

Fostering Creativity and Innovation

Presentation to Engineering Executive Forum

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Mary Adams Viola, Ph.D.
Professor of Practice
Director, Engineering Management

Agenda

- Introduction
- Creativity
 - Individual
 - Team
 - Organizational
- Innovation

Introduction

- Leadership: Begins with Self Awareness
 - Emotional Intelligence (Myers Briggs, “Get on the Balcony”)
 - Creativity
- Innovation Vs. Creativity
 - Innovation = Invention + Influence + Courage
- Beliefs about creativity

Ego Watcher: “Get on the Balcony”



Individual Creativity

- **Re-Awakening** the creativity in YOU!
 - Jill BolteTaylor (TED video)
 - Recall when you had a great idea....
- **Why this is important**
 - For technology development/R&D
 - For leadership!

Team Creativity

- **The problem/opportunity**
 - Twenty ways to kill an idea
- **Tools**
 - Six hat thinking
 - Visual Explorer®
 - Powerful questions
 - Biomimicry

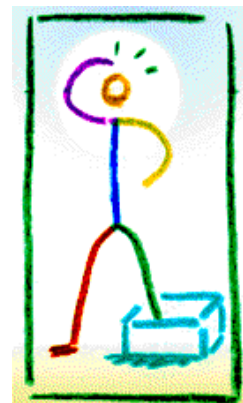
Killer Phrases Are Not Used During Idea Generation*

1. "Yes, but. . ."
2. "We tried that before."
3. "That's irrelevant."
4. "We haven't got the manpower."
5. "Obviously, you misread my request."
6. "Don't rock the boat!"
7. "The boss (or competition) will eat you alive."
8. "Don't waste time thinking."
9. "Great idea, but not for us."
10. "It'll never fly."
11. "Don't be ridiculous."
12. "People don't want change."
13. "It's not in the budget."
14. "Put it in writing."
15. "It will be more trouble than it's worth."
16. "It isn't your responsibility."
17. "That's not in your job description."
18. "You can't teach an old dog new tricks."
19. "Let's stick with what works."C
20. "We've done all right so far."
21. "The boss will never go for it."
22. "It's too far ahead of the times."
23. . . . laughter. . .
24. . . . suppressed laughter. . .
25. . . . condescending grin. . .
26. . . . dirty looks. . .
27. "Don't fight city hall!"
28. "I'm the one who gets paid to think."
29. "What will people say?"
30. "Get a committee to look into that."
31. "If it ain't broke, don't fix it."
32. "You have got to be kidding."
33. "No!"
34. "We've always done it this way."
35. "It's all right in theory. . . but. . ."
36. "Be practical!"
37. "Do you realize the paperwork it will create?"
38. "Because I said so."
39. "I'll get back to you."
40. . . . silence. . .

