NET-ENT
Networking for Entrepreneurship
Erasmus+

Project Number: 2017-1-SI01-KA202-035580

Networking for Entrepreneurship

Handbook for Students

Co-funded by the
Erasmus+ Programme
of the European Union

Project:
NET - ENT - Networking for Entrepreneurship

Handbook for Students

Partners:
- School Centre Nova Gorica (Šolski center Nova Gorica), Nova Gorica, Slovenia
- Secondary School of Design and Photography Ljubljana (Srednja šola za oblikovanje in fotografijo Ljubljana), Ljubljana, Slovenia
- Haaga-Helia University of Applied Sciences (Haaga-Helia Ammattikorkeakoulu), Helsinki, Finland
- Polytechnic Center Txorierri (Politeknika Ikastegia Txorierri), Derio, Spain
- City of Glasgow College, Glasgow, United Kingdom

Publisher: School centre Nova Gorica, Slovenia
Editor: Rosana Pahor

Authors: Rosana Pahor, Tanja Ušaj Hvalič, Saša Vitežnik Jelen, Damijan Kracina, Aleksandra Ardalić, Kepa Larrondo, Päivi Williams, Maria Haukka, Sonja Kuosmanen, Barbara Aitkenhead, James Wilson

Proofreading: Marko Celinšek Kaličanin
Design: Lettim studio, Slovenia

Public published: 2020
Digital Edition
Format: pdf
URL: http://www2.arnes.si/~projekt-net-ent/handbook_for_students.pdf

Co-founded by the Erasmus + Programme of the European Union

Kataložni zapis o publikaciji (CIP) pripravili v Narodni in univerzitetni knjižnici v Ljubljani
COBISS.SI-ID=305164032
ISBN 978-961-94996-2-7 (pdf)

Handbook for Students

Šolski center Nova Gorica · SSOf · Haaga-Helia · Politeknika Ikastegia Txorierri S. Coop. · City of Glasgow College

INTRODUCTION

Transforming ideas into products is the idea behind the ***Networking for Entrepreneurship Module*** (**NET-ENT MODULE**). In particular, we want participants in the NET-ENT MODULE to go through the process, all the way from idea to the commercially successful product.

In this handbook, you can find several topics to help you:

- developing an entrepreneurial mindset and entrepreneurial personality,
- developing a commercially successful product from the idea to the final product (through product development process).

This handbook is not meant to be used from A to Z in a chronological order, but more like a guidebook that you can use to navigate through the stages of the entrepreneurial process. You can combine it with other teaching/learning materials and use its contents in any way that may be useful to you. The handbook offers support for the entire process; however, users can select the implementation of tools and resources according to their own needs. The process is *an adventure along an unknown path towards entrepreneurial design and success, where you are your own navigator, researcher and coach*. The NET-ENT Handbook is not a traditional didactic program to go through from the beginning to the end while gathering knowledge and reproducing this knowledge for the evaluation. This module requires self-direction and engagement. This means more commitment but also more fun and more learning. At the end of the process, you will have gained some great entrepreneurial experience that you will never forget. You can use this process again and again, in various forms, to develop your future ideas. *You are the creator of your own future.*

A fundamental aspect of NET-ENT MODULE is integrating your own process – finding and developing your own way to materialize ideas. This involves discovering your own way of using resources and tools. The handbook offers you numerous possibilities and a framework, however, it is up to you how you will use it. By experiencing your own entrepreneurial process, you will also shape the process. It offers you a framework, knowledge, resources and digital tools that will help you create and develop ideas with commercial value. It is up to you to decide who is to be included in the project, what specific knowledge you need for the project, where to get this knowledge, etc. In short, you are building your own process.

SKILLS, COLLABORATION of different school programs AND NETWORKING

To develop products and establish a successful company, it is necessary to integrate knowledge, skills and expertise from a variety of fields. You do not have to have all the knowledge or skills, but you should know what knowledge and inputs you need and where to obtain them.

In entrepreneurship, these inputs (knowledge and skills areas) include:

- business and **marketing** skills
- industrial and graphic **design** skills
- product manufacturing capacity/**production** skills

These three areas need to work hand in hand. However, the school systems usually separate these areas – technicians and future professionals are educated in different programs with none or very random contact with each other. In this module, we will combine three different educational programs (**design, marketing** and **production**) to achieve the common goal of product creation and commercial success. The goal is to *create high-quality and useful products which are commercially interesting, properly designed and have market potential.* In *NET-ENT module* you and your team (teachers and students together) will liaise with other school programs/deptartments and interact closely with them during the process. For inspirational purposes, some examples of pilot implementation of NET-ENT MODULE are available among Digital Tools on the website of the project.

EU project website:

- https://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details/#project/6732d822-1b78-46a0-8135-c505f3917f02

NET-ENT project website:

- http://netent.scng.si/

The **NET-ENT Handbook** and the **NET-ENT Digital Tools** available on the EU project website represent a *complete learning environment for collaborative entrepreneurial project development which integrates design, production and marketing*. Digital tools connected to particular topics are clearly marked throughout the Handbook.

INVOLVEMENT OF EXPERTS FROM COMPANIES, INTEGRATION OF THE LABOR MARKET

At certain points of the process, you will need to update your practical knowledge, which can be "best" provided for you by the experts working in companies. Again, you will have to find your own resources. You can find the examples of **networking** and collaboration on the website of the project among Digital Tools.

NETWORKING in NET-ENT MODULE mainly refers to:

- interaction between different schools, school programs/departments and subjects,
- establishing networks between students and teachers of different programs,
- liaising schools and education with companies, professional experts and the world of work,
- networking and exchange of experiences from different EU countries.

INNOVATION FOR TEACHERS AND STUDENTS

Innovative methods in education are needed to establish entrepreneurial networking practices – new approaches to teaching and learning.

TEACHERS stimulate and encourage students and thus have an important role. NET-ENT project encourages teachers to establish a professional, inspiring and supportive relationships with their students, and to support them throughout the NET-ENT process. Teachers will no longer be in their traditional roles; they will become mentors – coaches. In classroom, they will use coaching and collaborative learning methods and they will establish cooperation with experts from real companies as well as with teachers from other schools, programs and subjects.

STUDENTS, on the other hand, are encouraged to become more proactive in their learning. They choose an area of interest which motivates them to develop ideas, discover their own strengths and weaknesses, and learn to take responsibility for obtaining knowledge and goal achievement. The teacher is not a transmitter of knowledge, he acts as a tutor and leads and directs students with the right, powerful questions to find their own solutions and to get involved other necessary players into the process of learning and growing. This makes a great difference to both.

> The role of the teacher changes. The teacher should accept that he/she does not know everything. The role of the student also changes – as they lead in choosing the project to develop. This requires more time and effort at the beginning, but leads to proactivity, more motivation and satisfaction, and taking full responsibility for their individual and team progress and success.

COACHING

Communication between teachers and students fundamentally changes. Using coaching as an innovative approach for supporting learning, education becomes more positive and respectful and learning is not top down but among equals. Instead of resistance, when differences in opinion arise, members now sit as a team, listening to each other and learning together. There are no right or wrong answers. **The learning process is more about goal setting, teamwork, research, development, acknowledgement and self-reflection on what is achieved.** Students in NET-ENT are coached and they also self-coach themselves to be ambitious and to take risks, learning all the time and upgrading their process. In life, we often find ourselves in new situations where we cannot predict what will happen in advance. Moreover, we rarely succeed at the first attempt. It is important nonetheless to take a risk. Feedback and experience gained from our unsuccessful attempts can serve as an opportunity for further learning and new knowledge.

COLLABORATIVE LEARNING

The other innovative aspect of NET-ENT is the above-mentioned networking or collaborative learning, which unites students and staff from different schools and departments in real project development. Both, staff and students, need to adapt to new methods of designing, supporting and evaluating collaborative learning projects such as the ones proposed in NET-ENT MODULE.

CONTENTS

The International **NET-ENT MODULE** consists of two parts:

- Part 1 – Personal Growth and Development of Entrepreneurial Mindset
- Part 2 – Development of a Commercially Successful Product (Enterprise)

The first part of the module, **Personal Growth and Development of Entrepreneurial Mindset**, is intended to encourage the vision and initiative among the participants, development of responsibility for their own success, motivation to look for opportunities and to develop perseverance throughout their projects. We would like that all the above-mentioned is encouraged among students.

Skills from the first module can be acquired as separate, individual contents or indirectly (hidden curriculum) in the second part of the module – **Development of a Commercially Successful Product.** In NET-ENT MODULE, self-initiative and entrepreneurship are encouraged as essential key competences.

Part 1 – Personal Growth and Development of Entrepreneuiral Mindset

1. Self-awareness and Self-efficacy
2. Vision
3. Motivation and Perseverance
4. Creativity
5. Spotting Opportunities

Part 2 - Development of a Commercially Successful Product (Enterprise)

1. Generating Ideas
2. Valuing Ideas (Design, Marketing and Production Aspect)
3. Prototyping (Transforming Ideas into Action)
4. Final Product

Each section in the Handbook is framed for easy reference as follows.

PART	"Part 1 or Part 2"
SECTION	**"Title of the section"**
CONTENT	"Short description of the content"
BRIEF DESCRIPTION	"Essence of the section in a few sentences"
ACTIVITIES	Activities – "to do"
NET – ENT DIGITAL TOOLS	"Digital Tools related to this topic created in NET-ENT project (also available on the EU website of the project)" EU website of the project: http://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details/#project/6732d822-1b78-46a0-8135-c505f3917f02
ADDITIONAL LINKS	"Other useful links where you can find more content related to this topic (self-learning and knowledge upgrading)"
LEARNING OUTCOMES	"Description of Learning outcomes – What can a student do after finishing this part?"

NET-ENT MODULE

PART 1

PERSONAL GROWTH AND DEVELOPMENT OF ENTREPRENEURIAL MINDSET

Šolski center Nova Gorica · SSOf · Haaga-Helia · Politeknika Ikastegia Txorierri S. Coop. · City of Glasgow College

PART	**1 – Personal Growth and Development of Entrepreneuiral Mindset**
SECTION	**1 – Self-awareness and Self-efficacy**
CONTENTS	■ Procrastination – Identify and Overcome Procrastination ■ Time Management – Establish Priorities ■ Saying No ■ Perfectionism and the 20/80 Principle ■ Self-Management
BRIEF DESCRIPTION	Do you postpone things that you need to do? Are you running out of time for everything you want to do? Do you feel like time is haunting you? Do you want to do something about it? Explore this section. **Believe in yourself and keep developing.**
ACTIVITIES	A. Reflection: Why do I Procrastinate? B. The Urgent/Important Matrix C. Self-Management Diagnostic Test
NET-ENT DIGITAL TOOLS	
ADDITIONAL LINKS	■ *How to Stop Procrastinating:* https://www.mindtools.com/pages/article/newHTE_96.htm ■ *Time Management* https://www.mindtools.com/pages/main/newMN_HTE.htm ■ *Eisenhower's Urgent/Important Principle* https://www.mindtools.com/pages/article/newHTE_91.htm ■ *The Gentle Art of Saying No:* https://www.lifehack.org/articles/communication/the-gentle-art-of-saying-no.html
LEARNING OUTCOMES	■ Candidate is able to identify and assess his/her own strengths and weaknesses. ■ Candidate takes responsibility for his/her own success and the goals achieved.

PROCRASTINATION – Identify and Overcome Procrastination

"Nothing is so fatiguing as the eternal hanging on of an uncompleted task." William James

Do you know the feeling when you take out the vacuum cleaner (even if you hate cleaning your house) instead of studying for the exam? And afterwards, you are angry at yourself and full of regrets, but you cannot turn back the clock. You swear to yourself you will never do it again, but next time you do the same. If you have problems with postponing things that you need to do, and you want to do something about it, explore this section.

Procrastination is the art of postponing things we need to do

Let us face it, we can all find something better to do than the job in hand. That extra cup of coffee, cleaning the table in incomprehensible detail, browsing your phone, etc. These are common ways to procrastinate. So why do we put off things we need to do? The following reasons are very common:

- fear of failure
- fear of success
- boredom with the task
- lack of time
- not knowing how to do it
- trying too much
- tiredness
- not believing that it is worth doing
- goals are not defined
- preoccupation with other problems

This list can go on and on. Most of us put things off. In fact, we often spend more energy putting things off than it would take us to complete the task. In many ways, we literally end up *paying* for our procrastination by spending twice as much time as necessary – all the energy and time we spend avoiding the task, plus the energy and time we spend for doing the task. In the end it comes to this: if you have to do something, you simply have to do it. The only question is – now or later?

ACTIVITY

A. REFLECTION: Why do I Procrastinate?

We are all different and we all have our own patterns of procrastination. Find out about your own reasons and patterns by using self-coaching questions listed below:

- How does putting X off serve, benefit or satisfy me? In what way?
- How does putting X off harm or hinder me?
- How much energy do I spend avoiding this task?
- What is a realistic timeframe for completing the task?
- What is holding me back? How can I minimize this influence?
- How will things/my life be different if I stop putting off doing something?
- What do I need to do to stop putting off tasks?

USEFUL WAYS to OVERCOME PROCRASTINATION

- Start now
- Define in detail what you need to do
- Divide the task into smaller parts/actions/steps
- Establish the priorities of the tasks to be done
- Set yourself deadlines
- Eliminate interruptions
- Attach a meaning to the task by linking it to a desired goal in the future

TIME MANAGEMENT – Establish Priorities

In this section, we focus on effective time management. If you learn to manage your time effectively you will get your tasks done in a shorter period of time and you will be able to enjoy your free time without the stress of having tasks in the pending state. Managing your time has a lot to do with the quality of your life. This is a complex challenge.

ACTIVITY

B. The Urgent/Important Matrix

One useful technique to manage your time is to distinguish clearly between what is urgent and what is less imortant. Decide how important something is to you. Fill in the matrix below with your activities according to urgency and importance.

	URGENT	**NON-URGENT**
IMPORTANT	Do it now!	Schedule it for later
UNIMPORTANT	Delegate it or do it later	Don´t do it!

SAYING NO

Saying NO is one of the best-kept secrets of time management. Some people are always available. They want to please everyone, and they always do what people ask from them. This can lead to a situation when they are so occupied with the requests of the others that they forget to think about themselves and their priorities are put aside. Sometimes, this is another way to procrastinate but it is also associated with low self-esteem.

If someone does not have enough time to complete their tasks it can result in a failure. And unfortunately, one is usually left alone in such situation. You should say no to a friend when you need to, and he/she will understand. *Be congruent, kind and explain why*. It might not always be obvious when to say no. **Be clear in your own mind WHAT YOU WANT OUT OF LIFE and what your priorities are.** Saying no does not mean you should simply say no to things you do not like. Be careful and honest with yourself. Try to find out if

helping others is your way to procrastinate. Research it and remember – your success is your responsibility.

Try some different approaches. Do not give up. If you really want to change, you will find a way. Check out the article *The Gentle Art of Saying No* for tips on how to phrase a gentle yet effective NO: https://www.lifehack.org/articles/communication/the-gentle-art-of-saying-no.html

PERFECTIONISM AND THE 80/20 PRINCIPLE

If you are always running out of time because you are a perfectionist and you always want to get things done 100% or more, this rule might help you. This principle was first described by an Italian economist Vilfredo Pareto. The principle states that 20% of the time we do 80% of the work. It is just a hypothesis and we do not have to take it literally. But it is worth to think about and ask ouselves: ***How much time do I really need to carry out the essence of the task and how much time I lose with irrelevant details?***

Again – you need to explore it for yourself; there is no rule applicable to everyone.

You can find more information and tips on time management in the following books:

Lothar J. Seiwert & A. McGee-Cooper (2007) ***Slow down to Speed Up: How to Manage Your Time and Re-balance Your life***

P. Brans (2010) ***Master the Moment: Fifty CEOs Teach You the Secrets of Time Manage*ment**.

SELF-MANAGEMENT

ACTIVITY

C. SELF-MANAGEMENT Diagnostic Test

Think about one situation when you managed yourself well/effectively and a situation when you did not manage so well.

- Think of the time when you were pleased at the way you managed yourself.
- What were you pleased with how did you manage yourself?
- What was that you were managing in your experience?
- What was it that made you manage yourself so well in that instance?
- What exactly did you do?
- What quality of self-management did you exhibit?

