



## ***Solving Hard-Hard Problems***

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***Comments Welcome***

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***Why are projects hard?  
There are two types of “hard”***

**Easy hard problems**

**Hard hard problems**

# Easy hard problems

(1/4)

- Size and scope
  - 75 person core team, \$10B capital, 10-20 year time horizon...
  - How: Facilitation and project management skills
- Implementation complexity
  - “Great idea, we cannot do it”
  - Violates processes, systems, capabilities, culture of enterprise, constraints (capital, policy)
  - Example
    - *Start a different business; move in value chain*
  - How: Must include these factors during framing and analysis. Or forget it
    - *Still not common practice*
    - *McKinsey 7-S published in 1980*

# *Easy hard problems*

*(2/4)*

- Analytic complexity
  - Large models
  - Complicated models
  - Octopus influence diagrams
  - Feedback
  - Intersects with other problems
  - All of the above...
  - How: Strong analytics – where most decision analysts are comfortable
- Organizational complexity
  - Multiple organizations involved
  - Different world views
  - Sometimes misaligned
  - Competing
  - How: Dialogue (and cunning)

# Easy hard problems

(3/4)

- Framing complexity
  - No one agrees on the problem
  - Example: Business Unit strategies
    - *Central office: Something is wrong, fix it*
    - *BU Management: Our plan is working, just give us time*
  - Usually the source of project failure
    - Along with wrong people
  - How: Hardest to define, rarest skill
    - *See through the noise to the heart of the problem*
    - *Partly ability to integrate across perspectives*
    - *Important is to go beyond what is there*

# *Easy hard problems*

*(4/4)*

“Easy” because we know, or know how to find, the path to the solution

*But people who can execute these are rare (10+ years experience)*

*Easy hard problems are still very hard...*

# Hard Hard Problems

- Our way of thinking seems wrong / incomplete
  - Our mental models are not right but we are not sure why
  - Need to think about the world differently
  - Heuristics are inappropriate
  - Problems outside domain of mainstream
- No one has a clue about frame/alternatives
  - Case A: Genuinely New
    - *Internet when it was Arpanet*
    - *Ipad*
    - *Nanotech*
    - *A world without the Soviet Union*
    - *Arab Spring*
  - Case B: No one involved with effort has a clue
    - *New business for the people in the project*

## Examples

Technology commercialization  
Very low probability, very serious consequences  
Long time frame  
Strategic value  
Managing culture  
How to use information / research when no priors  
*Most of the challenges we are looking at*

# Tackling Hard Hard Problems (and easy ones...)

(1/4)

- **Philosophy of Decision Analysis (DQ loosely defined) always works**
  - **Common tools and tactics often do not**
- Problem determines the approach – should be a natural act
  - Process and tools are powerful means, not ends
  - Must have command of wide range of tools and processes
  - Must be able to create new process, adopt/modify tools
  - Decision makers seldom care about process
    - *Analogy: Customers care about product benefits, not technical attributes*

# ***Tackling Hard Hard Problems (and easy ones...)***

***(2/4)***

- **Getting started correctly is the key to success**
  - Initial conditions matter the most
- I assume I do not understand the problem, much less have the solution
  - Listening more important than talking
- Creativity and innovation as important as tools and process
  - Quality of people may be more important than all
- Manage the culture
  - Know how to pick the right fights and when to give in

# Tackling Hard Hard Problems (and easy ones...)

(3/4)

- If the recommended solution is not implemented, the project is a failure
  - Little patience for “learning opportunities”
- Problems evolve – sometimes discontinuously
  - Fundamentally different in nature, not just degree
    - *Offshore exploration/production vs. Fracking?*
  - Our capabilities must evolve, sometimes discontinuously
  - Drives innovation in the DA world

# Tackling Hard Hard Problems (and easy ones...)

(4/4)

- **We are creating a solution, not finding it**
  - Subtle but hard mental shift
  - Drives creativity and innovation, also accountability, courage, and *leading*
  - DA is a paintbrush / design / building material
    - One of several
- The solution might be simple
  - But it can be very hard to get to

# Getting Started

## Immerse in Data – Internal and External

- Internal interviews with all ranks
  - Always to talk to senior and junior people
  - More rather than less
  - At least 20
  - Why an issue / context / what to do / risks and frets / value / people ...
- Good ideas tend to be independent of rank when dealing with hard hard problems
  - Must listen to all equally
  - Ideas, not constraints
- Harvest existing internal information
  - Market/Customer/Technical Research
  - Special studies
  - Often must look at in new ways, buried in details
- Look outside
  - Value chain
    - Customers, supplier, distributors
  - Competitors
  - Analysts
  - Universities
  - Think tanks
  - Bloggers
  - Journals and newspapers
    - NBER, HBR, MIT TR, MIT SMR...
    - Economist, WSJ, NYT, FT...
    - US Govt., CBO, IMF, World Bank
    - Investor Relations Presentations, I-Bank reports, Annual reports
    - Of course...Google & Wikipedia!!

