Design thinking for product and service design

**UNIBIAL_02: Strategy-oriented topics:
Product and service design with design thinking
and business model canvas creation**

Alicja E. Gudanowska

**DIGITAL DESIGN SKILLS FOR
FACTORIES OF THE FUTURE**

Agenda

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- ✓ basic theoretical content
- ✓ implementation of the individual steps of the design thinking process (working in teams)
- ✓ summary and presentations of results of group work
- ✓ evaluation round and ideas for improvement

How design thinking begins

„The myth of creative genius is resilient: We believe that great ideas pop fully formed out of brilliant minds, in feats of imagination well beyond the abilities of mere mortals." But innovative ideas are not only „a sudden breakthrough nor the lightning strike of genius", they can be „the result of hard work augmented by a creative human-centered discovery process and followed by iterative cycles of prototyping, testing, and refinement"

T. Brown, *Design Thinking*, „Harvard Business Review", June 2008.

Thanks to the evolution of the design concept, it has now gained a more extensive understanding. Now many workers from different industries call themselves designers.

K. Brodnicki, *Zastosowanie koncepcji design thinking w funkcjonowaniu przedsiębiorstw,* "Przedsiębiorstwo we współczesnej gospodarce – teoria i praktyka", nr 4, 2015, 35-45.
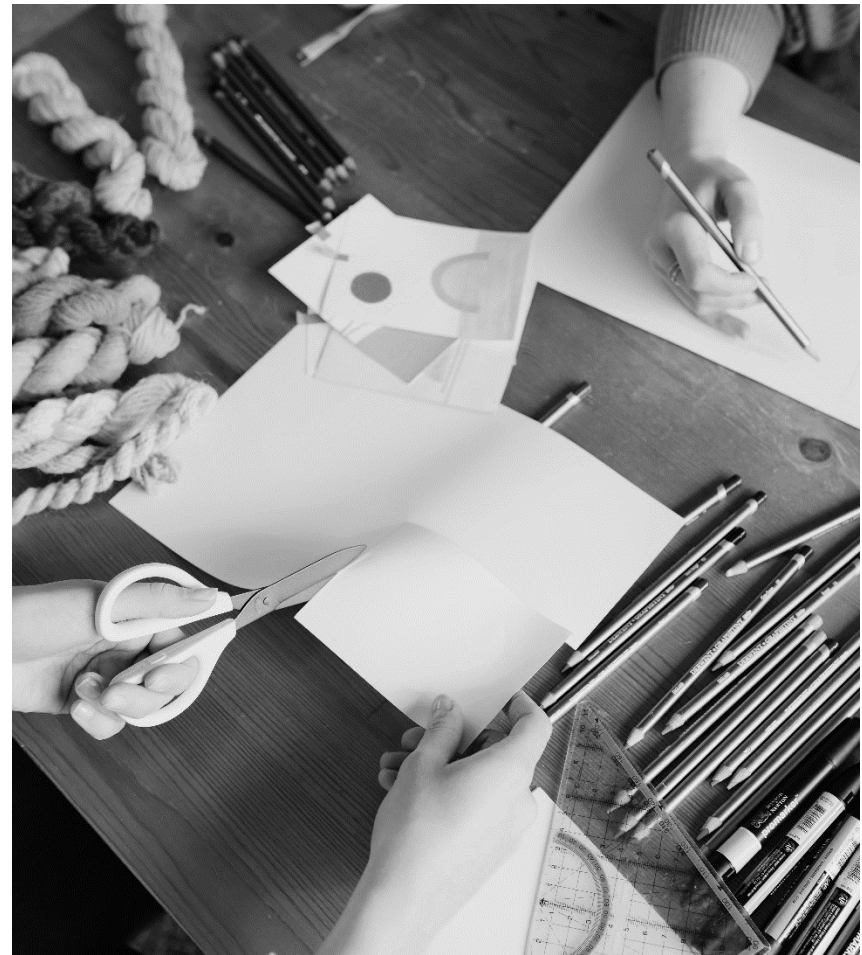
Photo by Karolina Grabowska from Pexels

The birth of design thinking concept

Photo by Breakingpicl from Pexels

The birthplace and development of design thinking is Stanford University in California. In the 80s and 90s, projects were developed and carried out in the spirit of DT, as a method to transfer creative and innovative ideas to the business community of Silicon Valley entrepreneurs.

