Columbia Business School

B7651 Systematic Creativity in Business

Professor Goldenberg

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This class will meet August 4th (Sunday) to 8th (Thursday), 9:00am-5:00pm, Local TBD

"Art lives from constraints and dies from freedom."

– Leonardo Da Vinci, c. 1480

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, not a trait, 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 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:

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.

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 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 40% of the project grade. Project reports will be submitted one week after the last class and will make up 40% of the project grade. Intelligent class participation with be considered as 20% of the grade.

Part of the work on the project will consist of working in breakout rooms, assistance from the teaching team will be offered. This means that we have one week to study the tools and successfully ideate.

Assignments:

There will be three types of assignments.

1. To prepare for classes, you will read from the course book and sometimes additional assigned articles (will be mentioned in class). Although you are not required to hand in any report, you are expected to read and understand the material.

2. The final assignment is the final course project. You are expected to work on the project throughout the course. In the tutorial sessions, we will discuss your progress on your topic and I will give you some feedback. Please don't be afraid to propose original and/or "crazy" ideas at the tutorials. We will explore those ideas together, and 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. The in-class presentations will be on **Thursday, August 8th**. A final project report is due via email on **August 22nd**, but it can be turned in earlier.

***Guidelines for written essay*:**

The final written report should include:

1. An analysis of the product/service you have been working on, making use of two ideas for each template covered in class. In addition, define one contradiction only (no need to solve it). You may include the idea that was presented in class, or any other idea you came up with during your analyses. Remember that the grade on the assignment is only the accuracy of the analysis, not the originality of the idea.
2. Please describe in detail the process leading to the idea you decided to present in class, including decisions you made during the discussions. For the rest of the ideas, explain only why it belongs to the template.
3. A description of the target audience and the degree to which the product/service is attractive from a marketing perspective (only for the idea you presented in class).
4. One additional idea which you came up with during the analysis, which you competed with the idea you presented, and you decided to drop. Try to select an idea with high originality and low quality (bizarre). Any "bad" idea is acceptable here. Explain why you think this is a bad direction that should not be pursued.
5. The PowerPoint presentations you used in class (you are allowed to improve it based on comments and questions, if you feel it is important). Unless you inform us about any objection, we plan to send it to the corporate experts from the firm.

Grading:

- Class intelligent participation: 20%
- Project: 80% (40% presentation, 40% a written part)

Readings:

There will be two types of readings.

1. *Required reading*. The course textbook is "Inside the Box: A Proven System of Creativity for Breakthrough Results." You are expected to closely read the assigned chapters (and articles) and be prepared to discuss them in class.

2. *Articles for recommended reading*. These articles cover some basic concepts and views which 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 Topics:

Day 1

Introduction: 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.

Reading:
Course book: pp. 1-15.
Goldenberg, J., Mazursky, D., & Solomon, S. (1999), Creative Sparks. *Science*, *285*(5433), September, 1495-1496

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.

Reading:
Course book: pp. 159-188.

Day 2

The Forecasting Matrix

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

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). We will be joined by our special guests from AXA.

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

Course book: pp. 15-38.

The Subtraction (with Replacement) Template

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.

Course book: pp. 38 -70.

Day 3

Guest Speaker: Drew Boyd

How is systematic creativity 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 also introduce the *Path of Most Resistance* approach.

The Division and the Multiplication templates

Two more templates: How to manipulate components inside the box.

Course book: pp. 70-159.

Reading:
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"

Day 4

The Contradiction Principle and the Necessary Conditions line of thought

Thinking through 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.

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

Working on the project

Day 5

Project presentations

Attended by our special guests from the industry.

Beyond innovation

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

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 empirical validation. *Journal of Product Innovation Management, 5*(3), 201-215.

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

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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., & Hauzer, 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.