Take notice of how you become more resourceful through your experience. At what point do you recognize that consciously and repeat it? This happens when you utilize thinking and actions that work for you, and when you exhibit positive qualities of self-management. You obviously already have the necessary skills to become the self-manager you wish to be.

- Think of a situation when you did not manage yourself successfully and wish you could do better.
- When were you not successful at managing yourself?
- What is it you are not doing when you are not managing yourself successfully?
- What are you holding back?
- What aspect of you are you holding back?

People who are successful in self-managing do not become this way just by using a box of tricks. You will probably discover that you are "*out of balance*" in some way; this usually stems from a negative way of thinking, judging yourself or judging the situation. As soon you are aware of the imbalances, you are able to realign yourself again.

PART	**1 – Personal Growth and Development of Entrepreneuiral Mindset**
SECTION	**2 – Vision**
CONTENTS	■ Developing Vision ■ Direction and Purpose ■ Values ■ Developing Entrepreneurial Vision
BRIEF DESCRIPTION	This section is designed to encourage and enable you to establish and develop an entrepreneurial vision. A vision is essential to develop business ideas and to see them through. **Work towards your vision of the future.**
ACTIVITIES	A. Explore Your Values: Values ANALYSIS and Values Circle (in DT) B. Explore your Purpose C. Creative Visualisation D. Vision Statements E. SMART Goals F. Action Planning G. Business Canvas Model
NET-ENT DIGITAL TOOLS	*HB - P1 - S2 - ACTIVITY A - Explore Your Values – TXORIERRI - ES*
ADDITIONAL LINKS	■ ENTREPRENEURIAL VISION: How to Create a Better Future for Your Startup! https://www.naijapreneur.com/entrepreneurial-vision/ ■ Startup Planning: 5 Things You Fundamentally Need to Start a New Business https://www.naijapreneur.com/2014/11/10/startup-planning/ ■ Vision: The Driver of Entrepreneurship https://www.entrepreneur.com/article/269757 ■ *The Business Model Canvas – 9 Steps to Creating a Successful Business Model – Startup Tips* https://www.youtube.com/watch?v=IP0cUBWTgpY - M. Beck (2002): ***Finding Your Own North Star: Claiming the Life You Were Meant to Live.*** Harmony. - M. Csiksentmihaly (2008): ***Flow; The Psychology of Optimal Experience.*** Harper Perennial. - R. J. Leider (2015): ***The Power of Purpose; Find Meaning, Live Longer, Better***. Berret Koehler.
LEARNING OUTCOMES	■ Candidate knows and uses the techniques and tools for developing a vision and turning ideas into action.

DEVELOPING VISION

KEYWORDS: **Passion, Purpose, Personal Why, Vision, Values**

Where will you get to if you don't know where you're going?
Where will you get to if you know where you're going?
And the crucial question – ***how*** *will you get there according to different scenarios?*

Developing vision is an important factor. Knowing where you want to go is crucial if you want to arrive at a certain place; and taking responsibility for actively supporting (owning) that vision will determine the shape and pace of the route. It seems that success (beyond all concepts of influence or material affluence) comes to those who have a clear idea of who they are, how they want to live and what they want to achieve. Many experts advise tuning in to this inner vision as a part of developing your life, professional or entrepreneurial vision. If we attend to our values, inner vision, gifts and passions, and align them with our external intention or purpose, we will find energy, drive, discipline, resilience, well-being and success. ***If you discover your why, the how emerges.*** Similarly, there are also evident benefits for companies with a clear vision and authentic, trustworthy branding as the customers (and staff) identify with the passion and interests of that service or product and engage in.

DIRECTION AND PURPOSE

In her book *Finding Your Own North Star (2001)*, Martha Beck advises that we should tune in to our internal compass to discover our *essential self* as opposed to our *social self*. What does provoke the feeling joy and vitality in you? In *Flow: The Psychology of Optimal Experience (1990)*, Mihaly Csiksentmihaly describes the sense of ***flow*** that accompanies our tuning in to what we enjoy, what we do well and what presents a challenge for us to perform at the highest level. In *The Power of Purpose (2010)*, Richard Leider reminds us that our purpose will always be something that:

- we feel that we are naturally good at and enjoy doing,
- we feel passionate and care deeply about,
- we feel fits our values and ways we prefer to operate in the world.

In some way, our purpose expresses our true gifts and passion – our essential self. At its most poetic or inspirational, vision and purpose are related to bliss. In *The Power of Myth (1988)*, Joseph Campbell famously coined the phrase "*follow your bliss*". Within the cycles (ups and downs) of an individual life, there is a possibility to live at the center, focused on the activity, work or passion that fascinates and attracts you relentlessly. He also warns us about the possible case of climbing the ladder of success only to find out later that it was put up against the wrong wall (doing something unfulfilling or what others expect of us). Campbell stated, "Whatever your body tells you to do, the odds are very good that it's the next step towards your North Star."

The Merriam-Webster dictionary defines vision as "*the ability to see:* sight or eyesight, *something that you imagine, a picture that you see in your mind, something that you see or dream.*"

VALUES

One way to connect with our inner vision is to explore what is the most important to us. Exploring our values helps set our compass for what we wish to do, develop and offer to the world.

On the website of the project, under Digital Tools, you will find the chapter Explore Your Values. Take a look at it, go through Values Analysis and prepare your Values Circle. You can also check the chapter Coaching Methods (Working with Values) included in the Manual for Teachers.

ACTIVITY

A. Explore Your Values: Values Analysis and Values Circle

You can find this activity under Digital Tools:

- *HB - P1 - S2 - ACTIVITY A - Explore Your Values – TXORIERRI - ES*

ACTIVITY

B. Explore your Purpose

Purpose is highly connected with Vision. This activity will help you link your values and talents with a vision for professional or entrepreneurial action (vocation and mission).

1. Create 4 separate circles and fill them in with all the things that come to your mind by answering the questions below.

   What do I love?

   What am I good at?

   What does the world need?

   What could I be paid for/charge for?

You may wish to get some input from others to broaden your vision of what your strengths are. You can also carry out a Personal SWOT.

2. Unite the 4 circles in a Venn diagram as below. Fill in the overlapping spaces between two circles with activities that are common to both circles. For example, if what you feel the world needs is also what you love, then this becomes a mission.

3. When you have all the information completed, try to see what connects your passion, profession, vocation and mission. Do not worry if this does not happen immediately. Pay attention to what happens in your body as different ideas take shape on the paper.

You might want to do this activity or talk it over with someone else.

This activity could also be carried out as a business vision model consisting of the following categories: "**What do we want to do?", "What do we do well?", "What do/does our customers/the world need", "What we are paid for?".**

ACTIVITY

C. Creative Visualisation

Developing a vision requires exploring our values and purpose. It also feeds directly from the **capacity to envision**. This activity allows you to explore your passion within the framework of a creative visualisation (which can take several formats).

A Take a large poster-sized sheet, scissors, coloured pens, some magazines, glue etc. Place a photo of yourself to the center of the poster.

Spend 45 minutes going through the magazines. Cut out anything that captures your attention or attracts you. This could be a phrase, an image, a shape or anything else. When your time is up, surround yourself with the things you cut out. Sit in front of your poster and imagine your life within 5 years and think of how you wish it would be. Among the things you cut out, select the ones that represent how you see your life in 5 years and create a collage out of them. Take at least another 30-45 minutes to complete the task.

When you are done, observe your poster. How does it feel? If anything is missing, add it in the way that feels appropriate. You may want to explain your poster to another person and describe what you portrayed for yourself. This is a good basis for establishing goals and practical steps towards the future self.

B. Take a large poster-sized sheet, coloured pens, post-it notes etc. Write a theme in the center of the poster. Take some time in silence and visualize how it would look, feel and sound like if you carried it out perfectly. Next, write and draw your ideas on post-it notes and place them on the poster.

Continue with drawing, writing and reorganizing the ideas on the poster. You can make this a collective activity carried out through several days with people passing the poster among each other and rearranging or adding ideas. You can keep a digital record of the poster to record changes.

This is a very useful activity as any parameter can be established as the objective (a parameter can be established as, for example: all ideas are accepted, only positive outcomes and ideas are requested for a certain period, only emotions felt are requested for a period or ideals etc.).

DEVELOPING ENTREPRENEURIAL VISION

KEYWORDS: **start up, venture, why, vision, mission statement, motivation, energy, enthusiasm, passion, drive, perseverance, instrumenting a business vision**

What is Entrepreneurial Vision?

Entrepreneurial vision is the starting point of a business venture carried out through transforming an idea into action. First, it defines a business and presents the foundation on which the business model is designed. Experienced entrepreneurs agree that it is very important to have an **inspiring, compelling and clear-cut entrepreneurial vision** before launching a business. A founding idea must metamorphose into an entrepreneurial vision and must be brought to life if the startup is to succeed.

Entrepreneurial vision is **an image of the desired future for your startup business**. You *create the vision with your imagination and then make practical plans on how to achieve it*. It is what you see your venture doing in the future, and what it should be doing today in order to get there.

Entrepreneurial vision plays a role in **energizing** and directing the birth, growth, and direction of new ventures. It is the vital energy that represents a drive for entrepreneurs, founders, co-founders their immediate teams; it is what makes them **dare to explore, dare to challenge, dare to insist, dare to keep pushing, dare to have the determination to succeed**. Vision is the energy that provides an entrepreneur and its organization with the ability to perform and succeed.

The **need for energy, perseverance, tenacity and resilience** is paramount. An entrepreneur is the carrier of the **motivational engine,** enthusiasm and drive (vision) that the organization or business needs to bring a project to fruition.

But the success of a venture is not only about defining and pursuing a vision, but also about being able to instrument the vision, formulate it into something tangible, and then share it as well. A vision needs to be shared and nurtured in order to become a lighthouse for action.

It provides

- Clarity of Purpose – explains with clarity what a business is about as there are many 'me too' businesses out there. It enables you to set your company apart and stand for something very tangible in the mind of target customers.
- Brand identity and name – will somehow encapsulate the philosophy that drives all that you do.
- Meaning – will define your business. *Our business is …*
- Product Development – it will shape the kind of products/services you develop.

A new venture is the vision of an entrepreneur to change the present into something better by solving a problem. This is the core driving force of *talented* entrepreneurs. That desire is expressed in an entrepreneurial vision which energizes and propels the entrepreneur and the startup he/she creates towards a greater future.

Vision is the key element that not only helps the entrepreneur in the ups and downs of a venture, but also funnels its passion, perseverance and tenacity to an end goal that needs to be shared with the organization/team and the customer. The vision finally allows the entrepreneur to draw others towards his own idea, to build something from scratch, and solve difficult problems in unusual and innovative ways to create greatness – this is why vision is the driver of entrepreneurship.

SOURCES:

- ENTREPRENEURIAL VISION: How to Create a Better Future for Your Startup!
  https://www.naijapreneur.com/entrepreneurial-vision/
- Startup Planning: 5 Things You Fundamentally Need to Start A New Business
  https://www.naijapreneur.com/2014/11/10/startup-planning/
- Vision: The Driver of Entrepreneurship
  https://www.entrepreneur.com/article/269757
- *The Business Model Canvas – 9 Steps to Creating a Successful Business Model – Startup Tips*
  https://www.youtube.com/watch?v=IP0cUBWTgpY

ACTIVITY

D. Create a Vision Statement

Robert Bly, a marketing expert, stated that **"Your vision – or your "mission statement" – declares where your business is headed and what it will look like when it's arrived**." A mission statement tells you what success (for you or your business) looks like. How else will you know when you have achieved it? A vision is important for small businesses because it forces them to really know their ambitions for the business. A vision cannot be vague. It declares the outcomes you expect and becomes a guiding light that will lead your business forward. **It is important to make sure that your vision statement clearly states the outcomes you intend to create.**

SAMPLE VISION STATEMENTS

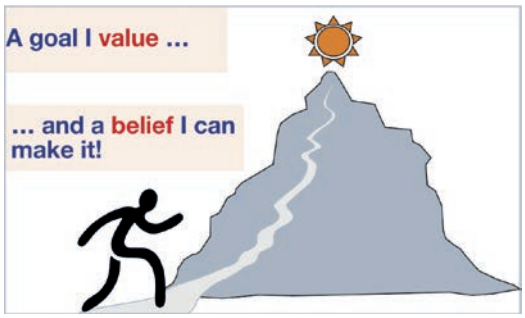
> ***Microsoft*** (original): "*A personal computer in every home running Microsoft software.*"
>
> ***EBay:*** "*To provide a global trading platform where practically anyone can trade practically anything.*"
>
> ***Amazon:*** "*To be Earth's most customer-centric company; to build a place where people can come to find and discover anything they might want to buy online.*"

Begin with a clean sheet of paper. Imagine your business three to five years into the future and answer the following questions.

- What service(s) do you perform? What products do you sell?
- For whom? (What types of clients? If you have specific clients in mind, list them.)
- Where is your business located? Do you work at home or in an office? Describe everything.
- You've just met yourself on the job. What do you do in the business? Are you an owner or a hands-on employee? Do you render the actual service clients buy or hire employees to do that while you manage and mastermind your business? What is your life like? What is it about your life that makes you happy?
- How much do you earn and how much profit does your business generate?
- Do you have employees? If so, how many? What do they do? What value do they add to the business? What skills do they have? Be as specific as possible.
- What does your business look like in case you decide to sell it or turn it over to someone else?
- What does your business do better than any other? What are you known for? What makes you unique or different from your competitors? What is your unique selling proposition?
- How do you feel about your business? What inspires you about it?
- What are the four or five keywords you use when describing your business to others? What words do your clients use when describing to others what is that you do for them?

Next, pull out the strongest words in your descriptions. Look for the words that trigger emotions in you. What stands out for you? Which words provoke the feeling of anticipation and passion when you read them on paper? These words should inspire you and belong into your vision statement. Your words should be a reference for the type of client you serve, the service you provide, and the geographic coverage of your service.

Write your vision statement. It may take some time, but it is worth it.



ACTIVITY

E. SMART Goals

To help you establish an entrepreneurial vision or to start carrying it into action, setting a SMART GOAL can be crucial. Answer the following questions as clearly as possible. The help of a coach might help you to define your goal more clearly.

SPECIFIC

- What do you want to achieve?
- Why do you want to do this?
- What do you need to do beforehand?
- Who else is involved?
- What are the requisites and constraints?
- When should you be able to complete it?

MEASURABLE

It is very important that you are able to measure the progress as well as the final achievement. This helps you keep your motivation high and indicates when you have reached your goal.

- How much …?
- How many …?
- How will you know that you have achieved your goal?
- How will others know that you have achieved your goal?
- What will be different when you have achieved your goal?
- How will you be able to perceive the changes?

ACHIEVABLE

Achieving the goal that you set for yourself should be within your power and capability. A goal that requires a change in others cannot be achieved if the environment does not have the same goal. It should also be achievable within the time limits and with resources you already have. A goal that needs a full-time activity cannot be achieved by a person who has a full-time job and a family.

- How can you achieve this goal on your own?
- What other changes are needed to make the goal achievable?
- How can you influence those changes?
- How much personal power and resources does your goal achievement require?

- How realistic is this in your current situation?
- How can you obtain the power you need to achieve the goal?

RELEVANT

A goal should have a strong meaning for you and should bring an important change to your life. Things that are important only for other people cannot be set as an individual's goal. Achieving the goal should bring you fulfilment, therefore, the goal must be in line with some values that are important to you.

- What does the goal mean to you?
- What are the values that are related to this goal?
- What are the needs and emotions that are related to this goal?
- How far has your life changed after achieving the goal?
- How far does the goal fit into your life vision?
- What happens if you do not change anything?

TIME-BASED

A good goal does not have any value as a goal without defining a deadline for its complete achievement. Even if the time factor is not relevant for you, it is important to define a time–based goal because the mind responds to specific demands. Setting a date and creating an action plan or a roadmap will make the goal more real and urgent.

- When do you intend to achieve the goal?
- When is it realistic to achieve the goal?
- How much time do you need to achieve your goal?
- What else will you have to do during this time?
- How much of your resources (time, energy, effort, etc.) can you invest into this goal?

The important thing is to set the goal and put it into action. You will need discipline to stick to your plan but if the goal is realistically set and valuable for you, you will be able to achieve it.

ACTIVITY

F. Action Planning

The combination of setting a personal goal and creating an Action Plan makes it easier to start working towards the achievement of a goal and get an overall vision. It is often a lot easier to see what needs to be done when a goal is divided into smaller steps, so called sub-goals. You can work on this alone or with a coach, who can help you identify the necessary steps to be taken, using some repeating questions and visualizing the process.

