# COMPENDIUM OF CREATIVE PROBLEM SOLVING METHODS

**METHOD**  **1**  **2**  **3**  **4**

Top phase banner:
- making sense out of the jumble
- narrow to fine point
- **diverge** — blow it out
- **converge** — reign it in / the best ideas
- explore approach to plan
- lead courageously
- doing it
- cycle repeats

## Idea Sandbox
Stay Informed (monitor) — situational awareness | Problem Recognition | Problem Definition | Generate Alternatives | Decision Making | best ideas | Plan Crafting | Be The Champion | Implement | Stay Informed (monitor)

## Walt Disney Creative Strategy
state the goal in positive terms | Dreamer "Want To" | Realistic "How To" | Critic "Chance To" | define the context in which it is workable and problematic
establish time frames and milestones for progress

## Roger von Oech
Explorer | Artist | Judge | Warrior
"A Kick In The Seat of the Pants"

## Alex Osborn
Fact Finding | Gather & Analyze Pertinent Data | Idea Finding | Select, Add, and Reprocess Ideas | Solution Finding
Problem Definition | Preparation | Idea Production | Idea Development | Evaluation | Adoption
- Picking out and Pointing Up Problems
- Thinking Up Ideas & Possible Leads
- Verifying Tentative Solutions
- Deciding & Implementing Final Solution

## John Adair
Define Objective | Collect Information / Develop Options | Evaluate and Decide | Implement / Monitor Consequences / Sense Effects

## (Source unknown)
Focus | Predict | Choose / Agree | Decide | Organize / Prioritize / Plan
(list: Focus, Predict, Choose, Agree, Decide, Organize, Prioritize, Plan)

## Human Factors In Innovative Problem Solving
Divergent Phase / Convergent Phase
diverge → converge

| Mess Finding | Data Finding | Problem Finding | Idea Finding | Solution Finding | Acceptance Finding |

- Divergent Phase:
  - Experiences, roles, and situations are searched for messes... openness to experience, exploring opportunities
  - Data are gathered; the situation is examined from many different viewpoints: information, impressions, feelings, etc are collected
  - Many possible statements of problems and subproblems are generated
  - Many alternatives and possibilities for responding to the problem statement are developed and listed
  - Many possible criteria are formulated for reviewing and evaluating ideas
  - Possible sources of assistance and resistance are considered; potential implementation steps are identified
- Convergent Phase:
  - Challenge is accepted and systematic efforts are undertaken to respond to it.
  - Most important data are identified and analyzed
  - A working problem statement is chosen
  - Ideas that seem more promising or interesting are selected
  - Several important criteria are selected to evaluate ideas. Criteria are used to evaluate, strengthen, and refine ideas.
  - Most promising solutions are focused and prepared for action; specific plans are formulated to implement solution

Creative Problem Solving: The Basic Course by Scott Isaksen and Donald Treffinger © 1985

## Design Thinking
Scope | Research | Prototype | Implement
- Scope: What kind of chair (scope)? Designers need constraints. How will I use the chair? Where will it go? These constraints set the scope of the problem and the designer can begin to get creative.
- Research: Look at more chairs (research). Designers look for inspiration. A team of designers will venture into the field, observing new chair designs, trends, and inspiration from industries far removed from the process. At this point, the design team has many ideas.
- Prototype: The drawing board (prototype). With several possible ideas for the chair, the designer will quickly sketch/model each idea. Prototyping the idea makes it tangible, facilitating new ideas, revisions, and progress.
- Implement: The perfect chair (implement) After several rounds of prototyping and revisions (and perhaps more research!), the designer will have a few solid creations from which to choose.

## Imagination Engineering
Surveying | Building | Waymarking | Navigating
- Surveying: Establish destination and surrounding, notice what influence the decision or problem
- Building: Creativity techniques used to overcome the obstacle.
- Waymarking: Transform the basic route into a fully working transportation system.
- Navigating: Using the path we built. Put ideas to use to get a return.
Brian Clegg / Paul Birch

## OODA Loop
Observe | Orient | Decide | Act
- Observe: Observe your surroundings, gather information
- Orient: Orient this data with previous experiences
- Decide: Decide the best path of action

## PDCA Cycle
Plan | Do | Check | Act

## Decision Quality
Frame | People | Alternatives | Values | Information | Process
- Decide on how to best frame the problem. The best people to be involved, and the best process to generate alternatives
- Most ideas require follow-up research to determine what's logistically possible, practical. Information is this stage.
- Values are what your company uses to measure what's important. Use these to filter out the better alternatives
Kevin Hoffberg

## ?WhatIf!
Insight | Ideas | Impact | Impact | Inspiring Opportunities
- Insight: What is the issue? Opportunities?
- Ideas: Having ideas about how to make these opportunities work for you.
- Impact: Choosing what creates energy...
- ...and doing something with them. Letting it rip!

## "A3 Process" Toyota
Identify Problem or Need | Understand Current Situation / Root Cause Analysis | Determine Counter-measures / Develop Target State | Create Implementation Plan / Develop Follow-Up Plan | Discuss Plans with Affected Parties / Get Approval (if needed) | Implement | Evaluate Results
- (1) Specify the outcome, content, sequence, and task of work activities
- (2) Create clear, direct connections between requestors and suppliers of goods and services
- (3) Eliminate loops, workarounds, and delays
- Observe, document, quantify
- Why x 5
- Changes to take place to get closer to ideal situation
- Represented as a diagram. Specific measures listed, expected improvement predicted specifically and quantitatively
- Who, what, when, outcome
- A critical step in the learning process of problem-solvers is to verify whether they truly understood the current condition well enough to improve it. Therefore, a follow-up plan becomes a critical step in process improvement to make sure the implementation plan was executed, the target condition realized, and the expected results achieved. You can state the predicted outcome here rather than in the target condition, if you prefer.

Color coding within the various methods is meant to show what matches with the Idea Sandbox process.
When steps are stacked the top step would come before those below it.