15.351 Managing Innovation and Entrepreneurship
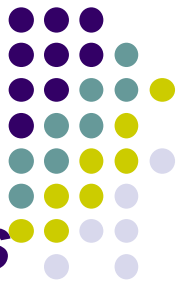Spring 2008

15. 351 Managing Innovation & Entrepreneurship

Fiona Murray

MIT Sloan School of Management

2008

Class Four
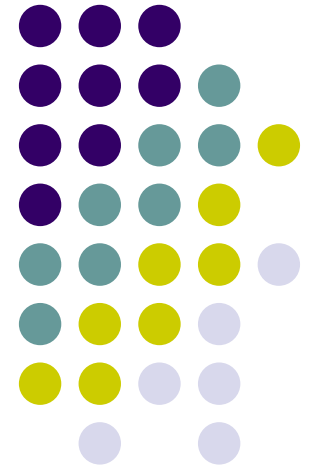
Module One:
## *Exploring innovations – processes & methods*

Exploring Innovations

Key processes

Five Cases-Five methods

- BIG vs. IDEO – opportunity identification, brainstorming, failure
- Advanced Inhalation Research – uncertainty analysis & experimental design
- Team New Zealand – prototyping & learning
- Innovation @ 3M – lead user learning
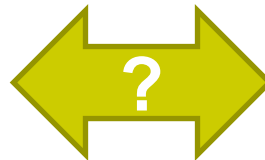- Iridium – failed innovation processes & scenario methods

Focus on Front End
Understanding the discovery process for opportunities
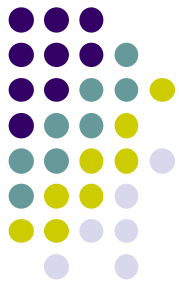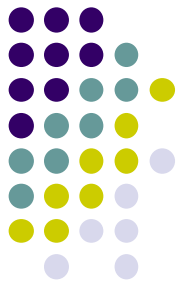
Search

- Relative differences in the costs & benefits of search (Stiglitz 1994)
- Lead some entrepreneurs to search and find opportunities more than others

?

Recognition

- Can't search because by definition opportunities are unknown until discovered (Kirzner 1997)
- Entrepreneurs vary in the degree to which their prior knowledge triggers opportunity recognition

# None of the entrepreneurs considered the other "opportunities"

- No competition over license scope – all considered specific opportunities

- Opportunity definition strongly shaped by prior knowledge

- Opportunities were discovered triggered by differences in prior knowledge

Can we overcome the "narrow" scope of typical opportunity identification?
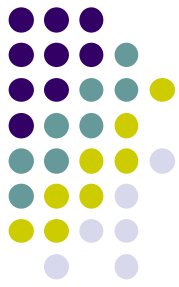
- What types of people?
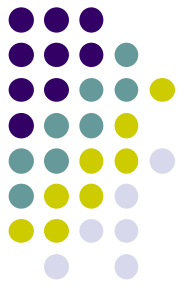
- What types of methods?
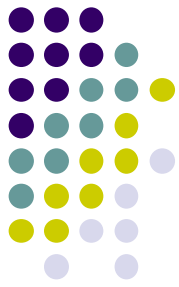
What types of people?

- Need to self-consciously manage diversity of people
  - People with diverse "solution" backgrounds
 - People with diverse "problem" backgrounds

Two approaches
- Internally
  - IDEO has a "diverse" group of people on each team
  - Potential as an entrepreneur to choose your team
- Externally
  - Use a broad (but narrowing) group of advisors
  - Broadcast your problem to those with solutions (BIG, InnoCentive)
  - Broadcast your solution to those with problems (?)

What types of methods

- Take people who already have "knowledge" & give them a richer "background" in
  - Problem context e.g. customer anthropology
  - Solution context e.g. papers, lab time

- Brainstorming (e.g. IDEO)
  - Focus on either finding the right "problem" for your solution **OR**
  - Focus on the right "solution" to your problem (e.g. shopping cart)

# Process for identifying opportunities - brainstorming
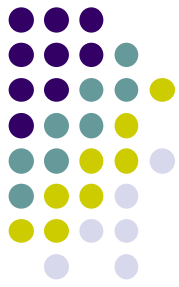
PURPOSE

- Gather additional relevant information in a structured way (even when that way is deliberately unstructured)

