

What does it mean to be a Decision Quality Organization?

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Decision Quality: Session outline

- **Plenary presentation (15 min). What is DQ? (Craig Smalley)**
- **Breakout session (30 min). Current status of DQ and potential benefits**
- **Feedback from breakout (15 min)**
- **Case histories (15 min). Brief presentations and case studies**
- **BREAK (30 mins)**
- **Plenary presentation (15 min). What steps can individuals and managers take to achieve organizational DQ? (Nadia Papamichail)**
- **Breakout session (30 min). Improving organizational DQ**
- **Feedback (15 min). Synthesize key challenges and requirements**
- **Conclusions (5 min)**

What is Decision Quality?

Craig Smalley

Visiting Professor

Dept of Earth Science & Engineering

Imperial College London

(Previously, Senior Advisor, Risk & Uncertainty, BP)

What is a good decision?

❖ Looking back:

- Decision A created massive profit for the company
- Decision B had a negative outcome and ended up losing money

❖ So, which was the better decision?

❖ Decision A was good and Decision B was bad – right?

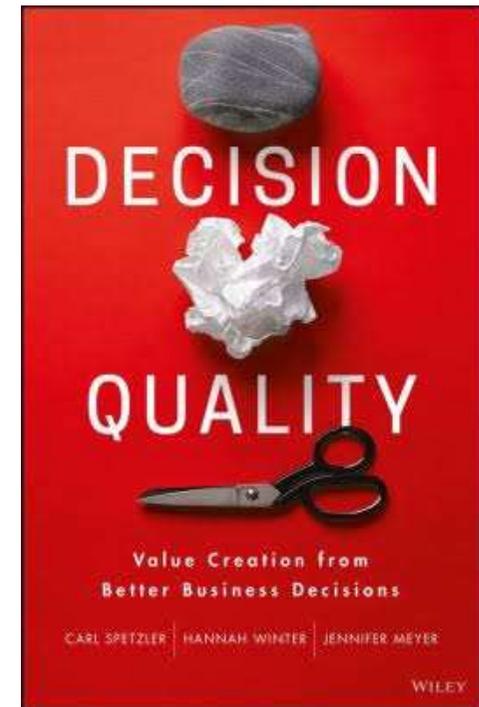
❖ Not necessarily!!

❖ Because of uncertainty...

- Bad decisions can have good outcomes
- Even the best decisions can have bad outcomes

What is a good decision?

- ❖ A good decision is not necessarily one that, looking at it afterwards, gave a good outcome
- ❖ A good decision is one that, at the time of making it, gives the greatest probability of achieving its objectives
- ❖ Decision Quality (DQ) is an approach for doing this, evolved over decades (late 1960s) from work of Ron Howard, Carl Spetzler and others



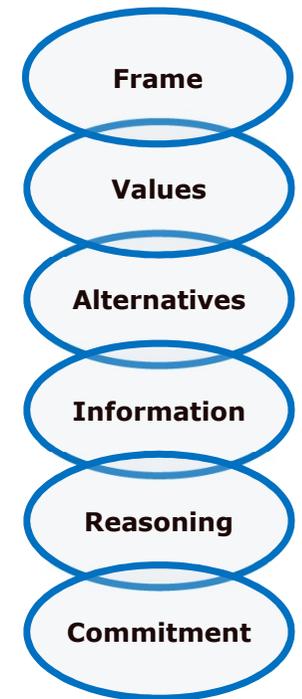
Spetzler et al. (2016)

Decision Quality: The framework for a good decision

High-quality decisions meet six requirements:

1. Setting the right frame
2. Clarifying values and trade-offs
3. Understanding all the alternatives
4. Accessing relevant information to understand uncertainties
5. Using logical decision analysis reasoning
6. Commitment to action

Each has to be strong: a decision is only as good as its weakest link



Frame

❖ Is it the right decision?