# Looking for...

(1/2)

- New insights
  - Time and again find the answer is out there, if you only let it in
- Unrealized connections & unused information
  - Must focus on the fine print
  - Data & information rich, understanding poor
- Context
  - Why this is important and how it fits in with other issues
- Different POVs and sources of differences
  - Major source of understanding and solution development
- Sources of disagreement / conflict
  - Must be resolved by end of project
  - Very valuable for meaning
  - Conflict is our friend
    - Silence is our enemy
- Doable ideal solution
  - Sometimes can short circuit a great deal of work

## *Looking for...*

*(2/2)*

- Emotional hot spots
  - Point out relevant history and strongly held mental models
  - Deep insights & high barriers
  - Separate lessons of past from issues of today
- Understanding of organizational capabilities
  - Understand who they are and what they can do
- Cultural issues affecting DQ
  - Financial rules
  - Inappropriate short cuts / approximations
  - Insularity vs. external perspective
  - Silos or free flow of internal information
  - Quality of leadership
- Hidden barriers and enablers
  - Processes, organizational structure, human resources

# Analysis & Quantification

(1/2)

- First step is clarity in terms and frame – making sure we started correctly
- Framing is not a substitute for analysis, but makes analysis much easier
  - Analysis without framing is usually a disaster
  - Still people want to jump to the model
- Foundation is gathering relevant data and evidence and communicating it effectively
  - Build up ability to quantify
  - Parallels level of understanding
  - Sustainability example: Focus groups to segmentation to concept testing to product testing to cost analysis to cash flow models
- Heuristics and short cuts used for “standard” problems tend to fail for new types of problems
  - Cash flow patterns and basic drivers differ
  - Need to go back to fundamentals
- ~95% of projects include some quantitative analysis
  - ~1/2 have cash flow model
    - DCF over reasonable time horizon – our old friend
  - ~1/2 based on direct judgment of decision makers
    - Evidence-based discussion of complex issues
  - Criteria is (true) profitability

# Analysis & Quantification

(2/2)

- Debate and vigorous discussion required for analysis and decision
  - Need to think well about how issues drives profitability of enterprise
  - Dialogue with decision makers critically important
  - Existing beliefs and practices are likely to be challenged
  - Must be willing to engage senior leaders in debate
    - *Tolerate discomfort of disapproval and conflict*
    - *Leading...*
  - DA can be an effective way of demonstrating profitability drivers and the appropriate use of heuristics
- Must know when to debate silly stuff and when to go along
  - E.g. align with existing models, match short and long term, discount rates, transfer pricing...
  - When they matter, argue, but must understand context
  - When they do not matter, go along, never sweat the small stuff
- Models should be decision models
  - Reducible to “farmer’s math”
  - Inputs may be generated by far more complex modeling

