> **OBJECTIVE FINDING** *identify the goal, wish or challenge*

> **FACT FINDING** *gather the relevant data*

> **PROBLEM FINDING** *clarify the problems that need to be solved in order to achieve the goal, wish or challenge*

1. EXPLORE THE CHALLENGE

IDEA FINDING
generate ideas that solve the identified problem

2. GENERATE IDEAS

> **SOLUTION FINDING** *move from idea to implementable solution, developing the criteria for success*

> **ACCEPTANCE FINDING** *determine who is responsible and what is needed to implement the solution in practice*

3. PREPARE FOR ACTION

Thelonius Monk like many other Jazz musicians develops his music during improvisational sessions. Ideas are implemented immediately, tested and improved until the music 'works'. Solutions need to be found for musical problems like expressing a certain mood or feeling or for going from one tempo to another. During solos, individual musicians are given the floor to show their skills and creativity. Creative processes are all about postponing judgement, fresh ideas need a safe environment and time to grow into better ideas. Photo: Eugene Smith 1959.

CREATIVE PROBLEM SOLVING

What is the purpose of the approach?
The purpose of Creative Problem Solving is to help you to unleash your creativity by freeing your mind of limitations. CPS stimulates you to find 'out-of-the-box' solutions through free association and/or free idea generation. The ideas you come up with do not have to logically connect to the given problem or situation.

Process description
CPS consists of a three-stage process that mimics your natural creative process, following six explicit steps:

STAGE 1: EXPLORE THE CHALLENGE
STEP 1
Objective finding > identify the goal, wish or challenge
STEP 2
Fact finding > gather the relevant data
STEP 3
Problem finding > clarify the problems that need to be solved in order to achieve the goal, wish or challenge

STAGE 2: GENERATE IDEAS
STEP 4
Idea finding > generate ideas that solve the identified problem

STAGE 3: PREPARE FOR ACTION
STEP 5
Solution finding > move from idea to implementable solution, developing the criteria for success
STEP 6
Acceptance finding (plan for action) > determine who is responsible and what is needed to implement the solution in practice

Creative Problem Solving (CPS) is a structured approach for generating novel and useful solutions to problems. The approach helps you redefine your design problems, come up with breakthrough ideas and then act on these new ideas.

During the second phase, you can employ several heuristics to stimulate creativity and fuel the idea generation process:
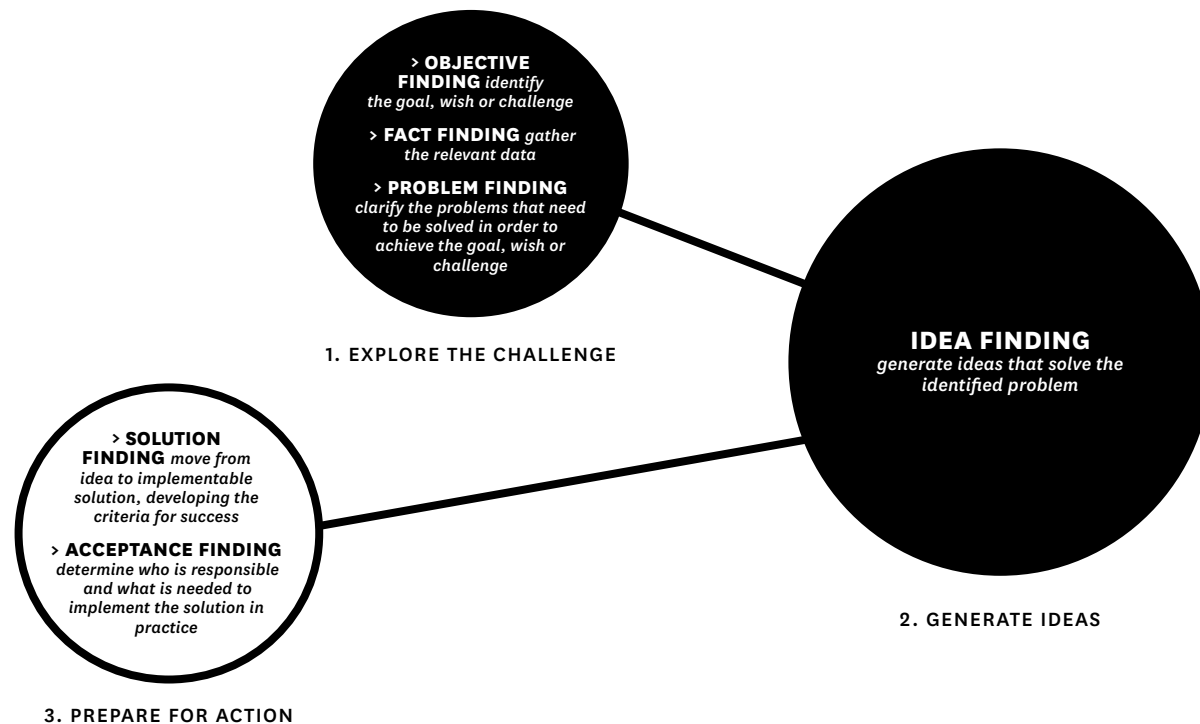
1. INVENTORY:
   collect and recall all existing information concerning the issue
2. ASSOCIATIVE:
   expand ideas by making associative links to new ideas, for example by brainstorming in a design team
3. CONFRONTATIONAL:
   identify and break down assumptions to get to new ideas, then force-fit these into the problem at hand, such as by using Synectics
4. PROVOCATIVE:
   ask 'what if not …?' or 'what else …?' You can spark new insights by using analogies, metaphors and random stimuli, such as picking a word from the newspaper
5. INTUITIVE:
   look at your problem or challenge in a non-structured and non-rational way, using your experience and direct and personal inspiration
6. ANALYTICAL-SYSTEMATIC:
   systematically make an inventory of possible solutions and make systematic variations and combinations.

Tips & Concerns
- In order to apply CPS successfully you should create a 'safe' environment where team members and other stakeholders can come up with out-of-the-box ideas.
- Criticism should be postponed and associations stimulated. If for instance a client states that he would not like to venture into a certain strategic direction, he might obstruct the creative process and block designers by demanding that they look for the right solution in the direction that he *does* like.
- An 'undesirable' idea can act as a steppingstone towards a 'desirable', implementable solution.
- In general, all rules for creative techniques apply here, such as a warm up and postponing criticism.

Limitations of the approach
- CPS requires a genuine interest in out-of-the-box solutions. Do not use the approach to justify existing ideas.

REFERENCES & FURTHER READING: De Bono, E., 1973. *Lateral Thinking: Creativity Step by Step*. New York, NY: Harper & Row. Osborn, A., 1953. *Applied Imagination: Principles and Procedures of Creative Problem Solving*. Buffalo, NY: Creative Education Foundation Press. Tassoul, M.*, 2006. *Creative Facilitation, a Delft Approach*. Delft: VSSD Delft. / Roozenburg, N.F.M. and Eekels, E.*, 1998. *Product Ontwerpen: Structuur en Methoden*. 2ⁿᵈ ed. Utrecht: Lemma.