



# **INNOVATION AND CREATIVITY MANAGEMENT**

## **Training material**

**Part 2**

**INCONEXT PROJECT**

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## **1. Functional creativity: human resources, company's culture and unusual environment**

### **1.1. How the creativity is evaluated and measured in the company?**

To evaluate or measure the creativity creative ideas have to be „**registered**“ in advance. All this is related to the methods, which are used in the company to **induce** creativity, to make creative ideas open and clear to the employees of the company.

When inducing creativity it is necessary to determine the difference between the company's resources. Larger enterprises have more methods to induce creativity. In these companies suggestion boxes are used, which are put in strategical places, screens, booklets are distributed, etc. Of course the situation in SVV is completely different. Only few have a need to induce creativity or to accumulate ideas. This may be so far explained by the fact that smaller enterprises have less human and financial resources for this and this might be achieved more easily through closed organisational relations.

Larger companies usually present the ideas in written form, while the situation in SVV is somewhat different, since ideas here are presented without such formality. However, in all cases the best results may be achieved after the introduction of ideas which are tested not carelessly, but with thorough evaluation. For example, employees sparing much time and energy for suggestion making, often exacerbate if the company fails to revise their suggestions over a certain time period, and in the future these employees may not present any suggestions at all.

Therefore, the company which seeks for productivity must revise the ideas presented without postponing. **Postponing the evaluation does not only harm the employees, but also the company itself.**

The criteria applied to determine whether ideas are valuable, are directly related to the goals of the programme and in most cases they answer the following questions:

- „Will the idea help the company saving money?“
- „Will the idea help the company to improve productivity and the working conditions of employees?“

The interesting fact is that most companies give priority to the ideas which are the result of team work, but not of separate persons.

The last important aspect is a reward system. Two categories exist. First of them is extrinsic rewards, e.g., monetary premiums or bonuses awarded to employees and which are used to get privileges or gifts. The second category involves more symbolic rewards, e.g., „honour plaques“ or public award ceremonies. The employees who have been rewarded for their ideas claim that a symbolic acknowledgement for their work gives the highest satisfaction.

One of the most popular methods for evaluation of ideas and increase of their potential is a “Criterion Matrix”.

„**Criterion Matrix**“ is a qualitative technique of evaluation which works with common and constructive group of persons to quickly recognise which ideas or actions seem to be a perspective subject to certain criteria or features. The Criterion method may be applied in many practical circumstances:

- To generate the ideas using different processes of solution;
- To establish criteria. Usually the following criteria exist: expenses and profit, technical implementation, time restriction, acceptability, novelties, and other criteria characteristic only to certain circumstances;
- To evaluate the ideas according to all criteria. It is recommended to use “+” for more acceptable ideas, and “-” for less acceptable ones. The elements which are usually hard to encode are marked with “?”. This method helps to quickly recognise the perspective ideas;
- A team when changing criteria always has a possibility of transforming the matrix.

Applying these stages the team members obtain a great common understanding about the existing situation. Then, a common agreement is attained. In fact, if a team fails to complete the matrix quickly, this is a signal, that the team is settled incompletely.

## **1.2. How is creativity developed in the organisation?**

Creativity is not only a natural talent, but also a skill, which may be improved and developed by every person over time. In order to develop creativity in the organisation, the behaviour of people should be integrated to the environmental conditions.

The main responsibility in the formation of creativity lies with a friendly organisational culture and therefore on the managers of the organisation as they make fundamental decisions. The initial task of managers is to formulate and announce the valuables discussed. Formally declared valuables of an organisation will have only an effect if they are reflected in all decisions and the behaviour of managers.

To help people increase the potential of creativity, they should be allowed doing what they like. Freedom of choice is what one wishes to have and which leads to a higher engagement from the employees. The employees should be motivated to develop the ideas which they are fascinated by; their internal motivation and creativity at work will grow if the managers create such an environment in which people are able to freely interchange ideas and to analyse common interests.