1. **QUESTION:** What is your goal and by when do you want to achieve it?

   Draw a timeline as your roadmap, starting from the present up to the point when the goal is to be achieved. In some cases, the point of achievement may not be completely clear. In such a case, draw a line from the present to a point set three years into the future. Label the beginning and the end of the line with concrete dates.

2. To make it more tangible, try to imagine the future and envision yourself at the point of goal achievement or in three years' time.

   QUESTION: What has been achieved? What is different? How can you see what has been achieved?

   QUESTION: What needs to be done before to get to that situation within the desired timeline? When is the most appropriate time to complete that action? Who needs to do this? How? Label the completion of the action on the timeline.

   A coach can be very helpful in defining concrete steps that need to be taken before the situation can be reached.

3. Every defined action requires prior steps and actions to be taken. Repeat the questions for each action. We can continue this iteration loop until a realisable action plan within a realistic time-frame is created.

4. Take a look at the action plan, alone or with a coach, and express all the questions and concerns that come to you mind.

   QUESTION: What excites you about this plan, what frightens you, what imposes most… etc.

   Such questions and concerns can reveal some steps or actions that are not entirely clear yet. These could be steps that lead to new sub-actions or indicate some internal barriers that you need to overcome. In the former case, more work can be done to complete the action plan. In the latter case, a new coaching sub-process could take place to help the coachee deal with the internal barrier and get closer to the goal.

EXAMPLE:

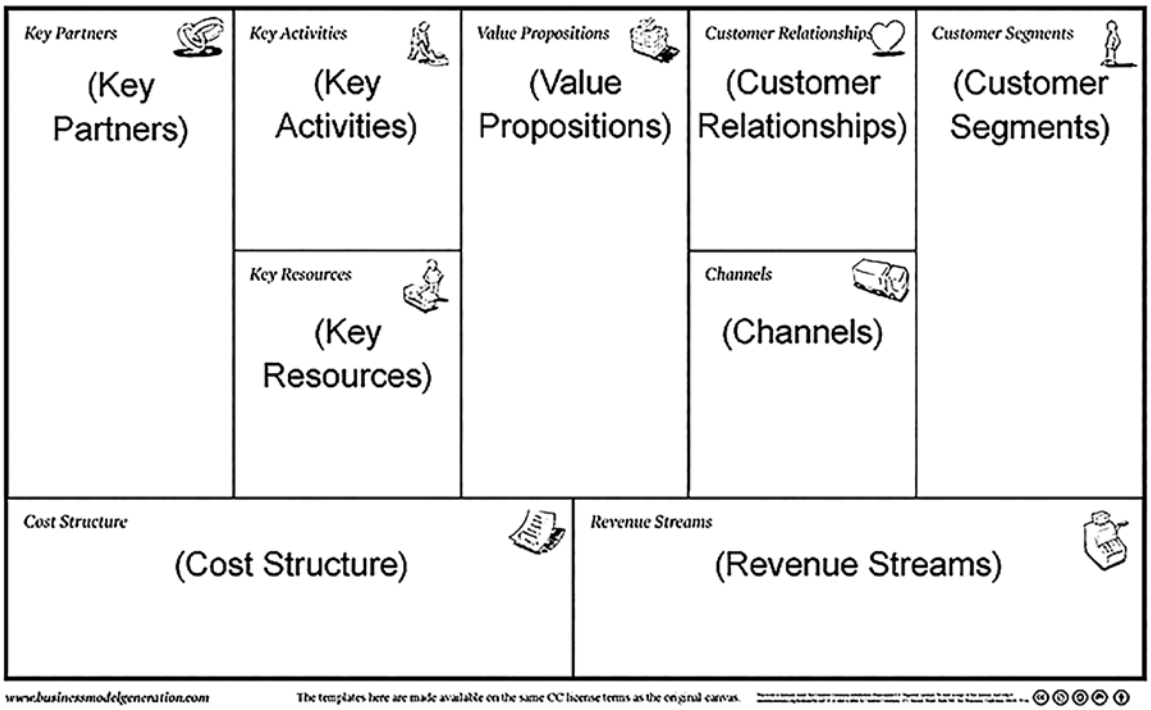
- What exactly do you aim for in three years' time, let's say July 2021?
- To set up a co-working space for community management with one or two colleagues and a secretary.
- How many clients would you like to have at that point?
- At least ten clients.
- When do you need to have at least five clients to be able to have ten clients in 2021?
- In September 2020.
- What do you need to have more clients?
- A business identity, a first client, marketing, …
- When do you aim to move into the office space with your colleagues?

- In October 2019.
- What do you need to have done before moving?
- I have to find out who is going to share the office with me.
- What do you need to find out who is going to share the office with you?
- I need to contact some colleagues with whom I can imagine a professional partnership.
- When is it realistic to do that?
- June 2019.
- What else do you need to have done before moving into a new office?
- ……

ACTIVITY

G. Business CANVAS Model

Take your entrepreneurial vision one step further by fleshing out the details of your vision in a business model. The BCM (Business Canvas Model) is one of the most functional and widely used tools for building your business model – how you will add value to your business while delivering a service or product to your clients. The one-page model will help you share your vision with others who will contribute to your venture (such as partners, suppliers, investors etc).



Check out the youtube link below to watch a video from the Business Channel for a clear description of the elements that BCM can help you join together:

The Business Model Canvas – 9 Steps to Creating a Successful Business Model – Startup Tips

https://www.youtube.com/watch?v=IP0cUBWTgpY

PART	**1 – Personal Growth and Development of Entrepreneuiral Mindset**
SECTION	**3 – Motivation and Perseverance**
CONTENTS	■ The meaning of Motivation and Perseverance ■ Tips for Success
BRIEF DESCRIPTION	When it comes to creating a change in your life or achieving your goals, it may not be easy for you. Research your patterns and observe what you believe, what motivates you, whether you are persistent enough. Observe yourself in the process of achieving your goals. This way, you can learn a lot about yourself. **Stay focused and do not give up.**
ACTIVITIES	A. Motivation and Perseverance Diagnostic Test
NET-ENT DIGITAL TOOLS	
ADDITIONAL LINKS	■ The Science of Perseverance – How Your Beliefs Can Strengthen (or Weaken) Your Motivation https://www.michaeldpollock.com/mindset-motivation-perseverance/ ■ 11 Ways to Stay Motivated & Focused to Achieve Your Goals https://www.youtube.com/watch?v=c-e_vOZp7GE ■ Stay Focused – Motivational Video Compilation for Success in Life & Studying 2017 https://www.youtube.com/watch?v=m_l9OsY9w6U
LEARNING OUTCOMES	Candidate is: ■ determined to turn the ideas into action, ■ prepared to be patient and keep trying to achieve long-term individual or group goals, ■ motivated and has developed perseverance in solving issuess despite the uncertainties and temporary failures.

The meaning of Motivation and Perseverance

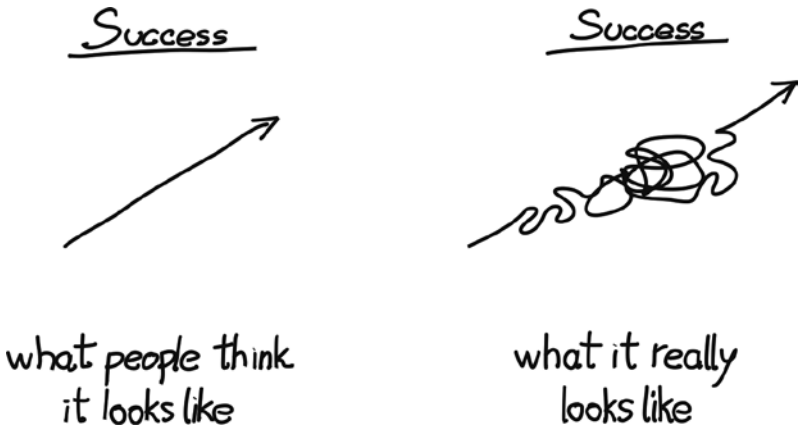
The difference between motivation and perseverance is that **motivation** is willingness of action especially in behavior while **perseverance** is continuing in a course of action without regard to discouragement, opposition or previous failure.

It takes hard work and time to build up and makes you solely responsible for your progress. **Perseverance** is the **key** to a **successful** life. If you keep **persevering** long enough, you will achieve your true potential.

When it comes to creating change in your life or achieving your goals, it probably won't be easy. You may struggle. It'll likely take longer than you expect. It's almost certain that you'll have setbacks and short-term failures along the way. Especially when it involves creating new habits, developing new skills or learning new concepts.

However, struggle, setbacks and short-term failures don't have to drain your motivation. They don't have to make you want to quit before you've put in enough time and effort to reach your goal. In fact, psychologists who study motivation and achievement say it could be just the opposite; as long as you adopt the right mindset.

According to decades of research, there are two fundamental belief systems, also known as "mindsets," that determine how people respond to struggle, setbacks and failure when pursuing their goals. In one mindset, you're likely **to get discouraged** and give up on your goal. In the other, you tend to embrace the struggle, learn from the setbacks and keep moving forward – **you persevere**.



Believing in yourself and persevere in your path is the secret to success.

Success - https://www.michaeldpollock.com/mindset-motivation-perseverance/.

TIPS FOR SUCCESS

- You think you will not succeed and that you are not good enough. This is only an advantage compared to people with strong egos who believe they are the best. Each frustration brings strength for creating.
- Do we have to wait for an ideal moment? There is no ideal moment. This is only an excuse. Start now. Favourable opportunities are rare and cannot be seized by indecisive people.
- Stick to your decision! We throw in the towel too soon. Success often follows a sequence of failures. However, do not stick to your decision at any price. We need to develop the sense of balance between sticking to your decision and adapting to changes.

- Learn to forget failures! They come and go. Only the one who does nothing knows no failures. Take your failure as a lesson and make this mistake a new opportunity. Be curious. The secret of true education is not in the certificate of the level of one's education but in the love for new discoveries.
- Set yourself a clear goal and a deadline to fulfil your task. Goals have magical power. Aim high! Put down your goals. Be obsessed with them as energy follows the direction of your thoughts.
- Learn to plan more efficiently. To be more efficient, set yourself shorter deadlines and improve your focus. Remember that for a certain task an individual spends the exact amount of time that is available to him.
- Be yourself! Be inventive. Pack your joys, knowledge and everything you love doing into an idea and get to work.
- Be responsible! *One's character is one's faith* (Heraclites). Take your time to evaluate yourself, to talk to yourself, take your time for positive thinking. Maintain a healthy mind in a healthy body.
- When creating ideas invite your friends to join! Avoid speculations. The truth always leaks out and the list of your enemies only gets longer and longer. *It is better to find friends in business than business in friends.*
- Learn to communicate with dignity, clearly and convincingly. The art of communicating is also in listening! Make people know that they are important in your eyes.
- Choose a role model! Role models set a good example. Honda's role model was Napoleon who was able to conquer the world in spite of his stout figure – the one Honda had himself. The findings of neuro-linguistic programming (NLP) attest this.

ACTIVITY

A. Motivation and Perseverance Diagnostic Test

Discover what is your or your team's characteristic and what can you do about it. Help yourself with questions listed below.

The following questions will reveal the current state of »GO« and the obstacles that we may still need to overcome.

- How do you feel about choosing your own idea to develop?
  Does that motivate you? Does that obstruct you? Or else?
- How do you feel about creating your own learning proces?
  Is that for granted? Is it hard? What else can you say about it?
- Are you ready?
- When will you be ready?
- How commited are you to the project?
- How optimistic are you about the outcome?
- What possibilites are you the most excited about?
- What´s holding you back right now?
- What´s your uncertainty about, and how could you turn it into readiness?
- What keeps you going under difficult circumstances?
- How did you manage before you gave up?

PART	**1 – Personal Growth and Development of Entrepreneuiral Mindset**
SECTION	**4 – Creativity**
CONTENTS	■ Creativity ■ Creativity and Entrepreneurial Thinking ■ The Entrepreneurial Mindset ■ What diminishes Creativity? ■ What boosts Creativity? ■ The Innovation Engine
BRIEF DESCRIPTION	If you are not prepared to be wrong, you will never come up with something original. **Develop creative and purposeful ideas.**
ACTIVITIES	A. Take Notice – Be Inspired
NET-ENT DIGITAL TOOLS	*HB - P1 - S4 - Creativity Background, Definitions and Models – SŠOF - SI*
ADDITIONAL LINKS	■ Innovation and Creativity https://www.cambridgeinternational.org/images/426483-chapter-4-innovation-and-creativity.pdf ■ Design Thinking https://www.ideou.com/pages/design-thinking ■ Design Thinking Toolkit https://www.ideo.com/post/design-kit ■ Sir Ken Robinson TED Talk: Do Schools Kill Creativity? https://www.ted.com/talks/sir_ken_robinson_do_schools_kill_creativity ■ Tina Seelig TED Talk: Innovation Engine https://www.youtube.com/watch?v=t0c9gufCL8Y ■ 10 Exercises to Fuel Creative Thinking https://www.fastcodesign.com/3057486/10-exercises-to-fuel-creative-thinking
LEARNING OUTCOMES:	Candidate can: ■ develop ideas and opportunities to create value, provide better solutions that the existing ones and create new challenges, ■ explore and experiment with innovative approaches, ■ combine knowledge and resources to achieve valuable effects.

"Electricity is not only present in a magnificent thunderstorm and dazzling lightning, but also in a lamp; so also, creativity exists not only where it creates great historical works, but also everywhere human imagination combines, changes, and creates anything new." (Lev VYGOTSKY)

CREATIVITY

Creativity is a word that we use very frequently in the 21st century. It is increasingly difficult to find an appropriate definition, since there are hundreds of different definitions available across different sources.

A very general and simple definition of creativity is: the creation of something new and of value.

However, this is just one amongst numerous definitions that are available. There are many different authors who described creativity in different models. You can find detailed descriptions of those models on the website of the project under Digital Tools:

- *HB - P1 - S4 - Creativity Background, Definitions and Models – SŠOF - SI*

Hereafter, we will focus on creativity which is an important starting point of developing ideas into commercially successful products. We are particularly interested in the connection between creativity and entrepreneurship.

CREATIVITY AND ENTREPRENEURIAL THINKING

How is creativity connected with entrepreneurial thinking and entrepreneurship? PhD Blaz Zupan [1], Head of Bioinformatics Laboratory at the University of Ljubljana, argues that:

Creativity	=	**new, different or surprising ideas**
Innovativeness	=	**creativity + realisation of creative ideas**
Entrepreneurial thinking	=	**innovativeness + linked to profit**
Entrepreneurship	=	**entrepreneurial thinking + a business model**

One of the key competencies in entrepreneurial thinking is CREATIVITY, which is not only an important part within the creation of new products or services – **creativity is a part of every process improvement**, how work is organized; it plays an important role in relationships and communication processes.

The term creativity doesn't only mean to conceive something new and unknown; it also means to improve. Steve Jobs, the founder of Apple, who is considered to be one of the most creative people of our era, emphasized that on several occasions. He said that creativity just connects things.[2]

ENTREPRENEURIAL MINDSET

The importance of creativity for modern entrepreneurial thinking can be seen from the description of the "*entrepreneurial mindset*" by ***entrum***[3]. *Entrum is an Estonian youth entrepreneurship ideas contest and development program.*

1 PhD Blaž Zupan: Spodbujanje kreativnosti s prototipiranjem (Šola za ravnatelje, 17. 1. 2018, Portorož)

2 PhD Tina Bregant: Dobrodošli v posodobljeni gimnaziji http://publikacija.k56.si/strokovnjaki/2.%20Tina%20Bregant.%20Ustvarjalnost.pdf

3 See www.schooleducationgateway.eu

Entrepreneurial mindset is defined as a personality that:

ACTS WISELY

is determined to achieve the goal, is able to adequately assess him or herself and the consequences of the choices he/she made, is able to consciously use resources, is able to establish relationships and cooperate.

THINKS CREATIVELY

is curious, open and willing to learn; is able to find new ideas/solutions; is able to solve problems in a creative way and can learn from mistakes; is able to notice and use global opportunities.

INITIATES COURAGEOUSLY

is self-motivated and independent; dares to dream big with great ambitions and sets high goals; wants to achieve the best; dares to make decisions and take risks.

