INNOVATION AND CREATIVITY MANAGEMENT

Training material

Part 3

INCONEXT PROJECT

Supported by:

THE LEONARDO DA VINCI PROGRAMME

Project No. LLP-LdV-TOI-2010-LT-0074

Švietimo ir kultūros GD
Mokymosi visą gyvenimą programa

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.

1.1. 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.

1.2. 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.

1.3. 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

Verb	***Explanation***
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).

1.4. 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.

1.4.5. Practical Tips for Increasing Creativity

One of the most renowned experts of creative thinking Michael J. Gelb provides five creativity competencies in his book “Innnovate 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-cantered 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.

2. Theories of Innovation Creation

2.1. Definition of Innovations

France began to apply the term innovation five centuries ago. It is usually used to emphasize the process of renewal. In the Lithuanian language you can come across two terms that express this: 'inovacija' and 'naujovė'. There is no universally accepted definition, since innovations can be perceived as the process or as the result of the process. In both cases innovations are aimed at improving the existing products and creating new ones through the use of the latest scientific knowledge, inventions or research results. All these actions are closely related to economic development, profit generation, creation of new business niches or services and other factors that promote competitiveness in the global environment.

Sometimes innovations are associated with entirely new phenomena or items, which is a misleading and narrow-minded attitude. Any improvement and novelty introduced in relation to the optimization of production and management processes and the creation of more effective management laws are regarded as an innovation. Innovative activities are always goal-oriented and focused on the optimization of human activities both in production-organizational and private activities. New operation methods are also considered to be innovations.

2.2. Classification of Innovations

Based on various sources (see the List of References), innovations can be divided according to their:

- content (technological, social, product and complex innovations);
- nature (qualitative and quantitative innovations);
- novelty (brand-new, optimization/improvement-oriented innovations);
- implementation level (innovations of global, national or economic significance and innovations oriented towards individual enterprises and persons);
- final result (fundamental, experimental and basic innovations and the like);
- implementation degree (innovations of single and multiple effect and application);
- impact (economic, social, ecological and integrated impact).

Many different sources treat these components of innovation classifications as specific aspects that show the diverse nature of innovative activities. Inventions and innovations do not come out of nothing, as a rule, they rest on time-tested truths and ideas that are improved to the extent that the obtained result or effect surpass creator's or consumer's expectations.

2.3. Innovation System

The system of innovations refers to the interaction between the internal principles of innovation promotion and the external environment, which allows turning knowledge into services and products, and ensures the successful spread of innovations within activities.

The innovation system consists of the following three components:

- innovation policy;
- infrastructure for innovation development;
- and operating enterprises.

On a frequent basis the innovation policy is supported by national institutions and implemented through strategies, programmes and legal instruments. It is carried out in three directions and involves: promoting a culture of innovations; creating an environment that is favourable to innovations; and directing scientific institutions towards innovation creation and promotion in business.

The innovation infrastructure includes scientific institutes, innovation and business centres, science and technology parks, business incubators, business development agencies, business associations (such as Chambers of Commerce, Industry and Crafts, Confederation of Industrialists and etc.), consulting and financial institutions. In addition to other activities, these organizations provide the following innovation support services to enterprises: notification, partner and technology search, technology, marketing and patent consultations and services, search for funding opportunities for innovation projects and research processes.

Innovative enterprises pursue activities directed towards change and change initiation, all possible information channels, initiative and measured risk, decentralization, teamwork, criticism of bureaucracy and regulation and the like.

All the above mentioned activities are carried out by participants whose functions, interests and motives are described below:

- An owner participates in innovative activities and creates production and financial possibilities that are necessary for the implementation of innovations;
- A director coordinates and supervises the creation of innovative products;

- A creator of ideas participates in innovative activities and is the source of intelligence and knowledge;
- An innovation manager is a connective link between research/scientific and actual activities;
- An employee directly produces the product created by other participants of innovative activities;
- A consumer is the end user of the created product.

An innovative enterprise is always involved in the process of the innovation creation and promotion, searches for new possibilities, creates plans and lays the foundation for new innovations or in other words, is dynamic, active and goal-oriented. It is said that finding something that helps the enterprise reach a certain level is not sufficient to sustain this level for a longer period of time. Only creativity and innovations allow the enterprise to thrive for an indefinite period of time.