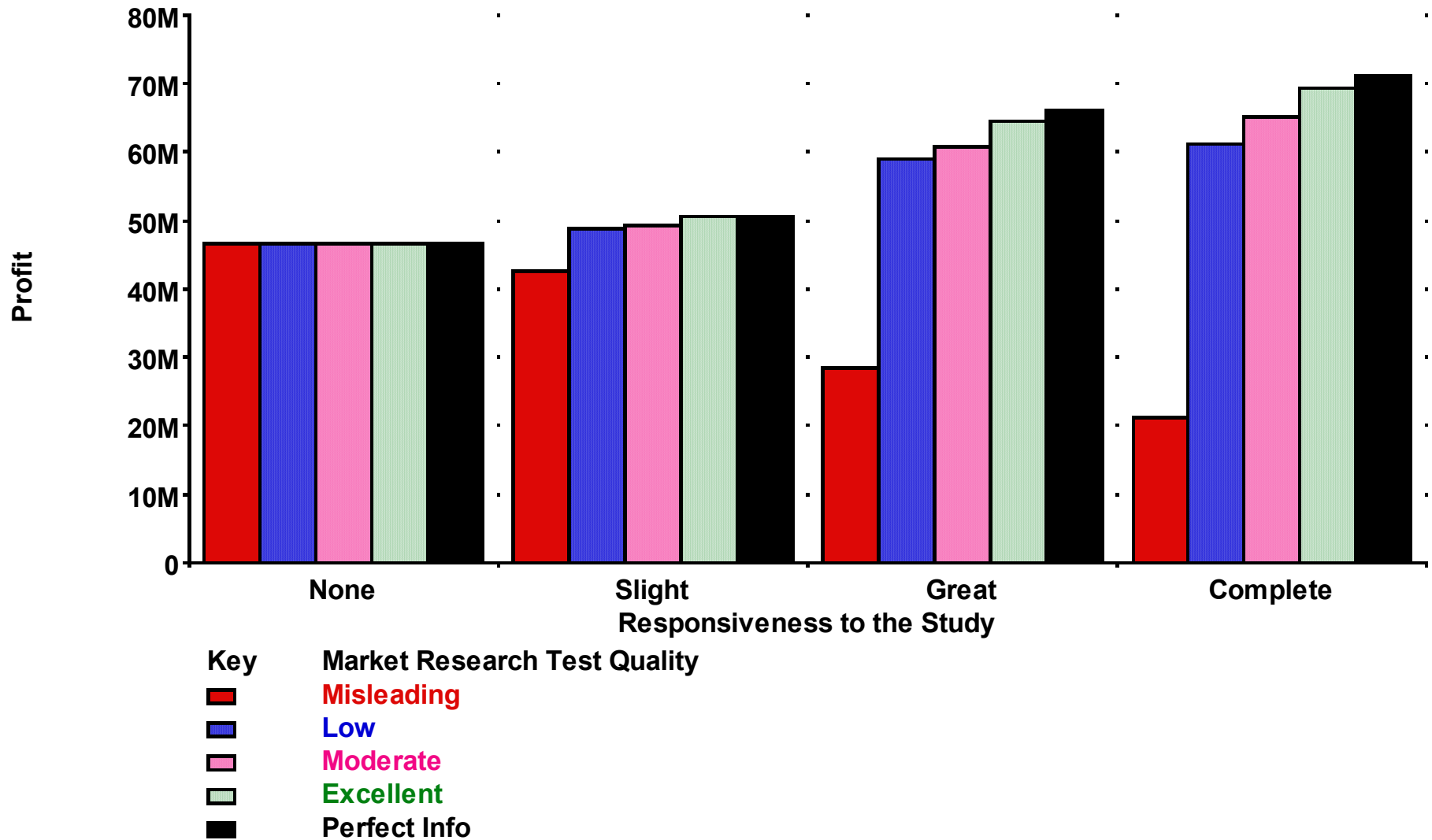
Decision-Maker's Responsiveness

- How much will the prediction influence the decision-making process
- Positive market research
 - None: 0
 - Slight: 0.1
 - Great: 0.8
 - Complete: 1
- Negative market research
 - None: 0
 - Slight: .2
 - Great: .7
 - Complete: 1

Effect on Value of Information



Effect on Profitability



Applications

- R&D, exploration & other capital investment
- Public policy– planning & oversight regimes
- Medicine- informed consent
- Analyst time management
- Apply Operations Research method?
- Decision quality discussions