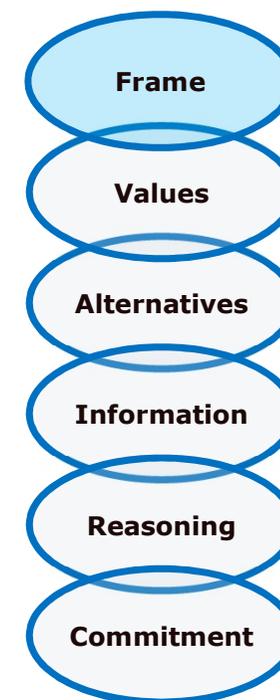
- Has the decision already been made (i.e., it is a given)?
- Does another decision have to be made first?
- Strategic v tactical

❖ Do we understand the anatomy of the decision?

- Purpose
- Who will make it
- Scope, scale
 - People
 - Technical
- Timeframe

Pitfalls:

- Plunging in
- Comfort zone bias
- Too narrow



Values, objectives and trade-offs

❖ What are the decision objectives?

- What would success look like?

❖ What are the value measures that will be used to evaluate the quality of potential outcomes and compare alternatives?

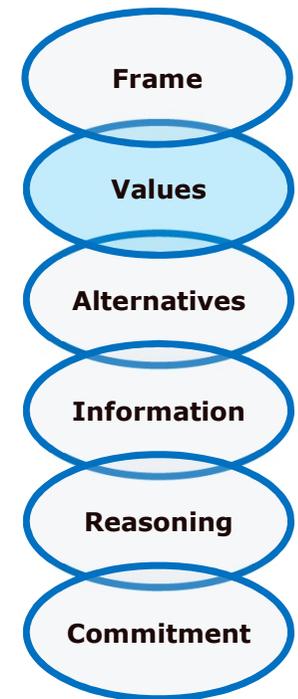
- Financial (NPV, IRR, ROCE etc)
- Not purely financial (safety, environment)

❖ Objectives may compete: e.g. cost vs performance

- If so, what are their relative importance?

Pitfalls:

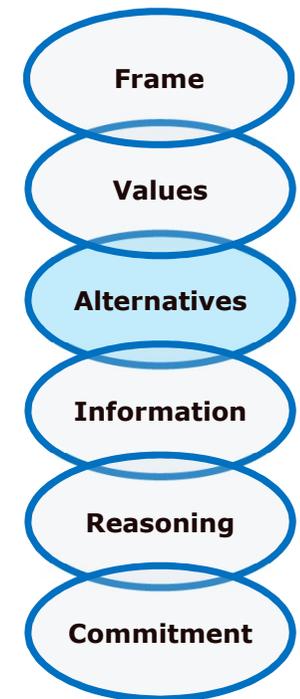
- Vague objectives
- Not recognizing trade-offs
- Motivational bias



What are the decision alternatives?

- ❖ For each decision it is essential to create a full range of alternatives to choose between
- ❖ An alternative cannot be chosen if never identified!
- ❖ Sufficient energy and creativity should be expended to identify alternatives that are:
 - Imaginative
 - Compelling
 - Reasonable, feasible
 - Different from each other

Pitfalls:
- Too narrow
- Too wide



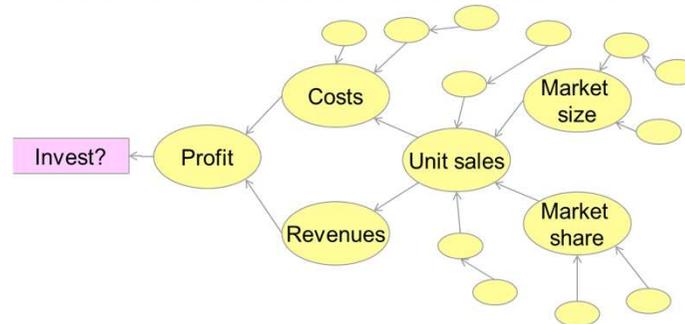
Information: relevant and reliable

❖ What are the key uncertainties that could affect the outcome of the decisions?

❖ What is their relative importance?

