

Study Unit 7

Design Thinking: Ideation Phase

Study Unit Outline

- Introduction
- Assessing opportunity do-ability
- Factors hindering/fostering creativity
- Facilitating ideation
- Creativity tools and techniques

Study Unit Duration

This study unit requires a 40 hours of formal study time.

You may spend an additional 3-4 hours for revision

Introduction

The study is about the ideation space which is the second phase of the design thinking method. Thus, you will study how to generate more ideas and select the best. In order to do so you will be familiarized with opportunity do-ability assessment framework and the factors stimulating or hindering creativity. Further, in this study unit you will learn on how to facilitate the ideation process using different creativity tools and techniques.

Learning Outcomes of Study Unit 7



Upon completion of this study unit, you should be able to:

- 7.1 List the major factors which stimulate/hinder creativity at individual and organizational levels,
- 7.2. Describe the divergent and convergent phases of the ideation space,
- 7.3 Illustrate the appropriate use of the different creativity tools and techniques and
- 7.4 Explain the opportunity do-ability assessment framework.

Terminologies

Ideation	The process of generating diverse and creative ideas.
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7.1 Design Thinking: The Ideation Space

In the previous sections, we discussed the factors that hold people back from becoming an entrepreneur. One among those factors is that people think they don't have a good idea. They have not yet found the right opportunity and they constantly look for the formula to get the good idea. However, you already know, from the previous session, that entrepreneurial opportunities are not necessarily out there, just waiting to be found. You have learned that sources of innovation are not only the technological innovations from Universities and R&D labs. More often, entrepreneurial opportunities come from within ourselves. They are based on the things we like and the things we don't like, things we wish we had, things we would like to get rid off and things we and people in our network care about. This is not to say that inventions and finding opportunities out there does not matter in the beginning or at some stages of the entrepreneurial process. But, whatever we come across out there, entrepreneurial opportunities are created by how and why individuals act on the things they come across. Many successful businesses initially departed from very minor **ideas**. Where you are taking them in the long run depends on what interests and drives you. You can create opportunities and transform them.

What should you do if you want to become an entrepreneur after this course? May be ideas will come to your mind while taking this course or during the interaction with your friends/ partners. Entrepreneurship in its early stage is very much like playing scrabble. There is a word there and you add a letter and you get credit for the whole work. If you want to get started, start now. There is no need to wait for the great idea that might never come. Many successful entrepreneurs started with simple problems which they could see an implementable solutions or what they thought was simply fun and worth doing.

In general, remember that in the beginning it is about getting started and being enthusiastic about it. Mary Kay Ash, founder of Ash cosmetics in the 1960 had a similar opinion on this topic. She did not only found a successful company selling cosmetics for direct sell to people in their homes but she also introduced the business model that enabled many women back then and today to earn their own money.

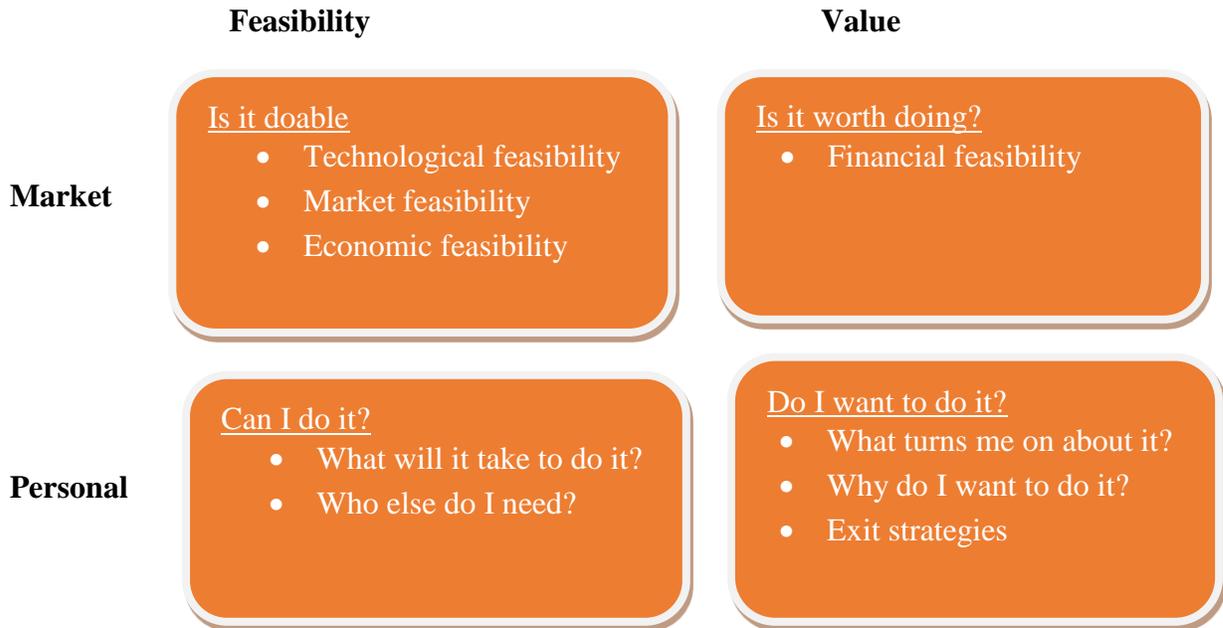
“A mediocre idea that generates enthusiasm will go further than a great idea that inspires no one.” Mary Kay Ash

