
Systematic creativity in business 8699-020-20082

You should learn to stop, or otherwise no worthwhile idea will catch up with you

- Doug King

Course Overview:

The ability to solve problems creatively and generate change is a recognized standard of success and plays an important role in gaining a competitive advantage in many areas of business management. Despite the enormous effects of creative ideas in management, this is one component in managers' work which traditionally defies quantitative evaluation or the applications of systematic approaches.

Not only is the original idea itself difficult to evaluate precisely, the ability to generate such ideas is generally considered an inherent personality trait that cannot be acquired: Creative people, it is generally believed, are born, not made. The conventional approach is, therefore, to view creative managers as a different class of individuals. Although creative individuals may have some degree of difficulty working on routine tasks or in a team, they compensate for these shortcomings by coming up with ideas that no one has ever thought of before. According to this approach, the stroke of genius or inspiration may occur once in ten years, yet the organization will benefit by waiting patiently to reap the fruits of its creative managers.

Supported by recent studies, this course reflects a completely different approach to creativity, and is grounded in the assumption that creative thinking is not different from other cognitive processes used in the best professional reasoning. Creative thought processes simply differ in the distinct orientation they establish to problem definition: Creative problem solving directs the solver to search in areas that are potentially richer in creative solutions. Creativity, then, is a skill which can be acquired and improved by practice; It can be part of the manager's toolbox, and it can be applied on demand.

Course objectives:

This course is designed to teach students several systematic creative problem solving methodologies that complement other managerial tools acquired in undergraduate and graduate studies. These methodologies are appropriately implemented when a decision has been made to search for a creative solution.

The course offers students the opportunity to learn how to solve problems, identify opportunities, and generate those elusive ideas that potentially generate enormous benefits to organizations with a very small investment.

This course will focus on new product ideation and creative marketing actions. We will also touch upon communications and dilemma resolution.

Content:

The course consists (as usual) of lectures, guest speakers, class exercises, home assignments, and a final group project.

Lectures will review systematic tools (termed *creativity templates*) and cover the rationale of structured thought processes. Guest speakers will present wisdom and know-how acquired in the practice of systematic creative ideation through real-life cases.

Important note: In our second class, a senior manager from a chosen industry will brief us on a product category that will be the topic of your final project.

Final Project:

A major activity of this course is the group project. After a presentation and brief given by a senior executive from a leading firm, teams (of 4-6 students) will generate a creative (and feasible) idea as a solution to a problem defined within a constrained set of assumptions. Teams will also define an implementation and entry strategy for their idea, emphasizing the quality of the idea and the underlying systematic process.

In the final class, teams will present their new product concepts. Corporate experts will grade ideas on originality, success potential, and probability of adoption by the firm. In addition, the class will grade the projects to comprise a simulated market assessment. The weighted average grades (expert assessment and peer review) of the presentation will be considered 75% of the project grade. Project reports will be submitted at the end of the semester.

It is recommended for teams to meet with me for several tutorial sessions as they work on the project.

Assignments:

There will be three types of assignments.

1. To prepare for classes, you will read from the course book and additional assigned articles. Although you are not required to hand in any report, you

are expected to read and understand the material.

2. At the end of the third class, you will be given a home assignment. This is a structured exercise in which you will apply a creativity template (*attribute dependency* using a *forecasting matrix*) to generate new ideas. The assignment can be submitted by pairs of students. A bonus puzzle using this template will be offered. Students who correctly solve the puzzle will present their solutions in class.
3. The second assignment is the final course project. You are expected to work on the project throughout the entire semester. In the tutorial sessions, we will discuss your progress on your topic and I will give you some feedback. I encourage you to try to apply some of the concepts and methods covered in the course for your projects. Please don't be afraid to propose original and/or "crazy" ideas at the tutorials. We will explore those ideas together, and you will not be judged. There will be no "performance" evaluation of the tutorials; their only purpose is to help you and to make sure that you are on the right track. A final project report is due at the end of the semester.

Grading:

- Class participation: 20%
- Home assignment: 30%
- Project: 50%

Readings:

There will be two types of readings.

1. Required reading. The course textbook is "Creativity in Product Innovation". You are expected to closely read the assigned chapters and articles and be prepared to discuss them in class.
2. Recommended reading. These articles cover some basic concepts and views, and will be summarized in the lectures. Generally, these articles will not to be a basis for class discussions. You can read them before class, after class, or not at all, although I strongly encourage you to at least know what each article offers. Several articles are advanced papers on specific topics (taken from academic journals). Most are available online through the Columbia Libraries' website. I encourage you to read these articles if you have a special interest in the topic.

Course Schedule:

Session 1: “First we throw dust in the air and then claim we can’t see...”

Defining creative solutions. The attributes of creative ideas. Conventional approaches to the study of creativity. The trap of modern marketing and the illusion of appealing to the customer.

Session 2: The *Attribute dependency* template and the *Function Follows Form (FFF)* principle.