There are many elements creating environment in which separate individuals and teams are motivated to be creative. They involve the organisational motivation, resources and innovation control means. The organisations should optimize the control stages and to award for creative behaviour and to induce the cooperation into multifunctional work groups.

For example, a **self-leadership** is an important organisational measure assisting in the establishment of a creativity friendly climate in the enterprise. In the organisation, which induces a self-leadership the intensive creativity processes will take place and there will be a smaller gap between available and practiced innovations and creativity. The other fundamental measure to induce innovations and creativity is **work groups**: the employees having the potential of innovations and creativity will actively integrate when they feel the support of a work group. In the inducement of creativity in organisations the role of a manager is also significant, i.e., to help the organisation to endure changes of a dynamics and to present the techniques how to complete work. If all this is implemented successfully, such interventions will help developing creativity.

Creativity and innovative activities of a work place are also affected by certain methods of **leadership**. The managers promoting and supporting innovations and creativity at working place, should follow these basic rules:

- Induce the employees to pursue „status quo“;
- Wide attitude to risk;
- Ability of taking advantage of mistakes in self-improvement;
- Use and share knowledge and information;
- Focusing on continuous learning;
- Fair and informative evaluation;
- Reward for creative work results;
- Use of common management; and
- Self-testing.

The organisations intuitively acknowledge the **significance of training** of employees' creative abilities in creativity enhancing. However technical competencies are necessary, since the creativity skills will not help individuals or groups to make creative decisions and find solutions to problems related with their direct work.

The practice of involvement of labour force into **decision making** may be a very effective way to enhance employee's senses of dependence, commitment and satisfaction with work. This will then lead to an increasement in terms of creativity.

## **2. Creative Techniques for Problem Solving**

Creative problem solving means finding a solution to a problem through reasoning. This approach emphasizes independent search for solutions. However, in addition to gathering knowledge and using reasoning, it also requires creativity which feeds on innovations of a certain product being developed, but this does not necessarily mean that the product has value or is recognized by others. Thus, problem solving becomes creative problem solving only when it is has some value, enables you to solve a specific problem or is recognized by the person who succeeds in improving his/her situation. **Creative techniques for problem solving** can be divided into:

- Creative techniques that are designed to change the existing state of mind into a creative one, for example, after an intensive search for solutions, take a break, have a rest or a nap.
- Creative techniques that are designed to reconsider a problem, for instance, rethink your goals and ask yourself "What am I trying to do here?", which can produce good ideas.
- Creative techniques that are designed to increase the number of fresh ideas. This approach is based on a belief that a larger number of ideas increase the possibility that at least one of them provides some benefit. Some of these techniques involve choosing random ideas (for example, picking up an accidental word from the list), deliberating\_about what similarities undesirable situations share in common and hopefully expecting that the idea is going to resolve the problem.

**The majority of well-known methods and processes, such as Mind Mapping, Brain Storming, Lateral Thinking (Edward De Bono) or Creative Problem Solving Process (Alex Osborn and Sid Parnes), encompass various creativity and creative problem solving techniques.**

The stream of thought is a segment that characterizes the environment of creative problem solving. It occurs automatically, does not require a great deal

of effort and, at the same time, is a very target-oriented state of mind. According to psychologist Mihály Csíkszentmihályi, the stream of thought is a mental state when a person is entirely engaged in his/her activities and is focused on successfully completing them. Looking from this perspective, this is what unites all creative people.

### 3. Individual Creativity Methods

When a company applies creative thinking methods, this allows for the generation of a larger number of innovative ideas and, at the same time, for the development of a culture of innovation. Creative thinking techniques can be used virtually in every area of company activities: in strategy creation, planning, product creation, service enhancement, finance management, human resource management, information management, software design, quality management and the like. The main creative thinking methods are provided below.

