



FOR GREEN TECH FUTURE!

Renewable Energy

- an introduction to design thinking

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Service designer, researcher, moderator, business analyst. She is looking for solutions that allow to achieve the goals of the organization and respond to the real needs of users.

Using the service design approach, she designed solutions for corporations, SMEs, public institutions and NGOs. The service design approach is also used to collect requirements for IT systems. Experienced moderator of processes and workshops based on service design and design thinking methodology.






Speaker at many conferences devoted to service design, including Element Talks, Experience Camp, World Usability Day, European Economic Forum.

What is design thinking?

Design thinking is an approach that helps us to find a satisfying solution for wicked problems. Wicked problems are the one that has many potential solutions, engage many stakeholders, are vague (we know that there is a problem, but we can't call it precisely).

Design thinking helps us to look for solutions systematically and support us with various tools. Design is as much about creation as it is about exploration and analyzes.

It is composed of five main stages:

	Exploration	learning about the context, users. Trying to understand the topic deeply we will work on
	Defining the design challenge	deciding what exact problem we need to solve to have an impact on the current situation
	Ideation	generating ideas that will solve the problem
	Prototyping	making ideas tangible with limited resources
	Testing	validating the concepts with others

Design thinking is all about people, their needs, expectations. We try to discover them and find a way to answer them.

Note: If you already have a solution then you don't need to go through the design thinking process. It can be helpful if there is a change required but you still looking for a way that will help you to reach it.

Design thinking in practice

Design thinking is about doing, experimenting and exploring. In the material, you will find selected tools that will help you to go through the process and take most out of it.

Note: Don't work alone

Design thinking is a collaborative activity. It works when you have people with different experiences and passions around you. Think which colleagues you can invite to your project. Usually, project teams have from 4 to 6 member.

Defining the scope

When you think about renewable energy and design thinking it starts to be clear that not all issues can be solved with this approach. If for instance, you want to figure out how to deliver solar energy to your school, probably solar panels are the right answer. In such cases using design thinking won't help you.

Thus we need to decide which topics related to renewable energy it may work. For instance, you can try to find an answer for such questions as:

- How to raise awareness in your school?
- How to raise money for your school/youth club to buy solar panels?

On the other hand, you may be interested in creating an innovative product or service based on renewable energy (maybe a portable solar panel to charge your phone?)

Activity: Discuss with all team members what you would like to work on.

Designing a new world

Designing the change starts with the dream of how the world should look like. Before we begin to think about activities we need to define how we want to change the current situation, this change of perspective helps you to come with more exciting ideas and open our minds for new solutions.

It is usually tough to answer the question of what we want to achieve. To make it easier you can use a mood board technique.

Moodboard is a collage of pictures and words that in a visual way presents how we see the situation.

Activity: At the beginning of your adventure with design, thinking prepare two mood boards: one that presents the current situation and other that depicts how your project will change it. You can use a set of pictures we have prepared for you. To fully express the story you want to share use also old magazines, draw, write important words.

Take your time to make them and enjoy the process. Working on them together with your friends is a great way to have meaningful discussions about the topic. When your mood boards are ready, look at them and write down what should change to move from as-is (current situation) to to-be (desired situation)? You can use our card as an inspiration (1). Choose one that you think is the most important.

Discover

Before solving the problem, you need to learn about it. We need to immerse in the topic, understand different aspects of it. Our discovery phase will be composed of three main stages:

- general information
- surrounding
- users

General information

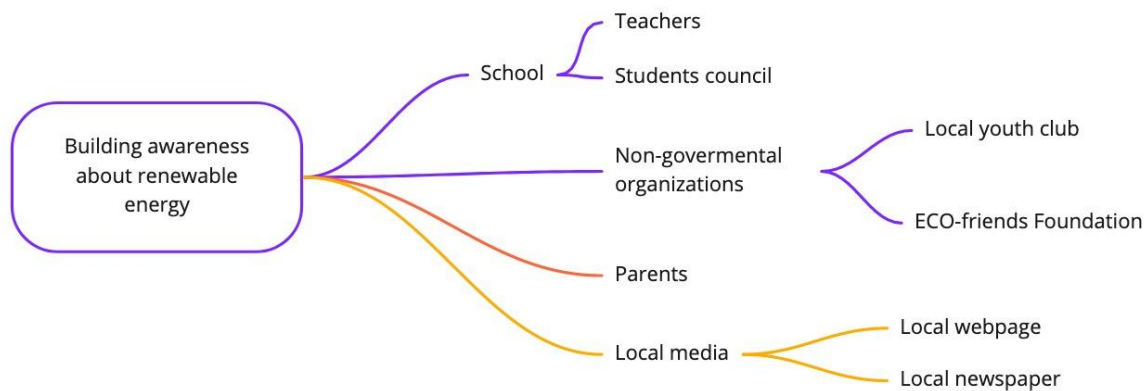
Let's start with the big picture of the topic. We need to learn about renewable energy.

Activity: Each member of your group should find and read some articles about the subject. Try to find some case studies that present how different communities, institutions were implementing changes related to renewable energy. Write down essential and interesting facts. Share with other members of your team. Fill in the poster not to lose any critical piece of information.

Surrounding

When you are ready you can move to the next step: learning about the surrounding. If you have decided for instance to make the change in your school, you should collect information how it works now when it goes about renewable energy, what's the surrounding: are there any institutions, companies, etc. that may have an impact on our project? If you would work on the gadget for travelers, explore what is already available on the market.