7.1.1 Assessing Opportunity Do-ability

So far, we discussed about getting started. If there is no road map and we don't know the final outcome, it is highly likely that we will be lost along the road. Hence, we will discuss more about this in the upcoming sections. For now, let's have a look at assessing opportunity do-ability framework. It is a simple framework consisting of four key concepts to consider on your way to transforming and developing your initial idea. The first two elements concern external factors like technology and the market environment. The last two factors are internal and include you. They depend on your personal circumstances and motivations. First of all think about whether your idea is doable that is the technology is available or could be made available. Are there similar products already out there? Are there any road blocks from the government? For example, if this is illegal what you want to do then you might have to take a different road, then address the value in the market. Is it worth doing in terms of the initial fund required? Would you invest your own money in it?

Second, look at the personal level in terms of feasibility for yourself. Do you think you can do it? What is it going to take and are you willing to invest time and disappointments? What are your own strength and weaknesses? Who do you need to make it work? Then, think about the personal value for you. Do you really want to continue on that journey? What do you really want to do it? What are you going to get out of this? And why are you doing it?

In general, this framework can be considered as a checklist. However, it should not be override. It does not matter how good your checklist looks like. An idea is not a good idea before you implement it and the best way to start is to find somebody who is willing to support it in one way or the other.



Source: Read et al (2011)

Now, we will look on how design thinking and the ideation space links to the entrepreneurial process and entrepreneurial opportunities. Design thinking is important for entrepreneurs because much in business is about designing the product, the processes and the business itself. Design thinking reflects the entrepreneurial process in a way that there is uncertainty about the outcome and the processes are usually nonlinear and iterative. By starting with what you know and you have, for example the constraints, you can iteratively come up with the next best solution even though it will not be the ultimate perfect one. Before you take your idea to a large scale getting feedback, new inspirations and improved solutions would always lead to go beyond the incremental idea. However, it does not mean that you cannot start with one and then work on your way towards something more radical by cycling back and forth through the design thinking process. As discussed in the first section of this chapter, creativity and knowledge are the prerequisites for invention and innovation. The inception for every knowledge, invention, and innovation is an idea and novel ideas emerge from the creativity process. The following section will, thus, discuss about the creativity tools, techniques and how to facilitate the creativity process which will help you to come up with innovative ideas.

7.1.2 Factors Hindering/Fostering Creativity

This is the second part of the idea generation space. Previously, we have seen that many people are good at becoming with good ideas. But, finding out whether these ideas themselves make a good business opportunity depends on implementing it in a creative way. Remember, creativity and innovation are not the same. Creativity drives innovation and knowledge is the bases for creativity and innovation. Creativity does become one central element for entrepreneurship and innovation. It is about the ability to generate ideas and further develops them.

What stimulates creativity and why are we not more creative? First of all, creativity is part of our evolution and problem solving approaches. History of human evolution has shown that human beings are actually pretty good at coming up with new ideas. However, approaching problems in a logical and analytical way focusing on what is and what we have and what could be done blocks creativity. While this approach is necessary and this led to many advances for our society; it sometimes oppresses the creative problem solving approach. Let's have a look at some facts that drive and impede creative problem solving approach.

First, research has shown that creativity is often driven by thinking outside of the box. Similarly, creativity is often associated with using both the right and the left sides of our brain. At the same time, creativity is often driven by time and necessity; for example, when there is a need to come up with a better solution. Creativity also depends on the environment we are in. The creative process is embedded on individuals, in groups and in interactions with other people. Organizational culture can drive creativity if there is a stimulating and supportive environment that is based on trust and empowerment. If we look at the factors that block creativity, we can again start at the individual level. Creativity is often blocked by negative self-talk. People tell themselves that they are not the creative one and then creativity is left to those who can draw in a nice way. Furthermore, creativity is often blocked by too much reliance on past experience and expertise which can make it difficult to think out of the box.