TAKES RESPONSIBILITY

takes into account the people and the surrounding environment, acts responsibly, and can cope with failure and uncertainty.

WHAT DIMINISHES CREATIVITY

SCHOOLS and EDUCATION

World renowned education, creativity and relationship specialist Ken Robinson proclaimed in a TED conference (Technology, Education, Design), which was seen by hundreds of millions of people around the world, that education is killing the unconventionality of children.[4]

"98% of all children are born very creative; after the educational process only 2% remain so."

According to him, the reason lies in the repression of unorthodox thinking at schools. The consequence is that the children do not want to stand out in any way. A child is a tabula rasa and is not frightened of being wrong. "*If we're not prepared to make mistakes during our work process, we won't be able to produce anything innovative and original. Adults are stigmatized; mistakes are difficult to accept.*" Ken Robinson received many awards for his work and was made Knight Bachelor by the Queen of England. He has travelled through most parts of the world and discovered that most educational systems follow the same hierarchy of subjects. On top, there are mathematics and languages, followed by social sciences and art at the very bottom. Many talented, brilliant and creative people don't believe in themselves because other competences are being valued at school.[5]

WHAT BOOSTS CREATIVITY

So how can we counteract negative influences in education and boost greater levels of creativity and innovation instead?

ENVIRONMENTS and SOCIAL INFLUENCES

New ideas emerge under the influence of suitable, encouraging environments that don't penalise wrong answers, that create a safe and friendly atmosphere and provide sufficient encouragement to awaken cu-

4 https://www.ted.com/talks/ken_robinson_says_schools_kill_creativity?language=en

5 Delo, priloga Svet kapitala, 14. 12. 2017 https://svetkapitala.delo.si/ikonomija/ce-bi-solski-sistem-spodbujal-kreativnost-bi-ze-zdavnaj-ziveli-z-roboti-4295

riosity and desire for new discoveries and are fun at the same time. This still includes the need for personal effort: hard work, enough time, immersion and passion remain essential.

The newest research shows, that creativity cannot be separated from the social context (Haslam et al., 2014). Researchers today think that belonging to a certain social group is essential to generate ideas and to recognize their value. This is supported by examples such as the impressionist movement, which was driven by excellent artists such as Monet, Degas, Renoir and many more. They only achieved a breakthrough in Paris, the centre of art, as a group. Why do you think that Silicon Valley and Palo Alto are the cradles of creativity in our time?

Social identity and motivation also determine the fulfilment of a person's goals. Picasso as a cubist wouldn't have been so motivated to create a war painting but as a declared antifascist and as a Spaniard, he created Guernica.

GROUPS

Working together and being perceived as "one of us" also determines creative success. A person can be very creative, but his/her work remains unnoticed. If you remember the Beatles, The Rolling Stones, Bauhaus and Bloomsbury, you will be able to see that belonging to a group results in flourishing and spreading of ideas.

Belonging to a group can also stifle creativity and encourage submission to common ideas, but on the other hand, it also facilitates the selection of ideas (good and bad) and inspires an argued defense of the individuals´ ideas within the group. Because of its numerousness, belonging to a group can also lead to changes on a broader social level.[6]

THE INNOVATION ENGINE

In the book *InGenius : A Crash Course on Creativity (2012)*, Tina Seelig from Stanford University (California, USA) highlights the importance of culture and environment. She states that it is necessary to ensure the presence of key internal and external factors to unlock and cultivate creativity.

The Innovation Engine predicts that we need to have or consciously stimulate all of the following in a particular way if we wish to stimulate creativity and innovation:

INTERNAL COMPONENTS: knowledge, attitude and imagination

EXTERNAL COMPONENTS: resources, habitat and culture

See Tina´s TED TALK for a full explanation of the Innovation Engine:
https://www.youtube.com/watch?v=t0c9gufCL8Y

ACTIVITIES

A. TAKE NOTICE – Be Inspired

Brilliant ideas rarely appear out of the blue. In his book ***How to Have Great Ideas: A Guide to Creative Thinking,*** John Ingledew, a photographer and a visiting professor at the London School of Film, Media, and Design (United Kingdom), offers 53 strategies to unlock creative thinking and the next breakthrough. The book aims particularly at young professionals working in design, advertising and communications; however, it offers useful ideas for everyone. Some of the recommended strategies are presented below.

6 Haslam et al., 2014 Source: PhD Tina Bregant: Dobrodošli v posodobljeni gimnaziji http://publikacija.k56.si/strokovnjaki/2.%20Tina%20Bregant.%20Ustvarjalnost.pdf

TAKE NOTICE

"*Creative people are expert noticers*," is an observation made by science professor Guy Claxton. He argues that creative people have highly developed abilities in visual foraging – spotting, gathering, and utilizing things that most others overlook. Having an active rather than idle curiosity about the world around you reveals ideas. Be nosy, be "eyesy."

PROJECT: Spot and collect the **faces, animals, letterforms, and numbers** that are **accidentally created** by wear, repair, time, decay, spillage, breakage, update, replacement, light, shadow, rain, or snow. Some of these things reveal themselves only when you look at them sideways, upside down, or in reverse.[7]

What do you see in the photo below?

Photo: John Ingledew

How can a designer or artist use this strategy or principle in his/her work? Bane Radošević, well known Serbian designer, was taking notice when looking around his art studio at Petrovaradin Fortress. He made an installation in front of his studio. From a certain point, which is marked on the pavement, you can see a head (a tree) with a particular hairstyle. The hairstyle changes as the seasons change.

Installation created by Bane Radošević / Petrovaradin Fortress in Novi Sad. Photo: Zala Tiran, SŠOF, 2017

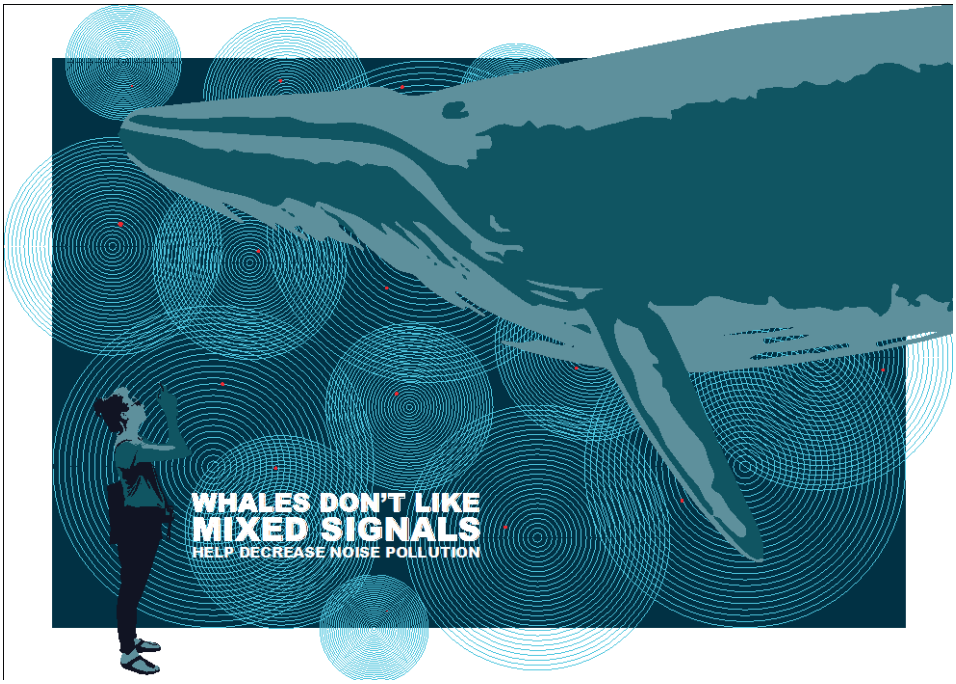
7 Source: John Ingledew: How to Have Great Ideas: A Guide to Creative Thinking (Laurence King, 2016)

Strategies from John Ingledew's book

- Be playful
- Keep it simple
- Act like a kid
- Take notice
- Ask "What else can I do with this?"
- Make them laugh
- Reposition
- Find a link
- Make leaping jumps
- Find an analogy
- Change what appears to be fixed
- Look to nature
- Build your own space
- Try osmosis
- Change the scenery
- Try translating
- Embrace absurdity
- Try swapping systems
- Try combining systems
- Be a storyteller
- Appreciate accidents
- Talk your way in
- Criss-cross borders
- Take things literally
- Be contrary
- Make it personal

What do you think about the picture below? What strategies included in the list above did the author of the poster *Nikita Fric* use?

Alcohol Kills, Nikita Fric, SŠOF, Mentor: Aleksander Brezlan



Whales don't like mixed signals, Filip Levec, SŠOF, 2017, Mentor: Saša Vitežnik Jelen

To participate in the **Bow Seat Ocean Awareness International Student Contest** (2017), Filip Levec decided to design a poster on noise pollution and won the Honorable Mention Award.

How do you understand his idea? Check off some of the strategies you think he used in his creation.

- Be playful
- Keep it simple
- Act like a kid
- Take notice
- Ask "What else can I do with this?"
- Make them laugh
- Reposition
- Find a link
- Make leaping jumps
- Find an analogy
- Change what appears to be fixed
- Look to nature
- Build your own space
- Change the scenery
- Try translating
- Embrace absurdity
- Try swapping systems
- Try combining systems
- Be a storyteller
- Appreciate accidents
- Talk your way in
- Criss-cross borders
- Take things literally
- Be contrary
- Make it personal
- Try osmosis

Illustration: Kaja Rajh, SŠOF

Try to guess what the story is about from the illustration above. The autor, Kaja Rajh, has not putt he story into words yet, it only exists in her mind.

Write your version of the story in 6 sentences.

Literature:

- Seelig, T. (2012). ***Ingenius: A Crash Course on Creativity***. HarperOne
- Sternberg, Robert J. (2011). "***Creativity"***. *Cognitive Psychology* (6 ed.). Cengage Learning. p. 479.
- Dacey, John (1999). "***Concepts of Creativity: A history***". In Runco, M.A.; Pritzer, Steven R.; *Encyclopedia of Creativity, Vol. 1*. Elsevier
- Kaufman, James C.; Beghetto, Ronald A. (2009). "***Beyond Big and Little: The Four C Model of Creativity***". Review of General Psychology. ***13*** (1): 1–12.
- King, L. (2016). ***How to Have Great Ideas: A Guide to Creative Thinking***. Laurence King Publishing.

PART	**1 – Personal Growth and Development of Entrepreneurial Mindset**
SECTION	**5 – Spotting Opportunities**
CONTENTS	■ Spotting opportunities as a key entrepreneurial competence
BRIEF DESCRIPTION	The learner's goal is to "seize and shape opportunities to respond to challenges and create value for others". **Use your imagination and abilities to identify opportunities for creating value.**
ACTIVITIES	A. Group Brainstorming B. Generate and Validate ideas by yourself
NET-ENT DIGITAL TOOLS	
ADDITIONAL LINKS	■ Brainstorm Technique: Lotus Blossom https://andyeklund.com/brainstorm-technique-lotus-blossom/ ■ Lotus Blossom Technique https://www.becreate.ch/en/browse-methods/bc/Activity/show/lotus-blossom-technique-1/ ■ Bacigalupo, M., Kampylis, P., Punie, Y., Van den Brande, G. (2016). ***EntreComp: The Entrepreneurship Competence Framework***. Luxembourg: Publication Office of the European Union https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/entrecomp-entrepreneurship-competence-framework
LEARNING OUTCOMES	■ Candidate is able to identify and seize opportunities to create value by identifying the needs and challenges that need to be met.

SPOTTING OPPORTUNITIES AS A KEY ENTREPRENEURIAL COMPETENCE

SPOTTING OPPORTUNITIES is one of the entrepreneurial competences identified in the EntreComp framework established by the European Union. The description of this competence according to the EntreComp framework is the ability to:

- *identify and seize opportunities to create value by exploring social, cultural and economic landscape,*
- *identify the needs and challenges that need to be met,*
- *establish new connections and bring together the scattered elements of the landscape in order to create opportunities to create value* [8].

Ultimately, the goal for learners is to "*seize and shape opportunities to respond to challenges and create value for others*"[9].

A successful entrepreneur spots an opportunity through a customer's need, a problem or a gap in an existing product or service, or he/she creates a new one and comes up with an innovative solution for it. A business idea can also be based on a different way of organising, implementing – or just doing something in a different way. Of course, the idea should be related to something that you are familiar with or something that you love; it is the passion that creates the opportunity. This can be something that was already implemented in some other area but now you can take it to your own market.

Below, we present two activities: one is for generating ideas within a group (Activity A), while the other one is for generating ideas by yourself (Activity B). Enjoy!

ACTIVITY

A. Group Work for Brainstorming

In this activity, you are working with a group (generally 5-10 people) and a facilitator.

***Step 1**: Brainstorming & Generating Ideas*

In the first step of ideation process, you will focus on quantity rather than quality. Get everyone involved and to contribute. There are no stupid ideas! The more ideas your group generates, the more likely it is that you will find a true gem amongst them.

During the brainstorming process, please make sure you:

- do not judge or evaluate ideas,
- encourage wild and exaggerated ideas,
- remember quantity is more important than quality at this point,
- adopt other people's ideas and develop them further,
- understand that all the participants and all the ideas are equally valuable.

The facilitator will write down the ideas (on a flipchart or similar). Using post-it notes will help you categorize the ideas later on.

At the end of the session, categorize the ideas. The categorization can be based on a topic, or for example, on the way that an idea could be implemented. Here are some examples of categorization:

8 Bacigalupo et al. 2016: 12

9 ibid.: 18

Social media	Mobile application	Service concept	Website
Idea			
		idea	
	idea		

Families	*Young people*	*Senior citizens*	*Restaurant visitors*
	idea		
		idea	
idea			*idea*

***Step 2**: Evaluating Ideas*

First, generate a visual list of the ideas you have produced. Print them and spread them around on post-it notes. Then, present the lotus blossom (see picture below).

Each participant can choose his/her 5 favourite ideas. There are several ways to do this: for example, score them on a scale from 1 to 5 (5 being the most favourite, 4 being their second favourite, etc.). Also, you can score each idea on a scale from -2 to +2 and calculate the average scores.

Calculate the scores and select the "winners". Move to the next phase with the three highest scoring ideas.

