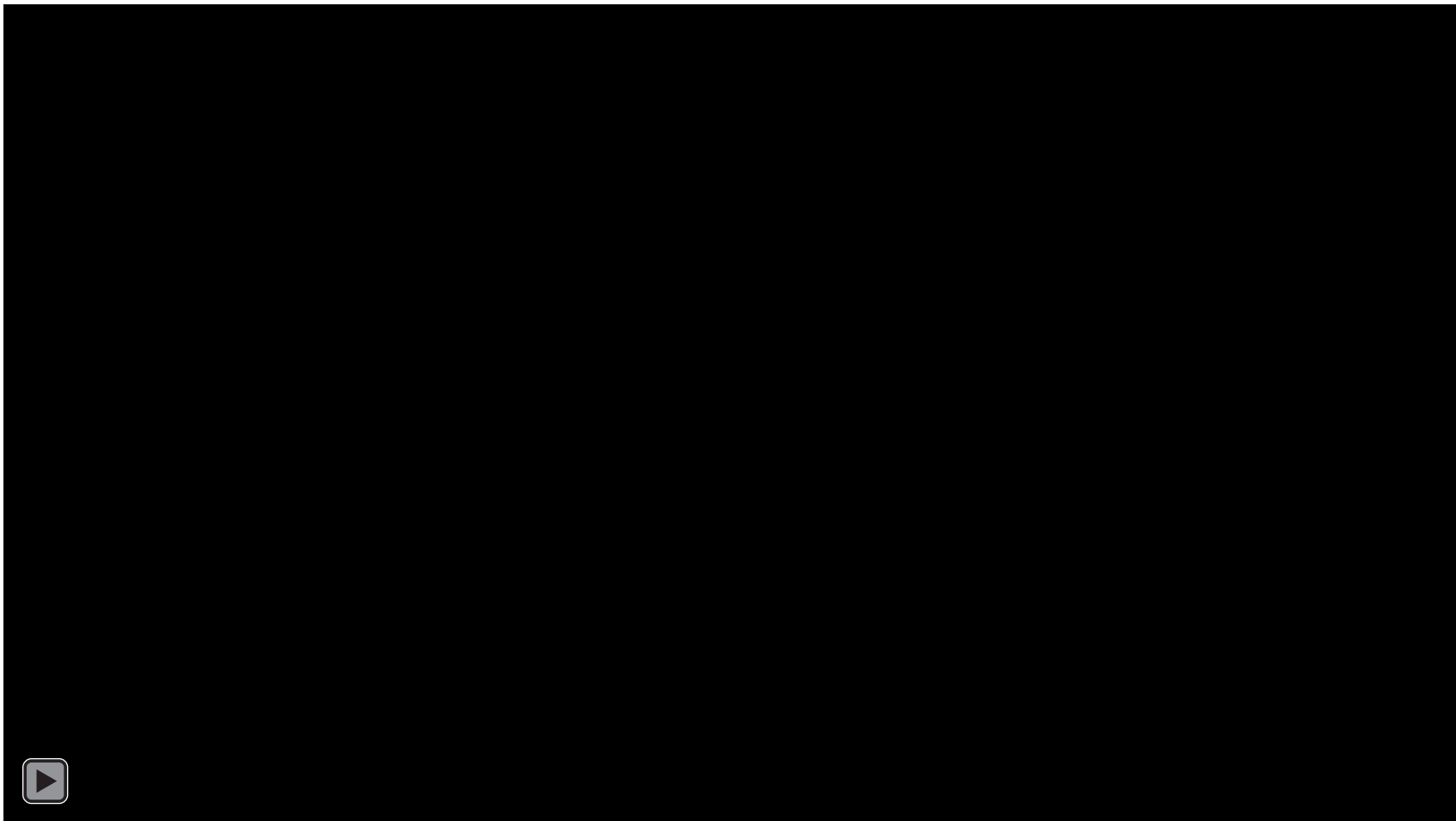# Creativity techniques

Lect.dr.ing. Laura Trifan

„We can't solve problems by using the same kind of thinking we used when we created them”

(Albert Einstein)

buzz-word

SME

innovation

originality

creativity

market

large company

organization

clients

R&D department

generating ideas

self-sufficiency

Innovation

- It is the action of "making a change, introducing a novelty in a field, in a system, etc.; of renewing" [DEX, 1996]
- "creative destruction", in the sense that the new replaces the old structures (Joseph Schumpeter)
- Innovation has a lower degree of originality, it is the takeover of existing concepts at the level of an organization (De Bono)
- Open innovation – interactive creation of value in the innovation process (Ralf Reichwals, Frank Piller)
-                  - i.e. innovation based on the partnership between industry, universities, technology and research centres (Brussels report, 2004)
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Innovation

