



# creative problem solving

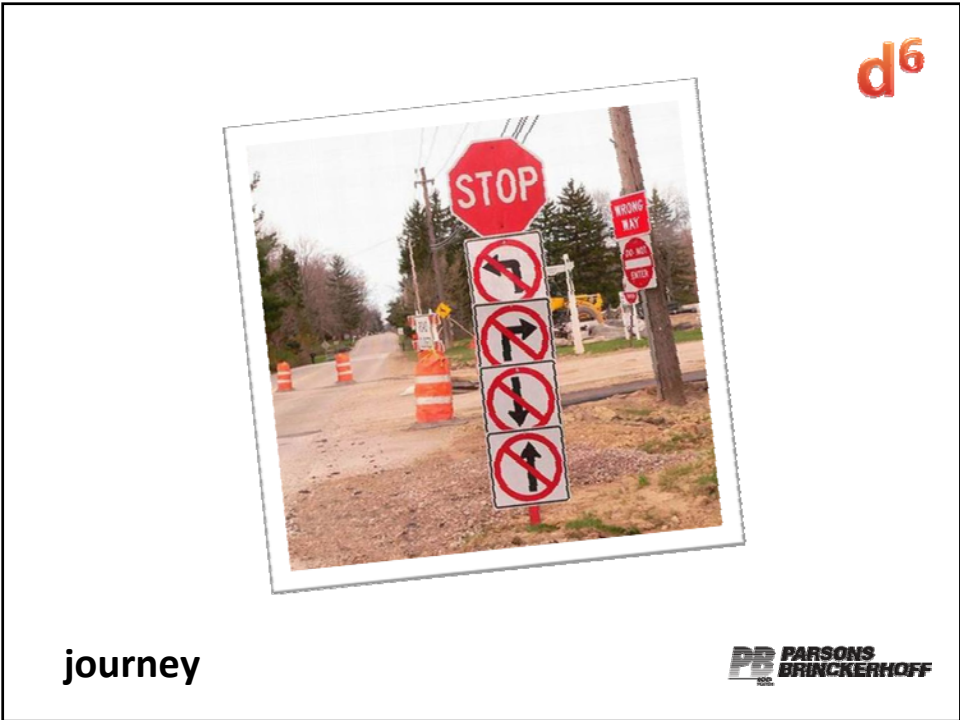
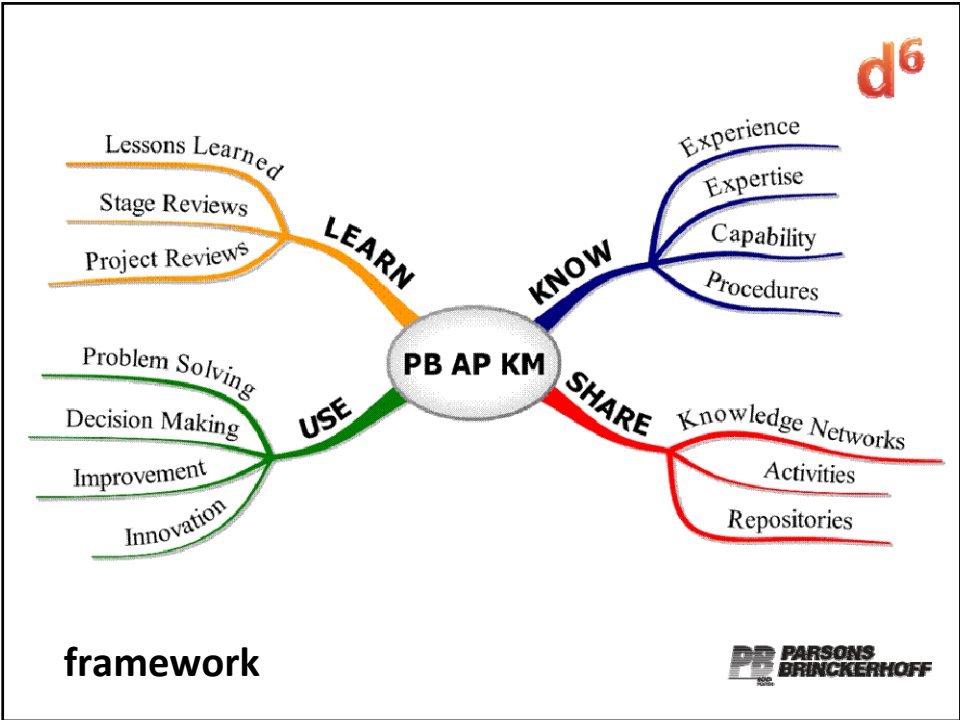
improving possibility