If we again look at the organizational level, many things that block creativity are embedded in our interactions with other people. Organizational culture which is very much risk averse in a sense of not leaving any room for testing out new ideas will block creativity in the long run. At the same time, zero tolerance for failure, no room for experimentation as time is money, and group pressure

block creativity. In general, these are the most important factors that facilitate and block creativity. You can see that much of it depends on the organizational culture in which individuals are imbedded in. That is why many organizations today are trying to create more creativity supportive environment.

Now, we will see one of the factors that blocks creativity in more detail. Let's start with a little experiment and soon you will know which factor it addresses. In the 1945, Kern Muncker started a series of experiments he called "candle experiment". He asked people the following questions. How would you mount a candle on a wall, in such a way that it can be lighted safely and does not drip by only having matches, a box of nails, and the candle available as your equipment? Here is the best solution. You simply empty the box of nails. Put the candle inside, use the nails to fix the box against the wall and use the matches to light. It sounds simple, but what most people did, who were taking part in the experiment, was that they did not come up with this solution. Instead, they were trying to fix the candle to the wall with the nails or some were trying even to melt candle wax to stick the candle to the wall. The problem is that many people see only the nails inside the box. They did not see the box itself as something they can use it, just not seeing the packing material as a part of the solution.

The nine dots (see the following figure) exercise is also another tool which shows on what blocks creativity. The purpose of this exercise is to connect the nine dots using four straight lines, without lifting the pencil/pen off the paper. If your pen or pencil goes twice or more on the same path, i.e., overlapping lines, it should be counted as many times as you go through that stretch.

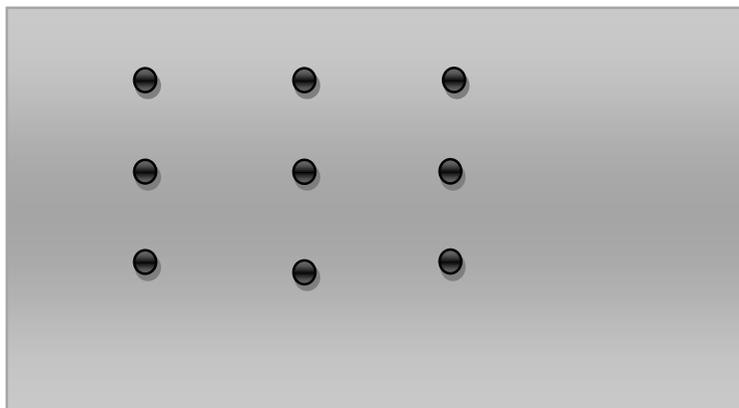


Figure 7.1 - Nine Dots Exercise

Visit the appendix for the correct solution. You may not get the solution presented. Perhaps, you were looking for a solution that was within the supposed "square" suggested by the arrangement of the nine dots. If so, you were trapped in this "square", which limits you not to think out of the box. But, why do you think this phenomenon happens? Our mental model of the "square", refers to the paradigm we have which are formed on the influence of family, the educational system of beliefs and social values. Often, people unconsciously adopt paradigms and are useful to our life. But, this can't be used as justification for entrepreneurs to allow their vision being limited by it. If they do so, they may not perceive other aspects that can be excellent business opportunities precisely because they do not fit to the common pattern. It is necessary to develop a divergent thinking, seeing beyond the boundaries and developing a more open and inclusive vision of other possibilities. It is also necessary to "go outside the box," to go beyond the limits, to break paradigms, it is required to have creativity, boldness and curiosity. This can be developed through practical actions such as changing the course of actions, participating in trade fairs and conferences in other areas, reading books of different subjects to your reality and business, developing new hobbies, seeking diversification in various aspects of your life.

Research in this direction led to insights on how too much experience and expertise tends to block creativity. Karn Duneker's candle experiment was the starting point for a research on an effect called functional fixedness. This means, when individuals are solving problems they are often constrained by their past experiences. This does have an effect on someone's predisposition to be creative because it impedes individuals from applying novel strategies to solve problems and makes them to impulsively fix the problem using the traditional approach. It is a cognitive constraint that we are facing. Functional fixedness is a concept on individual level. Similar fact happens on the organizational level. Organizations solely depending on internal knowledge and expertise to solve problems will be less likely to bring innovative solutions since functional fixedness will block creativity.