One of the main creators of design thinking is prof. David M. Kelley, who later co-founded the IDEO design office. The company initiated the commercial application of design thinking, as a method dedicated not only to product design, but above all to strategic and business consulting for companies, supporting them in the areas of organization, change management, innovation, relations as well as sales, marketing and communication.

http://designthinking.pl/co-to-jest-design-thinking/#geneza

When we need design thinking

design thinking is a method of creative problem solving,

a ready-made process that we can use
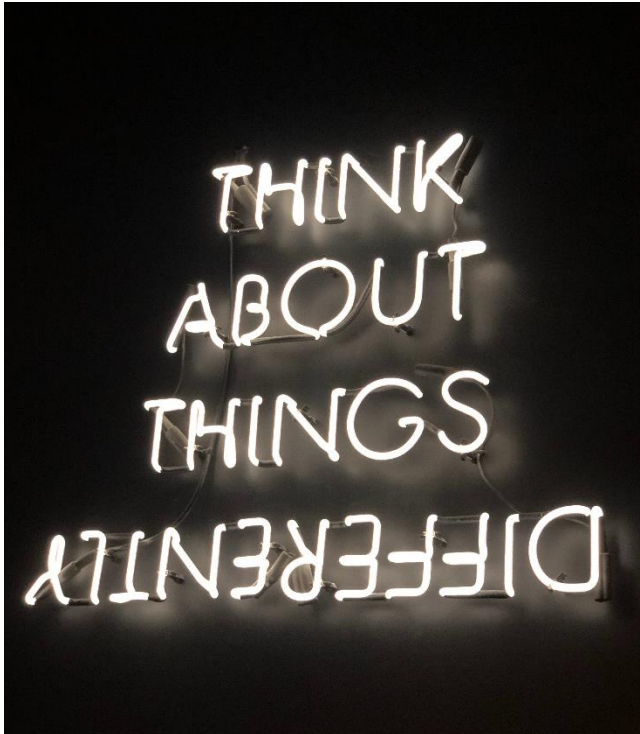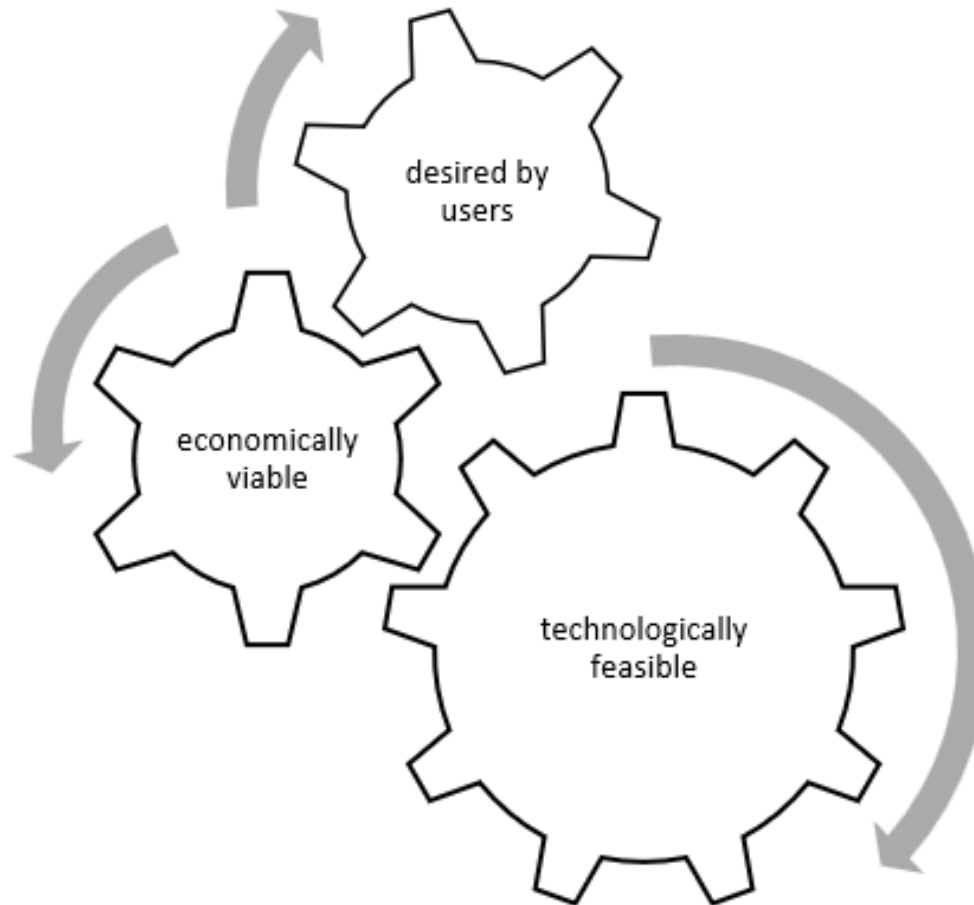
https://klosinski.net/design-thinking/

