MANAGEMENT CONSULTING NEWS
all things consulting . . .

Meet the MasterMinds is an exclusive interview series brought to you by Management Consulting News. Feel free to distribute this interview to others, but please respect our terms of use.

If you'd like to subscribe to our free, monthly email newsletter, sign up at www.ManagementConsultingNews.com.

Comments are welcome, so please send them along to the editor.

Enjoy the interview!

``````````````````````````

**Meet the MasterMinds: Michael Michalko on Cracking Creativity**

Michael Michalko is one of the world's leading creativity experts. He specializes in providing creative-thinking workshops, seminars on fostering creativity, and facilitating think tanks for clients around the world. His involvement in the field began when he organized a team of NATO intelligence specialists and academics to research, collect and categorize all known inventive-thinking methods.

Michalko's creative-thinking techniques were first made public in his highly acclaimed best-seller ***Thinkertoys*** (A Handbook of Business Creativity). He is also the author of ***ThinkPak*** (A Brainstorming Card Set), which is a creative-thinking tool designed to facilitate brainstorming sessions.

Michalko's latest book, ***Cracking Creativity*** (The Secrets of Creative Genius) shows how to make use of the creative-thinking strategies of geniuses. In this interview, he does just that, and offers innovative solutions to problems consultants face every day.

***MCNews:*** What are the common myths about creativity, and how can we think past them?

***Michalko:*** It's a myth that creativity cannot be learned, and that you are either born creative or you are not. Creativity is not genetically determined***.***

Typically, the average person has been taught to think reproductively, that is, on the basis of similar problems encountered in the past. We analytically select the most promising approach based on past experiences, excluding all other approaches, and work within a clearly defined direction towards the solution to the problem.

That's why every delivery expert in the U. S. doomed Fred Smith's idea of Federal Express to failure. They believed that based on their past experiences, no one would pay a fancy price for speed and reliability. And why, after Univac invented the computer, they refused to market it to business, because they said businesses had no use for a computer.

***If you always think the way you always thought, you'll always get what you've always got.***

In contrast, creative people think productively, not reproductively. When confronted with a problem, they ask, "How many different ways can I look at it?" instead of "What have I been
``````````````````````````

taught by someone else on how to solve this?" They tend to come up with many different responses, some of which are unconventional and possibly unique.

Albert Einstein was once asked what the difference was between him and the average person. He said that if you asked the average person to find a needle in the haystack, the person would stop when he or she found a needle. He, on the other hand, would tear through the entire haystack looking for all the possible needles.

MCNews: What are one or two secrets for cultivating creative genius?

Michalko: Two fairly simple things you can do to cultivate your creative genius are:
- Constantly try to improve your ideas and products
- Challenge your assumptions

Einstein believed that every new idea is some addition or modification to something that already exists. You take a subject and manipulate or change it into something else. There are nine principle ways you can manipulate a subject. These are arranged into the mnemonic SCAMPER. You isolate the subject you want to think about and ask the SCAMPER questions to see what new ideas and thoughts emerge.

Think about any subject from improving the paperclip to reorganizing your corporation. You'll find that ideas start popping up almost involuntarily, as you ask if you can:

S = Substitute something?
C = Combine your subject with something else?
A = Adapt something to your subject?
M = Magnify or modify—add to it or change it in some fashion?
P = Put it to some other use?
E = Eliminate something from it?
R = Rearrange or reverse it?

Thomas Edison was also tireless in his persistence to change a subject into something else through trial and error. In Edison's laboratory, there is a staggering display of hundreds of phonograph horns of every shape, size and material. Some are round, square, angular, thin, short, squat while others are curved and as long as six feet tall.

This collection of rejected ideas is a visual testament to Edison's approach to creativity— which was, in essence, to try out every possible design he could imagine. Once asked to describe the key to creativity, he reportedly said to never quit working on your subject until you get what you're after.

Contrary to popular belief, Edison did not invent the light bulb: his genius, rather, was to perfect the bulb as a consumer item. Edison also studied all his inventions and ideas as springboards for other inventions and ideas in their own right.

To Edison, the telephone (sounds transmitted) suggested the phonograph (sounds recorded), which suggested motion pictures (images recorded). Simple, in retrospect, isn't it? Genius usually is.

Edison felt his lack of formal education was, in fact, "his blessing." This enabled him to approach his work of invention with far fewer assumptions than his more educated competitors, which included many theoretical scientists, renowned Ph.D.s, and engineers.