Creating a connection between inherently independent variables. Brief of a product category for the final project.

Session 3: The *Forecasting Matrix*

Managing the search of attribute dependency through a forecasting matrix. Brief of a product category of the project.

Session 4: The *Close(d) World Principle* and the *Replacement* template

The Close(d) World Principle defines a hidden space with high density of creative ideas. Using existing resources to generate new value. Class exercise competition (in groups).

Session 5: The *Displacement*, the *Division* and the *Multiplication* templates.

The less the merrier: Improving product functionality by reduction and elimination. Divide or multiply or perhaps both? Simpler templates that offer complementary spaces of ideas.

Session 6: The *Contradiction* principle and the *Necessary Conditions* line of thought.

Thinking through a necessary conditions vs. sufficient conditions. Defining a contradiction. Using a contradiction to chart specified ideas hidden by specified fixations. The contradiction was the first discovery in the systematic creativity research (around 1940), and it is still the most fascinating.

Session 7: The *Component Control* template and brief review of other methods.

Defining evolutionary rules for generating links to the immediate product environment. Brief (and critical) review of other methods such as Brain Storming, Random Stimulation, Mind Mapping. Class exercise.

Session 8: Beyond innovation.

Implementing templates in advertising, negotiations, strategy, and other fields.

Session 9: Guest speaker from J&J.

How systematic creativity is implemented in real life? Our guest speaker Drew Boyd, a Director of Marketing Mastery, Ethicon Endo-Surgery Inc, a Johnson & Johnson Company, will share his wide and rich experience with the implementation of creativity templates. Mr. Boyd will introduce also the *Path of Most Resistance* approach.

Session 10: Project presentations.

Attending by our special guests from a leading firm.

Required Reading:**Session 1**

Course book: pp. 13-55.

Goldenberg, J. Mazursky, D. & Solomon, S. (1999), Creative Sparks. *Science*, 285(5433), September, 1495-1496.

Session 2

Course book: pp. 59-98.

Session 4

Maymon, O., & Horowitz R. (1999). Sufficient condition for inventive ideas in engineering. *IEEE Transactions, Man and Cybernetics*, 29(3), 349-361.

Course book: pp. 99-133.

Session 6

Course book: pp. 7-10, 59-62

Session 7

Course book: pp. 134-143.

Session 8

Paulus, P. B., Dzindolet, M. T., Poletes, G., & Camacho, L. M. (1993). Perception of performance in group brainstorming: The illusion of group productivity. *Personality and Social Psychology Bulletin*, 19, 78-89.

Session 9

Goldenberg, J., Lehman, D. R. & Mazursky, D. (2001). The idea itself and the circumstances of its emergence as predictors of new product success. *Management Science*, 47(1), 69-84.

Goldenberg J., Horowitz R., Levav A., & Mazursky D. (2003). Finding the Sweet Spot of Innovation. *Harvard Business Review*, March, 120-29"

References and Recommended Reading:

Altschular. G. S. (1986). *To find an idea: Introduction to the theory of solving problems of Inventions*. Novosibirsk: USSR, Nauka.

Arieti, S. (1976). *Creativity: The magic synthesis*. New York Press, basic books.

Calantone, J. R., & Benedetto, C. A., (1988). Integrative model of the new product development process: an An empirical validation. *Journal of Product Innovation Management*, 5(3), 201-215.

Finke, R. A., World, T. B., & Smith, S. M. (1992). *Creative cognition*. MIT Press, Cambridge, Massachusetts.

Goldenberg J., & Mazursky, D. (2001). *Creativity in product innovation*. Cambridge University Press

Goldenberg, J., Horowitz, R., Levav, A., & Mazursky, D. (2003). Finding the sweet spot of innovation. *Harvard Business Review*, March, 120-129.

Goldenberg, J., Lehman, D. R., & Mazursky, D. (2001). The idea itself and the circumstances of its emergence as predictors of new product success. *Management Science*, 47(1), 69-84.

Goldenberg, J., Mazursky, D., & Solomon, S. (1999). Creative sparks. *Science*, 285(5433), 1495-1496.

Golder, N. P., & Tellis, J. G. (1997). Will it ever fly? Modeling the takeoff of really new consumer durables. *Marketing Science*, 16 (3), 256-270.

Griffin, A., & Hauser, J. R., (1993). The voice of the customer. *Marketing Science*, 12, 1-26.

Hofstadter, D. R., (1995). *Fluid Concepts and Creative Analogies*. BasicBooks (Harper Collins Publishers).

Maymon, O., & Horowitz, R., (1999). Sufficient condition for inventive ideas in engineering. *IEEE Transactions, Man, and Cybernetics*, 29(3), 349-361.

Perkins, D. N. (1981). *The mind's best work*. Harvard University Press.

Wallace, D. B., & Gruber, H. E. (1989). *Creative People at Work*. Oxford University Press: NY.

Weisberg, R.W. (1992). *Creativity beyond the myth of genius*. W. H. Freeman Company: NY.