- In an interview in the Süddeutsche Zeitung (Oct.2009), De Bono said that we need a ministry of thought

- At the opposite pole: the opinion of the physicist Jonathan Huebner – 2005 – the article "A possible declining trend for worldwide innovation" – in which he estimates that 85% of humanity's innovative capacity has already been reached, and if innovation follows the normal distribution - in 2038 it would tend towards zero (as in the beginnings of mankind)

Creativity

- **It is in the first instance, a process of reordering / a new ordering of known elements, with the aim of producing a new idea that is valuable and useful for the one who generated the idea, but not necessarily for other people**

- **The process of raising awareness of the existence of problems, deficiencies, a lack of knowledge or elements; identifying the difficulty, looking for solutions**

Creativity techniques…

- working methods that stimulate or regulate the development of creative processes (deliberate creative thinking)

- contain the working steps in the creative process

- give a targeting, not a limitation

- tools of thought, which help the brain to work

- they all work according to the same principle: they let the thinking become chaotic

Creativity techniques...

- if solutions could always be found through rational, structured thinking, then we would no longer need creativity and therefore no creativity techniques

- some people think chaotically, others easily switch from rational to chaotic thinking

- most people are accustomed to think rationally and linearly - solving problems is done like solving a mathematical equation. This process has some advantages, but it does not produce new ideas

Creativity techniques…

…are divided into 2 groups:

the first pushes towards chaotic (intuitive) thinking

 the second group proceeds systematically

Creativity techniques...

Intuitive

- Brainstorming
- Method 635 (Brainwriting)
- Brainwalking
- Parallel Thinking (6 Thinking Hats)
- Formation of analogues
- Mindmapping + Ishikawa Diagram (of the fish bone)
- Synectica
- Bionics
- Representation of plasticine
- Lateral thinking
- Simultaneous© thinking

Methodical

- Morphological analysis (structured research)
- Progressive Abstraction
- Cascading questions
- Collection of ideas
- Analysis of some stimulus words
- Checklist

Lateral thinking

- concept invented by Edward de Bono in 1967
- taken over by the Oxford Dictionary
- definitions (given by the author himself):
- "You cannot dig a hole in another place, digging the same hole deeper and deeper" - the interpretation: to strive and persist in a certain direction may be less useful than changing the direction
- "Lateral thinking is for changing concepts and perceptions"
-

Lateral thinking

- **A technical definition: "In any system with self-organization there is a need to get rid of a local optimum in order to move towards a more global optimum. Lateral thinking techniques, such as the technique of provocation, are intended to contribute to this change."**

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Parallel thinking

- It can be best understood in contrast to traditional thinking based on argumentation and contradiction – it does not build, but only seeks the Truth.

- Parallel thinking means cooperation and coordination, all parties look in the same direction, statements are not argued and are not disputed. The conclusions take shape at the end.

- Another phrase: "Think outside the box"

SIX THINKING HATS

By Edward de Bono
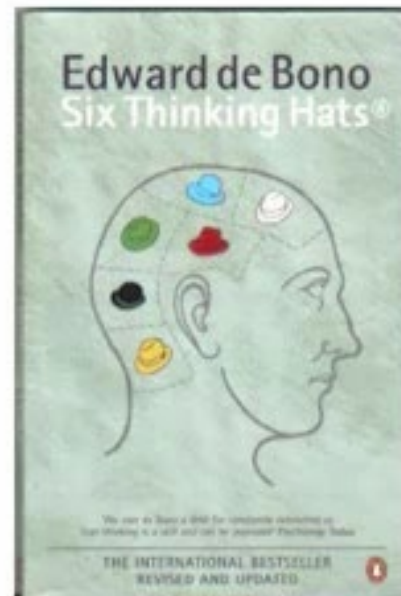
Morphological analysis (structured research) – the morphological box

- 1966 – after Fritz Zwicky.

- "structured research".

- describes the most important parameters of a product, activity or service, which it orders in a coordinate system, in order to systematically investigate the relations between variables. Thus, a series of ideas can be quickly developed with the help of a matrix. This model "morphological box" and is the simplest form of morphological analysis.