# *Data – Big and Small*

Not a rear view mirror

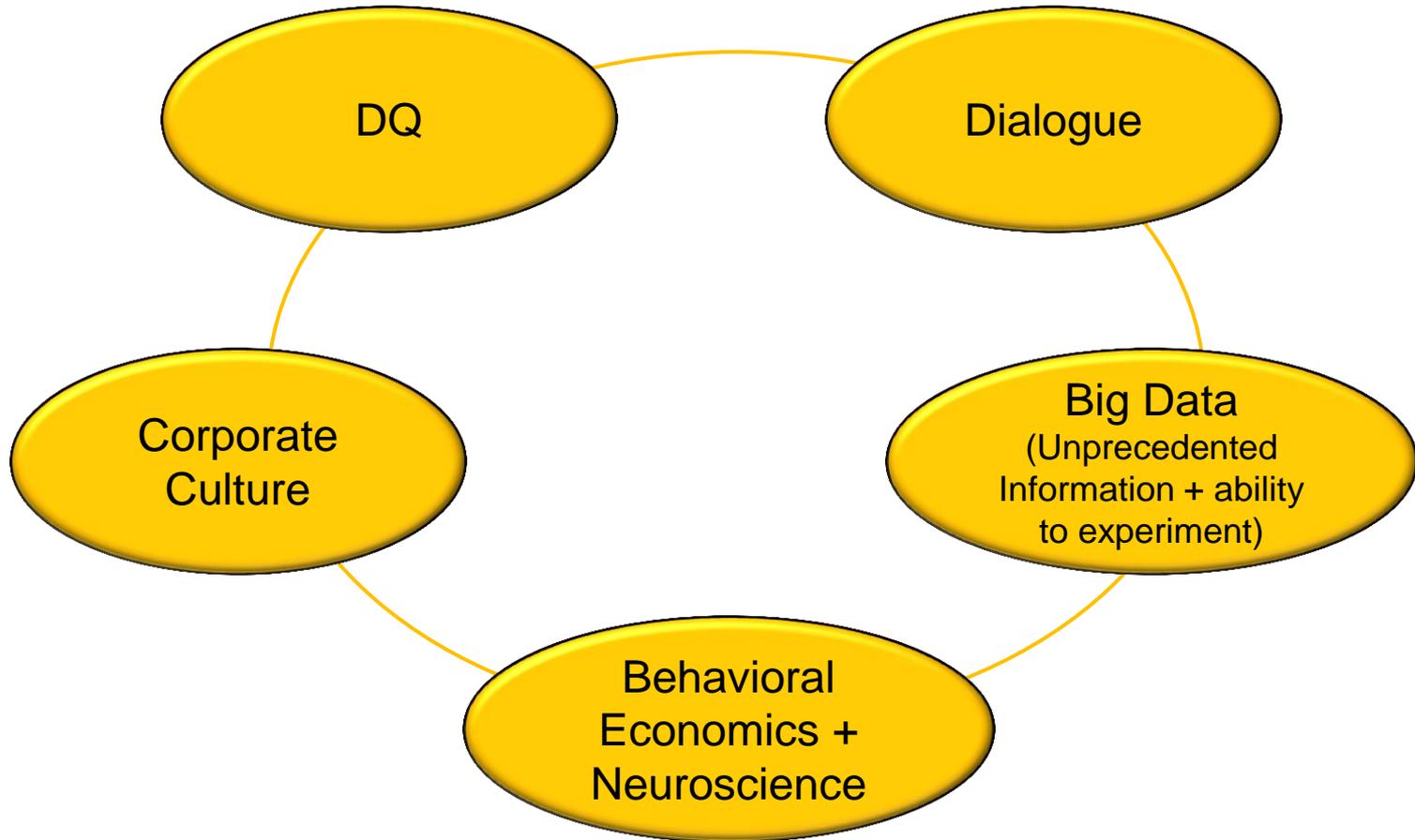
**Illuminates the landscape ahead**

New roads

New Hazards

New Destinations

# *Big Enablers for effective decision consulting*



# ***Effective decision makers as important as effective decision analysts***

- Characteristics of Effective Decision Makers
  - A lack of self-delusion
  - An ability to make intuitive decisions with accuracy in the absence of models or conventional data
  - An ability to simplify highly complex situations to facilitate clear-cut decision making
  - A tolerance for ambiguity, and a decisiveness in indeterminate settings
    - *Source: Pelton, Warren J., Sonja Sackmann, and Robert Boguslaw(1990), Tough Choices: The Decision-Making Styles of America's Top 50 CEOs. Dow Jones-Irwin, Homewood, IL. (From Jay Russo SDP Webinar February 20, 2013)*

# *Helping decision makers means meeting them on their terms*

- Eliminate self-delusion
  - Tactfully/intelligently
  - Evidence based discussions
  - Held in private
    - Especially if frame changing or bad news
  - Over time
- Communicate all the data and models that exist
  - Understand relevance and limitations
- Cut through as much complexity as possibility
  - Separate the noise from the signal
- Surface ambiguity and be comfortable with it
  - Do not impose a false certainty

*It also means courage and leadership*

## *Why were most of us attracted to this stuff in the first place?*

*Power to affect world for the better*

The problems have changed, so should tools

Sustainability, big data, new technology, globalization, ...

The philosophy and goals should remain unchanged