



PROCESS INNOVATION

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FUNDAMENTAL CONCEPTS

WHAT IS CREATIVITY? WHAT IS INNOVATION?

The field of Performance Excellence has evolved significantly over the past three decades.

While Problem Solving for Continuous Quality Improvement is still at the heart of any Performance Excellence process, it is not sufficient to ensure that organizations will survive and succeed in today's very competitive marketplace.

Continuous Quality Improvement focuses on Faster, Better, Cheaper performance.

The current need is Faster, Better, Cheaper, Different. This calls for Continuous Innovation.

Innovative organizations are working to combine the left-brain incremental approach to Continuous Quality Improvement with revolutionary right-brain ideas that will help them surpass their competition in the marketplace. The cutting edge for this approach is an organization-wide application of Creativity Tools to traditional Problem Solving methodologies.

Creativity, at its most basic level, is the process of generating many ideas.

Innovation is the process of selecting / combining, harvesting, refining, and translating the best ideas into reality.

Both are equally important for organizations to be competitive.

THE OLD APPROACH TO CREATIVITY

The old approach to creativity was myopic.

- Only a few people in the organization were considered the creative ones
- Breakthrough ideas were needed only in the strategic areas of the business
- Engineers were routinely brought in to fix the major manufacturing or customer problems
- Consultants were appointed to help achieve a breakthrough in products or markets.

Why does this approach not work today?

In most businesses Customer Satisfaction has become a moving target. What satisfied customers yesterday, no longer satisfies them today. Competitors have already copied the differentiation / breakthrough. Further, there is no room for error right from product / process launch.

THE NEW APPROACH TO CREATIVITY

Managing for Innovation is no longer an option for organizations pursuing Performance Excellence. Breakthroughs are required in every corner of the organization.

- Specialists in breakthroughs (namely, engineers and consultants) are still critical. But more people must get involved in creatively tackling the increasing number of challenges / problems that are emerging
- The creativity that exists naturally within everyone in the organization must be harnessed
- A common approach for dramatic improvement must be created.

Being creative involves:

- Consistently producing a lot of ideas
- Putting existing or new ideas together in different combinations
- Breaking an idea down to take a fresh look at its parts
- Making connections between the topic at hand and seemingly unrelated facts, events, or observations
- Designing an innovative solution.

CREATIVITY TOOLS

The Creativity Tools provide a structured way for an individual, group, or team to combine intuition, imagination, and personal experience to create interesting, and eventually innovative concepts and solutions. These innovative solutions can be aimed at virtually any target:

- Reducing waste and cost
- Developing new products and services
- Resolving chronic customer complaints
- Dramatically reducing cycle time
- Dramatically improving existing processes
- Developing new processes

The Creativity Tools also enhance the creativity process by:

- Breaking thinking patterns
- Consistently inspiring breakthrough ideas
- Enhancing traditional brainstorming methods
- Igniting the dormant creativity resident in employees
- Turbo-charging Continuous Quality Improvement activities.



PROBLEM REFORMULATION/HEURISTIC REDEFINITION¹

Envisioning a new approach to a problem

Why use it?

To help a team use pictures, questions, and criteria to take a fresh look at the components of a system in order to identify a fundamentally new approach to solving a problem.

PURPOSE HIERARCHY

Thinking on purpose

Why use it?

To identify the full range of possible purpose of an improvement effort in order to choose the one that best fits the needs of the customer and the resources of the project team.

CLASSIC BRAINSTORMING

Creating bigger and better ideas

Why use it?

To get team members to pool their knowledge and creativity, in generating “waves” of ideas in a process that is free of criticism.

BRAINWRITING 6-3-5

Building on each other’s ideas

Why use it?

To provide the time and structure for team members to thoughtfully generate a large number of ideas and to find unusual connections and combinations among those ideas.

IMAGINARY BRAINSTORMING

Brainstorming with a twist

Why use it?

To allow teams or individuals to break traditional patterns of thinking that can prevent creative solutions.

TILMAG¹

Building ideal solutions through associations and analogies

Why use it?

To systematically focus on those associations and analogies that will lead directly to a team's ideal solution.

WORD ASSOCIATIONS AND ANALOGIES

Making connections and comparisons

Why use it?

To move a team that is trapped in traditional thinking by using random, unrelated words as a way to stimulate fresh perspectives and new solutions.

MORPHOLOGICAL BOX

Anatomy of a solution

Why use it?

To map out all the combinations of potential solutions that address the essential parts of a problem.

QUALITY IMPROVEMENT TOOLS

Flow Diagrams
 Brainstorming
 Cause-Effect Diagram
 Data Collection
 Graphs and Charts
 Stratification
 Pareto Analysis
 Histogram
 Scatter Diagrams
 Box Plots

Frequent	Circumstantial	None	Frequent	Circumstantial	Circumstantial	Frequent	None	None	None
Frequent	None	None	None	Circumstantial	Circumstantial	None	None	None	None
Frequent	None	None	Frequent	Circumstantial	Circumstantial	Frequent	Circumstantial	Circumstantial	Circumstantial
Circumstantial	Frequent	Frequent	None	None	Circumstantial	None	None	None	None
Frequent	None	None	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent
Frequent	None	None	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent
Frequent	None	Circumstantial	None	None	Circumstantial	None	None	None	None
Frequent	Frequent	None	Frequent	Frequent	Circumstantial	None	Frequent	Frequent	Frequent
Circumstantial	Frequent	Circumstantial	None	None	None	None	None	None	None
Frequent	None	None	None	Circumstantial	None	Circumstantial	Circumstantial	Circumstantial	Circumstantial
None	None	None	Frequent	Frequent	Frequent	Frequent	Frequent	Circumstantial	Frequent
None	None	None	Frequent	Frequent	Frequent	None	Circumstantial	None	Circumstantial

STEPS OF PROBLEM SOLVING

- List and prioritize chronic problems
- Identify the project team
- Analyze symptoms
- Formulate hypotheses of causes
- Test hypotheses
- Identify root causes
- Evaluate alternative solutions
- Develop solutions and controls
- Address resistance to change
- Implementation controls
- Check performance
- Monitor control systems

CREATIVITY TOOLS

Problem reformulation/
heuristic redefinition¹
 Purpose hierarchy
 Classic brainstorming
 Brainwriting 6-3-5
 Imaginary brainstorming
 TlImag
 Word associations
and analogies
 Morphological box

None	Circumstantial	Frequent	None	None	None	None	None	
Frequent	Frequent	None	None	None	None	None	None	
None	None	None	None	None	None	None	None	
None	None	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	
None	None	None	None	None	None	None	None	
None	None	None	None	None	None	None	None	
None	None	None	None	None	None	Circumstantial	Circumstantial	Circumstantial
None	None	Frequent	Frequent	None	Frequent	None	Circumstantial	
None	None	Frequent	Frequent	None	Circumstantial	None	Circumstantial	
None	None	None	None	None	Circumstantial	None	Circumstantial	
None	None	None	Circumstantial	None	None	None	None	
None	None	None	Circumstantial	None	None	None	None	



Frequent application of tool



Circumstantial application of tool