Image 1: Lotus Blossom https://andyeklund.com/brainstorm-technique-lotus-blossom/

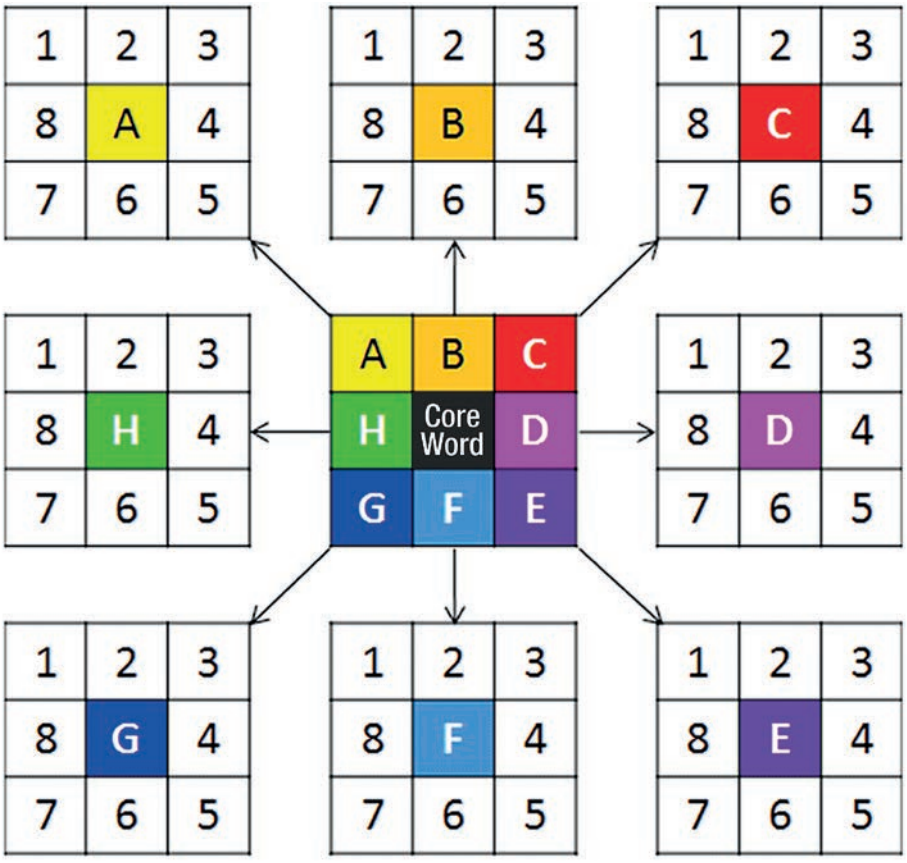
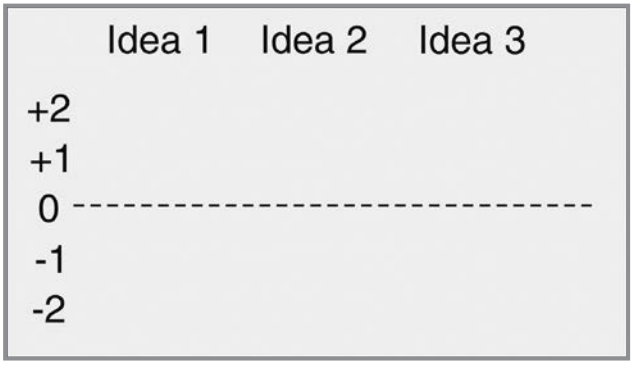


Image 2: Scoreboard for Ideas



***Step 3**: Test Your Ideas*

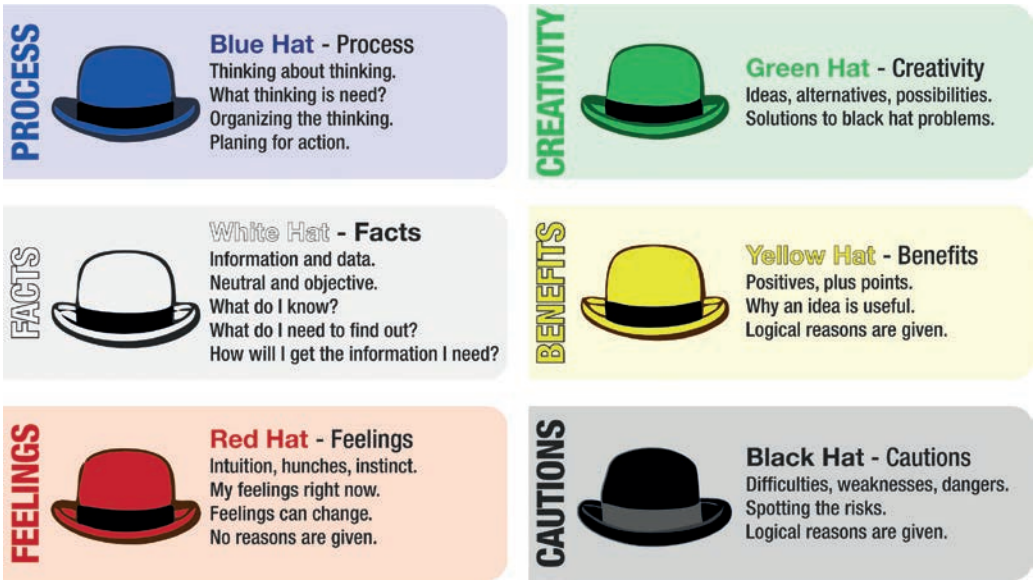
You now have a small group of ideas to work with. We will use a method called **Six Thinking Hats**, developed by Edward de Bono in 1985.

Each participant "wears" one hat at a time, while the hats are rotating between the participants. This will help you consider each idea from multiple viewpoints and to focus on one aspect of the idea at a time. There are six roles ("hats") in different colors:

- **Facts and knowledge** (white)
- **Emotion and feelings** (red)
- **Caution, critical evaluation** (black)
- **Benefits** (yellow)
- **Creativity and new ideas** (green)
- **The overall process – the "big picture"** (blue)

You can find detailed descriptions for each hat in the image below.

Image 3: Six Thinking Hats



After the Six Thinking Hats exercise, you can then complete a SWOT analysis of each idea and focus on expanding the ideas using the lotus blossom framework (see step 2).

ACTIVITY

B. Generate and Validate Ideas by Yourself

It is not easy to find an idea for your business – don't stress! It may sometimes seem that people "found" their ideas easily, they just "popped up", but it is not always like this. Also, it may not be smart to focus on a single idea for too long; some ideas are simply not viable in the long term.

Another way to get a business idea is to concentrate and to work on it; force it out, in essence. Here is a short guide on how to do that.

Of course, it is not guaranteed that you will find that once-in-a-lifetime idea that will make you a millionaire, but it never hurts to try. Who knows – your business idea may be just around the corner! Let us try to find it.

1. **LISTING IDEAS**

   List all the ideas that come to your mind. Notice! At this point we are not talking about business ideas; just ideas or themes related to anything that comes to your mind. Just list everything. Do not spend too much time on a single idea. You will choose the best ones later.

   These ideas can be related to (for example):

   - What are you good at?
   - What are your special skills?
   - What do you love to do?
   - What are you interested in?
   - What would you like to learn?
   - What kind of job have you been doing recently?
   - What was the most interesting school project that you participated in recently?
   - What are your hobbies?
   - What do you like to do in your free time?
   - For what kind of matters people ask help from you?
   - What kind of books and articles have you read lately?
   - What kind of tools and apps do you use?
   - Which blogs or websites do you read regularly. What are they about?

2. **MAKING BUSINESS IDEAS**

   After you have listed the ideas and themes with the help of the questions above, you should have had around 50 ideas and themes on your list. At least, you should aim for that. Now, it is time to think about the actual business ideas. Go through your list and ideate business ideas from every word you have listed. You might get several business ideas from one word.

   For example: *I love running so I write running as a first idea on my list*. In the second phase, I add "a running app", "running coaching", "a running magazine", "a running website" and "a running gear store" to my list of business ideas. At this point do not think about what you can do or if the idea is feasible. Just list the business ideas!

   After you have completed this phase, you should have had about 100 ideas on your list.

3. **CATEGORISING**

In third phase, it is time to categorize your business ideas. Choose some main categories such as "a store" or "training" or "running" and list the business ideas under these main categories. Some ideas might fall into several categories and that is perfectly acceptable. After you have listed all the ideas under the main categories, go through the ideas and categories once more.

The purpose of this phase is to explore the relations among your existing ideas and to generate some new ideas at the same time. Still, the point is to ideate, so keep your list long. The validation of the ideas will be done in the following phases.

4. **VALIDATION**

Now it is time to establish which ideas that your generated may actually work.

Go through all the business ideas you have on your list. For each idea, keep in mind who the customer is. Write it down, put your focus on the costumer and ask yourself: Is the potential customer willing to pay and able to pay for this product or service?

If the answer is a decisive "no", forget the idea. If the answer is "yes", ask yourself: ***Am I willing to and able to produce this product or service?*** Of course, you do not need to do everything by yourself but at least this must be something that you are interested to learn about.

If this is not the case, just forget the idea! If it is, keep it on your list.

5. **TALKING TO THE EXPERTS**

At this point, you have a shortlist of the remaining ideas. If you think, there are still too many, go through the validation process (phases 3 and 4) once again.

If you think the rest of the ideas are good, you need to go through the final validation. And even though, you may only have one idea at that point, use that one.

This final validation is completed by talking to the experts. For every potential idea, you should talk to at least 5 people that are professionally involved in the business your idea is related to. If they also think that the idea is good, you might have an awesome business idea on your hands! Do not be discouraged if you receive some negative feedback. Most people would usually say: "No, that isn't going to work". However, if several specialists tell you that the idea is not feasible, you should at least be more careful and think about the risks you are taking.

Good luck! We hope that this ideation process was helpful to you and that it helped you to find an idea to develop further.

NET-ENT MODULE

PART 2

DEVELOPMENT OF A COMMERCIALLY SUCCESSFUL PRODUCT (ENTERPRISE)

Šolski center Nova Gorica · SSOf · Haaga-Helia · Politeknika Ikastegia Txorierri S. Coop. · City of Glasgow College

PART	**2 – Development of a Commercially Successful Product (Enterprise)**
SECTION	**1 – Idea Generation**
CONTENTS	■ Finding Ideas ■ How to Increase Your Potential ■ Design Thinking
BRIEF DESCRIPTION	In the first part of this Handbook, we focused on personal growth and development of entrepreneurial mindset. In the second part, we are now moving to the practical part that focuses on the development of a new product, starting from an idea. Since the chapters in this part are intertwined (idea generation, idea validation, prototype, product), its contents are intertwined as well. The first chapter will focus on the ideas, however, it will methodology for developing new products is also included – Design Thinking. We will get to know the whole process of creating a new product – from the idea to the final result. We will return to this section if the following chapters require it. **Taking the Initiative**
ACTIVITIES	Generate as many ideas as you can – help yourself with the chapter Spotting Opportunities from the first part of the Handbook. A. Inspiration: My Purpose B. Design Thinking in Teams: Problem Solving
NET-ENT DIGITAL TOOLS	*HB - P2 - S1 - CREATIVE PROCESS - 11 PHASES – SŠOF - SI* *HB - P2 - S1 - Design Process – Graphic presentation 1 - SŠOF - SI* *HB - P2 - S1 - Design Process – Graphic presentation 2 - SŠOF - SI*
ADDITIONAL LINKS	Brown, T. (2008). ***Design Thinking***. Harvard Business Review (6), 84-92. IDEO (2011). HCD – Human Centered Design Toolkit. www.ideo.com ■ The Design Thinking Process: https://www.youtube.com/watch?v=_r0VX-aU_T8 ■ What Is Design Thinking? https://www.youtube.com/watch?v=a7sEoEvT8I8 ■ The Explainer: What Is Design Thinking? https://www.youtube.com/watch?v=_WI3B54m6SU ■ What is Design Thinking? (2019) | AJ&Smart https://www.youtube.com/watch?v=-hyVVdFobhU ■ Design Thinking E-book https://www.agencyq.com/design-thinking-ebook ■ How Design Thinking Improves the Creative Process https://www.gsb.stanford.edu/insights/how-design-thinking-improves-creative-process ■ What is Design Thinking and Why Do Entrepreneurs Need to Care? https://www.americaninno.com/boston/what-is-design-thinking-and-why-do-entrepreneurs-need-to-care/

	■ Design Thinking Is the Key to Successful Innovation https://www.imperial.ac.uk/business-school/knowledge/entrepreneurship-innovation/design-thinking-is-the-key-to-successful-innovation/ ■ Paper Beats Plastic https://www.ted.com/talks/leyla_acaroglu_paper_beats_plastic_how_to_rethink_environmental_folklore?utm_campaign=tedspread&utm_medium=referral&utm_source=tedcomshare ■ Why the Lean Start-Up Changes Everything? https://hbr.org/2013/05/why-the-lean-start-up-changes-everything ■ What Makes Organizations More Creatively Competitive? https://zine.ideo.com/downloads/Zine-IDEO-no1-YouCanPrototypeAnything.pdf
LEARNING OUTCOMES	■ Candidate is motivated to do things, take the initiative, and is willing to get things done on his own.

FINDING IDEAS

The secret of fulfilment is creating, and creating is a process, not a sudden action.

The life force of a young person is creating.

If you ask people when they get their best ideas, most of them woud respond – while taking a shower, while running, while having a walk etc. Just a few of them would respond – at work. Why? Because creative thinking is related to the state of being relaxed.

Where to find ideas? You do not have to go anywhere. The ideas are found within us.

Human brain is a phenomenon. It consists of 86,000,000,000 neurons. Each of them establishes 1000 links, which is 150.000.000.000.000 links in total. The brain effectively stores 2.5 million Gb of information.

What an extraordinary tool to look for ideas.

The secret of discovery is in seeking.

SUCCESSFUL – CREATIVE MINDSETS

Characteristics of successful people include:

- strong will,
- high expectations,
- belief in success,
- perceiving opportunities where others perceive obstacles.

To succeed is no more difficult than to fail!

However, there are many **excuses** for not taking the risks to succeed. Let us take a look at the examples below.

- *It used to be easier to succeed. If only these were the good old times.*
  Many entrepreneurs believe that a crisis is their life opportunity and that business has never been better. And they succeed in whatever they start.

- *I´m too young.*
  You can overcome the lack of experience by being daring, energetic, passionate, intuitive and original.
- *I have no money.*
  The most important assets of an entrepreneur are a good business idea and a positive drive. TO BE is TO OWN.
- *My education is not good enough.*
  Education in the form of a diploma or a degree is not enough to bring success. More than a half of "millionaires" hasn't finished higher education.
- *I have no talent.*
  Everyone in the world has at least one talent. Some capabilities can also be acquired.
- *I do not have enough strength.*
  Discover latent energy (other drive). A problem can't be solved with the same level of thinking that created it (Albert Einstein). Why don't we use "out of the box solutions"?
- *I am scared of failure. What will people say if I fail?*
  Only people who haven´t done anything will never fail in the eyes of the world – beyond the fact they have never done anything. Be courageous. Only those who believe in victory will win.

HOW TO INCREASE YOUR POTENTIAL

Several tip for success were already provided in the chapter Motivation and Perseverance. Take your time and go through those tips once again since they are tightly related to the content that follows.

To think that you will succeed is not enough. It is important to be involved and to use feeling.

❍ ***Knowledge + feelings = KNOWING***

Personal experience and identification with the idea is of significant importance. *I believe in my idea. I am the idea.*

Be CREATIVE. It´s a fact that we are all creative. Without exception! Therefore, we should get rid of all the unnecessary prejudice and limitations, which exist only in our mind. As creativity is a skill, it holds as a rule (as with other skills) that practice makes it perfect; however, practice must be regular and hard. Creativity is the result of the activity in the right hemisphere of the brain. This part of the brain communicates with the left side of the body. Therefore, if we are right-handed and we brush our teeth with the left hand every evening, we are getting closer to activating our hidden potentials in our right hemisphere – where drawing, singing, dancing and other reside (creativity).

❍ **Creativity ≠ Inventiveness**

Creativity is an emotional-mental strength that presents the potential for creating.

Inventiveness is realised when creative power is freed from fear.

❍ **Creativity = new, different and astonishing ideas**

Innovativeness is a different perspective on the product or technology that the company is using. An innovative product is better and/or cheaper in terms of its features compared to the current products on the market (Andrej Wagner).

❍ **Innovativeness = creativity + fulfilment**

Being entrepreneurial is a competence which enables an individual to identify and exploit the opportunities that arise; it enables him/her to realise ideas and to plan and administer the processes that lead to the goals he/she set.

❍ **Being entrepreneurial = innovativeness + benefit**

Entrepreneurship is a process of creating something new while turning a profit and taking risks.

❍ **Eentrepreneurship = being entrepreneurial + business model**

EXAMPLES

CREATIVITY: I designed a personal home system for faster beer brewing.

INNOVATIVENESS: I manufactured the system; I brew beer and it works!

BEING ENTREPRENEURIAL: I founded a brewery association so that the system could be used by my friends. I presented the system at a trade fair and now I am looking for methods to change the brewery industry.

ENTREPRENEURSHIP: I sold 100 systems in 1 month.

HOW TO GENERATE IDEAS (see also section 5 - Spotting Opportunities in the first part of Handbook)

We can get ideas in different ways:

- Solving people's problems. We are surrounded by ideas and each idea can solve a specific problem.
- Developing a business out of a hobby.
- Finding out our competitors' weaknesses.
- Combining two or more ideas in a new way.
- Recycling waste into useful products.
- A new way to make an already existing product.
- Improving a product or service.
- Curiosity/asking questions.
- Observing.
- Talking and listening to people.
- Research/trials.
- Dreaming and imagination
- Market research
- Contemplating the purpose of the products
- Thinking in a new way: back to the source, large – small etc.
- Transferring solutions into another field.
- Imitating someone else's successful idea.
- Constant searching for ideas.
- Browsing the internet (search engines).
- Joining a team.
- Environment evolution.
- Coincidence (Eureka!) etc.

In a planned process of searching for ideas, it is important to put down the ideas. It certainly holds true that wise people put things down. We should always a notebook, a pen or a personal organizer at hand. Many people dream about good ideas; therefore, it is essential to have a notebook close to your bed. You can never tell.

DESIGN THINKING

The method of searching and realising the ideas is called Design Thinking – the mindset of designers has moved towards the comprehensive concept of product or service development.

