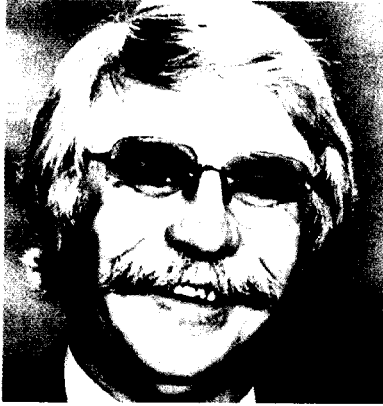


EXCITING CREATIVITY AND INNOVATION IN DESIGN OF PRODUCTS - PROCESS - SYSTEMS - SERVICE

Roger Syverson



Mr. Syverson received his Bachelor's degree from the University of Minnesota and his Master's degree from the University of St. Thomas. Roger is President of Professional Value Services, an international consulting firm, Minneapolis, Minnesota.

Roger has been a Value Engineering (VE) consultant for 30 years, providing training and guidance to over 100 organizations. His services include the disciplines and techniques associated with Product and Process development, concurrent engineering, Value Analysis (VA) /VE, Quality Function Deployment, Creativity Processes and Project management. Recently his major thrust has been integration of specific techniques into concurrent development of products and processes. He has written over 50 article and given over 300 presentations on management and products topics.

He teaches several management courses at the University of St. Thomas and is an adjunct professor at the Management Center.

ABSTRACT

This paper will address a different idea and concept generating techniques using both left and right brain approaches to help you increase your idea/concept generating power by 4 to 10 time's. Then your teams can truly achieve goals that are "LEAP - BREAKTHROUGH" in nature and cause true customer excitement.

If Function Analysis is the heart of the VA Process - then creativity is the bloodstream. Creativity must run throughout the VA process to have a successful study - but - it must absolutely flourish in the creative phase.

HUMOR - CHANGE - GOAL SETTING

"The most important thing an organization can do is to develop an atmosphere that is receptive to new ideas and promote managed change."

Sidney Parnes - Chairman
Creative Education Foundation

INTRODUCTION

The highest type of creativity is business - because all of its elements are dynamic and in a constant state of change.

I'm biased, but I happen to believe that VA is the most effective and efficient creative problem solving technique available today even though we only use a fraction of its power. This is true because we don't make full use of a wide range of idea/concept generating techniques and stimulators in the creative phase. We stick to the tried and true left brain methods like brainstorming. Now - don't get me wrong - brainstorming is a good tool - but - we must use more than one good tool.

I thought a sub-title for this paper could be "Have we forgotten how to have fun" when using the VA? This isn't just an off-the-wall question - it is real and very critical to the success of VA. There is a very strong correlation between having fun and the outcome of the creative process. The more powerful the outcome of the creative process the more powerful the outcome of VA and - therefore, the higher the probability of achieving really significant results. In these days of increasing magnitude and pace of change, we must learn to use VA as the powerful tool of change that it really is. Having fun in the creative process is a major key to success.

Let's talk about improvement to illustrate what I mean. I'll classify improvement into three general categories.

- Category I - Regular- 5 to 25% improvement
- Category II - Stretch-25 to 50% improvement
- Category III - Leap-50 to 80% improvement

I see many projects where regular targets are set, some where stretch targets are set and virtually none where leap targets are set and actively pursued. I believe part of the reason leap targets are so infrequent is because people don't believe they can achieve them - so they don't set them. This line of thought has several serious flaws:

- ONE ● GOAL SETTING IS A POWERFUL TOOL
- TWO ● IF YOU THINK YOU CAN - YOU CAN
- THREE ● THE POWER OF HAVING FUN AND EXCITEMENT IN THE CREATIVE PHASE CAN GREATLY ENHANCE THE PROBABILITY THAT YOU CAN AND WILL ACHIEVE LEAP GOALS.

The power of having fun during the creative phase, therefore, is extremely critical in helping you believe you can truly set and achieve "leap" targets. There are many things which lead to having fun in the creative process - (proper preparation, for example) - however, I will concentrate on only two of the most important factors:

- 1) Idea generation techniques
- 2) Idea booster techniques

Many tests have shown that use of multiple idea generation techniques enhance the number of ideas generated. Idea boosters will increase the quantity

even more and help you break out of paradigms. I will present several idea generations techniques and idea boosters for you to use in future idea generation sessions.

IDEA GENERATION TECHNIQUES

1. Brainstorming
2. Reverse Brainstorming
3. Nominal Group Technique
4. Brain Writing
5. Mind Mapping
6. Pictures - Sketches
7. Imaging - Visionizing

BRAINSTORMING

General: The most basic, simple basic, simple, and widely practiced technique.

- Process:
1. Hang pages on wall
 - Project name
 - Goals
 - Problem definition
 2. Preparation
 - Creativity warm-up exercises (1 - 2)
 - Humorous if possible
 - Use (1) or (2) idea boosters
 3. Select Recorder
 4. Establish time for each topic (area)
 5. Split into teams of (5) to (7) persons
 6. Pick highest priority topic and generate ideas - list every idea
 7. Use multiple recorders if necessary
 8. Keep idea list visible to everyone
 9. Push for new and different ideas

10. Use idea boosters
11. Go on to topic of 2nd priority - etc.
12. Continue generating ideas until all topics are complete

REVERSE BRAINSTORMING

General: Most commonly used as a supplement to regular brainstorming when ideas slow down or stop

Process: Follow Brainstorming process except for items listed below:

1. No warm-up required if preceded by a brainstorming session
2. State reverse or opposite of what you are trying to accomplish
 - Original statement
 - How can we support the suggestion system
 - Reverse statement
 - How can we kill the suggestion system
3. Generate ideas on reverse statement
4. Reverse ideas generated to get potential solution statement
5. Continue on with brainstorming process

NOMINAL GROUP TECHNIQUE

General: A good process to use where status differences exist -or- where some person or groups tend to dominate - also pulls out quiet persons.