#### 3.1. Mind Mapping

Mind Mapping is a method of individual brainstorming devised by T. Buzan (2002). A mind map is a diagram used to represent words, ideas, tasks and other items linked to or arranged around a key word or idea. It reflects semantic or other connections between portions of information. Elements are arranged intuitively according to the significance of concepts and are classified into groupings, branches and areas.

Mind maps are usually used for studying, discussing ideas with other team members and improving memory, including visual thinking and problem solving. This tool is also recommended when it is necessary to generate, shape and classify ideas and to present them visually.

**How it works?** Write down the main goal in the centre of a large sheet of paper and circle it. Then indicate the main aspects of the problem on branches extending from the circle. Each branch is divided into smaller branches until the map shows the basic, interrelated ideas. Use a bright marker to underline the core items and to join interrelated points between different branches. This will allow you to see new connections, combinations and ideas. Use the following practical tips:

1. Start in the centre and use 3 colours to write down the main topic.
2. Use images, symbols, codes and different dimensions throughout your map.
3. Select key words and use upper or lower case letters.
4. Use each word/image in a separate line.

5. Connect the lines starting from the central image. Use thick, organic and clear lines that become thinner as they radiate out from the centre.
6. Make the lines the same length as the word/image they support.
7. Use colours to encode.
8. Develop your personal style.
9. Show and emphasize associations.
10. Make everything clear, use radial hierarchy, numerical order or outlines for your branches.

Sometimes it is possible to use the same idea for a couple of times. Link the idea with other fields or show relationships between ideas and branches. Use different colours or font sizes. You can also use drawings, which will make the whole diagram look more attractive.

When the map is ready, you can see the overall picture within the context of the existing problem and can start analyzing relationships between ideas. The use of mind maps can be justified when it is necessary to deal with strategic issues. These maps help to understand complex situations that lack wholeness and are full of contradictions.

### **3.2. Lateral Thinking**

Lateral thinking, which was developed by a renowned psychologist E. De Bono (2000), helps to solve complicated problems using unconventional reasoning. A “digging deeper” metaphor is the best way to explain this thinking method. Vertical thinking is digging the same hole deeper until we have a clear yes or no, whereas, lateral thinking means digging a hole in a different place, i.e. looking for a solution in a different place.

This is non-linear thinking that does not use step-by step logic, deviates from the course, tries to see things from a different perspective and enables to see problem from new directions. Instead of using conventional logic, other methods are selected, for instance, provoking, thinking in metaphors or imagining impossible things. Lateral thinking allows you to find a great deal of alternative solutions to one particular problem, to turn problems into possibilities and to generate a number of fresh and practical ideas.

This type of thinking requires flexibility and open-mindedness.

### **3.3. Checklist**

The checklist method is usually used for product improvement. The method focuses on modification of products, services or their properties based on the checklist of verbs provided below.

**Table 2.** The Checklist of Verbs

<b>Verb</b>	<b>Explanation</b>
Put to other uses?	As it is? If modified?
Adapt?	Is there anything else like this? What does this tell you? Is the past comparable?
Modify?	Give it a new angle? Alter the colour, sound, odour, meaning, motion and shape?
Magnify?	Can anything be added, time, frequency, height, length, strength? Can it be duplicated, multiplied or exaggerated?
Minify?	Can anything be taken away? Made smaller? Lowered? Shortened? Lightened? Omitted? Broken up?
Substitute?	Different ingredients used? Other material? Other processes? Other place? Other approach? Other tone of voice? Someone else?
Rearrange?	Swap components? Alter the pattern, sequence or layout? Change the pace or schedule? Transpose cause and effect?
Reverse?	Opposites? Backwards? Reverse roles? Change shoes? Turn tables? Turn other cheek? Transpose?
Combine?	Combine units, purposes, appeals or ideas? A blend, alloy, or an ensemble?