- Tap into/allow for more creative thinking

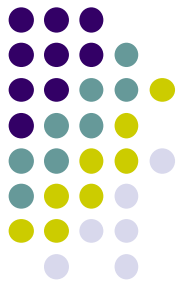# Alex Osborn's Original Rules of Brainstorming

Idea Generation

- Criticism is ruled out
- Freewheeling is welcomed
- Quantity is wanted
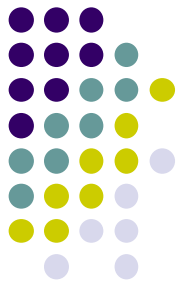- Combination and improvement are sought
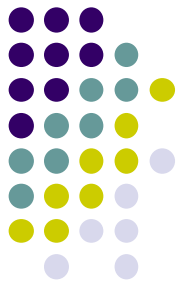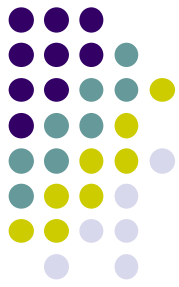
Caveat - Who has been in a meeting and put a good idea forward which has been followed by laughter and dismissal?

Caveat - Who has been in a meeting and put a good idea forward which has been followed by the comment 'that won't work, we have tried that before?'

Edward de Bono's Six Thinking Hats™

White hat
Data, facts and information

Green hat
Creative possibilities, new ideas

Yellow hat
Positives, benefits, good things
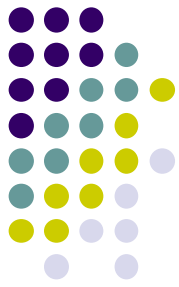
Red hat
Feelings, intuitions

Black hat
Negatives, warnings, pitfalls

Blue hat
Control or direction in thinking

Image by MIT OpenCourseWare.

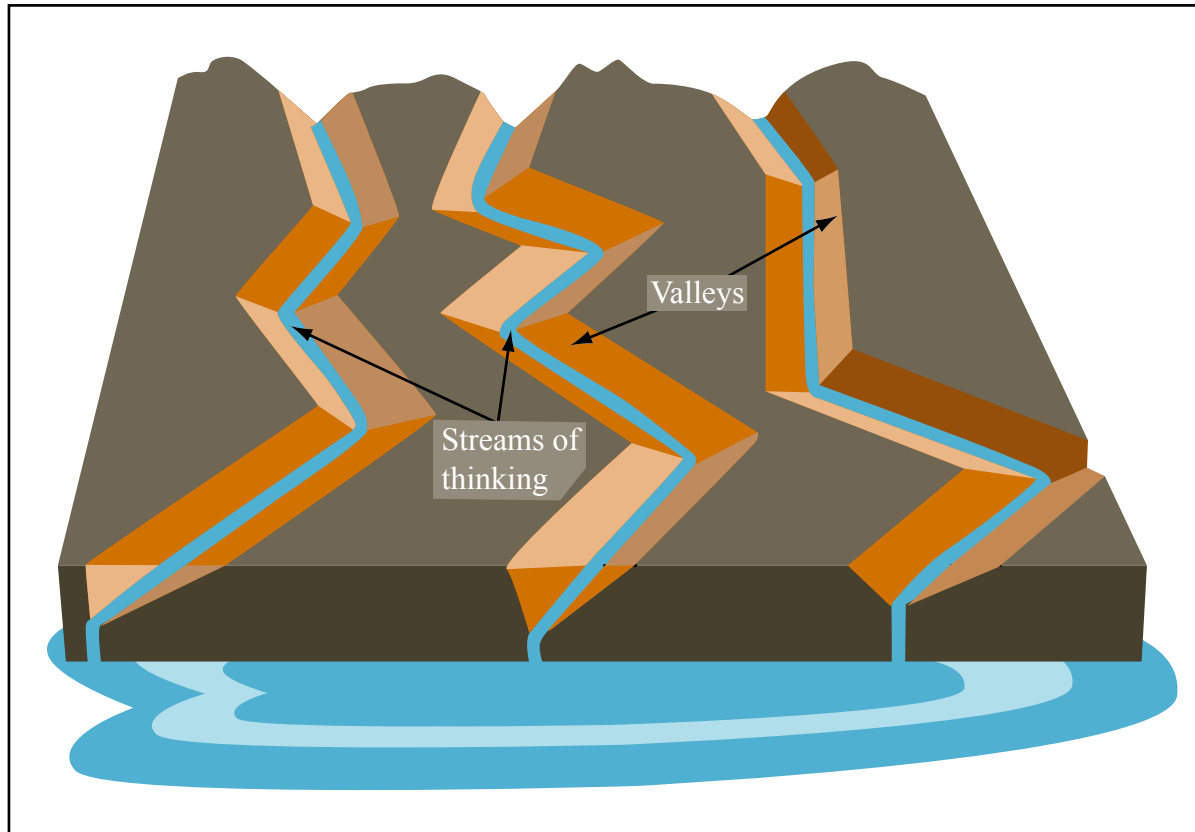# Edward deBono's Mental Valleys Model for Thinking