d<sup>6</sup>



**WARNING!**

**PARSONS  
BRINCKERHOFF**



d<sup>6</sup>

## Vision

- d6 has been developed to give our people the tools and confidence to assist them in finding innovative solutions to our clients' problems.

## Objectives

- Improve the chances of finding the real problem early, not the symptoms and not our first perception of the problem
- Introduce different ways of thinking
- Improve the possibilities of solutions



what

**PB** PARSONS  
BRINCKERHOFF  
2002

d<sup>6</sup>

## Value

- Improve clients perception of PB as a problem solver and an innovator
- Deliver client outcomes more efficiently and effectively
- Improve our confidence in solving wicked problems
- Improve the marketability of our problem solving capability

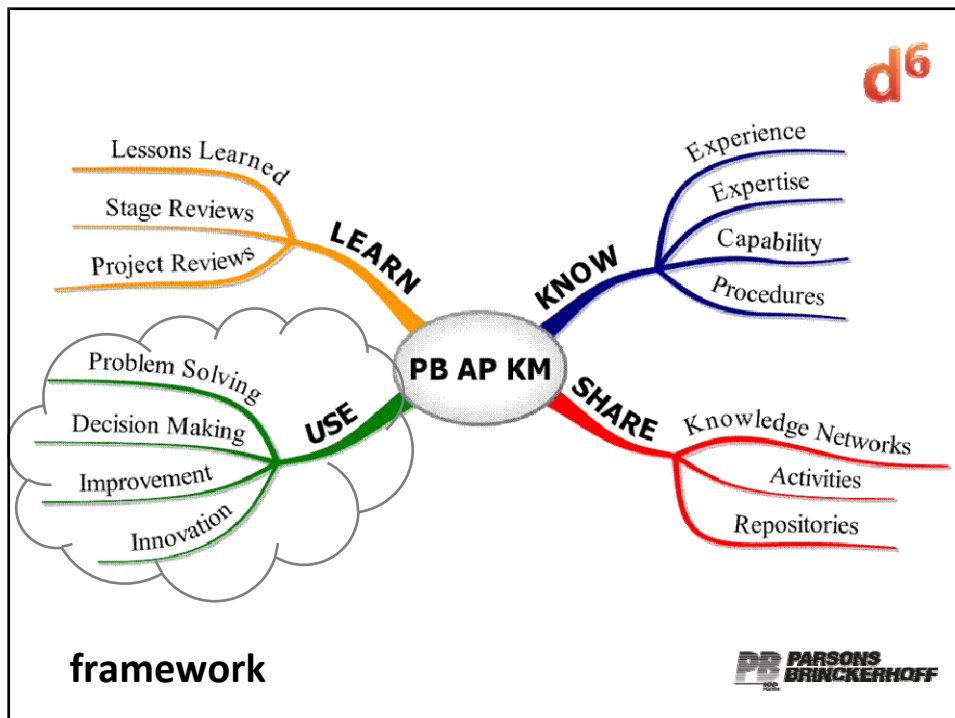


why

**PB** PARSONS  
BRINCKERHOFF  
2002

## 4 We share knowledge with our colleagues to deliver professional excellence.

- By eliminating organizational barriers that limit the sharing of knowledge and resources
- By listening, consulting and responding with consideration to our colleagues' needs
- By actively sharing knowledge and working collaboratively and flexibly to deliver results
- By continuously developing our personal skills and knowledge and supporting our colleagues' personal and professional development
- By being innovative and creative in all our work
- By recognizing that our performance as an industry leader requires the highest quality professionals working for major clients on the world's most challenging projects
- By never settling for second best