On the level of the organization, functional fixedness is often called local search bias. Within the systems innovation approach overcoming local search biases has become an important issue for many organizations. At the same time, there is a risk associated with going too far. In the previous topics we raised the absorptive capacity, the ability to understand, evaluate and assimilate knowledge. If we move too far away from our experience and expertise we are at risk of

compromising absorptive capacity. This is by now a well know problem in the innovation and entrepreneurship literature. So far, research has shown that there is an 'inverted U shape' relationship between increasing cognitive distance and the learning effect. The novelty value increases when we move away from what we are familiar with. However, at the same time absorptive capacity decreases. We learn most when we are at the optimal cognitive distance - the distance we move away from the local but are not going too far. We have to look beyond our own box, but in order to keep our absorptive capacity, we need to keep the relation to our problem.

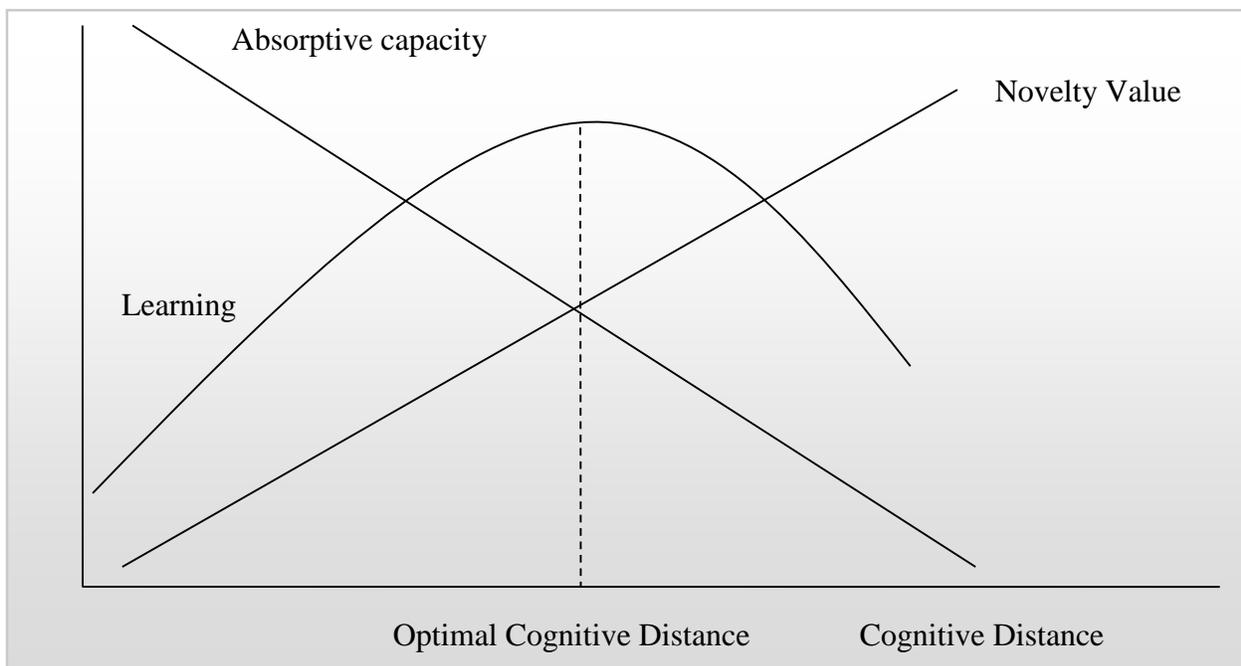


Figure 7.2 - Optimal cognitive distance (Nooteboom,1999).

7.1.3 Facilitating Ideation

This part focuses on how the creative process can be facilitated. The process of creating new ideas is called ideation. There are models that help us to understand and facilitate it. Let's start with the two phases of the ideation process. The ideation space, ideally consists of two phases in each iteration. First, there is a phase called divergent thinking. This phase is about opening up possibilities and generating as many ideas as possible. The divergent phase is then followed by a

convergent thinking phase in which we try to synthesize the ideas and make a decision on the idea we want to proceed with for the time being. We get a set of options and we are supposed to select the best possible one. However, we are often having difficulty with the idea generation phase especially with combining the two phases. This process even is more challenging when we are working in teams, though we are often rewarded with better idea when we work together.

