Making Better Decisions: Critical Thinking & Creative Problem Solving

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BLUF

1. It is easier to make a decision if you have good possible solutions
2. There is no procedure or algorithm to create something new, though there are some successful approaches
   - two of which will be demonstrated interactively today
3. New ideas compete with existing ones
4. Practice makes perfect

# When making a decision by considering alternatives ...

- Is there already one that dominates the others? Is this a solved problem? Is there anything new under the sun?
- Step 1: Conduct research

Remember libraries?

New alternatives cannot be proceduralized

- By definition, coming up with new alternatives about which a decision must be made cannot be proceduralized

- Thinking outside the box is, after all, outside the box!

- But there are approaches that can help stimulate and extract creative solutions from willing participants. Positive results cannot be guaranteed. Some problems are difficult!

You are here.
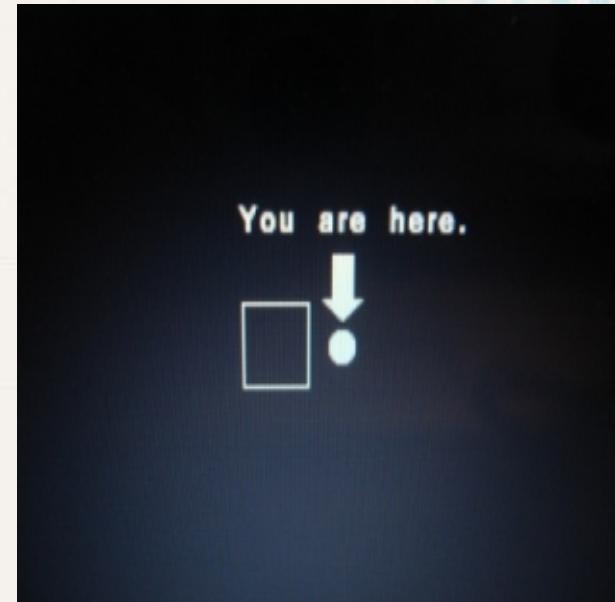
Two steps to creating (that each contain many steps)

There is more than one way to skin a cat!
This is ONE way, not THE way.

1. Layout the problem/issue and then brainstorm about possible solutions and their pros & cons. Make it visual and shared. Be sure everyone is heard and their inputs recorded

2. Assume critical roles in turn to assess & revise the problem, solutions, and pros and cons

Capture the Issues

- Use a free & open source tool such as Compendium*

- Capture the world as Issues, Solutions, Pros, Cons in a shared display.

Here's a real time demo!

> What is the best way to reduce the duration of our work? How can we deliver faster?

* http://www.compendiumng.org/download-windows/

Our success in business depends on how well we Think

- "The main difficulty of thinking is confusion," writes Edward de Bono, long recognized as an international authority on conceptual thinking and on the teaching of thinking as a skill. "We try to do too much at once. Emotions, information, logic, hope, and creativity all crowd in on us. It is like juggling with too many balls."

- Dr. de Bono reveals the often surprising ways in which deliberate role playing can make us a better thinker. He offers a powerfully simple tool to create a climate of clearer thinking, improved communication, and greater creativity for everyone who makes decisions, in business and in life

- His tool is called <u>The Six Thinking Hats</u>. With its practical and positive approach to exploring new ideas and making decisions it helps us think better

Now assume/assign roles to critically re-evaluate the tableau

The Six Thinking Hats
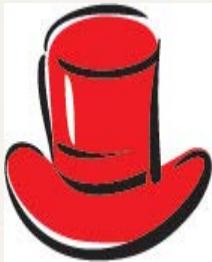
- **Red Hat** - Feelings, intuition and emotions
"Red suggests anger (seeing red), rage and emotions. The red hat gives the emotional view."

<u>Typical Questions</u>
What is your gut-feeling?
How do I feel about this right now?
How does it make me feel?
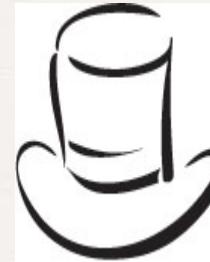
- **White Hat** - The Facts
"White is neutral and objective. The white hat is concerned with objective facts and figures."

