

Making Decisions Defensible

Kelly Black
N&PTUNE
AND COMPANY

Making Decisions

- We don't always put a lot of thought into the decisions we make...

Quick Decisions



Quick Decisions



Quick Decisions



Unsupported Decisions



Cognizant Decisions



Cognizant Decisions



Cognizant Decision Making



What is Structured Decision Making (SDM)?

- A framework for “formalized common sense”
- SDM helps solve complex problems in an *optimal, reproducible, technically defensible, transparent, and adaptive* manner.
- The role of SDM facilitation is to help individuals and groups solve their own problems - it is not to solve their problems for them.

Let Me Repeat That...

SDM helps solve complex problems in an *optimal, reproducible, technically defensible, transparent, and adaptive* manner

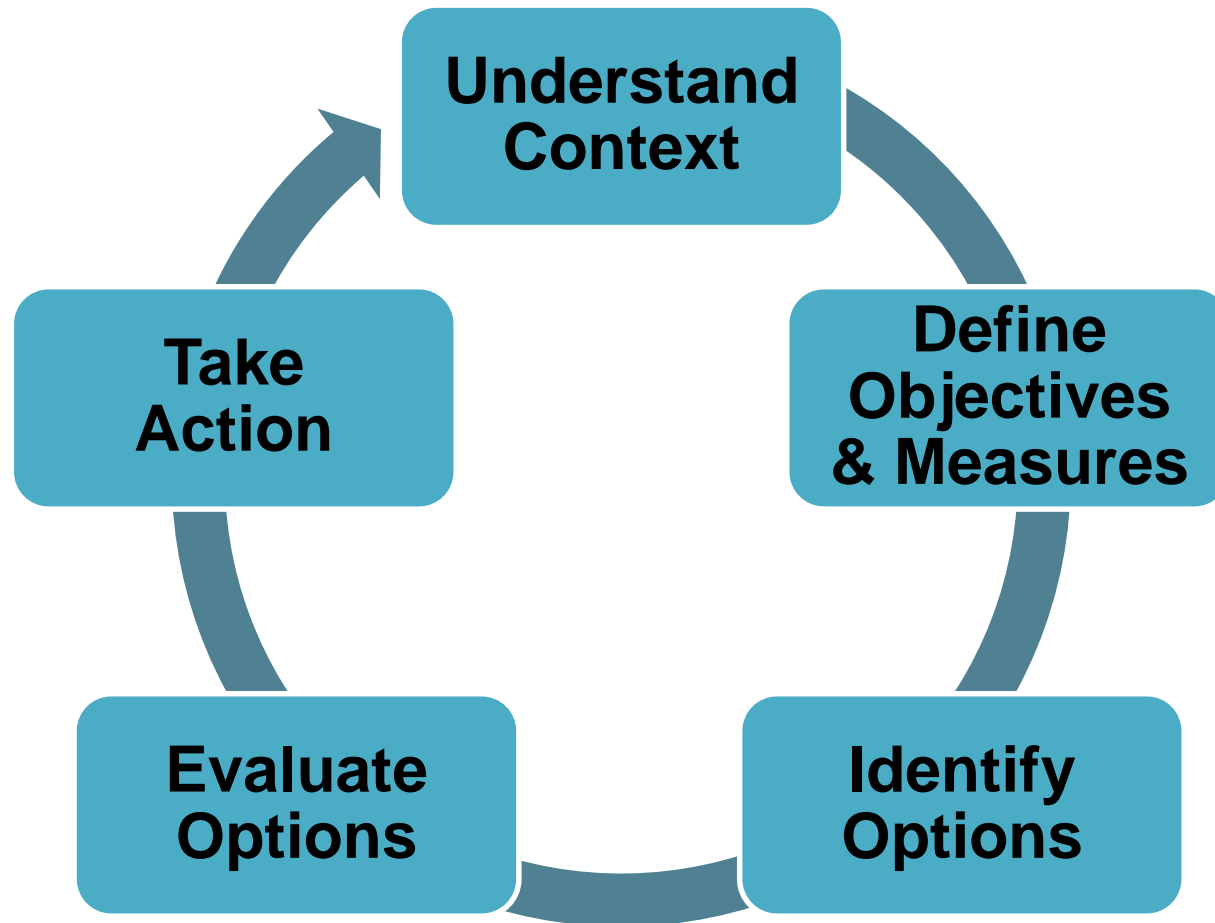
Paradigm Shift ...

1. Collect data
2. Statistics and analysis
3. Risk assessment
4. Stakeholder engagement/communication

Paradigm Shift

1. Stakeholder engagement/communication
2. Decision analysis
3. Risk assessment
4. Collect data

Structured Decision Making



1. Understand Context

- Describe the problem
 - Decision Landscape
 - Social Network Analysis
 - Regulations
 - Map
 - Cost constraints
 - Timetable

2. Define Objectives

- Value-Focused Thinking approach
- Involve device stakeholders
- Elicit objectives
 - Measurable attributes
 - Value of one attribute over another



3. Identify Options

- What sorts of things can be done?
 - Leverage stakeholder inclusion to access additional data
- What “switches” can we adjust? E.g.:
 - Emphasize risk/patient impact
- Both single and groups of options should be considered.

4. Evaluate Options

Here's where traditional science comes in...

- Measurements / data / information
- Numerical models
 - Social, financial, etc.
- Model evaluation / results
 - Uncertainty analysis
 - Sensitivity analysis – What **is** critical to quality?
 - Value of Information analysis

Examples of Implementation

- DOE: Disposal of nuclear waste - Leave in place, or move...to which disposal facility?
- EPA: Coral Reef protection in Guanica Bay, Puerto Rico - Dredge reservoir vs. shade-grown coffee
- Florida: Assist towns with resiliency planning in preparation for impending sea level rise
- Idaho: Superfund site prioritization and remediation selection
- FDA: Prioritize food shipments to inspect

Structured Decision Making



SDM builds a bridge to Optimal,
Defensible, Transparent Decision Making

Structured Decision Making with GiSdT (Guided Interactive Statistical Decision Tools)

For further information:

Kelly Black – 720-746-1803, ext. 1005
kblack@neptuneinc.org