Photo by Ivan Bertolazzi from Pexels

wherever we are dealing with problems that do not have one obvious solution,
in the case of a complex issue requiring an integrated approach, which combines the competence in technology, psychology, design, ergonomics, business
design thinking will be the answer

http://designthinking.pl/co-to-jest-design-thinking/#geneza

The aim of design thinking solutions

desired by users

economically viable

technologically feasible

based on http://designthinking.pl/co-to-jest-design-thinking/#geneza

The importance of group work in the DT process

Design thinking is characterized by working in multidisciplinary teams,
and thus, thanks to this diversity, it is possible to stimulate creativity.

Photo by fauxels from Pexels

The project team dealing with problem solving and new product development should
include people from production, R&D, marketing, sales, as well as designers.
Thanks to the fact that their competences are diverse,
they have a chance to develop unconventional solutions.

J. Helman, M. Rosienkiewicz, *Design Thinking jako koncepcja pobudzania innowacji*, [w:] R. Knosala (ed.) Innowacje
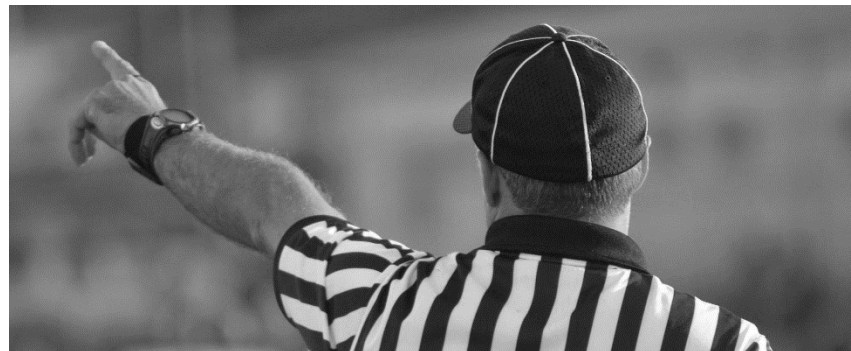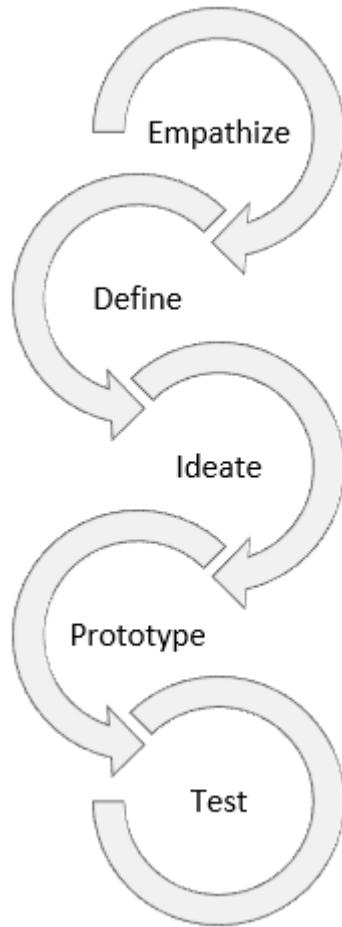w zarządzaniu i inżynierii produkcji. T. 1, Oficyna Wydawnicza Polskiego Towarzystwa Zarządzania Produkcją, 2016

Design thinking is based on four basic principles:

➢ human rule – according to which design is a social activity, so solving problems should aim to meet human needs

➢ rule of ambiguity – not placing restrictions and strict definitions, and allowing experimentation and different perceptions of certain things has a positive impact on stimulating creativity and innovation

➢ redesigning rule – it should be understood that the problem the solution to which is being developed has usually already been analysed before, so it is worth learning about historical solutions and methods of dealing with it

➢ rule of tangibleness – the realization of ideas through their visualization and prototyping helps to improve communication between people Involved into designing

J. Helman, M. Rosienkiewicz, *Design Thinking jako koncepcja pobudzania innowacji*, [w:] R. Knosala (ed.) Innowacje w zarządzaniu i inżynierii produkcji. T. 1, Oficyna Wydawnicza Polskiego Towarzystwa Zarządzania Produkcją, 2016

Photo by Free-Photos from Pixabay

Design thinking process

Empathize — Who's my user? What matters to this person?