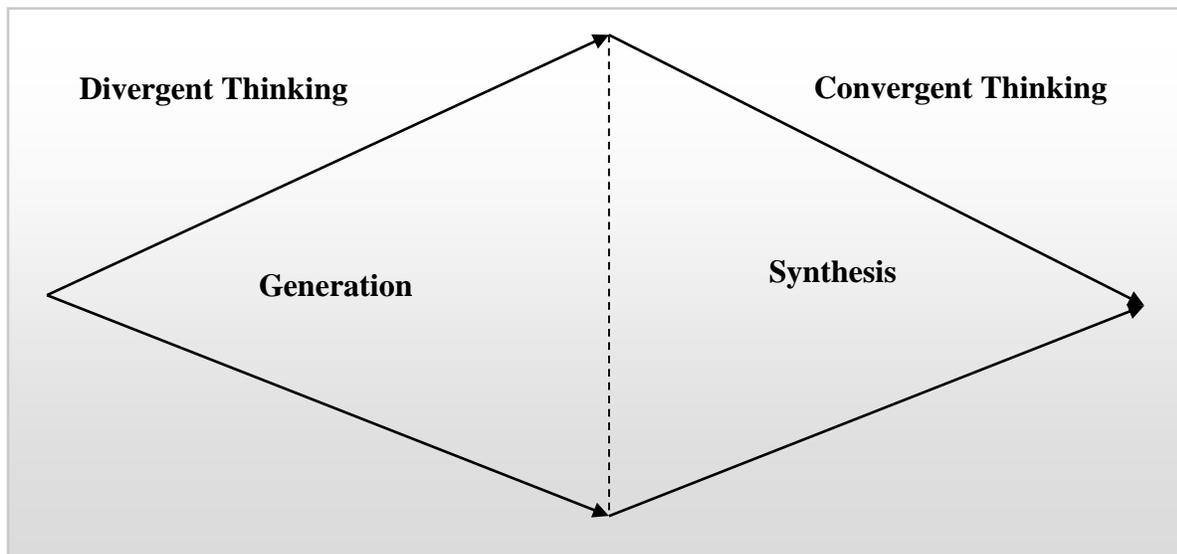


Figure 7.3 Phases of the ideation space

Now, we will continue to look at how the ideation process, in a team, looks like. The starting point is the new topic, in this case the problem definition and then we proceed to generate ideas. In the beginning, we usually come across a number of familiar opinions and incremental solutions. But, after sometime the diversity of idea increases. We arrive at the point where we have a few quite diverse perspectives. In this site it is not time to narrow down. We consolidate our thinking, refine ideas and then we reach a decision point.

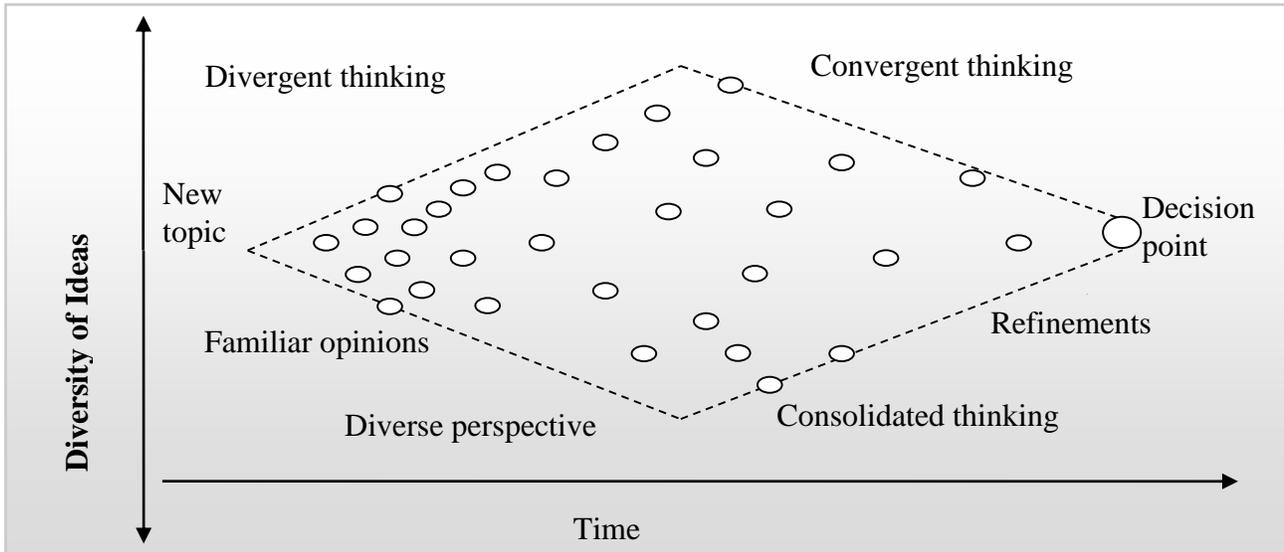


Figure 7.4 - The Diamond of participatory-decision making; (Kaner, 1996)