d<sup>6</sup>



## Creative Problem Solving Pilot

• Jun-Oct 2008

d<sup>6</sup>

## Problem Solving Model

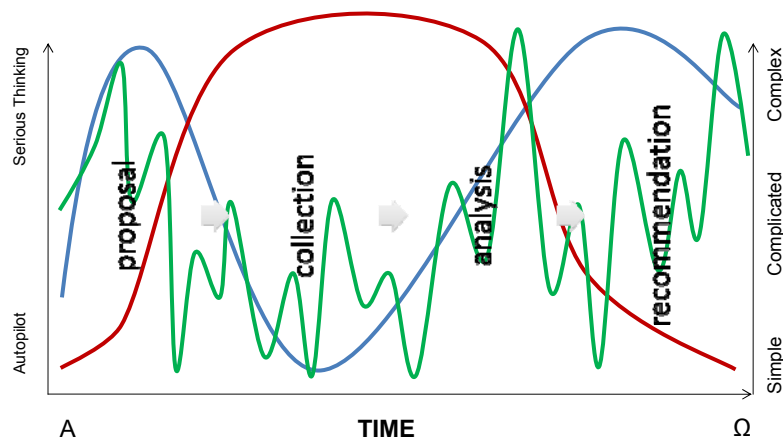
• Nov 2008-Jan 2009

initiative



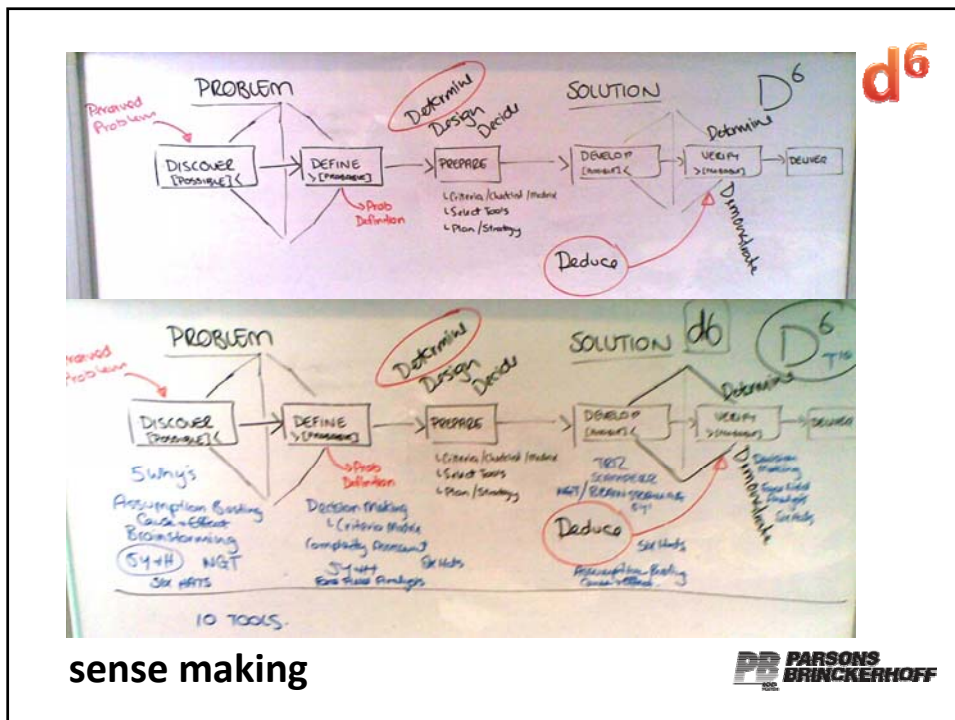
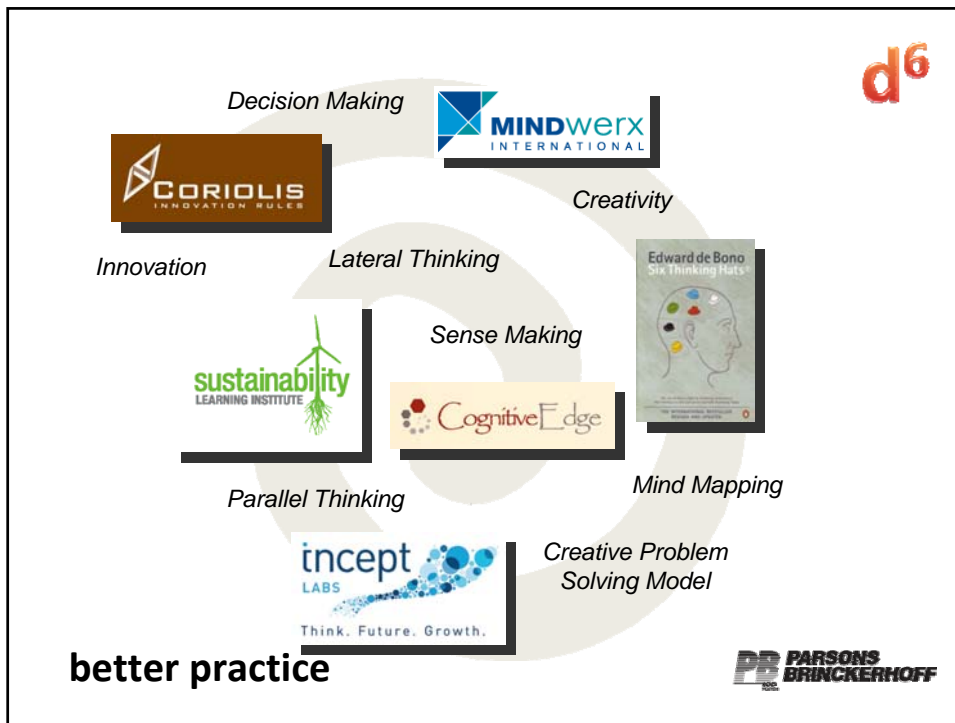
d<sup>6</sup>