Define — What are the customers' needs? What is their point of view? What is the problem?

Ideate — How to solve the problem defined in the previous step?
Which idea(s) will become a prototype(s)?

Prototype — Physical representation of the solution to the problem. How can I sell the idea?

Test — Does the original user like the prototype solution? What worked and what didn't?

based on J. Helman, M. Rosienkiewicz, *Design Thinking jako koncepcja pobudzania innowacji*, [w:] R. Knosala (ed.) Innowacje w zarządzaniu i inżynierii produkcji. T. 1, Oficyna Wydawnicza Polskiego Towarzystwa Zarządzania Produkcją, 2016

Empathize

Empathize / Define / Ideate / Prototype / Test
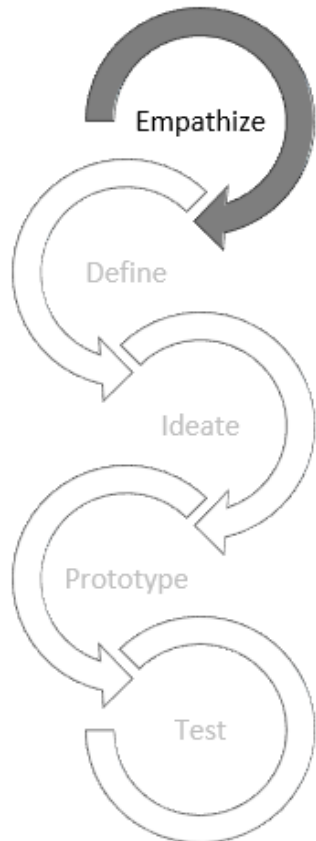
innovation starts with empathy, which allows for an in-depth understanding of users' needs

the most important thing is to diagnose and identify the "hidden motivations" that influence people's behaviour and to understand, for example, market or technological conditions of the project

J. Helman, M. Rosienkiewicz, *Design Thinking jako koncepcja pobudzania innowacji*, [w:] R. Knosala (ed.) Innowacje w zarządzaniu i inżynierii produkcji. T. 1, Oficyna Wydawnicza Polskiego Towarzystwa Zarządzania Produkcją, 2016

Photo by James Chan from Pixabay

Empathize
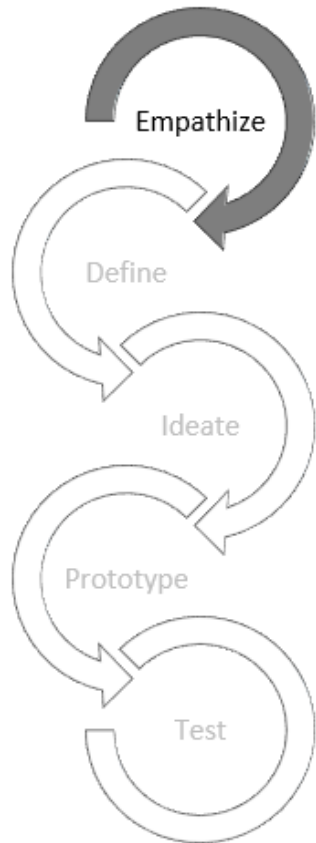
foundation is the conversation and observation

what we can use:
empathy maps, personas, stakeholder maps, ethnographic interviews, user observations, reconnaissance surveys with detailed environmental analysis („hit the streets"), behavioural observation (to capture own amateur user improvements), ….
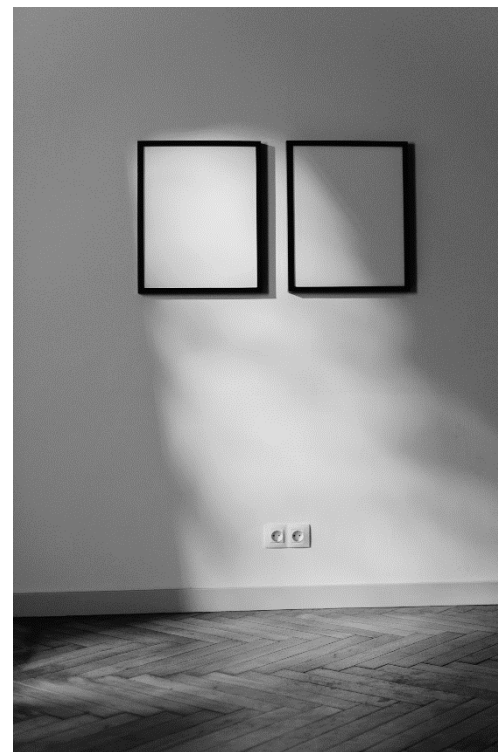