He approached any idea or experience with wild enthusiasm and would try anything out of the ordinary, including even making phonograph needles out of compressed rainforest nuts, and clamping his teeth onto a phonograph horn to use as a hearing aid, feeling the sound vibrate through his jaw. This wild enthusiasm inspired him to consistently challenge assumptions.

He felt that in some ways too much education corrupted people by prompting them to make so many assumptions that they were unable to see many of nature's great possibilities. When Edison created a "system" of practical lighting, he conceived of wiring his circuits in parallel and of using high-resistance filaments in his bulbs, two things that were not considered possible by scientific experts, in fact, were not considered at all because they were assumed to be totally incompatible until Edison put them together.

An easy way to challenge assumptions is to simply reverse them and try to make the reversal work. Try this: List your assumptions about a subject; then, write down the opposite of each assumption; and finally, list as many useful ways as you can to accomplish each reversal.

MCNews: You are well known for helping people and organizations with the creative process. What are the common barriers to creativity for most people?

Michalko: Many people have bought the conventional wisdom that creativity is an innate gift, dividing us into two groups: "artistic" types– painters, musicians, directors, actors, writers, mimes, comedians– and those deemed not especially creative, who usually wind up in business, accounting, law, or health care.

But the legendary career of Edison illustrates how creativity can be cultivated by anyone, in any industry. His work methods reveal that the true keys to unlocking creativity are learned traits--namely perseverance and an open-minded approach to learning. A shrewd businessman, Edison used his creativity not only in developing new inventions but also in bringing them to market and winning out financially over competitors.

Edison was granted 1,093 patents for inventions that ranged from the light bulb, typewriter, electric pen, phonograph, motion picture camera and alkaline storage battery---to the talking doll and a concrete house that could be built in one day from a cast-iron mold. When he died in 1931, he left 3500 notebooks, which are preserved today in the temperature-controlled vaults of the West Orange Laboratory Archives at the Edison National Historic Site in New Jersey.

The notebooks read like a turbulent brainstorm and present a verbal and visual biography of Edison's mind at work. Spanning most of his six-decade career, the notebooks are yielding fresh clues as to how Edison, who had virtually no formal education, could achieve such an astounding inventive record that is still unrivaled.

The notebooks illustrate how Edison conceived his ideas from their earliest inceptions and show in great detail how he developed and implemented them. Following are some of Edison's creative-thinking strategies, which you might bend to your will.

Edison believed in quantity, that to discover a good idea you had to generate many. Increasing idea production requires conscious effort. Suppose I asked you to spend three minutes thinking of alternative uses for the common brick.

No doubt, you would come up with some, but my hunch is not very many. The average adult comes up with three to six ideas. However, if I asked you to list 40 uses for the brick as fast as you can you would have quite a few in a short period of time.

A specific quota focuses your energy in a competitive way that guarantees fluency and flexibility of thought. To meet the quota, you find yourself listing all the usual uses for a brick (build a wall, fireplace, outdoor barbeque, and so on) as well as listing everything that comes to mind (anchor, projectiles in riots, ballast, device to hold down newspaper, a tool for leveling dirt, material for sculptures, doorstop and so on). By causing us to exert effort, it allows us to generate more imaginative alternatives than we otherwise would.

Initial ideas are usually poorer in quality than later ideas. Just as water must run from a faucet for a while to be crystal-clear, cool and free of particles, so thought must flow before it becomes creative. ***Early ideas are usually not true ideas***.

Exactly why this is so is not known, but one hypothesis is that familiar and safe responses lie closest to the surface of our consciousness and therefore are naturally thought of first. ***Creative thinking depends on continuing the flow of ideas*** long enough to purge the common, habitual ones and produce the unusual and imaginative.

It's also critical to record your ideas. Edison relentlessly recorded and illustrated every problem in his notebooks. Whenever he succeeded with a new idea, Edison would review his notebooks to rethink ideas and inventions he'd abandoned in the past in the light of what he'd recently learned.

For example, Edison's unsuccessful work to develop an undersea telegraph cable ultimately led to a breakthrough on a telephone transmitter. He took the principle for the unsuccessful undersea telegraph cable— variable resistance— and incorporated it into the design of a telephone transmitter that adapted to the changing sound waves of the caller's voice. This technique instantly became the industry standard.