### Brain Power-ometer



current practice





d6



**Introduction**

- Model overview
- 15 minute presentation/eLearning module



**Problem Solving 101 (L)**

- d6 model
- Simple tools



**Problem Solving Practitioner (P)**

- Complicated tools



**Problem Solving Facilitator (O)**

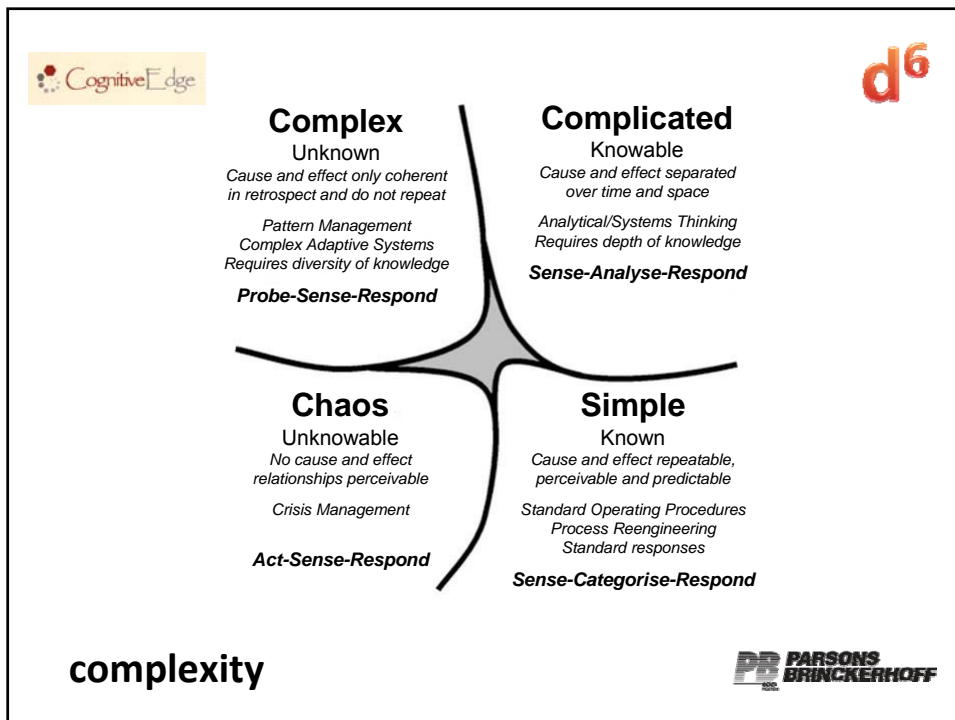
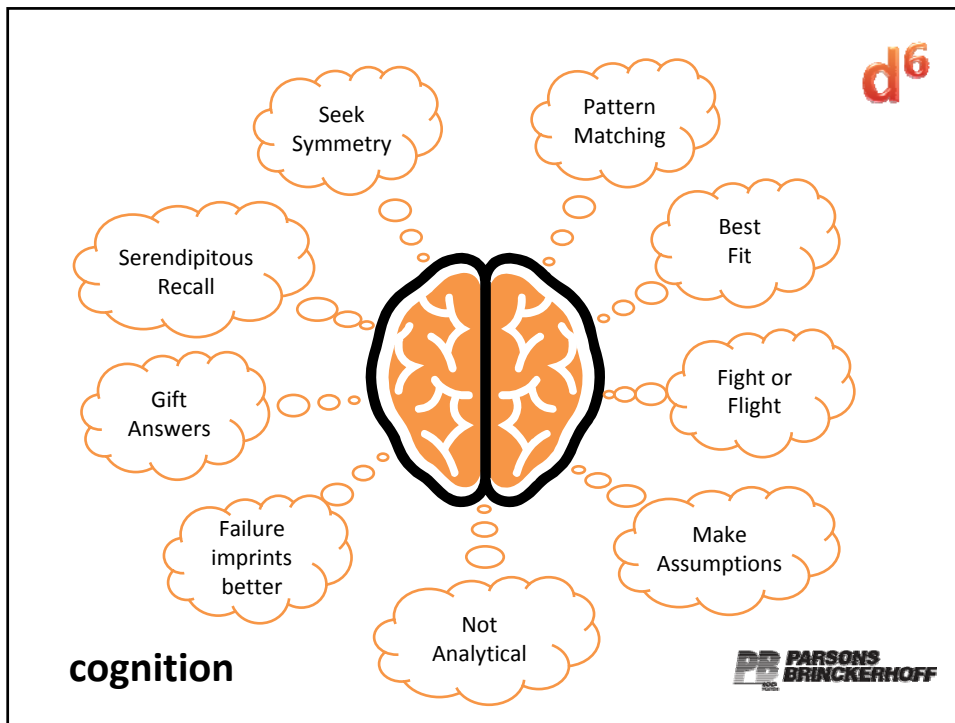
- Complex tools
- Facilitation