Photo by James Chan from Pixabay

Define

Empathize

Define

Ideate

Prototype

Test
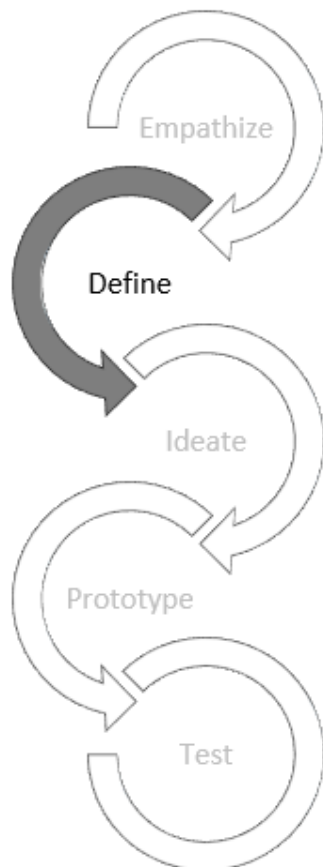
synthesis of the information collected during the previous emphaticisation phase, determining what is appropriate problem

we reject standard frames of thought and habits that limit the field of vision, thus preventing us from looking at the problems from a wider perspective

Photo by cottonbro from Pexels

based on J. Helman, M. Rosienkiewicz, *Design Thinking jako koncepcja pobudzania innowacji*, [w:] R. Knosala (ed.) Innowacje w zarządzaniu i inżynierii produkcji. T. 1, Oficyna Wydawnicza Polskiego Towarzystwa Zarządzania Produkcją, 2016
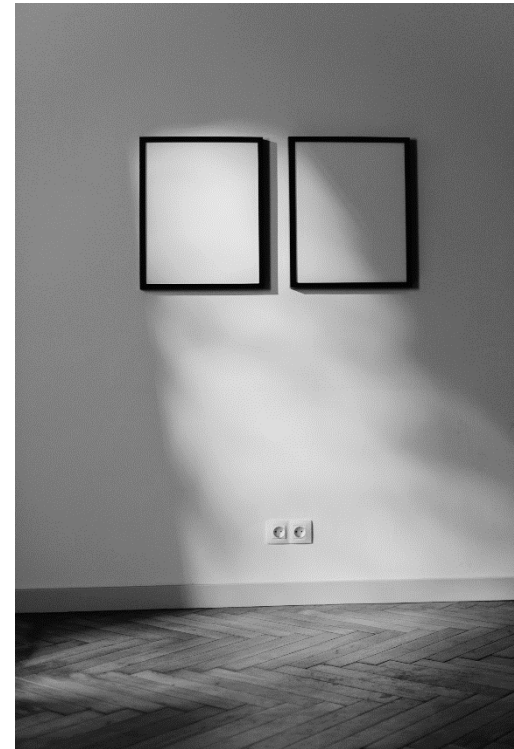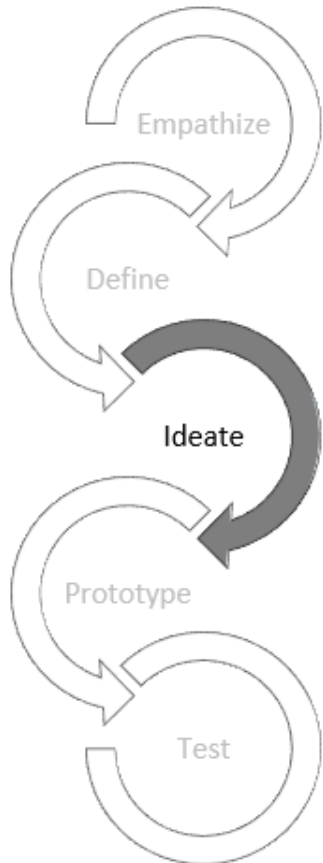
Define