Edison would often jot down his observations of the natural world, failed patents and research papers written by other inventors, and ideas others had come up with in other fields. He would also routinely comb a wide variety of diverse publications for novel ideas that sparked his interest and record them in his notebooks.

He advised his assistants to make it a habit to keep on the lookout for novel and interesting ideas that others have used successfully on other problems in other fields. To Edison, your idea needs to be original only in its adaptation to the problem at hand.

Another barrier to creative thinking is that many people have no clear definition of creativity. ***Creativity means looking at the same information as everyone else and seeing something different***. To get new ideas, you need to rethink the way you see things, to look at the world in a different way, and to look for different ways to see problems.

MCNews: When you have a really tough challenge and can't see the answer, what is your favorite technique for unlocking your brain?

Michalko: To do nothing! ***My favorite technique when stonewalled is to do nothing, and let my subconscious mind work on the problem***. Sooner or later, an idea or solution will pop up in my mind--appear after a period of incubation out of nowhere.

The act of recording your thoughts and ideas about a particular problem plants the information into your long-term memory and also into your unconscious. In the unconscious mind, we activate complexes of information without boundary.

Information held in long-term memory can be processed in parallel in the unconscious and find its way into conscious thought. An innovative idea emerges not in any real-time sequence but in a "mind popping" explosion of thought.

My work notebook contains information about all the ideas, concepts, and problems that I am working on. By periodically reviewing my notebook, I activate all the recorded information in my conscious and subconscious mind.

This sets up a mental system of network thinking where ideas, images, and concepts from completely unrelated problems combine to catalyze the nascent moment of creativity.

Recording your work plants the information in your subconscious mind and somehow activates relevant patterns so it can be processed into a mind popping solution, even after a long delay during which the problem is abandoned.

Archimedes got his sudden insight about the principle of displacement while daydreaming in his bath. According to legend, he was so excited by his discovery that he rushed naked through the streets shouting, "Eureka!" (I've found it). Henri Poincare, the French genius, spoke of incredible ideas and insights that came to him with suddenness and immediate certainty out of the blue. So dramatic are the ideas that arrive that the precise moment in which the idea arrived can be remembered in unusual detail.

Darwin could point to the exact spot on a road where he arrived at the solution for the origin of species while riding in his carriage and not thinking about his subject. Other geniuses offer similar experiences. Like a sudden flash of lightning, ideas and solutions seemingly appear out of nowhere.

That this is a commonplace phenomenon was shown in a survey of distinguished scientists conducted over a half-century ago. A majority of the scientists reported that they got their best ideas and insights when not thinking about the problem.

Ideas came while walking, recreating, or working on some other unrelated problem. This suggests how the creative act came to be associated with "divine inspiration" for the illumination appears to be involuntary.

The more problems, ideas and thoughts that you record and review from time to time, the more complex becomes the network of information in your mind. Your subconscious mind never rests. When you quit thinking about the subject and decide to forget it, your subconscious mind doesn't quit working.

The thoughts keep flashing freely in every direction through your subconscious. They are colliding, combining and recombining millions of times. Typically, many combinations are of little or no value, but occasionally, a combination is made that is appreciated by your subconscious and delivered up to the conscious mind as a "mind popping" idea.

Our conscious minds are sometimes blocked from creating new ideas because we are too fixated. When we discontinue work on the problem for a period of time, our fixation fades, allowing our subconscious minds to freely create new possibilities.

To experience "mind popping," try the following experiment. Write a letter to your unconscious about a problem. Make the letter as detailed as possible. Describe the problem, what steps you have taken, the gaps, what is needed, what the obstacles are, the ideal solution and so on.

Instruct your subconscious to find the solution. Write, “Your mission is to find the solution to the problem. I would like the solution in two days.” Seal the letter and put it away. Forget it. Open the letter in two days. If the problem still has not been solved, write on the bottom of the letter, “Let me know the minute you solve this.” Sooner or later, when you are most relaxed and removed, ideas and solutions will pop up from your unconscious.

MCNews: What’s on your reading list now?

Michalko: At the present time, I am reading:

- ***Thought as a System*** by David Bohm
- ***Science, Order, and Creativity*** by David Bohm and F. David Peat
- ***The Psychology of Consciousness*** by Robert Ornstein
- ***The Timeless Way of Building*** by Christopher Alexander
- ***The Tipping Point*** by Malcom Gladwell

Michalko’s Web site can be found at www.creativethinking.net.