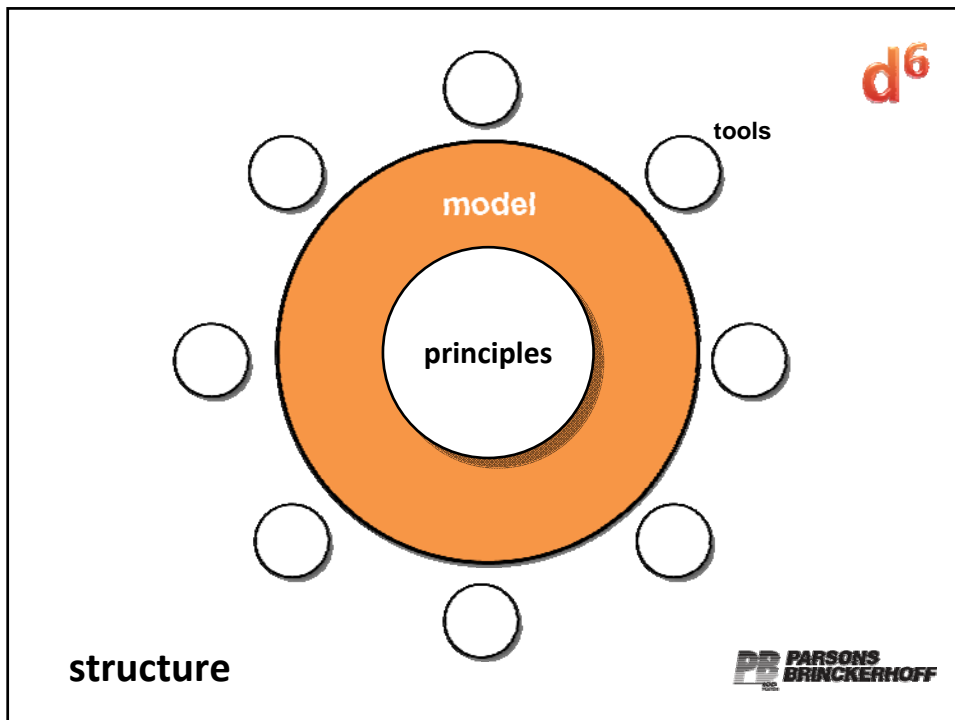
progression



d6





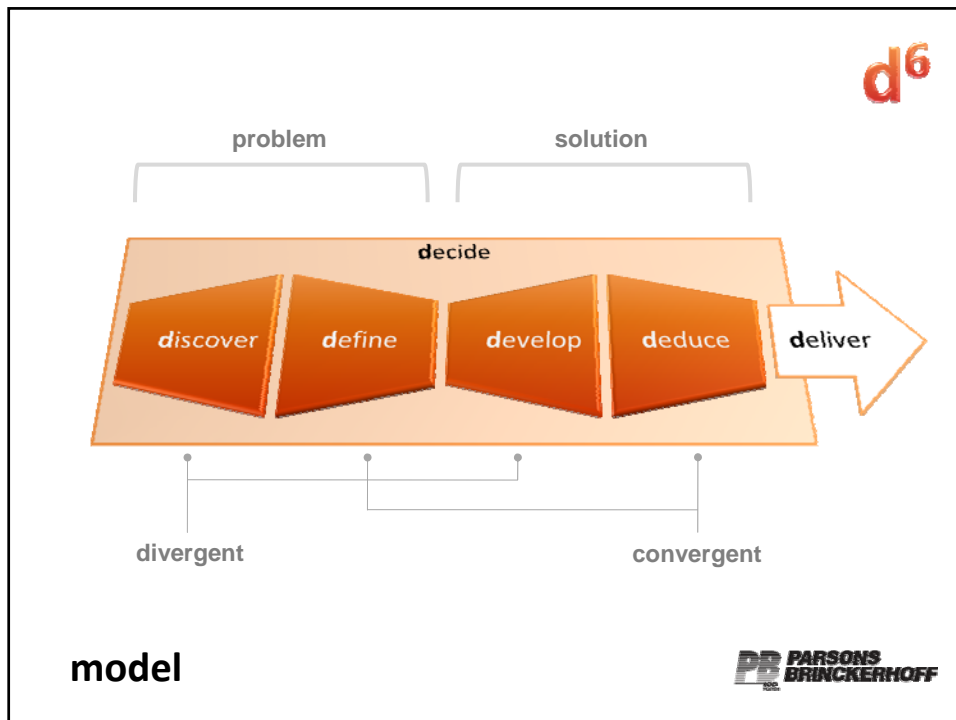


## Thinking Foundations

- Clients: Do it with them, not to them
- Reuse, recycle, renew
- Think about your thinking
- Identify problem 1<sup>st</sup>
- Get past first pattern match
- Diversity of thought (*Collaboration*)
- Realise where you are (*Complexity*)
- Assumptions can kill (*Weak Signals*)
- Reflect and share experience

The image shows a 3D rendered lightbulb with a human-like body, sitting in a meditative pose. The lightbulb is glowing, and the body is white and metallic. In the top right corner is the "d6" logo, and in the bottom right corner is the "PARSONS BRINCKERHOFF" logo.

**principles**



## decide

- Based on Principles
- Planning
- Key decisions at each stage
  - Complexity
  - Tool Selection
  - Collaboration
  - Client Mandate

“Developing the plan is actually laying out the sequence of events that have to occur for you to achieve your goal.”  
George L. Morrissey

decide phase

PARSONS BRINCKERHOFF



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## discover

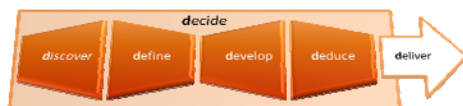
- Possible problems
- Divergent, creative activities
- Root cause analysis
- Steer clear of solutions



“Sometimes the situation is only a problem because it is looked at in a certain way. Looked at in another way, the right course of action may be so obvious that the problem no longer exists.”

Edward de Bono

## discover phase



d<sup>6</sup>

## define

- Probable problems
- Convergent, analytical activities
- Decision making



“When you cannot make up your mind which of two evenly balanced courses of action you should take - choose the bolder.”

William Joseph Slim

## define phase





d<sup>6</sup>

## develop

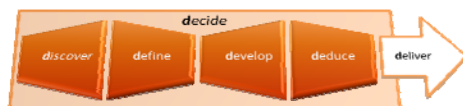
- Possible solutions
- Divergent, creative activities
- Safe-fail instead of fail-safe



It is well known that "problem avoidance" is an important part of problem solving. Instead of solving the problem you go upstream and alter the system so that the problem does not occur in the first place."