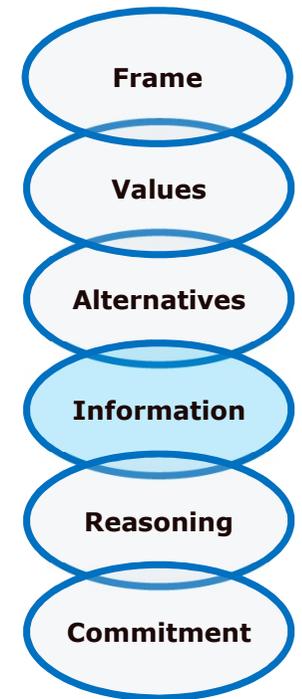
Parameter	Uncertainty	Impact on NPV	Example Action
Gross Rock Volume			Buy more seismic
Oil Price			Hedge with futures
Average Porosity			Take more core
Saturation			Different rock model
Pipeline Cost			Cheaper steel supply
Recovery Factor			Build simulator model
Rig Cost			Competitive bid
Net:Gross			More gamma logs
Reservoir Continuity			Survey analogs
Fiscal Terms			Renegotiate PSC

Begg & Bratvold (2008) "I would rather be vaguely right than precisely wrong"



Pitfalls:

- Errors
- Biases
- Overconfidence

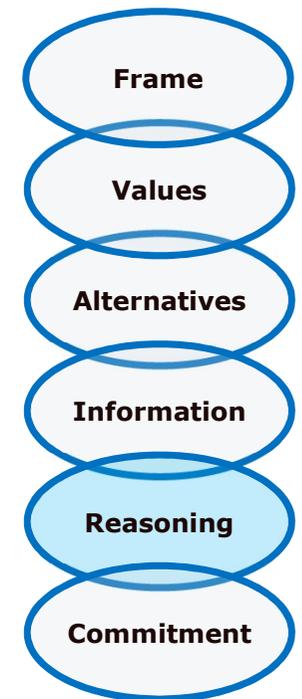


Reasoning: Sound and logical

- ❖ **Methodology to integrate the frame, relevant information and alternatives to give the maximum value from the decision**
- ❖ **Which decision tools to use**
 - Type and depth of analysis
 - AU4DM Decision Support Catalogue
- ❖ **Facilitation of dialogue between stakeholders**
- ❖ **Synthesis of complex analysis and results in manner that provides insight and clarity for decision maker**

Pitfalls:

- When you have a hammer, every problem looks like a nail
- Inappropriate shortcuts
- Lack of risk management plan post-decision

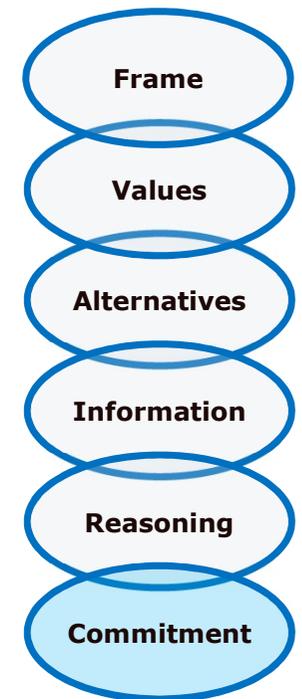


Commitment to action

- ❖ “A decision is an irrevocable commitment of resources to achieve an objective”
- ❖ **Mental shift from thinking to doing**
- ❖ **Commitment required from:**
 - Decision maker - committed to making a decision
 - Those who will have to implement the decision
 - Participation of implementers in the decision process create ownership essential for effective implementation