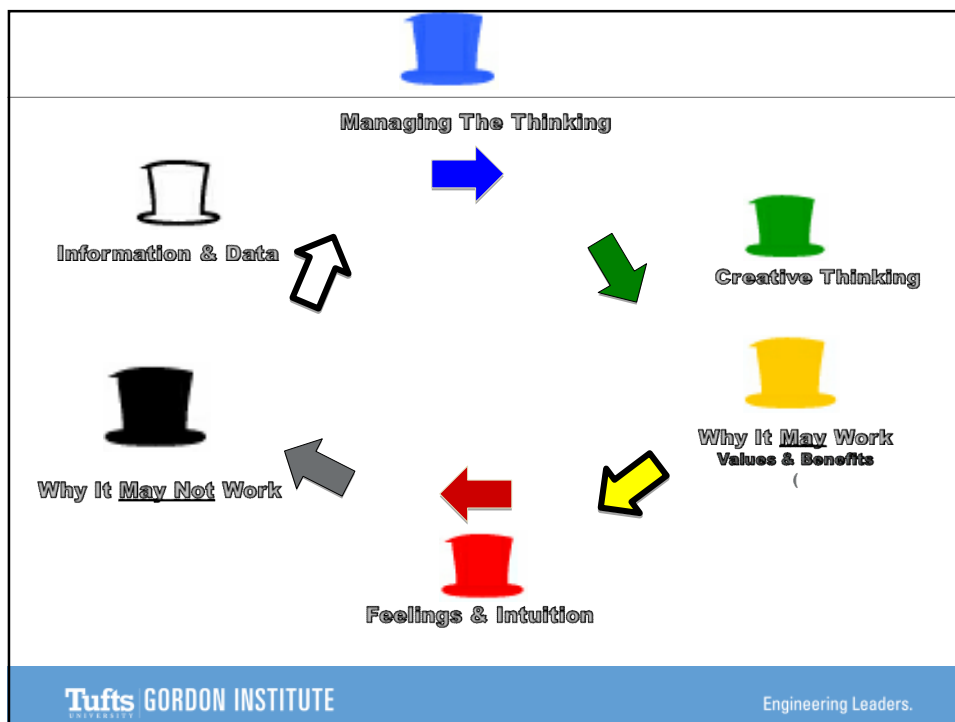
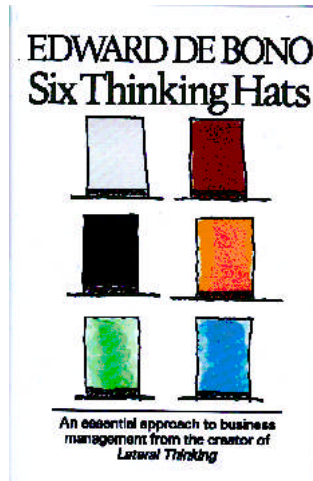
* Reference: "What A Great Idea" by Charles "Chick" Thompson, 1992, HarperCollins Publishers

Creativity

- An Aspect of Self Awareness
- Vertical vs Lateral Thinking
- Lateral Thinking
 - Challenge assumptions
 - Seek out new paradigms
 - Suspend judgement
- PRACTICE



Dr. Edward de Bono



Powerful Questions

- What assumptions are you making; what sacred cows can you let go of?
 - Apple's white headphones
 - Netflix--mail DVDs
- What can you compare your idea to...(make a metaphor). Ask how and why this metaphor relates to your product? How can you use this insight to improve your concept.
- What if you combined two ideas together?
- What is really important about your idea., what should you focus on?
- In what outside places can you look for new ideas
- **What patterns of nature can you borrow?**
- What would a fool or six year old say about your idea?
- How can you reverse your viewpoint?
- How would you feel if you were the product you were developing?

Biomimicry

- http://www.ted.com/index.php/talks/janine_benyus_biomimicry_in_action.html
- <http://www.asknature.org>
- http://biomimicryguild.com/guild_services_methods.html

Organizational Creativity

- Keys Survey..
 - Available from Center for Creative Leadership
 - <http://www.ccl.org/leadership/assessments/KEYSOversview.aspx>

Environmental Factors for Creativity

- Stimulants
 - Organizational Encouragement
 - Top Mgt support for risk-taking
 - Supervisory Encouragement
 - Boss needs to set clear expectations and goals...not “how”
 - Work Group Supports
 - Team diversity, trust and commitment
 - Sufficient Resources
 - Challenging Work
 - Freedom
- Obstacles
 - Organizational Impediments
 - Destructive criticism, turfism, resistance to change
 - Workload pressure

Source: Teresa Amabile

Innovation

- Innovation = Invention + Influence + Courage



Courage: Standing up against the 'norm'

- Asch Experiment



Only 25% don't give in

Influence Without Authority

- Concepts
- Exercise: Buttermilk
- Case Study: Monica Ashley
- Personal Case

Summary

- Like leadership, creativity can be learned
- Our job 1 as leaders is to foster innovation in our environments...
 - Awareness: Get on the balcony
 - Tools: Six hats, powerful questions, biomimicry
- Young engineers can be made more aware of the creative process and develop influence skills to make it happen!
- Biomimicry is a sustainable source of new product, business solution designs