We can use The Design Thinking Process in all stages – from idea to product (since we are talking about the development of new products). No matter what your profile is (business, marketing, design or production), you will always go through this process when developing a new product.

However, when it comes to industrial and graphic design of the objects, designers use a very accurate process, which is described in detail and clearly illustrated (with examples) in the section Digital Tools listed below. A design student or an external expert in the area of design, who will participate in the process, already has this knowledge. Both can help you how to understand the meaning of design and how to use it properly when developing your ideas.

To deepen your knowledge and understanding of this field, we prepared additional digital materials.

- *HB - P2 - S1 - CREATIVE PROCESS - 11 PHASES – SŠOF - SI*
- *HB - P2 - S1 - Design Process – Graphic presentation 1 – SŠOF - SI*
- *HB - P2 - S1 - Design Process – Graphic presentation 2 - SŠOF - SI*

Historically, design was considered as one of the last steps of the development process. It is a point where designers (who have not had any role in the innovative work before) put a product or an idea into a nice package. It is certainly true that this approach stimulated market growth in several fields by making products visually attractive and consequently more desirable for consumers by improving brand perception, encouraging advertising and using communication strategies. However, during the second half of the twentieth century, design has become more and more important as a competitive tool, e.g. in electronics, automotive industry and other. However, it remained in the background as an additional value; in most industries, it was used at a quite late phase (Brown 2008).

Design is everywhere around us.

Good design is the one for which you do not have to write (Shawn Leslie).

Design is not a narrow use of formal abilities; it is a way of thinking (Chris Pullman).

I never design a building before I check the location and get to know the people who are going to live in the building (Frank Lloyd Wright).

Design is not only about how something looks like or how something feels. Design is about how something functions (Steve Jobs).

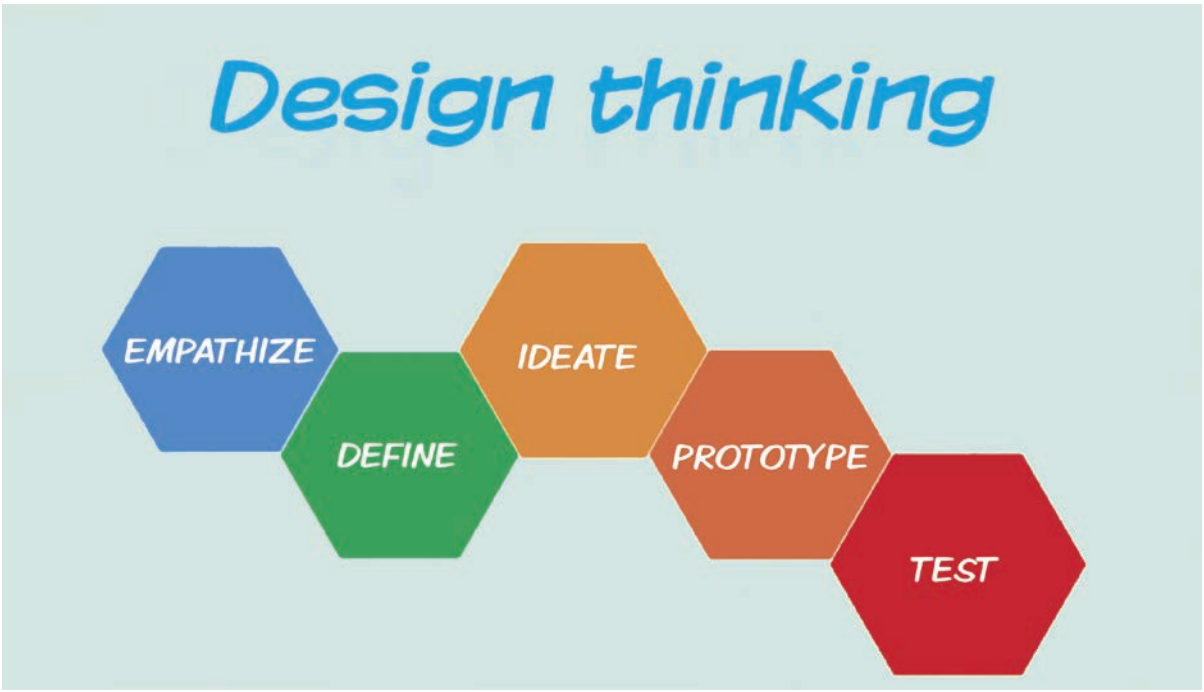
WHAT CAN WE DESIGN?

- Products
- Services
- Aesthetic value
- Usefulness and clarity
- Business models
- Work processes
- Company strategy
- Teamwork
- etc.

Design focuses on the user and his/her needs – also known as human-centered design. **DESIGN THINKING** is a methodology that is applied in five stages:

1. EMPATHIZE – Understanding the users, their real needs and desires
2. DEFINE – Interpreting the content of the problem, issue
3. IDEATE – Ideation – finding different ideas
4. PROTOTYPE – Experimentation
5. TEST – Implementation

The stages of design thinking are not linear; during the process, we often get back to the previous stages to make sure we are still heading towards our goal.



1 EMPATHISE (REVEALING – INTERVIEWING – EMPATHY)

The defenders of design thinking often criticize the use of classical market research for developing new products and services. Why? Because they believe that it is difficult for users to communicate what they really want, however, market research is based on the (future) users' opinions. With design thinking, qualitative research plays a much more important role. The aim of this stage is to get acquainted in detail with a challenge/problem, and then define the target group and its needs, values and motivation. Design thinking stresses the importance of empathy. EMPATHY is a psychological ability of feeling emotions, perceiving thoughts and feelings of another person without expressing your own. It is the ability of identifying with another person. Empathy is needed to reveal explicit and implicit needs of others so that we can provide them with our solutions.

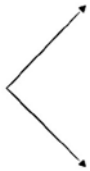
The methods applied are observation, field research, discussions and filming/taking photographs; researchers have to be in touch with users instead of merely doing desk research. **This stage is meant to observe but not (yet) to interpret.** The interview is of utmost importance by which it is essential for a researcher to ask the right questions and to choose a suitable interviewee who has to be representative of a target group; someone who has a lot to teach us – maybe somebody who breaks certain rules of a product or service use. The defenders of design thinking point out the significance of including elements such as

anthropology and ethnography, which is relatively rare in a business context. A common feature of teams is their heterogeneity in terms of experience, branch of profession and education.

When asking questions, we consider three axioms:

- 1: Ask about recent experience. The designer is not so much interested in future behaviour, or wishes, as in recent experience. *Where did you spend your last holiday?*
- 2: Don´t judge responses. Show sincere interest.
- 3: Go deeper: *Tell me something more about …*

After the interview short written summaries about all conversations are drafted.



CONSUMER RESEARCH

These reveal the addressed and unaddressed consumer needs. Our thinking is open, without limitations and judgments.

2. **DEFINE the problem (INTERPRETATION)**

Interpretation is the second stage of design thinking. It gives meaning to stories and information and transforms them into invaluable insight and inspiration. The aim of this stage is to find a clear direction for generating ideas. What we found out in the first stage is interpreted in a way that creates real-life stories while avoiding generalisations, judgments or assumptions. Patterns and relations among information are defined with categories and groups of information. We can also visualise a story which helps us to see the whole picture clearer. It is important that the information is interpreted from the target group's point of view (not from ours). After we have defined topics and patterns, we can start designing opportunities. This means moving from the present state/situation towards future opportunities. This means redefining the problem from the point of view of consumers' needs. This will provide a clear direction for creating ideas. Opportunities are expressed in the form of active questions starting with:

How could we…? For example: *How could we provide our consumers with a better-quality service*?

Opportunities are not solutions; they are questions which create possibilities for creating ideas.

RESEARCH ANALYSIS AND SYNTHESIS

We transform the revealed patterns into findings by applying analytical thinking, narrowing the interest area of the project, and defining the problem that we are solving.

3. **IDEATE (IDEATION)**

Ideation is the third stage of design thinking. They say that the most reliable way to generate quality ideas is to generate many ideas. Thus, the main goal of this stage is to generate as many ideas as possible. When applying the design thinking approach, people would most commonly use brainstorming and follow its four rules. Following these rules creates a synergy that significantly increases the creativity of the team.

DESIGN THINKING BRAINSTORMING TIPS

1. Focus on the quantity. This is a means that contributes to the diversity of the proposed ideas. The basic idea is – if we produce a higher number of ideas, there is a higher possibility of finding efficient solutions (quantity leads to quality).
2. No judging. Judging the ideas should be put aside during the team brainstorming sessions. Instead of trying to find out what is wrong with an idea, students should first focus on broadening the idea and contributing to it – critical evaluation is postponed to the later stages of the idea generating process. By delaying evaluation, we create a stimulating atmosphere where students feel at ease to create unusual ideas.
3. Unusual ideas are welcome. This way, we create a better and a longer list of ideas, moreover, unusual ideas sometimes provoke a new way of thinking and can lead to better solutions than the ordinary ones.
4. Combine and improve ideas. This should lead to better and more refined solutions than just generating new ideas. Constructing of ideas can be stimulated through associations.

When using brainstorming, we must first define a problem we would like to provide a solution for. The problem must be set clearly and should not be too comprehensive. We can use closed or open brainstorming.

In closed brainstorming, each student independently lists his ideas on a piece of paper. Then, he switches his list with a neighbour and completes his list with own suggestions.

In open brainstorming, a team chooses a secretary to note down the ideas as the students generate them. The students are looking for possible solutions to problems while the secretary is writing them onto the blackboard and repeating them out loud.

MIND MAPPING

We can also use any other creative thinking technique or a combination of them such as mind mapping. MIND MAPPING is a simple and extremely effective method of creating and organizing ideas by using symbols, key words, codes and colours. The use of mind mapping stimulates our mind and significantly improves our productivity, creativity, memory, communication ability and flexibility. However, it is essential that we think outside the box, without limitations. It can also be very useful to draw ideas. At the end of the ideation stage, we choose the most promising idea that we are going to take to the next stage to experiment with.

Experience has shown that pictorial representations allow for:

- 30 % faster understanding and communication,
- 20 % faster team decision-making and coming to agreements,
- 60% shorter duration of meetings and
- 20% shorter duration of project work.

HOW TO USE MIND MAPPING?

Put down your goal in the centre of the paper/screen. Draw a branch that stems from the central point and put down the first idea or problem area that comes to your mind. From there on, you can continue breaking down the same branch or you can start a new one. And so on. You can always jump from one branch to another. You can start new branches and prolong the old ones until you run out of paper or until you realise that you can see a clear picture that provides you with all the options and connections. Use arrows to connect interdependent branches among themselves; if there are any. The brain will click and the whole idea will rise up in front of your eyes. This way, you will get an overview of the whole picture as well as of separate elements. The students are extremely engaging and creative during the process, so they have no problems summarizing and memorising everything!

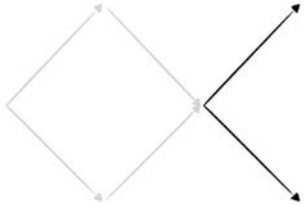
Mind mapping follows the actual happening in our brains. Thus, in a mind map, our thoughts are not listed in a certain order (from the left to the right); they jump from one branch to another, just as they occur in our brain. Draw an arrow, a line, connect them, write down a word or two … and that is it.

A mind map enables you to see the whole picture and the details on one page. This way, the relations inside the mind map become obvious, and the results achieved are creative and dynamic. Mind mapping stimulates the activity in both hemispheres of the human brain and improves our memory – it is easier for us to remember the pictures that lead us to better results.

On line Mind mapping – Free Tool https://www.mindmeister.com/?utm_source=google&utm_medium=cpc&utm_campaign=world_en_search&utm_content=mm&gclid=CjwKCAiArJjvBRACEiwA-Wiqq8n0DoVWbcknFzZ-bzaNflUfXLFipLOzLMaBYkADr-T41nTT1iLOFRoCuRMQAvD_BwE

4. **PROTOTYPE (EXPERIMENTATION)**

This stage of the idea is meant for testing. Prototypes are an excellent tool that enable us to learn as much as we can from an idea when it has already taken shape – this stimulates further thinking. This way, we obtain new information and learning experiences. Creating prototypes quickly, at an early stage, enables us to immediately dispose of unusable ideas. Prototypes are supposed to be simple and should provide feedback once they are created. At this stage, it is very important to be ready to give up the ideas that proved to be inefficient.

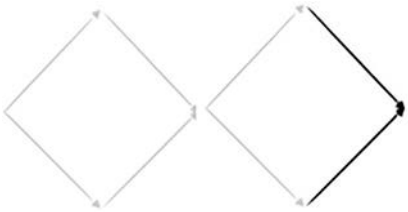


DEVELOPMENT OF IDEA SOLUTIONS

We seek possible solutions to a given problem. We apply creative thinking (without limitations) and test our prototypes.

5. **TEST (IMPLEMENTATION)**

The aim of the final stage is to produce a final product. At this point, we use feedback from the previous stage to improve the idea as much as we can. We make changes in places where consumers reported possible obstacles and we assess the relevance of each such feedback. Next, we plan further steps and sources needed to implement the idea; we prepare calculations, set the deadlines, communicate our ideas to people who could help implementing them, and record the whole process of implementation. At this stage the team also prepares an attractive presentation to draw the attention of the target groups. The presentation should be designed as a story.



DESIGNING A FINAL SOLUTION

We deliver and implement the final solution of the project that is verified and testified with consumers.

ACTIVITIES

A. Reflection – Inspiration and PURPOSE

Describe an inspirational moment that you have experienced in recent years – a moment when something enraptured you and took you to the inside of yourself; when you said to yourself: *That's it. I want to do this. That´s why I'm here in this world.*

B. Design Thinking in Teams: Problem Solving

Form the teams of four students with similar interests. Think of a problem/issue that you are going to solve or something that you would like to improve.

1. Perform field research among users/consumers, have at least 20 conversations or interviews and record what you find. When asking questions, consider the three axioms. Find out if the problem/need really exists and how it affects the people concerned. Observe what is going on with each person and the context/situation that the person finds himself/herself in.

   How does each person react?

   Why does a person react in this way? Look for stories.

   Ask: "*Why*?"

   Listen carefully and observe.

   "*Tell me how it was when you last* _____."

   "*Tell me something about the experience you had with* _____."

SAMPLE HANDOUT:

SEX: M F

AGE: _____

STATUS: _____

INCOME: _____

QUOTATION:

_____

2. Study the information acquired through the interviews/conversations.

   Identify the patterns that repeat. It´s essential to interpret the information from the point of view of you target group. After you have defined the topics and patterns, you can start designing opportunities and solutions.
3. By using closed brainstorming, write some ideas on a piece of paper / post-it notes. Next, hand the paper with your ideas to your neighbour (another student) and complete the list of ideas that you were handed. Then, carry out a group brainstorming with a secretary, collecting all the ideas on the blackboard without any judgements. Remember: the more ideas, the better.

THE 20 IDEAS METHOD TO SOLVE A PROBLEM

1.
2.
3.
4.
5.

1–5 AVERAGE IDEAS; rarely reflect good solutions; these are the first ideas that cross peoples' minds without particularly intensive thinking.

6.
7.
8.
9.
10.

6–10 BETTER IDEAS; you have to wrack your brains to get these ideas; an average person that dislikes thinking rarely comes up with this many.

11.
12.
13.
14.
15.

11–15 EXCELLENT IDEAS; you have to do serious thinking to come to these ideas; you have to consult other people and the process of thinking may take several days.

16.
17.
18.
19.
20.

16–20 BRILLIANT IDEAS; some of these ideas border madness and are potentially top-notch; only a small percentage of people can come up with this many ideas but very often in these areas are the winners

The team should choose the most promising ideas among the given. A student draws a draft of the product/service that solves a given problem.

4. Try to produce a simple prototype of a product/service from the materials available (LEGO, plasticine, etc.).

   Present the prototype to the other teams. They should consider others' opinions to improve their product.

   Present the idea/service/product/solution in a 1-minute sketch, showing how the problem is solved.

   Get more feedback from consumers' or users to improve the prototype and adapt it accordingly.

A short video The Design Thinking Process shows the essence of this process:

https://www.youtube.com/watch?v=_r0VX-aU_T8

We can use The Design Thinking Process in all stages – from idea to product.

