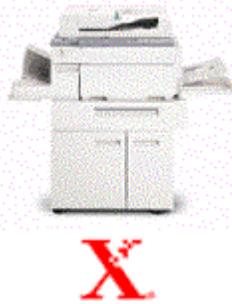


## Creative Problem Solving



### In a Nutshell

Xerox Corporation has a nice tradition of creativity. Earlier this year, they received their 15,000th U.S. patent.

To be effective problem solvers at work, we have to be able to think of multiple possible solutions to problems. Unfortunately, our minds are prone to thinking in habitual and overly simplistic ways. If we overcome our conceptual blocks, we'll become more effective at **problem solving** and **innovation**.

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### Uses for Creative Problem Solving Skills

Creative problem solving skills have countless uses. Too often people associate creative problem solving with dealing with crises or difficulties, or think of it as something that's used for games and puzzles or special kinds of jobs. However, creative problem solving skills are required for achieving exceptional performance in most jobs (and all the good jobs). The term "problem" simply refers to any discrepancy between the current situation and a desired future situation. So, finding a way to exploit an opportunity is a form of problem solving just as coping with a crisis is. Moreover, any opportunity to improve work processes or products fits that definition of a problem. Creative thinking is not just for certain jobs, like writing advertising copy or designing entertaining training programs. Creativity can help all of us progress from our current situation to a desired future situation, whether our jobs are normally thought of as involving "creative work" or not.

The creative problem solving process differs from routine problem solving in that with routine problem solving a pre-established method for solving the problem is used; with creative problems solving, any pre-established method for solving the problem is either unknown or not used. Creative problem solving involves a hunt for new solutions, while routine problem solving uses old solutions (*borrrring!*).

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### Conceptual Blocks

Despite the importance of creative thinking to so many facets of our lives, human beings are prone to mental ruts. Our brains are powerful computers with the capacity to be very flexible, but sometimes our thought processes aren't as flexible as they need to be. A number of conceptual blocks can keep us from solving problems creatively.

**Constancy.** Once we've learned a solution to a problem, we often try to reuse that solution when encountering similar problems. It can be difficult to ignore that solution and consider others. When that

solution is ineffective, being fixated on it interferes with our problem solving. Creative problem solving requires being able to define and solve problems multiple ways.

As the Xerox invention of GlossMarks demonstrates, redefining a problem is often a way to find a serendipitous solution. Xerox researchers originally set out to eliminate "differential gloss," the plastic-like sheen on high-quality prints and photocopies, when they discovered a productive use for the gloss. Like watermarks in paper, GlossMarks can embed a unique image in a document to discourage counterfeiting. When the problem was defined as "remove gloss from prints and photocopies," they did not find a solution. However, when the problem was broadened to "produce innovative products," the researchers were able to identify a solution.

**Commitment.** Although our minds can process a lot of information, we often get committed to overly simplistic assumptions about things. For instance, we assume that our current project is like prior projects, or we assume that our customers have similar priorities. In other words, we stereotype things. Creative problem solving requires relaxing our assumptions in order to notice subtle differences and similarities that might help us find solutions.

**Compression.** To quickly solve a problem, we often artificially limit the information we use in defining the problem and searching for solutions. We overlook important things surrounding the problem or mistakenly assume that some types of solutions are more appropriate than others. Creative problem solving requires looking at the "big picture," considering all relevant information about the problem, and ensuring that a variety of possible solutions are examined.

A group I was conducting a team building workshop for taught me a lesson in thinking beyond artificial constraints. To illustrate interdependence in teamwork and the conflict that it creates, I challenged each team to build a house of cards. One of the teams decided to bend the cards. We don't normally bend playing cards, do we? Those of us who have built a house of cards have probably done it without bending the cards so that we could use them later. However, the team that didn't assume that the cards needed to be treated with care ended up achieving their goal of building the biggest house ... and ruining my cards.

**Complacency.** Sometimes we give up too easily when we encounter problems for which we don't immediately see solutions. The Wright brothers could have easily given up on their early attempts at flight and many people thought they should, but they didn't. Instead, the Wright brothers put a tremendous amount of time and energy into study and experimentation. Creative problem solving often requires extensive study of the problem and time for creative ideas to incubate in our minds.

Our minds tend to be programmed to quickly solve the problems we typically encounter in a day. However, those thought patterns could block our ability to solve problems creatively. To increase our creativity, we need to break our conceptual blocks.

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## Overcoming Conceptual Blocks

There are many things we can do to overcome our conceptual blocks and enhance our creative problem solving skills. Individually, we can practice creative problem solving and keep our minds flexible by playing with lateral thinking puzzles. There are several books on lateral thinking puzzles in most bookstores.