Image by MIT OpenCourseWare.

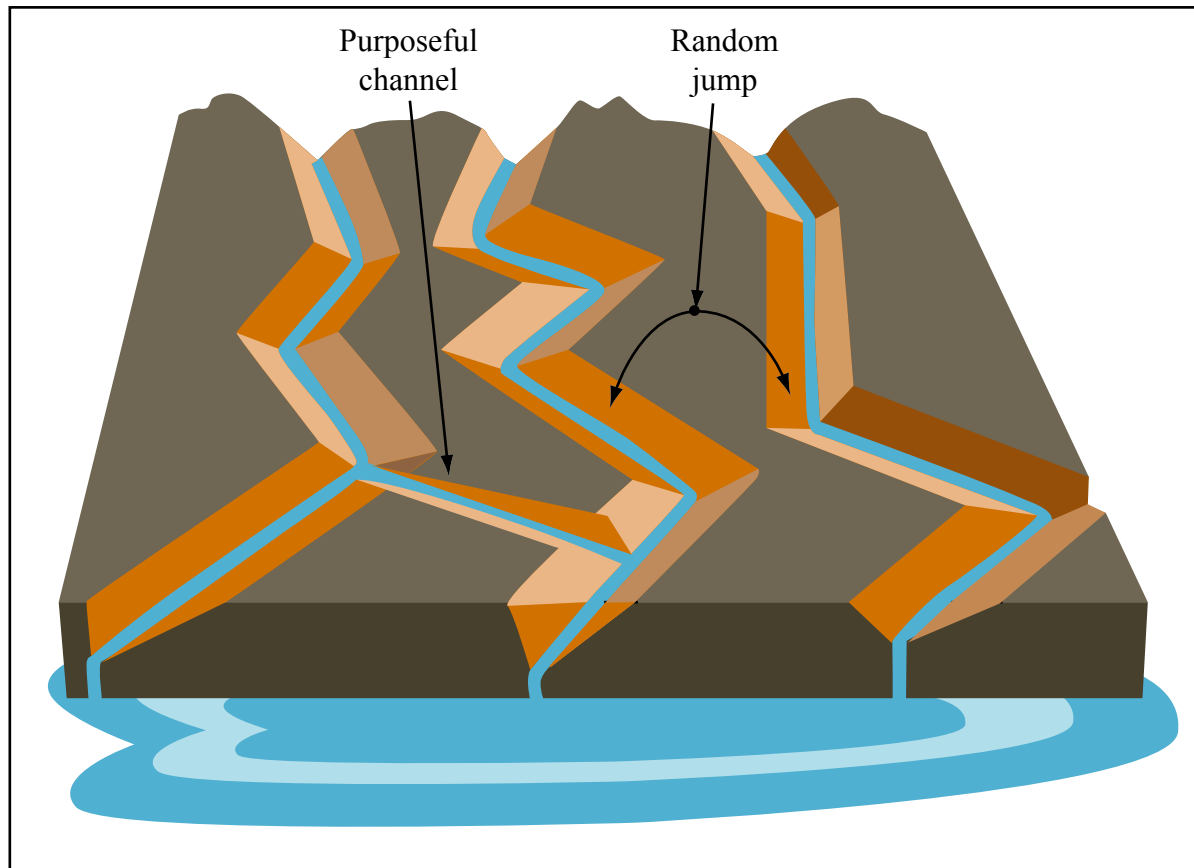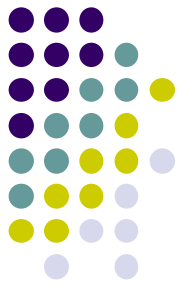**"Creative thinking involves breaking out of established patterns (valleys) in order to look at things in a different way."** de Bono

Image by MIT OpenCourseWare.