Unfortunately, idea generation processes typically are different in real life. What usually happens is that the decision point is either moved into an early stage of the process or it does not happen at all. There are two possibilities. First, we sometimes make too quick decisions. We focus and decide on the obvious solutions and in doing so we risk premature closure before we explore more novel and diverse ideas. Second, we don't really arrive at a solution at all. We enter into the more divergent phase, come across controversies, run out of time and we end up with no or poorly defined solutions. The problem in here, as soon as we move away from familiar opinions, we get into uncomfortable zone. When more diverse perspectives come up, we sometimes tend to react with 'No' reactions. It takes us time to arrive at a common mental frame for more diverse ideas are actually there, and we start to be concerned of being stacked and running out of time, especially if this is a workshop and we want to go home at some points.

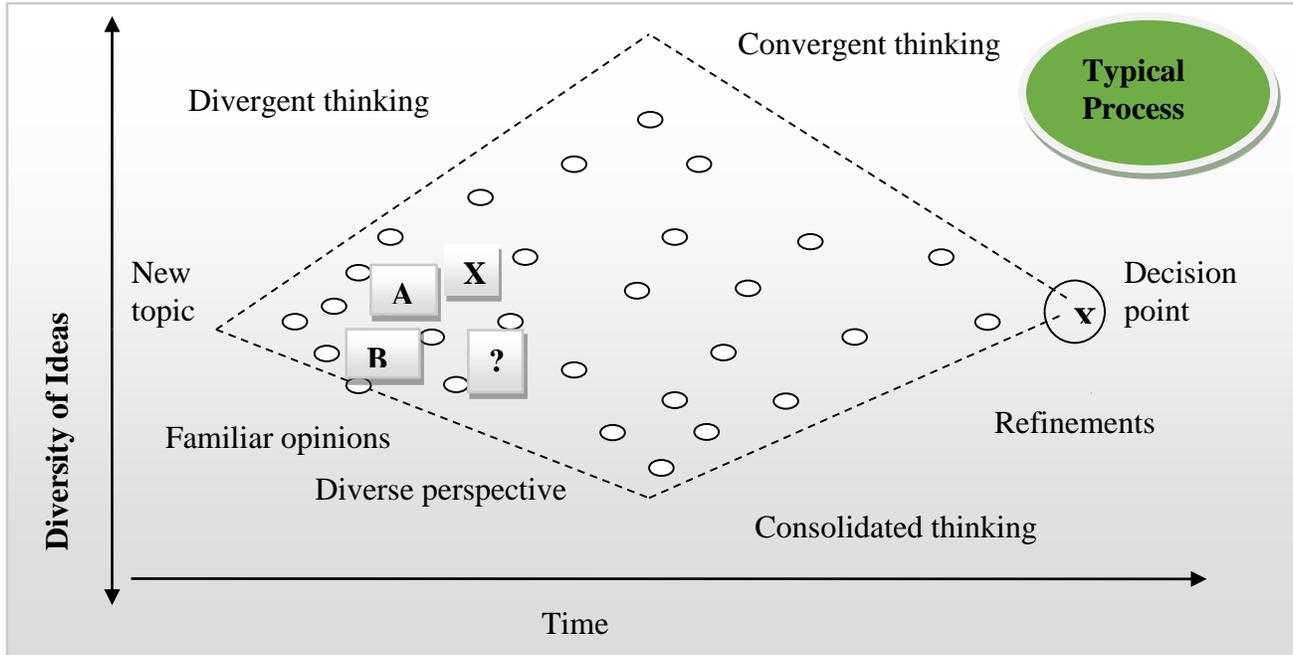


Figure 7.5 - Dynamics of Group Decision Making

It is important to note that in an innovation project, we should not end up with quick decisions. For other projects this might be a good and important, but innovation is all about coming up with novel ideas, so we need to move beyond the familiar. Acknowledging that there is a difficult zone called groan zone in the middle of the ideation process and paying attention to how the team is going to experience at this stage is necessary.