PART	**2 – Development of a Commercially Successful Product (Enterprise)**
SECTION	**2 – Valuate the Idea from the Aspects of Marketing, Design and Production**
CONTENTS	■ Ideas Evaluation in General ■ Marketing Aspect ■ Design Aspect ■ Production Aspect
BRIEF DESCRIPTION	Now you have to check your ideas and find out: If the idea has market potential – will people buy it, do they need it? If it is properly designed to be attractive to customers – will they like it? Whether it can be produced – how (what) will it look like? **Valuing ideas** **Working with others**
ACTIVITIES	A. Develop and evaluate your ideas. Please refer to the procedure below. Together with your mentor: - Establish your own team, make a list of potential coworkers from other fields (those who have the knowledge to help you develop the idea) and contact them. They will see your idea from a different perspective; they can also take over one part of the product development process (for example, making a prototype). - Set a collaboration timeline and define the tasks and methods of cooperation. Keep it up to the date and if necessary, upgrade it. - Evaluate the learning process – write down what you liked in particular and make suggestions for improvements. Based on the obtained results, prepare the guidelines for possible improvements and upgrade the process. - Record and edit the video of the product creation process from the initial idea onwards – it can be an example of good practice of Networking for Entrepreneurship. It can even grow into a long-term collaboration or network.
NET-ENT DIGITAL TOOLS	*HB - P2 - S2 - INDUSTRIAL DESIGN – SŠOF - SI* *HB - P2 - S2 - Validating the Idea - MARKETING Aspect – TXORIERRI - ES* *HB - P2 - S2 - Validating the Idea - DESIGN aspect – SŠOF - SI*

ADDITIONAL LINKS	■ What is good design http://ui-patterns.com/blog/What-is-good-design ■ HOW TO EFFECTIVELY EVALUATE AND PROOF A DESIGN https://modassicmarketing.com/when-evaluating-a-design-whose-opinion-should-you-value ■ Design Review Process Overview (Evaluation sheet) https://www.iainstitute.org/sites/default/files/designreviewchecksheets.pdf ■ Evaluation in Product Development http://www.uiah.fi/projekti/metodi/13c.htm ■ 12 Steps From Product Concept to Manufacturing https://www.business2community.com/product-management/12-steps-product-concept-manufacturing-01518713
LEARNING OUTCOMES	Candidate is able to: ■ identify and choose opportunities to create value by identifying the needs and challenges that need to be met, ■ distinguish between the design, marketing and production aspects within the process of new product development and understands their roles in achieving success, ■ choose co-workers and assemble a larger team to achieve the desired goal.

IDEAS EVALUATION IN GENERAL

Now we have come to the point where the interesting part starts. This is the first step to a successful business and can be the starting point of you company in the future.

As already mentioned in the introduction to this Handbook, the most important thing of the NET-ENT MODULE is that you are a co-creator of the learning process. Once you pop-up with your idea, the final goal is to develop it to a commercially successful product (it can also be a service).

So, not just any product, but the product which has the market potential.

To develop products like this, it is necessary to integrate knowledge skills and experts from a variety of different fields.

In creating a commercially successful product, we need to combine:

- business and **marketing** skills,
- industrial and graphic **design** skills,
- product manufacturing capacity/**production** skills.

These three areas have to work hand in hand. However, school systems usually separate these areas – technicians and future professionals are educated in different programs with none or very random contact with each other.

In this module, it is your job to combine three different educational programs (marketing, design and production) to achieve the common goal of product creation and commercial success. **The goal is to create high-quality and useful products which are commercially interesting, properly designed and have market potential.** In NET-ENT MODULE, you and your team (teachers and students together) will establish cooperation with other school programs/deptartments and interact closely with them during the process. For inspirational purposes, you can find some teamwork examples on the website of the project – under Digital Tools, Pilot Implementation Videos.

Look at your idea (product) from the perspective of:

- a marketing specialist (buyers need it and desire it, you can sell it, it has a story, …),
- a designer (design plays an important role in product performance),
- a product manufacturer (can be produced, manufactured).

You do not have to have all the knowledge or skills but you should know what knowledge and inputs you need and where to find them.

You can find your colleagues and co-creators among students and teachers in one of the programs that is not your program. They have a wealth of knowledge which can contribute to developing your idea into a commercially successful product.

The best way is to establish networks with them and work with them together in this module. At the same time, you can help them with your knowledge to develop their ideas. In this process of exchanging the knowledge and sharing different perspectives on the idea, you can learn a lot of useful things (for example from a designer's point of view) without having to know the full range of tools and knowledge that designers have. It is enough to communicate with them in the right way and include them in the process when their knowledge is needed.

At certain points in the process you will need up-to-date practical knowledge that can be obtained only by experts working in real companies.

Knowledge is changing very fast these days, and fresh ideas, experiences and advice from entrepreneurs will further enhance and refine your product development experience. Again, you will have to find your

own resources (the companies and branches related to your idea). Companies and experts can help you with their experience and knowledge applying it to your idea. There are many different ways you can include them, e.g. organizing special workshops, consulting and mentoring, problem solving, case studies.

A fundamental aspect of NET-ENT MODULE is finding and developing your own process of learning, finding your way to materialize ideas.

Any student or external expert in marketing, design or production who will participate in the process already posses the knowledge of their own field. As already told, you do not need to know everything yourself. These experts will upgrade your idea with their knowledge. You do not need to have that knowledge.

However, if you want to deepen your knowledge and understand what you need to know in a particular field, there are additional digital materials available for each area.

You can find them among Digital Tools on the EU Website of the project:

- *HB - P2 - S2 - INDUSTRIAL DESIGN – SŠOF - SI*
- *HB - P2 - S2 - Validating the Idea - MARKETING Aspect – TXORIERRI - ES*
- *HB - P2 - S2 - Validating the Idea - DESIGN aspect – SŠOF - SI*

You are free to choose you own learning path. Isn´t it great?

Be active, curious, responsible, persistent. Do not give up.

This is not an easy task, but it pays off.

TRY and TRUST.

Do not worry if you fail at first attempt, you have learned a lot from it anyway.

Below, you will find some basic questions for each area to help you get started.

MARKETING ASPECT

If there is no need for our product and we cannot sell it, then it is certainly not a commercially successful product. How to find this out?

A good place to start is to ask yourself the following questions about your idea/product:

1. **How is it different?**

Your underlying business idea doesn't need to be original but you need to establish unique selling propositions (USPs) if you want people to buy from you rather than your competitors. You have to offer something new. Is your proposition solving a problem? Are you filling a gap in the market or building on an existing offer?

2. **Is there a market, and is it big enough?**

Thorough market research is needed before moving forward with your business idea. You need to ensure that there will be sufficient and sustainable demand to support your business and enable it to thrive.

3. **What is the business model?**

How will you charge your customers, and what for? Can you think of additional revenue streams? Research is vital to determine whether your business model is viable; this should include an analysis of how your competitors have structured their businesses.

4. **Is the price right?**

It is no good having a winning product or service if your customers cannot afford it, but you need a decent margin for a sustainable business. Talk to your potential customers to find out whether your pricing is feasible.

5. **What will stop others from copying you?**

If you have ever watched Dragons' Den (an entrepreneurship challenge – a reality TV show in the UK), you have certainly heard this question: "What is to stop a big company coming along and stealing your idea?" Have strong USPs (such as an exceptional customer service) and protect your intellectual property.

6. **Do you know your customer?**

Arm yourself with as much information about your target customer as you possibly can, and listen to them at every opportunity. What does a typical customer look like? How do they behave? What do they most value from a product or service like yours? Where can you find them? What marketing methods do they respond to?

7. **Can you make profit?**

How much will it cost to produce your idea (taking into account manufacturing or supplier costs, salaries, overheads, office equipment, etc.)? How much can you sell your product or service for, and how much do you need to sell to make profit and not only to cover your costs? Is this achievable?

8. **Do you have sufficient funding to get the venture off the ground?**

You need enough cash to support yourself and your business until it becomes sustainable. If you do not have the funding in place, can you raise it?

9. **Do you have the necessary experience, attitude and skills to pull it off?**

Even if you have the best idea in the world, without passion, drive, commitment and vision, there is still a good chance of failure.

10. **Is there scope for growth?**

Can you upgrade your idea and diversify by adding new products or services, entering new locations, or improving your original proposition?

Different models can be used to answer these questions. We need complex knowledge and recognition of theoretical models and their occurrence in practice.

If marketing is not your area, look for study programs and experts that can help you with useful knowledge.

However, if you want to explore this area, check the Digital Tools:

- *HB - P2 - S2 - Validating the Idea - MARKETING Aspect – TXORIERRI - ES*

DESIGN ASPECT

Good design is not just what looks good. It also needs to perform, convert, astonish, and fulfill its purpose. It must take into account both – aesthetic and functional aspects.

These are some actions which can serve as starting points to get a valuable and reliable evaluation of a design:

1. **Do not ask, "which one do you like best?"**

A successful design communicates an idea. It doesn't matter if someone "likes it" more than another. A pretty ad may look great but may not communicate the desired message. Instead of this, you should ask which one communicates the idea more clearly.

2**. Do not ask specifics such as "do you like these colors?"**

This is a personal preference and just because someone prefers blue to green that does not mean this is the right choice for your design.

3**. Lay the design in front of them. Do not say anything. After a while, ask a few questions such as:**

"What is the single (or primary) message of this design?"

"What was the first thing you looked at?"

"What do you remember about the design?"

4**. Watch the viewer's eyes.**

Where do they look first? How do their eyes move around the product? Good design should guide the user so that upon a quick scan they get the main message without reading the whole copy.

5**. If possible, sleep on it.**

When things look different to what you expected, the most common reaction is "*No, that's not what I was thinking*". Give it a day, it may grow on you. We all have expectations of how something should look like, so it is easy to get a negative impression. It is important to trust your designers. You do not want to say no to a concept, which is better than what you were expecting, just because it differs from your expectations. Instead ask yourself if it represents the brand and communicates the message effectively.

Designer has an important role in product performance.

Good design is not only beautiful and not only a brilliant idea – it must be appropriate.

Design is too important to handle it on your own and requires too much responsibility to be trusted to designers only. Good results can only be obtained by working closely with all the team members (marketing, design and production).

However, we must be aware that design is a sophisticated and demanding process. The designer has a wealth of knowledge and experience that he uses to develop products from a designer's perspective.

Regardless of the evaluation method, one must keep in mind two things:

First, there are countless ways to tackle design problems. At the core of successful evaluation lies the repetition of potential solutions throughout the product design process. The task is successfully accomplished if based on consistent criteria and clearly set goals.

Second, we do not always need elaborate criteria to tell us what good design is – sometimes we just know. In other words, design evaluation is not always based on objective criteria. At the heart of evaluation, there is a competent designer who is up to the task.

If design is not the area of your profession, look for the study programs and experts that can help you with useful knowledge and include them in your team.

However, if you also want to explore this area, check the Digital Tools:

- *HB - P2 - S2 - INDUSTRIAL DESIGN – SŠOF - SI*
- *HB - P2 - S2 - Validating the Idea - DESIGN aspect – SŠOF - SI*

PRODUCTION ASPECT

Even a good idea is of no use if it cannot be produced in a way that benefits the user.
This is therefore a key question at this stage. Can we produce this? Who can produce it?
What is the best material to use? Etc.

Again – find the team members. Who can help you with that? Students and teachers from the programs such as woodwork, mechatronics and computer science? Entrepreneurs from the labor market? Which one of them?

The process of bringing a new product to the market can seem long and daunting which might be enough to put you off from getting started. By breaking it down into 12 steps, you may see that it is not so difficult to turn your great idea into a final product.

12 Steps From Product Concept to Manufacturing

Step 1: Product Concept

This is where you begin to flesh out your basic idea. Think about what you want your product to be, what is its purpose, and who will use it. Create sketches and notes of your initial concept.

Step 2: Research

There are two important things to research at this stage. The first one is demand. If your product is meant to solve a problem, you should ask yourself if there are a lot of people looking for a solution to that problem? Can you see a gap that needs to be filled? Secondly, are any similar products already out there? Even if there are, it does not necessarily mean that your idea will not succeed. But how will you improve on what is already available?

Step 3: Product Design Development

At this stage, you can begin to develop your product design. There are a number of things you must consider:

- You should have a firm idea of your product's function.
- Think about how strong and long-lasting your product will be.
- How reliable is the product?
- What will be the manufacturing costs? Does this allow room for profit without a price tag that will put the potential buyers off?
- Think about the complexity of manufacturing; how many parts is each unit is made of?
- Is your product for a single-use or long-term use?
- What materials do you need to produce it? This may also require further research.

Step 4: Research and Development of the Final Design

Keep changing your design as much as necessary. Include dimensions and materials, and develop the design to a high standard, including all the important details. If your product is made of multiple parts, decide for a minimum number of different parts in order to keep down the manufacturing costs and to speed up the assembly.

Step 5: CAD

Computer-aided design. This process uses 3D rendering software in order to produce a computer model of your final design. This can help to reveal any potential issues that were not evident from the product design itself. Take this opportunity to return to the final design stage and deal with the problems.

Step 6: CAM

Computer-aided manufacturing. This is where you get to see a physical prototype of your product, manufactured by a computer-guided system.

Step 7: Prototype Testing

Make sure your testing is thorough and critical. Do not be afraid to be honest with yourself about any problems or flaws that your design might have. This can only help you to improve the design in your end product. If you need to, go back to step 3 and apply the neccessary changes.

Step 8: Manufacturing

If prototype testing did not reveal any problems that need to be resolved, it is time to manufacture the product. At this point, you will have to decide on materials, batch numbers, and the manufacturer itself. Think about how to keep your costs low, and at the same time maintain the desired quality. This way you will maximise your profits.

Step 9: Assembly

Some important choices to make at this stage may involve further materials to be used, e.g. glue. You should think about the costs, however, do not forget that using low-quality materials may negatively affect your sales. Do not let the quality of the product slip away by cutting corners.

Step 10: Feedback and Testing

Now, when your product has been manufactured and assembled, you can continue testing it rigorously. There are many ways to do this: you can assemble focus groups, you can ask your family or friends about it, etc. In any case, make sure you always take note of the feedback and allow for free and honest criticism. You should allow for further development of the product and continue improving it.

Step 11: Product Development

Consider going back to the product development phase in case you need to make some important improvements or address any unforeseen issues. Even though, your manufacturing company should have pointed out any serious issues with the product before. Take your time and make it right.

Step 12: Final Product

Now you have successfully taken your product from the concept to the final product. It is time to turn your attention to marketing, and the practical side of getting it into the hands of the customers. The more you sell, the more you can afford to invest into the proccess of manufacturing larger batches, which means a larger profit next time around.

The questions showed that the three areas (marketing, design and production) are intertwined. Even in terms of design and production, we can find issues that are basically marketing issues.

It is essential that you understand these three concepts of perceiving a product and how they are related to each other.

It is important that you find and use the right sources of knowledge which can complement your knowledge and that you gain new skills and insights through the experience of working with others.

Do you know the product in the picture bellow? This is Juicy Salif by Philippe Starck.

How do you think you would answer the questions above in relation to this product (in terms of marketing, design and production)?

Philippe Starck: Juicy Salif (citrus squeezer)

ACTIVITIES

A. Develop and evaluate your ideas. Please refer to the procedure below.

Together with your mentor:

- Establish your own team, make a list of potential coworkers from other fields (those who have the knowledge to help you develop the idea) and contact them. They will see your idea from a different perspective; they can also take over one part of the product development process (for example, making a prototype).
- Set a collaboration timeline and define the tasks and methods of cooperation. Keep it up to the date and if necessary, upgrade it.
- Evaluate the learning process – write down what you liked in particular and make suggestions for improvements. Based on the obtained results, prepare the guidelines for possible improvements and upgrade the process.
- Record and edit the video of the product creation process from the initial idea onwards – it can be an example of good practice of Networking for Entrepreneurship. It can even grow into a long-term collaboration or network.