When facing a particular problem that you would like to solve creatively, there are a number of techniques you can use to overcome conceptual blocks. First, reduce any [stress](#) that you might be experiencing and try to put yourself in a positive mood. Problem solving under stress tends not to be very creative. Second, accept and be patient with wild ideas. Generating and considering wild ideas can seem like a waste of time, but it's often the route to an ingenious solution. Third, play around with the problem definition. State the problem as you see it and then try to see it in other ways. Use odd analogies for the problem. Elaborate on it, and look for ways to state it "the other way around." These activities break the "compression" conceptual block. Fourth, produce many possible solutions without regard to their practicality. After listing many solutions, try combining and modifying the solutions on the list. If you're still not satisfied with the solutions you've produced, take a break for several hours or even several days. Let your ideas incubate, and you'll find that you often identify a solution when you're not even trying.

Managers can also use various training interventions to promote their subordinates' creative problem solving. The most popular types of creativity training focus on [fluency](#)--producing a large number of ideas. Fluency techniques include brainstorming and the Nominal Group Technique. [Excursion](#) techniques can also be

helpful. An excursion is anything that takes employees into unfamiliar realms of thought, and takes their conscious minds off the problems they are currently wrangling with, permitting the incubation process to occur in their subconscious. In the past, I've found that traveling to conferences is an effective excursion technique for me. **Pattern breaker** techniques force employees to think beyond their cognitive ruts and gain a fresh perspective on the problem. Synectics is an approach to stimulating creativity by using analogies to break patterned thinking. **Shake-up** exercises get employees out of their comfort zones and make them more receptive to unusual ideas. Shake-up exercises encourage employees to take risks and relax, and they are also good icebreakers.

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### Sources

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Xerox Corporation web site, [www.xerox.com](http://www.xerox.com)

### About the Newsletter and Subscriptions

*LeaderLetter* is written by Dr. Scott Williams, Department of Management, [Raj Sooin College of Business](#), Wright State University, Dayton, Ohio. It is a supplement to my MBA 751 - Managing People in Organizations class. It is intended to reinforce the course concepts and maintain communication among my former MBA 751 students, but anyone is welcome to subscribe. In addition, subscribers are welcome to forward this newsletter to anyone who they believe would have an interest in it. To [subscribe](#), simply send an e-mail message to me requesting subscription. Of course, subscriptions to the newsletter are free. To [unsubscribe](#), e-mail a reply indicating that you would like to unsubscribe.

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### E-mail Your Comments

Whether you are one of my former students or not, I invite you to share any insights or concerns you have regarding the topic of this newsletter or any other topic relating to management skills. Please [e-mail](#) them to me. Our interactions have been invaluable. **Every week, I learn something new from *LeaderLetter* subscribers!** Let's keep the conversation going.

### A Good, Clean Joke

*Having trouble coming up with creative excuses? Try this template!*

Dear

- a. Mom,
- b. Dad,
- c. love of my life,
- d. Assistant Principal,
- e. Your Honor,

Words cannot begin to express how sorry I am that your

- a. car
- b. house
- c. pet
- d. espresso maker
- e. left arm

was severely damaged by my

- a. infantile
- b. puerile
- c. inept

- d. comically brilliant but nonetheless sadistic
- e. woefully under appreciated prank.

How could I have known that the

- a. car
- b. jet ski
- c. large helium balloon
- d. rodent driven sledge
- e. Zamboni

I was riding in would go so far out of control? And while it is true that I should not have pointed it in the direction of your

- a. house,
- b. wife,
- c. Cub Scout troop,
- d. 1/16th sized replica of the Statue of Liberty, complete with lightbulb in the torch,
- e. priceless collection of Rolling Rock beer cans,

You must understand that it was all meant in fun. The subsequent carnage that I caused is beyond my ability to

- a. imagine,
- b. fathom,
- c. comprehend,
- d. appreciate,
- e. pay for,

And I must therefore humbly ask your forgiveness. I know that you are perfectly within your rights to

- a. hate me,
- b. sue me,
- c. spank me,
- d. take my firstborn,
- e. gouge out my eyes with spoons and feed them to the fish in your koi pond,

but I ask you to remember all the good times we've had, joshing around at

- a. school,
- b. work,
- c. church,
- d. the bowling alley,
- e. the municipal jail,

and to remember that I am first and foremost your

- a. friend.
- b. child.
- c. sibling.
- d. lease co-signer.
- e. only possible match should you ever need a bone marrow transplant.

I think that counts for more than one prank, especially one that

- a. was so stupid.
- b. was so silly.
- c. would have been funny if it worked.
- d. you would have done, if you had thought of it first.
- e. I'm going to use again on someone else.

Sincerely,

Enter name or alias here: \_\_\_\_\_

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