Activity: Prepare the mind map that presents who is/may be related to the project. You can find an example below



Users

Last but not least, think about people. Who will benefit from your solution, for whom you are designing it for? When we create solutions, we need to define what problems we solve and who has them. Even if you think that everyone can benefit out of your answer, decide for whom you will dedicate it in the first place. Understanding users are crucial for our process.

Look at examples that present who may be perceived as a user of the solution.

Topic	Users
Raising awareness about renewable energy in the school	<ul style="list-style-type: none"> ● school pupils who are engaged in environmental topics ● school pupils who are not involved in ecological issues ● teachers
Creating portable solar panels	<ul style="list-style-type: none"> ● young people who spend the whole time outside their homes ● travelers who don't have access to electricity during their journeys

Activity: Prepare the Persona using the prepared canvas. Persona is a way to present and communicate to others easily for whom you are designing for.

After you have prepared the person, there is a tricky part. While filling in the canvas, you have written down your impressions. Now you should meet with people who fit in the profile: for example teachers from your school, students who are engaged in environmental topics, students don't care

about environmental issues. During the meetings, you should learn what they think about the problem if they care (or don't) why it is so? How do they see the situation?

Before the meeting prepares the list of a few questions, you want to ask. **Don't ask if, but why, how. Let's tell you their story.**

You should meet with around six people who fit into your profile.

Note: Don't educate or correct anyone during your meeting, try to understand.

Defining the design challenge

Very often we came with great ideas that don't solve any problems, and as a result, no one want to use them. We want to avoid this situation. Thus we define the challenge after we have learned about our users' needs.

The design challenge is usually defined in the form of the question:

How might we help (who) in (what), so that (effect)?

Who - write down what groups your persona represents

What - what problem of our persona we want to solve

Effect - what is the expected outcome of the solution

Example: *How might we help travelers who have no access to the electricity during the trips in charging small electric devices so that they can stay in contact with the world and document their adventures.*

Activity: Write down your design challenge. Keep in mind that the hardest part is not to make the challenge to wide either to narrow. It needs to be specific, but when you think about it at least a few different ideas should come to your mind.

Ideation

During the next stage of the process, you will have a chance to generate some ideas. We will use two methods that will help you to find exciting solutions for your challenge.

Before you start, remember about fundamental rules of creating solutions



There are not bad ideas



During the first stage of the process don't think if it's practical and implementable



Work as a team - inspire each other



Have fun

Pass it on

Activity: First activity rules are very simple. Use A4 paper. Each member of the team should write at the heading your design challenge. Then write down three ideas that come to your mind.

Example

Design challenge: How to make children in our school more aware of renewable energy?

Ideas:

- organize a drawing competition
- prepare a special board game to
- organize a trip to the place where renewable energy is used

After you write down your ideas, give a paper to the person on your right. When you got a paper with some ideas: read them and add three more. You can't write the ideas you already wrote down, and they need to be new. Be inspired by someone else ideas. Modify them, add new elements, write the opposite one.

The general rule is that you should write the ideas as fast as possible: it means that you are writing first ideas that come to your mind. Keep the order when passing by the paper. It may happen that some of you don't have paper in front and one person has three that need to add some ideas on - it's ok. Around six people should participate in the game. If you are in the smaller group make two rounds.

The game finish when the paper you started with come back to you. Look at your paper and put three dots next to the ideas you like most. Each should select ideas at each paper.

Rewrite on sticky notes selected ideas.

Upside down

Activity: Next activity will help us to go beyond most common ideas. At the beginning write down five sentences that present how the current situation looks like.

Example

Just on few lessons during the school year renewable energy topic is raised up
Travelers don't have access to the electricity for the majority of the time

Rewrite the sentences to make the opposite:

Example

At each lesson, there is at least one sentence said about renewable energy
Travelers have access to the power in places where there is no electricity exactly when they want it

Now think how this new situation may work, what solutions were implemented? Write down all your ideas.

Select ideas

With the next stage comes the time to select ideas we will develop. We will choose those that have the biggest potential. What does it mean? They can solve the problem you have defined and answer user needs.

Activity: Look at ideas from two activities. Write them in our canvas. Give them points from 0 to 3 in two categories (2). the more point it gets the better it can solve the problem/answer users needs. In the beginning, each team member should give points individually. Check your scoring and choose concepts that have a satisfying number of points in each category.

Prototype

Probably at this stage of your work the idea is very general e.g. Prepare a special board game.

Everyone who looks at it may have a completely different concept of how it may work. Prototyping will help us to develop the idea and have a common understanding of it.

Prototyping is about doing not talking so take the materials you have next to you and try to make a board game as you see it, prepare the poster that could promote the event, etc.

Activity: Look at examples of prototype and prepare a prototype of your solution.

Testing

Problem with the ideas is that we easily fall in love with them. That's why minimize the risk that we will be only one who will enjoy them we need to validate it with others.

Activity: Prepare a list of people who can give you meaningful feedback to your idea, for instance, experts in the renewable energy field. Remember that those for whom the solution is dedicated need to be perceived as experts as well, as they are the only one who can tell you if your solution answers their needs.

Celebration and implementation

Congratulation! You just have finished your first process using a design thinking approach. If you won't be able to implement the idea by yourself think who may help. Look at the institutions you mapped when discovering the surrounding and try to set up the meeting when you can present your concept.