*Reference: J.Gurevičius (2005).*

### **3.4. Reversal Procedure**

The reversal procedure allows you to look at the problem from a different angle. It is necessary to reverse the question, idea or goal or to show their negative side, i.e., the opposite side, in order to generate more ideas and explain the problem. Such thinking enables the team to create ideas for the existing problem or to look at the problem from a different perspective and to change attitudes towards it. Changes in attitudes mean changes in reality. Different attitudes lead to different results.

This method makes it possible to extend the list of ideas that was prepared during the brain storming, to search for additional processes or quality

improvement possibilities or to understand the essence of the problem and to discover a larger number of possible solutions.

The main benefit provided by the reversal procedure is that presented facts help participants to see the situation from a different perspective. Reversal of order allows avoiding standard tendencies and thinking habits. This reinforces the ability to generate new ideas and makes people think outside of the box.

This method can be employed individually and collectively. It is useful for finding solutions to the problem without confronting obstacles. However, the method is ineffective when new products are being created.

Managers, employees, teachers, trainees, researchers and etc. at all levels can employ the reversal procedure. It is usually used in the following areas: research, engineering and project management, marketing, manufacturing, services and customers, quality metrics and change management.

### **How to implement in practice?**

*Step 1.* To identify the main challenges.

*Step 2.* To provide a list of attitudes related to the problem.

*Step 3.* To reverse attitudes and statements.

This kind of reversal does not have to be the opposite to the aspects of a certain problem. You can change verbs, goals or any words used in the definition. Thus, reversal can be widely defined as any kind of reversal of problem statement. Write down opposite attitudes of each statement.

Examples of reversal are provided below:

If it was necessary to improve the company's position, the opposite attitude would be "What can we do in order to make it worse?" If it was necessary to improve communication within the company, the opposite attitude would be "What can we do in order to make it worse?"

*Step 4.* Each opposite attitude is used for creating new ideas. Discuss how it is possible to implement each reverse in practice.

## **4.5. Practical Tips for Increasing Creativity**

One of the most renowned experts of creative thinking Michael J. Gelb provides five creativity competencies in his book "Innovate Like Edison: The Five Step System for Breakthrough Business Success". The first three competencies focus on the development of attitudes and skills that are necessary for innovation literacy, whereas, the last two competencies deal with the creation of an innovative culture.

**1. Solution-centered mindset.** It is necessary to combine your passion with goals, to engage in continuous learning and experimentation, to deal with failures in an optimistic way, to maintain the balance between optimism and discipline and to develop strict objectivity towards issues one may encounter on a daily basis in the future.

**2. Kaleidoscopic thinking.** It is necessary to write down creative ideas, to generate as many ideas as possible, to find ways how to apply or join them, to develop visual thinking through mind mapping.

**3. Full spectrum engagement.** It is necessary to optimize energy resources and to combine obviously different things, such as seriousness and play, intensity and relaxation, loneliness and teamwork. For instance, if you take a 10-minute break every 60-90 minutes, you will be able to recall everything better, be smarter and increase the possibility of breakthrough.

**4. Mastermind collaboration.** It is necessary to gather the team of experts specializing in different areas, to promote an open environment for idea exchange and to provide rewards for cooperation.

**5. Super value creation.** It is necessary to create new consistent value for the client, to target the right audience, to establish niches and to motivate the team to think creatively on how to exploit the existing/new ideas and to focus on the most popular trademarks in the market.

A large number of creative organizations promote free thinking. Thomas Edison was one of the most productive inventors in the world and held patents on 1093 inventions, which include a phonograph, dictaphone, kinescope, electrical chair and others. In 1876 he established an industrial technological laboratory, which was the first enterprise to search for technological innovations and to control their production. Edison's employees were aware of his genius and sociability. His former staff members Dyer and Martin wrote: "He discussed things and argued about them as if he and others were at the same level". When employees at all levels know that their ideas are valued and respected, they begin to develop constructive thinking.