- <u>Typical Questions</u>
What information do we have here?
What information is missing?
What information would we like to have?
How are we going to get the information?

Sources: Edward DeBono (1999). *Six Thinking Hats.* Little, Brown.
http://6toolsforthinking.weebly.com/

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Six Thinking Hats (cont.)

Blue Hat - meta-cognition
"Blue is cool, and it is also the color of the sky, which is above everything else. The blue hat is concerned with control, the organization of the thinking process, and use of the other hats."
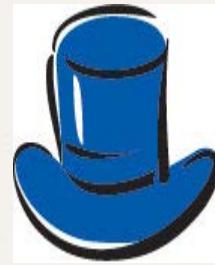
Typical Questions
What is our focus?
What thinking is needed?
What have we done so far?
What do we need to do next?

Green Hat - Creativity and new ideas
"The green hat is the energy hat. Think of vegetation. Think of growth. Think of new leaves and branches. The green hat is the creative hat."

Typical Questions
Are there any other ideas here?
Are there any additional alternatives?
Could we do this in a different way?
Could there be another explanation?

Six Thinking Hats (cont.)

Yellow Hat - positive points. "Yellow is sunny and positive. The yellow hat is optimistic and covers hope and positive thinking."
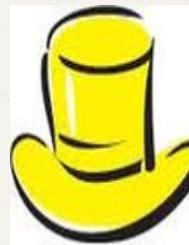
Typical Questions
What are the benefits of this option?
Why is this proposal preferable?
What are the positive assets of this design?
How can we make this work?

Black Hat - judgement, caution and evaluation. "Black is somber and serious. The black hat is cautious and careful. It points out the weaknesses in an idea."

Typical Questions
What could be the possible problems?
What could some of the difficulties be?
What are the points for caution?
What are the weaknesses?
What are the risks?

Source:
http://6toolsforthinking.
weebly.com/
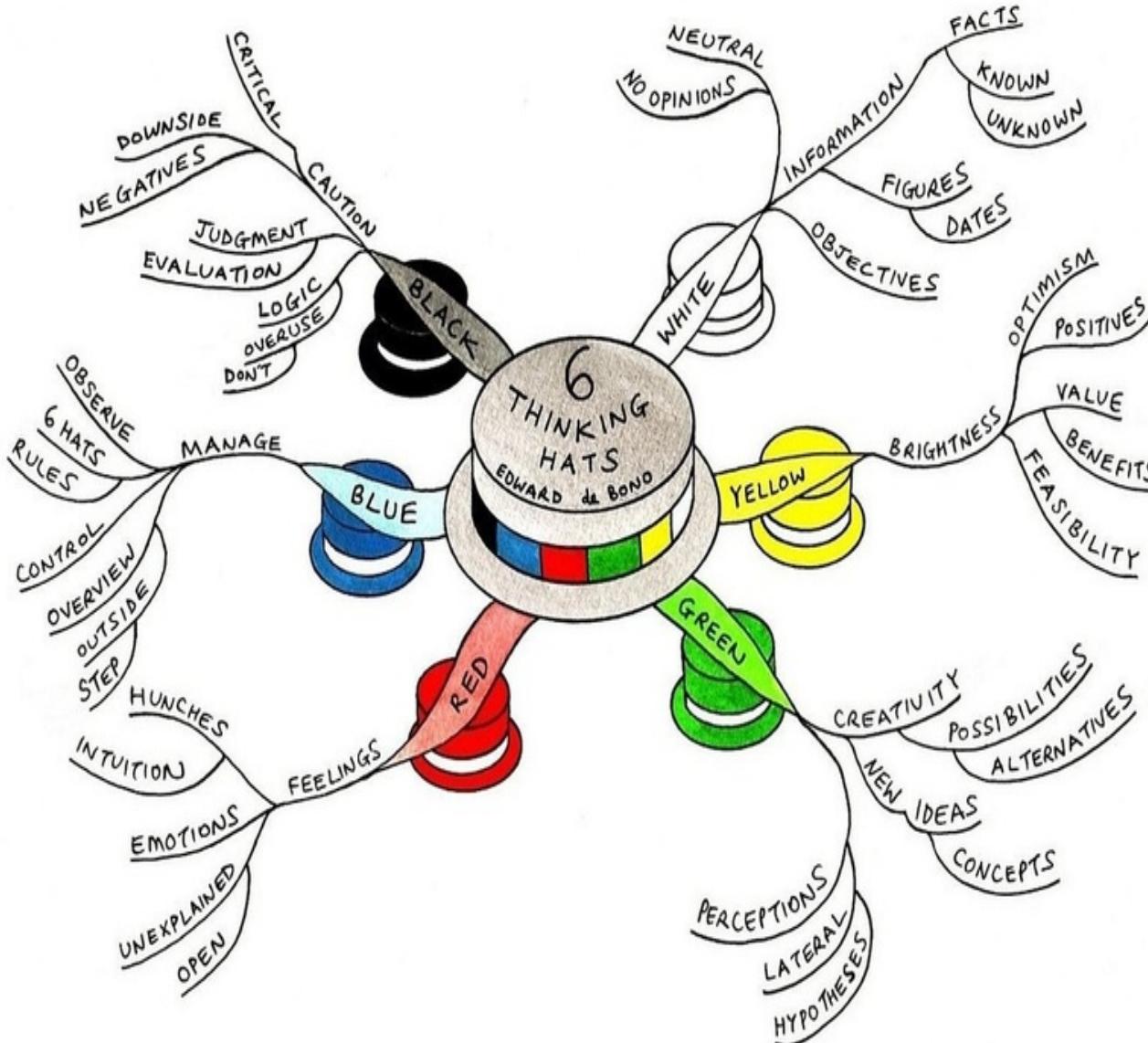
What do you have when you are done?