Edward de Bono

## model mechanics



d<sup>6</sup>

## deduce

- Probable solutions
- Convergent, analytical activities
- Decision making



"It's not hard to make decisions when you know what your values are."

Roy Disney

## deduce phase3





	decide	discover	define	develop	deduce	deliver
simple	<ul style="list-style-type: none"> <li>Principles</li> <li>Complexity</li> <li>Tool Selection</li> <li>Collaboration</li> <li>Client Mandate</li> </ul>	<ul style="list-style-type: none"> <li>Brainstorming</li> <li>5 Whys</li> <li>5 Ws &amp; H</li> <li>Assumption Busting</li> </ul>	<ul style="list-style-type: none"> <li>PMI</li> <li>5 Ws &amp; H</li> <li>Assumption Busting</li> </ul>	<ul style="list-style-type: none"> <li>Brainstorming</li> <li>5 Whys</li> <li>5 Ws &amp; H</li> <li>Assumption Busting</li> </ul>	<ul style="list-style-type: none"> <li>PMI</li> <li>5 Ws &amp; H</li> <li>Assumption Busting</li> </ul>	<ul style="list-style-type: none"> <li>Project Management</li> <li>Change Management</li> </ul>
complicated	<ul style="list-style-type: none"> <li>Principles</li> <li>Complexity</li> <li>Tool Selection</li> <li>Collaboration</li> <li>Client Mandate</li> </ul>	<ul style="list-style-type: none"> <li>Brainstorming</li> <li>Nominal Group Technique</li> <li>Cause &amp; Effect</li> <li>Assumption Busting</li> <li>SCAMPERR</li> </ul>	<ul style="list-style-type: none"> <li>Decision Tree</li> <li>Force Field Analysis</li> <li>Multi Criteria Decision Matrix</li> <li>Ritual Dissent</li> </ul>	<ul style="list-style-type: none"> <li>Brainstorming</li> <li>Nominal Group Technique</li> <li>Cause &amp; Effect</li> <li>Assumption Busting</li> <li>SCAMPERR</li> </ul>	<ul style="list-style-type: none"> <li>Decision Tree</li> <li>Force Field Analysis</li> <li>Multi Criteria Decision Matrix</li> <li>Ritual Dissent</li> </ul>	<ul style="list-style-type: none"> <li>Project Management</li> <li>Change Management</li> </ul>
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tools



