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Value Engineering WSDOT

Embracing Creativity and Innovation

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What is the Creative Phase?

According to the SAVE International Value Standard and Body of Knowledge the purpose of the Creative Phase is to generate a quantity of ideas related to other ways to perform functions.

Fundamental Question: How else may the functions be performed?

From *Human Motivation*, 3rd ed., by Robert E. Franken:
Creativity is defined as the tendency to generate or recognize ideas, alternatives, or possibilities that may be useful in solving problems, communicating with others, and entertaining ourselves and others.

To be creative… view things in new ways or from a different perspective. Among other things, you need to be able to generate new possibilities or new alternatives.

Typical Outcome of the Creative Phase

- A broad array of ideas
- alternative ways to perform functions

These alternative ideas are meant to improve the value of the project.

Consistent with WSDOT's embrace of practical design ideas for transportation demand management (TDM) and transportation systems management (TSM) should be explored.

Tests of creativity measure not only the number of alternatives that people can generate but the uniqueness of those alternatives. the ability to generate alternatives or to see things uniquely does not occur by chance; it is linked to other, more fundamental qualities of thinking, such as flexibility, tolerance of ambiguity or unpredictability, and the enjoyment of things heretofore unknown.

From *Creativity - Beyond the Myth of Genius*, by Robert W. Weisberg.
..."creative" refers to novel products of value, as in "The airplane was a creative invention."

All who study creativity agree that for something to be creative, it is not enough for it to be novel: it must have value, or be appropriate to the cognitive demands of the situation."

Creative Phase Brainstorming Guidelines

- No Idea is a bad
- No Debating the Idea
- Encourage everyone to participate
- Free Flow ideas
- Build on the Ideas of others
- Be innovative

Applying Creativity Effectively

The creative phase ~ Applies creative methods and techniques to address any given problem. These serve to generate many diverse and innovative Ideas that provide potential for improved processes, methods or services.

> 'Not to be bound by rules, but to be creating one's own rules—this is the kind of life which Zen is trying to have us live.' – David Suzuki

Once the Functional Analysis phase is complete and the given problem has been thoroughly defined, the Creative Phase provides an opportunity to conceive alternate solutions that will accomplish the necessary basic functions . When allowed to be unbound by conventional thinking and to set aside standard practices , rules and matrices and when encouraged and freed from criticism, minds can become powerful tools of innovation.

Themes of Creativity [1]

There are themes that are common amongst the most brilliant minds. Some of these themes include:

- **Problem Sensitivity** – Awareness that a problem exists and being able to state in in a manner that does lead to predetermined solutions
- **Idea Fluency** – Producing a multitude of ideas and be prudent simultaneously.
- **Flexibility** – Openness to ideas no matter how wild they may seem, and the ability to think quickly and play with variables and scenarios.
- **Originality** – Ability to associate unrelated ideas and fuse them into new solutions.
- **Imagination** – Approach problems using balanced creativity.
- **Innovation** – Improve on the ideas of others
- **Fundamental Knowledge** – Having a wide range of knowledge sources to draw upon.
- **Curiosity** – Desire to know why and how things work
- **Permissive Environment** – An atmosphere that encourages, curiosity, free thought and innovation, supported by respect and open communication

Creative Obstructions or "Roadblocks"

The majority of the time, most of us are not challenged to be creative in their day to day routine and form habitual ways of thinking about and performing tasks. When charged to be creative, it is very difficult to remove ourselves from the rut of our habitual routines and ways of thinking. This very normal human condition forms a Roadblock when faced with problems that require innovative solutions. These roadblocks must be recognized and counteracted in order to be overcome.

10 Mental Roadblocks to Creativity As identified by Roger Von Oech - American Toy Maker

1. The Right Answer (there is no ONE right answer)
2. That's not Logical (It doesn't have to be)
3. Follow the Rules (Just say no to this)
4. Be Practical (Just say no to this too, What-if's = creative thought)
5. Avoid Ambiguity (Ambiguity = creative thought)
6. To Err is wrong (don't be afraid of failure)
7. Play is frivolous (Try new things !)
8. That's not my area (get out of your comfort zone, this is where some of the most creative ideas come from)
9. Don't be foolish (don't be afraid to laugh and loosen up)
10. I'm not creative (You are if you LET yourself be)

Credit: SAVE International (efforts are made to insure that the content is consistent with SAVE International guidance.

WSDOT Value Engineering Website
http://www.wsdot.wa.gov/Design/ValueEngineering

[1] Paraphrased from Value Optimization for Project and Performance Management, Robert B. Stewart, PMP, 2010 john Wiley & Sons, Inc.

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