In groan zone, we will feel frustrated, confused, anxious and exasperating. This is because, we suddenly go beyond the familiar and now we are dealing with different perspectives and competing frames of reference/pictures of mental maps. We are often tired and we are facing an overload of information. How should we behave in that stage? We should be patient, persevere, be tolerant, and should not lose our sense of humor. This will help us to arrive at a shared perspective and shared framework of understanding and finally good decision making. However, this is not easy. What you can do is to become aware of this zone and either become facilitator yourself or assign an internal or external person who explains and continues to explain about this zones, call for stretches, breaks, encourages and supports. This person can for example, interfere when there are conflicts about an idea and suggest to make a drawing or visualize it in a different way. He/she

can also remind people to step back or stop some team members from judging the idea too early on.

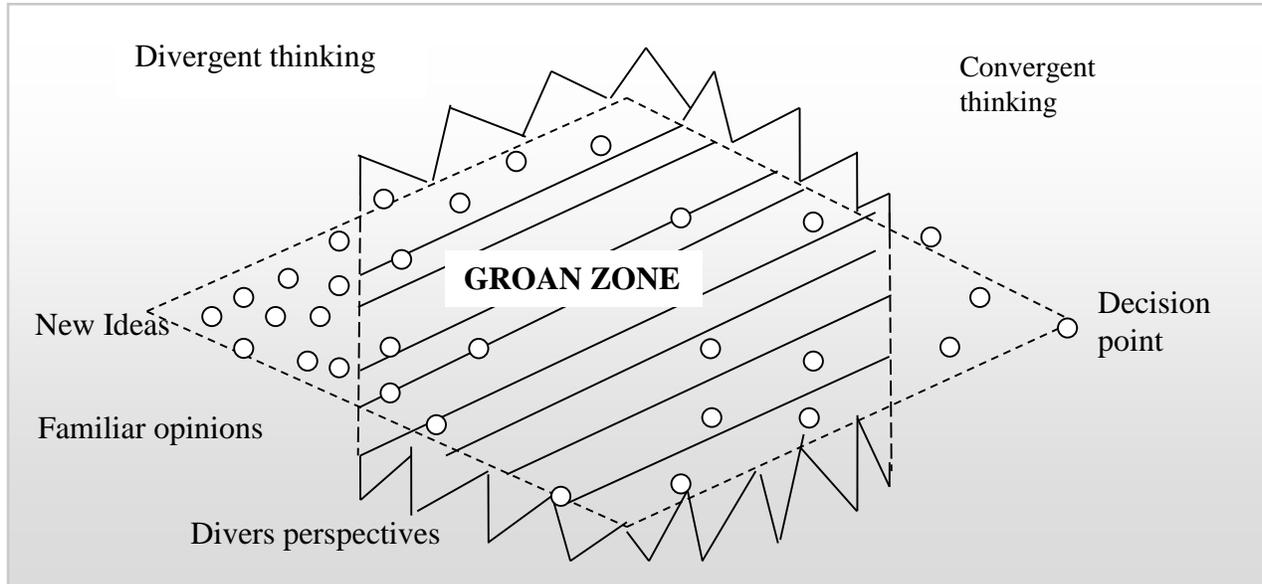


Figure 1 - Groan Zone, Kaner, 1996

7.1.4 Creativity Tools and Techniques

This topic deals with the creativity tools and techniques that you can use during the ideation phase. As we discussed earlier ideation is a process that can be facilitated. First, we need to understand the two phases of ideation, the divergent and the convergent. Moreover, there are a several tools and techniques which can assist you to generate ideas and think out of the box. The most familiar tool is brainstorming. So, let us get an over view of the different techniques which are categorized as fluency, excursions, pattern breakers and shake up exercises. A brief description of each the technique is presented below.

First, there are **fluency** techniques which focus on stimulating idea generation, usually in a more goal focused and straight line thinking approach. Tools in this category include brainstorming, brain writing and mind mapping. Next, there are so called **excursions**, that focus on pushing the mind out of the usual and towards the unpredictable and novel. These techniques aim to take the individual or the group away from the common work to a different perspective. They usually use

stories and imaginations to pull out ideas. Example techniques include synoptic questioning where you make use of ridiculous ideas to get people out of tunnel vision/conventional mindsets. Also include tools which focus on a painting to create a story and techniques that foster visualization through making mind movie.

Similarly, **pattern breakers** force us to stretch our minds towards finding patterns between dissimilar concepts. These techniques usually involve a more problem focused techniques such as metaphorical exercises where you can link photo to goals. Another technique is to celebrate a party in which you imagine that the innovation is already a success. Finally, **shake up exercises** where you try to make the team loosen up and open to unusual ideas are important creativity techniques. These techniques focus on making people laugh, as humor can help us relax and break self-censoring mechanism. Techniques include role plays and team games for example body storming- a technique that should get people to figure things out by trying. Further, techniques in this category are also outdoor fun activities or watching funny movies together.