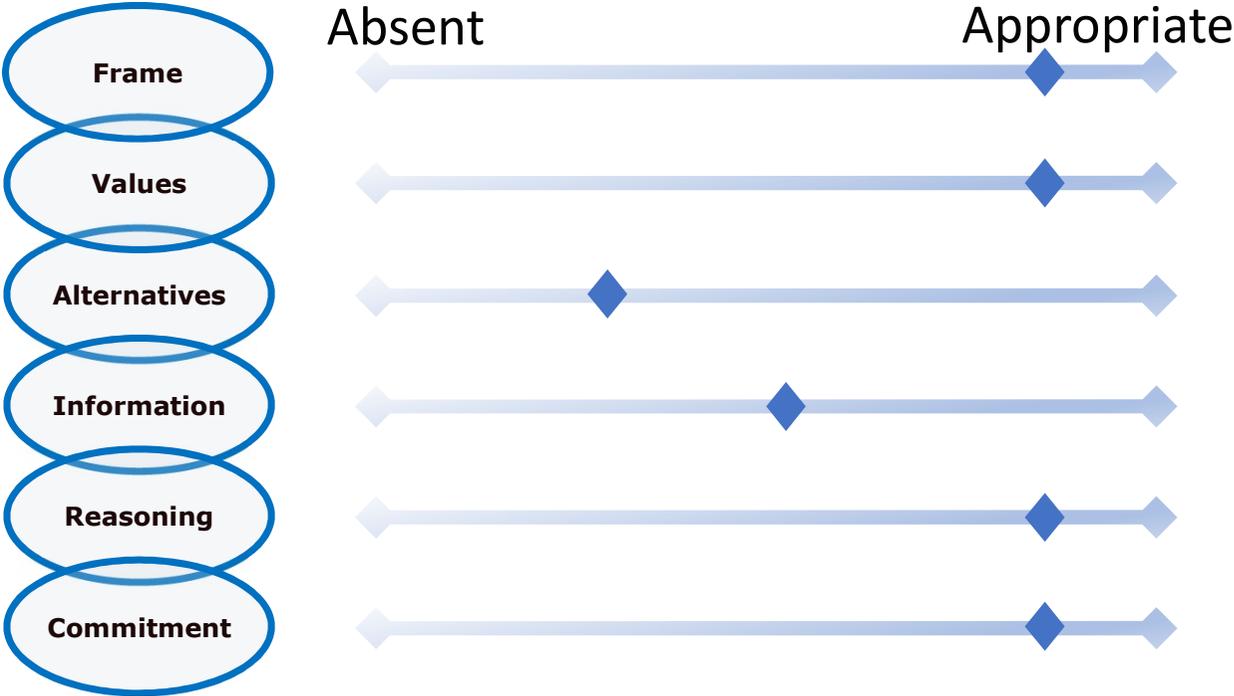
Pitfalls:

- Lack of alignment among stakeholders
- Hesitation, unease, wanting too much info