Process: Hang pages on wall
Project name
Goals
Problem Definition

1. Each person writes ideas on paper or post-it pads without speaking
2. Work around the table - each person presents one idea at a time to the group - until all ideas have been presented - no criticism is allowed. Number all ideas
3. Ideas are recorded on a flipchart as presented - new ideas are added as the initial ideas are presented
4. Discuss ideas for clarification and

understanding - no judgment is permitted
- add any new ideas

5. Stretch for new ideas and add to list

BRAIN WRITING (Brain sketching)

General: A name given to a set of various techniques which involve silent writing and hitch hiking of ideas - also good for status or dominance situations, and pulls out quiet persons.

1. Hang up project name - goals and problem statement on wall
2. Give each person a stack of index cards
- 3a. Each person writes down one idea(s) on an index card(s) and passes it to person on right - who repeats the process - no judgment allowed

- or
- 3b. Each person writes down one idea(s) on an index card and lays it face down in the center of the table
 4. Cards are shuffled - and each person is given a new card to hitch hike on existing or add new idea(s)
 5. Activities continue for 10 to 20 minutes when idea cards are collected
 6. Every person should have the opportunity to view every card (eg every idea)
 7. Above steps can be followed by using sketches for ideas
 8. Number ideas on collected cards

MIND MAPPING

Breaks the concepts of a traditional linear layout for an outline

- Utilizes the power of graphics
 - Organizes ideas as they are presented
 - Fits the mind's pattern of idea generation
 - Generates a picture of ideas
 - Looks like an idea tree
1. Select topic and write it in a small circle at the center of the writing surface
 2. Generate ideas for major topic areas and draw a line out from the circle for each one

3. Generate ideas on each topic by adding lines to the major topic lines
 - Any subset ideas should be a branch of the major set
4. Continue idea generation until page is full or ideas run out
5. You may need to add pages for topic areas if they are big

PICTURES - SKETCHES - DRAWINGS

Builds on - A picture is worth 10,000 words.

Enhances use of the right brain.

The best method to present concepts.

A good method to express a group of related ideas.

Most powerful when used overnight or over a weekend.

Use colors or art supplies.

1. State problem or issue
2. Ask participants to draw a picture that represents their idea(s). Must allow at least 15 minutes.
3. Give each person one or two minutes to present their picture. No criticism allowed. Only limited questions to clarify pictures
4. Can use other methods to force two or three pictures into one -or- distribute pictures among the team and have them build on originals.

IMAGING - VISIONIZING

THINGS

NOTE: REQUIRES SKILLED FACILITATOR

- The most powerful "right brained" idea/concept generating technique
- An extremely strong tool for development of truly new products-processes-systems-organizations
- A good technique for breaking out of paradigms
- Requires a very relaxed-quiet setting for maximum effectiveness
- Should be used for all truly "new projects" OR where breakthroughs are desired
- Sidney Parnes book "Visioning" and tapes are good study guides

IDEA BOOSTER TOOLS

The following idea boosters should be integrated with the idea generation techniques for a mix of thing - question and time. Music should be used when ever possible - but certainly with pictures and visionizing.

AN "IDEA" ROOM
POST IT PADS
EXERCISES
- PHYSICAL
PAPER CLIPS
- EXERCISES
FOAM BALLS
CARTOONS
AIR BALLS
PICTURES
SLINKIES
OBJECTS
BALLOONS
TOYS
FOAM FRISBEES
RUBBER BANDS
RUBBER DUCK
W R I T T E N A R T I C L E S
BOOMERANG
LIGHTS
SMILE BUTTONS
TOOTHPICKS
ERASERS
G A M E S - C A R D S - P I N S
PENCILS
CHECKERS
LISTEN TO MUSIC
SCRABBLE

QUESTIONS

WHO
WHERE
WHAT
WHY
WHEN
HOW

TIME

OVERNIGHT
OVERBREAK
OVERWEEKEND
TAKE A WALK
OVER A MONTH

CREATIVITY HELPERS

- **USE A FLIP CHART PLUS A RECORDER**
- **ROTATE RECORDER**
 - **MAKE BIG → SMALL**
 - **MAKE SMALL →BIG**
 - **MAKE MOVING → STILL**
 - **MAKE STILL → MOVING**
 - **RESEQUENCE**
 - **ROTATE ALL AXIS 90**
 - **GET ONE MORE IDEA**
 - **OSCILLATE TEAM - INDIVIDUAL**
 - **TEAM**
- **ASSIGN PROBLEM(S) TO EACH**

INDIVIDUAL IF TIME IS PRESSING

WISHING - VISUALIZING - DREAMING

HAVE FUN - USE HUMOR

CONCLUSION

This is a varied and flexible list of techniques for you to use. It's up to you - if you want to enhance the probability of achieving "Leap" goals - then you must expand the techniques you use to add "excitement, fun and humor" to the creativity process.

The creative process is the life blood of your organization; therefore, enhancing the creative process will vitalize all elements of your organization. The net result is:

- **A Healthy Organization**
- **Happy Employees**
- **Excited, Very Satisfied Customers**