Type	Purpose	Techniques (Examples)
Fluency Techniques	Stimulate idea generation, usually goal-focused, straight line thinking	<ul style="list-style-type: none"> • Brainstorming • Brain writing • Mind Mapping
Excursion Sessions	Push the minds towards, wandering, the unpredictable, novel,take individual/group away from the problem to (unconscious) work on it from a different perspective; usually focus on stories, and imagination to pull out ideas	<ul style="list-style-type: none"> • Synoptic questioning (make use of absurd ideas, get people out of tunnel vision/traditional mindsets) • Focus on a painting or a word • Mind movies/creative visualization

<p>Pattern breakers</p>	<p>Force them to stretch to final pattern between dissimilar concepts to find unusual ideas or restate problems</p>	<ul style="list-style-type: none"> • Metaphorical exercises (e.g. link random photo to goals) • Powers of 10 • Imagined party (for celebrating a successful innovation, think about the factors that lead to success)
<p>Shake up exercises</p>	<p>Games and team activities to loosen up and make group members more receptive to unusual ideas, usually focused on helping them relax and laugh (humor breaks self-censoring mechanisms, make people less inhibited)</p>	<ul style="list-style-type: none"> • Role plays (e.g. body storming) • Outdoor fun activities • Cartoons, funny movies

You are now familiar with the different tools and techniques of creativity. But, the outcome depends on the right use of each technique. These techniques have to be used differently in the different phases of the ideation process. There are tools for opening up, for exploring, and for closing. Fluency techniques like brain storming are often used for all phases and work well when they are supplemented by other techniques. Excursion sessions work well for the opening phase. While pattern breakers are useful for exploring diverse ideas and for starting to synthesize them. Shake up exercises can again support all phases of the project. Further, there is one very simple technique that works well for breaking and exploring diverse ideas. It is called the power of **what if** questions and simply means asking questions with what if and that is followed by an idea that changes an existing way of reaching a particular goal. For example, take this statement: what if furniture buyers picked up a component in flat pack from a large warehouse and assembled the products themselves in their homes?

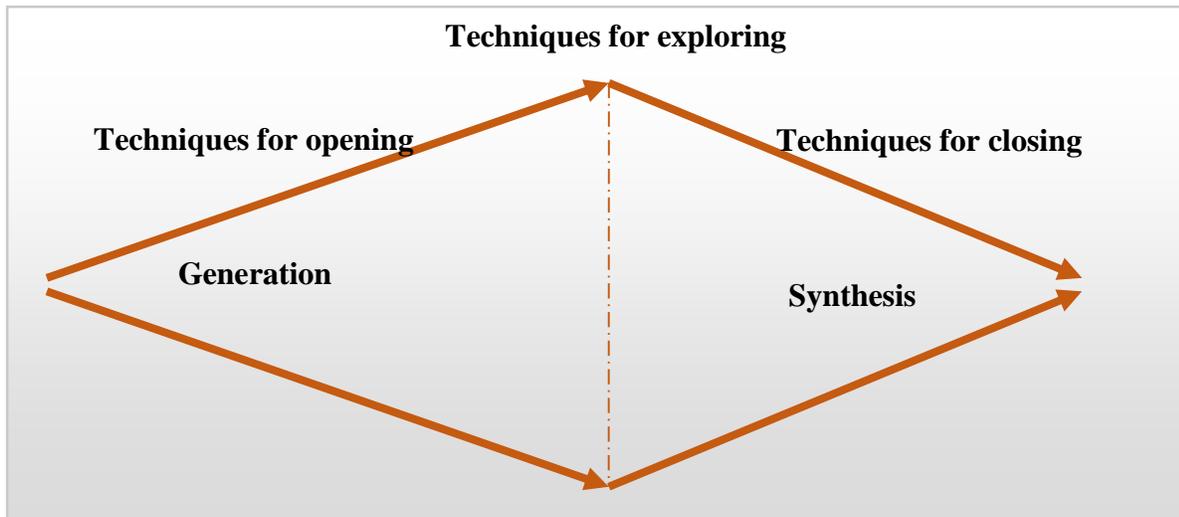


Figure 7.7 Different techniques of creativity for different phases

Self-Review Questions

1. Define what ideation is in the design thinking?
2. What is opportunity Do-ability Assessment Framework? Why is it important?
3. Mention at least three factors that inspire creativity?
4. Explain the two phases of the ideation space?

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