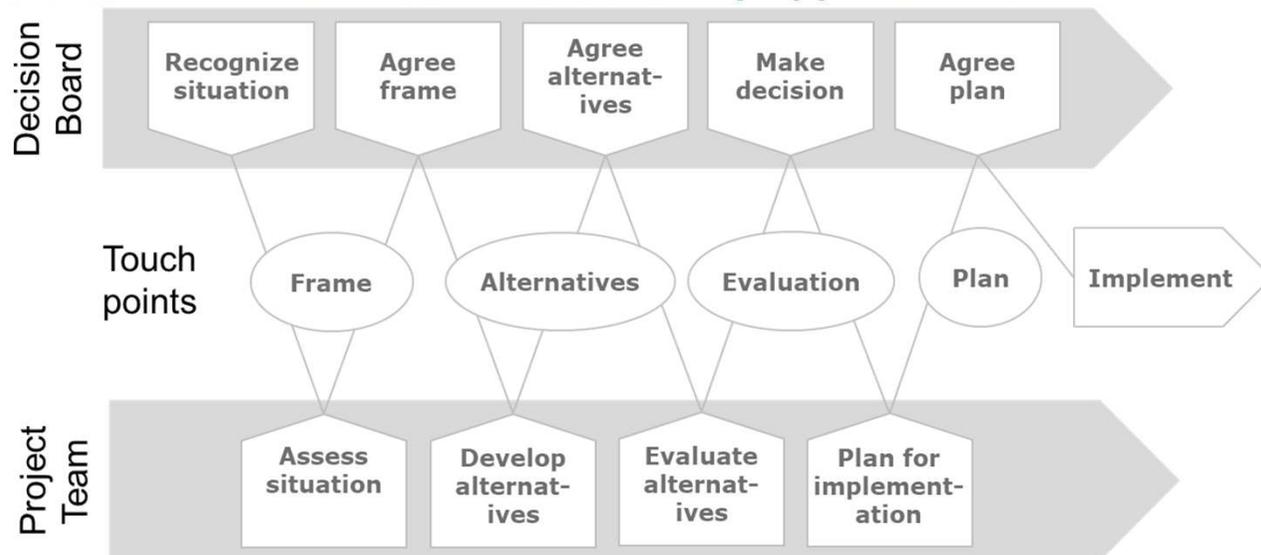
Decision Readiness

Assessment of DQ elements during the decision-making process



Achieving organizational DQ

- Widespread training of Decision Makers and participants
- Access to appropriate tools
- High level commitment: DQ the default for all important decisions
- DQ is the core to the design of decision and governance processes, e.g., collaborative Decision Dialogue Process, rather than traditional advocacy-approval model



Organizational DQ assessment

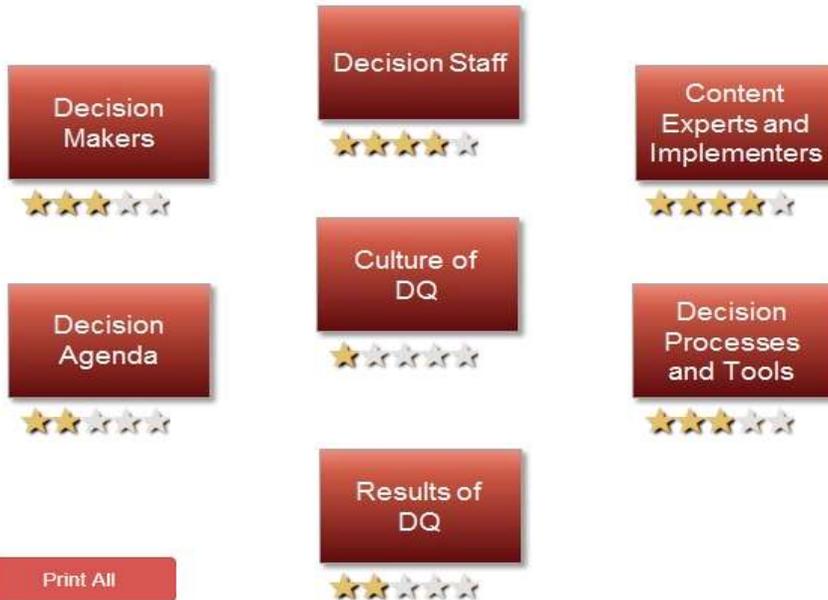


Assessment of Organizational Decision Quality (ODQ)

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<http://odqassessment.sdg.com/>

Note: Your responses will not be stored and will be cleared when you end this web session.



Clear All Print All

Our content experts and implementers...

1. Have formal decision quality training that is relevant to their role in decisions.
2. Have sufficient knowledge of the tools and concepts of DQ.
3. Willingly participate in decision quality processes and are able to provide informed and credible input to the process
4. Actively contribute to achieving decision quality in their specific content areas.
5. Work with decision staff to mitigate the impacts of decision traps and biases.
6. Leverage learnings from each DQ process to improve information assessments and probabilistic judgments for future decisions.

Percent Achieved



Average: 57%



Decision Quality: Summary

❖ Simple framework for:

- Organizing how to tackle a decision
- Assessing readiness to make the decision
- Identifying areas that need more work
- Provides a consistent high-level front end to deeper analysis processes and tools

❖ Largely common sense

❖ Implementation across a large organization is not as simple as you might think

❖ Significant performance improvements for organizations that get it right

Analysis Under Uncertainty for Decision Makers Network

<http://au4dmnetworks.co.uk/>

- **Advice and support for Decision Quality implementation**
- **Decision facilitation and coaching**
- **Research into improved decision making**