PART	**2 – Development of a Commercially Successful Product (Enterprise)**
SECTION	**3 – Prototyping (Transforming Idea into Action)**
CONTENTS	■ Role of the Prototype ■ Prototyping – Digital, Virtual, Physical ■ Resources – Material & Equipment ■ User Testing ■ Obtaining Funds
BRIEF DESCRIPTION	In this section, the learner will explore the purpose of the prototype and the resources needed to produce it. As a part of the process in developing an idea, it is essential to establish that the producto or service is designed to meet the needs of the end user. A prototype is an interactive model that demonstrates the product's or service's performance before it is manufactured or built. ■ Develop and produce a prototype in response to a brief, ■ select production materials and methods to build a prototype, ■ test and evaluate the prototype(s), ■ apply Health & Safety guideline. **Planning and Management** **Coping with Uncertainty, Ambiguity and Risk**
ACTIVITIES	A. Make "Early Stage" Prototypes and Evaluate Them B. Produce a Finished 3D Model and a Visual Solution C. Attend Workshops
NET-ENT DIGITAL TOOLS	
ADDITIONAL LINKS	■ How to Design & Build a Prototype of Your Invention Product Idea in Your Workshop – Part 1 Invention Therapy / 31 Jan. 2017 https://www.youtube.com/watch?v=AwpqOx2q5Ko ■ Making a Prototype: part 1 Nate Murphy / 29 Jan. 2017 Idea – Business vlog https://www.youtube.com/watch?v=cjb929ODMYA ■ Different CNC MACHINE Types Explained – Datulab Tech / 29 Jan. 2018 https://www.youtube.com/watch?v=0x_coeLC5Ps ■ Getting Working Capital to Fund Your Product and Your Business https://startupsventurecapital.com/getting-working-capital-to-fund-your-product-and-your-business-ef5bb14b69a3 ■ Manufacturing Costs: 9 Considerations to Make Before Taking Your Idea from Prototype to Production https://www.autodesk.com/redshift/manufacturing-costs-taking-your-idea-from-prototype-to-production/

	Further Reading Case Studies of products, model making, materials, techniques and equipment: Hallgrimsson, Bjarki (2012) **Prototyping and Model Making for Product Design**. Laurence King Publishing, London. Case Studies of manufacturing techniques, production processes, technology and sustainability: Lefteri, Chris (2012) **Manufacturing Techniques for Product Design** 2nd Ed. Laurence King Publishing, London. Design Museum educational resource: Williams, Gareth (2015) **DESIGN an essential introduction**. Goodman Fiell Publishing, London. ■ Rapid prototyping Google Glass – Tom Chi https://www.youtube.com/watch?v=d5_h1VuwD6g&feature=youtu.be ■ Why Designers Should Never Go to a Meeting Without a Prototype https://slate.com/human-interest/2013/10/the-importance-of-prototyping-creative-confidence-by-tom-and-david-kelley.html ■ Evaluation in Product Development http://www.uiah.fi/projekti/metodi/13c.htm ■ Developing an Industrial Product http://www.uiah.fi/projekti/metodi/130.htm#tuotkeh
LEARNING OUTCOMES	■ Candidate can plan and manage the process of creating a commercially successful product from IDEA to PROTOTYPE and is able to adjust it when necessary. ■ Candidate can face uncertainty, ambiguity and risk. He knows how to accept failure as an opportunity to learn.

Role of the prototype

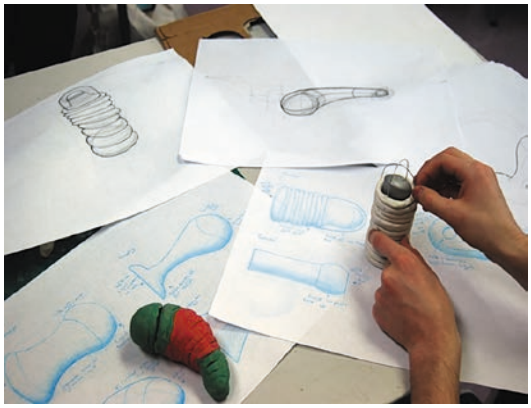
Many designers and companies use prototypes and models to test the functionality of new designs and/or obtain customer feedback for new products. The information collected from these tests is then used to modify the prototype model in order to improve the product, design or service.

A prototype is the *"first of a type"*. Prototyping is realising a design in its physical form and a necessary part of the design process. It is NOT a linear process and it can be time consuming. However, it is extremely valuable when the information you require cannot be gathered from other sources.

Refer to Part 2: Section 1 – Idea Generation – Design Thinking.

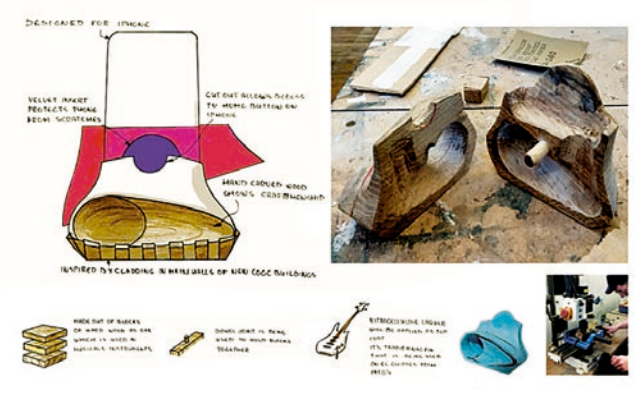
Stage 1 – Will it perform how you want it to?

- **roof of Concept Prototype –** is built primarily to investigate what a product can do for a user.
- **Appearance Prototype –** is built to simulate how the product will look and feel like and how the user will interact with it.



Stage 2 – A more fully resolved prototype

- **Functional Prototype –** helps to answer technical questions on how the product may work. It may not look the same as the end product and some components may be "off the shelf" at this stage.
- **Production Prototype –** looks and functions like the final design of the product, however, it may be made from similar but less expensive materials as a more cost- effective approach before manufacturing.



Stage 3 – Testing the manufacturing process and the quality of the product.

- **Pilot Prototype –** looks exactly the same as the product will look like in the first production run. This will be independently tested to obtain the product certification and to ensure that the product complies with the regulations of the countries that present the target market.

Prototyping

Digital Prototyping

Digital prototyping allows you to explore the concepts of a product before you build it. It uses 3D CAD software to help with analysis and simulation. This technology enables designers and developers to optimise designs, validate them and then visualise the overall product before real prototypes are needed.

Virtual Prototyping

Virtual Prototyping is a reality-based operating and designing program for modelling, simulating and visualizing. The system also works well with CAD design and other software solutions. The application tests the products virtually instead of physically. Digital prototyping is used to construct and build things, while virtual prototyping is used to create animation. Once you have a virtual prototype, you are ready to build a physical prototype.

Physical Prototypes

Making simple models at the concept stages of the design development is a useful exercise to explore the 3D form of the product which was previously developed in 2D format (sketchbook or digital format). These "low fidelity" prototypes can be made from inexpensive materials and are a quick and effective way to experiment and to receive feedback – people are not afraid to give opinions at this early stage.

At later stages of the design process, when you have already generated a virtual prototype, a more accurate model is required to test the feasibility of your idea. This also means that you will need more time to produce a "high fidelity" prototype. If you do not have the skills to produce it yourself, you might need to outsource, which also means additional financial investment.

Having decided on the purpose of the prototype, the next thing to consider is what materials are available, affordable and suitable to make an effective prototype.

If you have the skills, you can build one yourself. Otherwise, there are several other options available. You can get a professional prototype designer, a designer or an engineer to build your prototype. If you are financially limited, you might want to look for a handyman or to publish an advertisement at the college of industrial design.

Once you have your first prototype built, you can correct the flaws that need to be corrected before seeking a patent. You may need to build several prototypes in order to obtain a good one. Normally, the first prototypes are built of less expensive materials than the later versions to save money. When the design of your prototype is improved to the desired point, you are ready to produce a prototype that will look like your final product.

Resources

Materials

- found materials and objects
- "off the shelf" hardware & programmables
- paper, card and foam board
- plastics – sheet, rod, plasticard, epoxy resin etc.
- metals – tin, copper, wire, wire mesh etc.
- modelling clay
- latex or silicone rubber moulds
- adhesives – UHU, double sided tape, hot glue gun, plastic weld cement and tapes
- styrofoam sheets & modelling board
- casting polymers
- wood and timber derivatives – MDF, veneers etc.

Equipment

- Personal Protection Equipment (PPE) – e.g. eye protection, dust mask, disposable gloves
- Planning, layout and measuring tools – steel rule, steel square, Vernier caliper.
- Cutting tools – scalpel, Stanley knife, circle cutter, blades and cutting mat.
- Small hand-held tools – pliers, hobby saw etc.
- Basic hand tools – files, rasps, sandpaper
- Workshop machine tools
- Hotwire cutter
- Vacuum former
- Computer Numerical Control (CNC) machines and software, e.g.:
  - Laser cutter
  - *3D printer
  - SolidWorks, Creo, Autodesk Inventor

***Rapid Prototyping** represents a group of techniques used to quickly fabricate a scale model of a physical part or assembly using three-dimensional computer aided design (CAD) data. The construction of the part or assembly is usually done by using 3D printing or "additive layer manufacturing" technology.

User Testing

The design process involves ongoing research into how people interact with a new product, interface or service. The end user will find it easier to respond and offer a constructive feedback to a physical prototype than to a drawing or a verbal description.

Besides continuous product performance testing, market testing should also be carried out to check the acceptability of the product in the defined market. This way, it can be predicted in advance whether the customers will accept and buy the product upon its launch on the market.

Refer to Part 2: Section 2 – Validating the Idea/ Design – Evaluation

Obtaining Funds

A good prototype makes your product more appealing for the investors. If you cannot finance the production yourself, you may want to approach your friends or family for extra funding. However, you may also want to approach some outside sources. There are several ways to do this – pitching your product to companies, finding investors through networking, or trying crowdfunding.

- Bootstrapping – using your own financial resources, e.g. savings.
- Friends and Family
- Crowd Funding – GoFundMe, JustGiving, Kickstarter, etc.
- Angel Investors – financing for a share of the business such as Dragon's Den
- Bank Loan/ Venture Capital

ACTIVITIES

A. Make "Early Stage" Prototypes and Evaluate Them

To make an "early stage" prototype, first decide which aspect of the user experience you want to test. Build your prototype and test it with the end users or use role-playing.

Collate and analyse the feedback and use everything you have learned to improve the design and function of your design proposal.

B. Produce a Finished 3D model and a Visual Solution

Produce a finished 3D model and a visual solution. In response to the feedback you have received, build a prototype of your design solution using appropriate materials and equipment.

When making the prototype, demonstrate good work habits and effective workflow.

C. Attend Workshops

WORKSHOPS

Case Studies – present and discuss physical and visual examples of prototypes in view of:

- purpose,
- materials,
- manufacturing techniques.

Model Making and Manufacturing Skills

- Explain Health and Safety (H&S) in the studio and workshop environments
- Demonstrate the safe use of materials, adhesives and equipment
- Demonstrate good working habits (cleaning up, health and safety, shared spaces)
- Describe the basic workflow model (planning, preparation, producing parts, assembling)

PART	**2 – Development of a Commercially Successful Product (Enterprise)**
SECTION	**4 – Final Product**
CONTENTS	■ Pitching Your Idea
BRIEF DESCRIPTION	Learn what a pitch is and how to craft a winning pitch. Being able to project your idea (product/service) and its competitive advantage convincingly and with confidence. **Learning Through Experience**
ACTIVITIES	A. Write a script for a 2-minute business pitch.
NET-ENT DIGITAL TOOLS	
ADDITIONAL LINKS	■ How to Pitch to Investors in under 2 Minutes https://www.youtube.com/watch?v=q7BzmSBim7M ■ Crafting an Elevator Pitch https://www.mindtools.com/pages/article/elevator-pitch.htm
LEARNING OUTCOMES	■ Candidate is able to learn through experience in the process of developing new products. ■ Candidate is able to project the idea (product/service) and its competitive advantage convincingly and with confidence.

FINAL PRODUCT

As already mentioned before, when we have already developed a prototype, the next step is to find a manufacturer and consider our options in terms of manufacturing our product. This is certainly not an easy task.

Consider who already produces a similar product on the market. Could they help you with advice? Can teachers and students of different school programs (Woodworker, Mechatronic Engineer, Computer Technician) help you with this?

Mass production will probably not be a possible option during the schooling phase; however, you should consider it. You should learn about what already exists, make plans for the future and define all the possible options. Maybe you can produce at least a couple of products. Give it a try.

Certainly, delivering a prototype is already a great success. Now, you have to present it properly and be ready when the opportunity arises. Learn how to pitch the product in next sesion.

PITCHING THE IDEA

After you have come up with an exciting vision and carried it through the process of design and production (a service or a product), you should also know how to successfully sell this idea to others. Sometimes you only get a few minutes to pitch your business opportunity to potential investors or a bank manager.

An elevator pitch is a concise and carefully planned description of your company or idea that can be quickly and easily understood.

In the financial world, the pitch refers to an entrepreneur's attempt to convince a venture capitalist that a business idea is worth investing in. However, in your context, it will be more likely that you pitch to collaborators or clients.

An elevator pitch should include why your product, idea or project is worth investing in by explaining such things as the features, benefits and cost savings.

A pitch should be interesting, memorable, and succinct. It also needs to explain what makes you – or your organization, product, or idea – unique.

Source**: Investopedia**

OPENING	MIDDLE	END
Think of how to attract the attention You need to set a hook. What is the problem or unmet need that you/your product, service is solving? ■ You can tell a story, ■ or use an analogy – something that will help people understand what you do.	**Answer some of these key questions:** ■ What is your product or service? ■ Define your market. ■ How will you make profit? ■ Who is behind your company? ■ Who are your competitors (getting back to what you do – explain *why you are better than the others*)? ■ What is your competitive advantage?	**ASK yourself /state:** What do you want your audience to do (give you a business card, make an appointment with you, visit a stand, pick up a flyer, etc.)? *"In conclusion I would leave you with one thought … "* End with something that you want them to remember.

ACTIVITY

B. WRITE A SCRIPT FOR A TWO-MINUTE BUSINESS PITCH

- Rehearse (and repeat) your pitch so you can do it spontaneously, in a natural way. When your script is complete, you need to learn it 'by heart'. Take a video or record your speech on the phone. Listen to it, record a better one, and listen to it again … You can practice in front of a mirror, in front of your peers or a mentor, who can give you feedback. Do not leave it to coincidence.
- When it is time to give the speech, do it spontaneously, in a natural way.

Learn more:

- How to Pitch to Investors in Under 2 Minutes
  https://www.youtube.com/watch?v=q7BzmSBim7M
- Crafting an Elevator Pitch
  https://www.mindtools.com/pages/article/elevator-pitch.htm

Digital Tools:

- 10 HB - P1 - S4 - Creativity Background, Definitions and Models – SŠOF – SI
  http://www2.arnes.si/~projekt-net-ent/10_HB_P1_S4_Creativity_Background_Definitions_and_Models_SSOF_SI.pdf
- 11 HB - P2 - S1 - CREATIVE PROCESS - 11 PHASES – SŠOF - SI
  http://www2.arnes.si/~projekt-net-ent/11_HB_P2_S1_CREATIVE_PROCESS_11_PHASES_SSOF_SI.pdf
- 12 HB - P2 - S1 - Design Process – Graphic presentation 1 – SŠOF – SI
  http://www2.arnes.si/~projekt-net-ent/12_HB_P2_S1_Design_Process_Graphic_presentation_1_SSOF_SI.pdf
- 13 HB - P2 - S1 - Design Process – Graphic presentation 2 – SŠOF – SI
  http://www2.arnes.si/~projekt-net-ent/13_HB_P2_S_Design_Process_Graphic_presentation_2_SSOF_SI.pdf
- 14 HB - P2 - S2 - INDUSTRIAL DESIGN – SŠOF – SI
  http://www2.arnes.si/~projekt-net-ent/14_HB_P2_S2_INDUSTRIAL_DESIGN_SSOF_SI.pdf
- 15 HB - P2 - S2 - Validating the Idea - DESIGN aspect – SŠOF – SI
  http://www2.arnes.si/~projekt-net-ent/15_HB_P2_S2_Validating_the_Idea_DESIGN_ASPECT_SSPF_SI.pdf
- 19 HB - P1 - S2 - ACTIVITY A - Explore Your Values – TXORIERRI - ES
  http://www2.arnes.si/~projekt-net-ent/19_HB_P1_S2_ACTIVITY_A_Explore_Your_Values_TXORIERRY_ES.pdf
- 20 HB - P2 - S2 - Validating the Idea - MARKETING Aspect – TXORIERRI – ES
  http://www2.arnes.si/~projekt-net-ent/20_HB_P2_S2_Validating_the_Idea_MARKETING_Aspect_TXORIERRY_ES.pdf