Morphological analysis - example

1. Definition of the problem: e.g. "detergent packaging"
2. Establishing the main characteristics
3. Determination of weightings
4. Combining solutions
5. Choice of solution

Characteristics/ Sizes	1	2	3	4
Form	Cube	Cillinder	Tetrahedron	Sphere
Material	Cardboard	Plastic	Foil	Wood
Color	Uni	Black/White	Golden	Rainbow
Handle	Torch	Lug	Cord	Belt
Closing	Lid	Cork Stopper	Pouring	Valve
Splitting	Glass	Cântar	Spoon	Tablets
Suplementary unit	Toy	Miracles Box	Container	Bucket

Mindmap (structual diagram)

- method by which the parameters of a problem are structured in the form of an image

- thus the connection between verbal thinking and that in images is made and the performances of human thought are stimulated

- overview of the problem grows and associations offer new solutions

- the method is based on the results of modern research on the brain (differentiation of the functions of the two hemispheres of the large brain)

Mindmapping

Use

In the field of product development, Mindmapping is especially suitable in the early stages for the generation of ideas. The method is also useful in the case of work breakdown structure and processes.

Mindmapping

Material

· Flip-Chart and Moderator (by group) · paper
· Colors

Development

1. Write the theme in the middle of a sheet of paper
2. It encircles itself
3. Starting from this circle, branches are formed, which divide the theme into areas. Associations are created, and from the branches, ramifications can be further formed in order to concretize the partial problem. This process continues until the participants exhaust all ideas on the topic.
4. A keyword is passed on each branch.

Mindmapping

Basic rules

· the structuring is done from the abstract to the concrete
· from general to specific

Advantages

· this technique of creativity can also be used individually, not just in a group
· a good overview of the problem
· easy to learn and apply

· there are applications that can be downloaded for free from the internet

Disadvantages

· beginners do not find it easy, at first, to identify keywords
· concrete keywords often appear before that branch is created. These keywords should be noted on a separate sheet and subsequently passed into the mind map

Ishikawa Diagram

- Derives from mind map

- Vms. fish bone diagram or cause-and-effect diagram

- was developed in the 40s by Karuo Ishikawa

- the 6 categories established by Ishikawa, the 6M (Man, Management, Method, Machine, Material, Mother Nature – Environment)

- subsequently, the Ishikawa diagram was taken from the quality management (continuous improvement) and adapted for any kind of cause-and-effect analysis
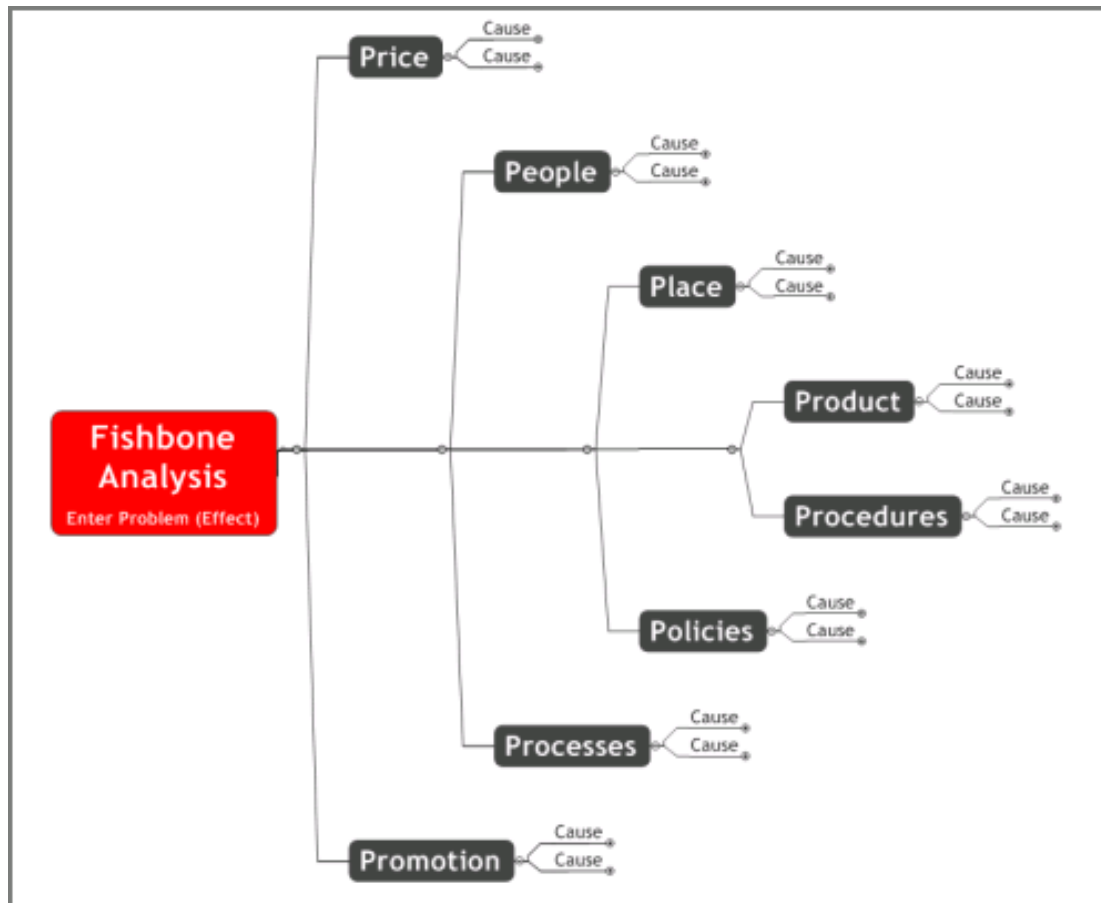
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Ishikawa Diagram/ The 6 Ms