### 5 Ws & H



- What** | Data Gathering
- Why** | Collect information on the context of a situation to assist thinking and decisions.
- How** |
  - Who? What? Where? When? Why? How?
- Tips** |
  - Divergent and Convergent use

tools



## Brainstorm



**What** Idea Generation

**Why** Collaboratively generate a large volume of ideas in a short time, free of criticism and judgement.

**Tips**

- Nominate a recorder
- Quantity is key
- Half hour at most
- Sprints (2 minutes)
- No criticism
- Encourage all
- Facilitate dominance

tools

## 5 Whys



**What** Root Cause

**Why** Investigate the root cause of a problem through iterations of questioning.

**Tips**

- “I don’t know.” and “Because” are not valid responses
- You may need to go more than 5 times

tools

## Assumption Busting



**What** | Breaking Patterns

**Why** | Understanding the assumptions you are making and misconceptions you may have and testing them.

**Tips**

- You will discover more assumptions
- Get an external perspective

tools

## Plus/Minus/Interesting (PMI)

**What** | Weighing pros and cons

**Why** | Looking at the positive and negative aspects of factors and allowing for other interests to be considered.

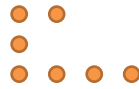
**Tips**

- Set weightings before totalling

Should I move to the City?		
Plus	Minus	Interesting
More going on (+5)	Have to sell house (-6)	Easier to find new job? (+1)
Easier to see friends (+5)	More pollution (-3)	Meet more people? (+2)
Easier to get places (+3)	Less space (-3)	More difficult to get own work done? (-4)
	No countryside (-2)	
	More difficult to get to work? (-4)	
<b>+13</b>	<b>-18</b>	<b>-1</b>
	<b>-6 Total</b>	

tools

## Dotmocracy



**What** | Selection

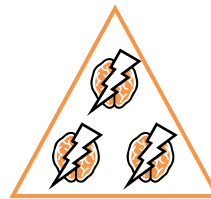
**Why** | An open voting method to select one of more results.

**Tips**

- Write down your votes first
- Do not be influenced by others
- 3 votes each

tools

## Nominal Group Technique



**What** | Idea Generation

**Why** | Anonymous generation of ideas in writing.

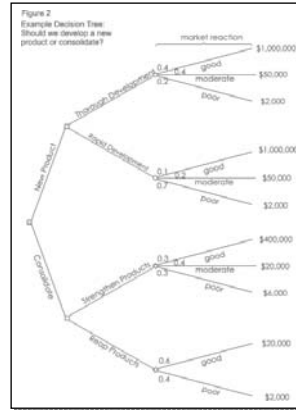
**Tips**

- Individually or with small groups

tools

## Decision Tree

- What** Decision Making
- Why** Choosing between options by projecting likely outcomes.
- Tips**
- Provide a view where all options can be seen



tools



q&a



knowledgebucket.wik.is

d<sup>6</sup>

## Cory Banks

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thankyou

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