- Are you ever done?* Yes, if you have established a "done" criterion and met it. "Satisficing" may be enough.

- You have two things:
  1. A new set of solutions, and
  2. Shared understanding & experience at joint problem-solving, at co-creation

* See, for example, Michael D. Cohen, James G. March and Johan P. Olsen. (Mar 1972). A garbage can model of organizational choice. *Administrative Science Quarterly 17*, 1 (1-25)

How do the best do it?

- Practice, practice, practice. Using lots of different approaches to creativity

- Lots of institutional rewards, recognition, promotion, … for creating new solutions. There are BU and project goals for creative solutions

- But, do NOT use a project management approach, as one can never predict how soon a suitable result can be found. You can time-box problem-solving, going with the best so far

- Time off from regular duties to pursue problems of particular importance

- Fail fast

References

- Issue Maps https://eight2late.wordpress.com/2009/06/25/visualising-arguments-using-issue-maps-an-example-and-some-general-comments/ and Dr. Jeff Conklin's web site http://cognexus.org/cognexus_institute.htm, including his book on the subject, http://cognexus.org/dm_book.htm

- Edward de Bono. (1999) *Six Thinking Hats*, Back Bay Books. Also, Edward de Bono. (1994) *de Bono's Thinking Course*, Revised Ed., Facts on File. This is an entirely different approach than Thinking Hats.

- There are errors in thinking, biases. Wikipedia article lists 90 related to decision-making. [https://en.wikipedia.org/wiki/List_of_cognitive_biases]
  - Kahneman, D. (2011) *Thinking, Fast and Slow*, Farrar, Straus and Giroux. Chapter 23, "The outside view," is about the planning fallacy, a decision bias related to planning projects. [Kahneman earned the Nobel Prize in Economic Sciences in 2002, the first time ever that a psychologist was awarded.]
  - Kahneman, D., and Lovallo, D. (1993). "Timid choices and bold forecasts: A cognitive perspective on risk-taking". *Management Science* 39: 17–31. doi:10.1287/mnsc.39.1.17.
  - Virine, Lev, and Trumper, Michael. (2013). *ProjectThink: Why good managers make poor project choices,* Gower/Ashgate Publishing. A very readable work on behavioral economics applied to projects. The planning fallacy is introduced on pp. 35-36.

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Note: Requests for company specific training should be sent to the Director, Training & Development at debra.ogrady@akima.com