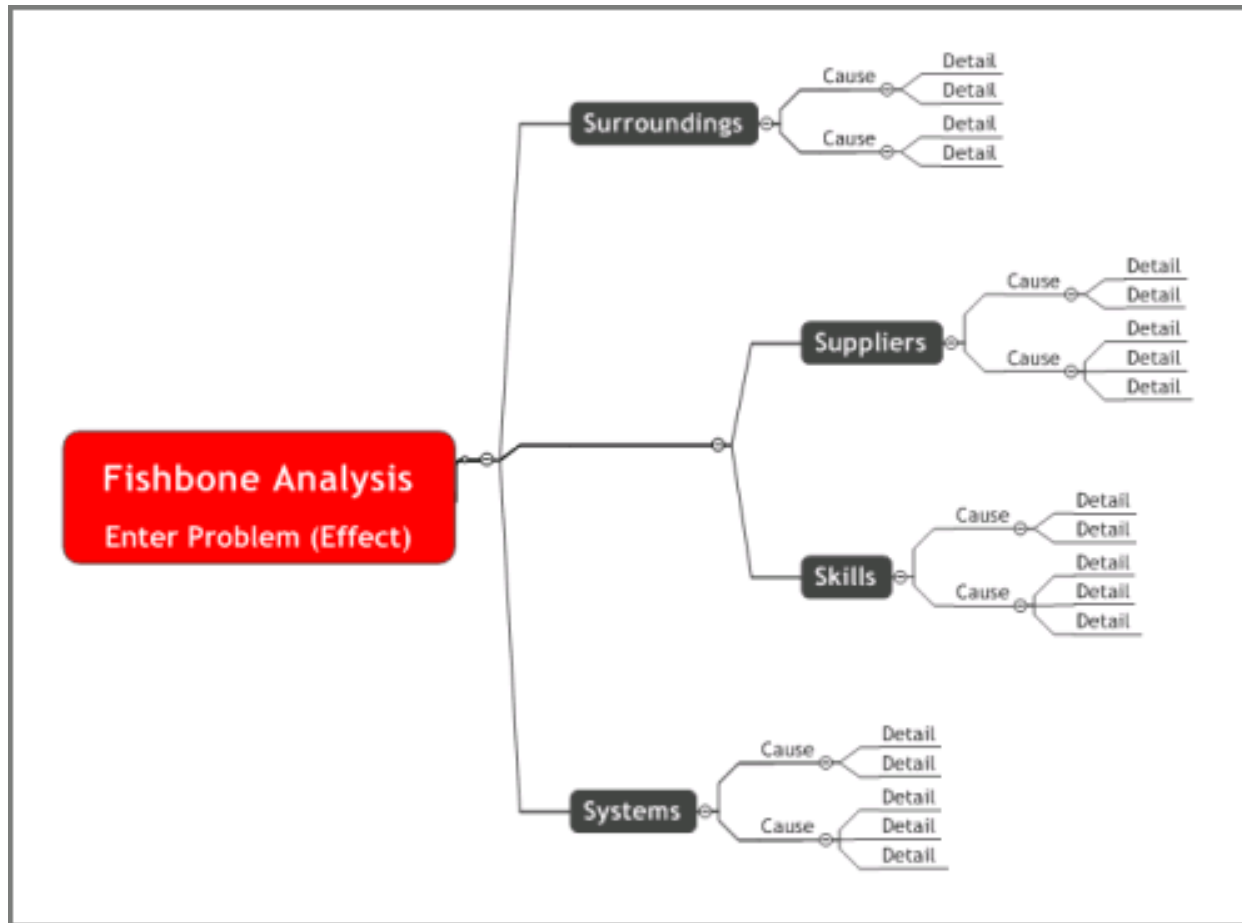**Machine, Method, Materials, Mother Nature, Man, Maintenance**
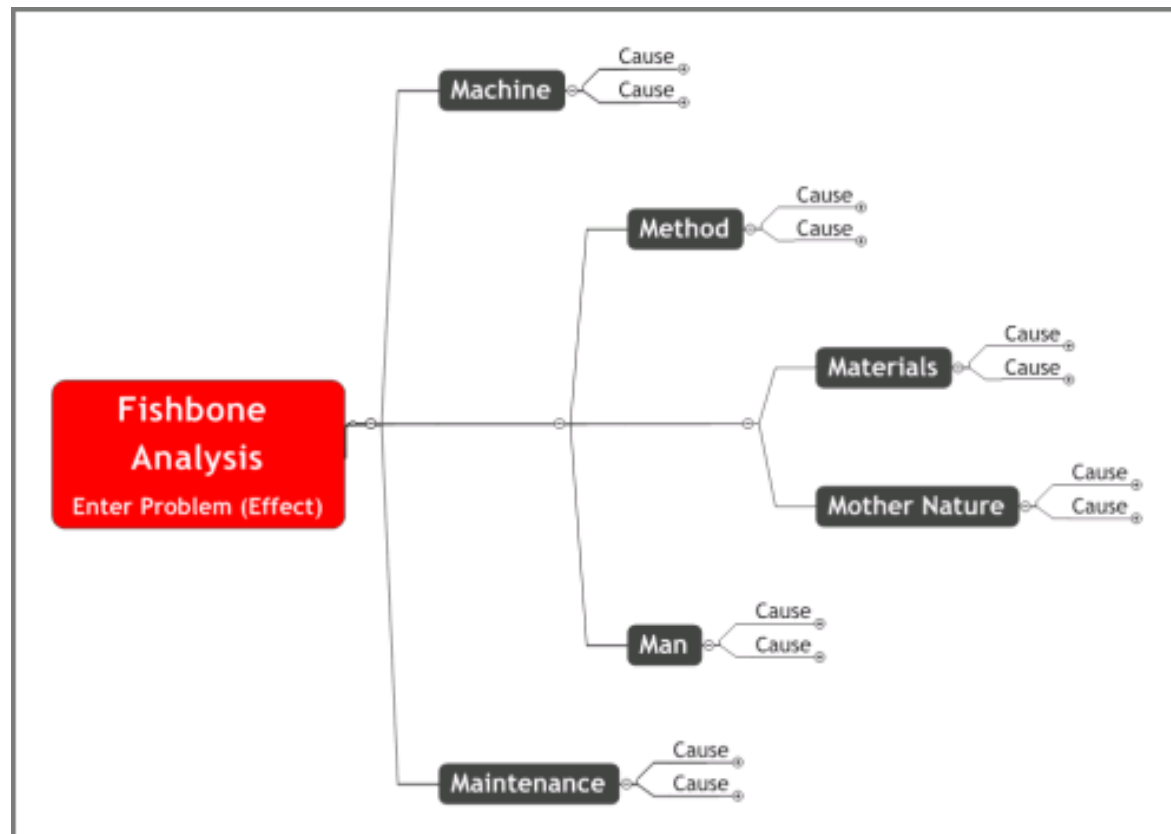
Ishikawa Diagram/ The 8 Ps

Applied in administration, HR and services

Ishikawa Diagram/ The 4 Ss

Mindmapping exercise

Create a mind map for the theme:

„the perfect university course"

Concluzii

- creativitatea se poate deprinde
- tehnicile de creativitate sunt utilizate pentru generare de idei şi pentru rezolvare de probleme
- metodele sunt extrem de complexe
- nu există o metodă perfectă, sunt subiective, importante sunt rezultatele şi drumul până la acestea

Thank you for... creativity!