Empathize

Define

Ideate

Prototype

Test
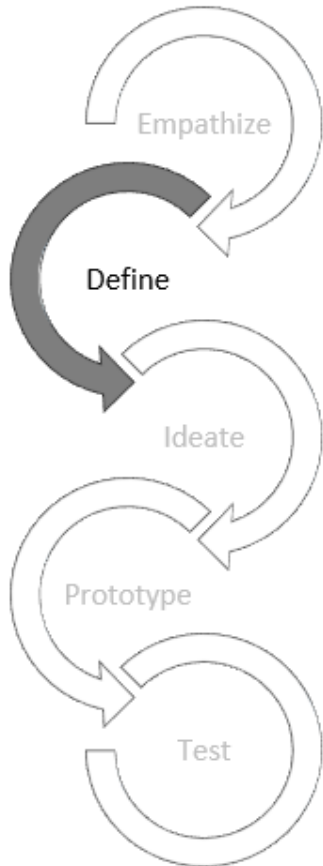
the problem definition
should not be too narrow
or too broad

what we can use:
re-framing problem, method 5 WHY,
how can I help X so that Y
…

Photo by cottonbro from Pexels

Ideate

Empathize

Define

Ideate

Prototype

Test

generating ideas, for a previously defined problem, as many solutions as possible should be generated

the stage should only be completed when, among all the problems, the one which will be used to build the prototype is chosen

K. Brodnicki, *Zastosowanie koncepcji design thinking w funkcjonowaniu przedsiębiorstw*, "Przedsiębiorstwo we współczesnej gospodarce – teoria i praktyka", nr 4, 2015, 35-45.
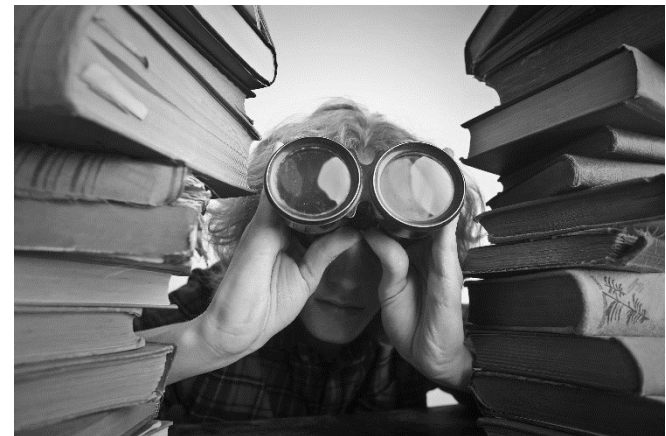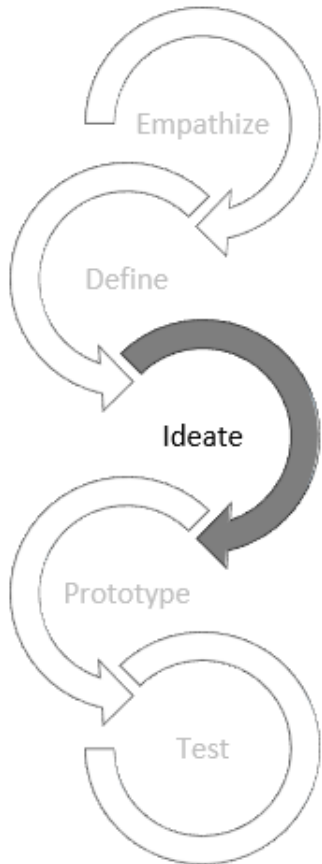

Photo by Andrea Piacquadio from Pexels

Ideate

be unconventional – think out-of-the-box
be open – don't criticise or judge

what we can use:
brainstorming in different versions, 6 thinking hats,
SCAMPER, ….

Photo by Andrea Piacquadio from Pexels

Prototype

creating a physical representation of the solution to the problem, its aim should not be to develop complex models with features similar to the final product

the most important function of the prototype is to be able to visually present the solution to the users and quickly collect opinions about it

J. Helman, M. Rosienkiewicz, *Design Thinking jako koncepcja pobudzania innowacji*, [w:] R. Knosala (ed.) Innowacje w zarządzaniu i inżynierii produkcji. T. 1, Oficyna Wydawnicza Polskiego Towarzystwa Zarządzania Produkcją, 2016
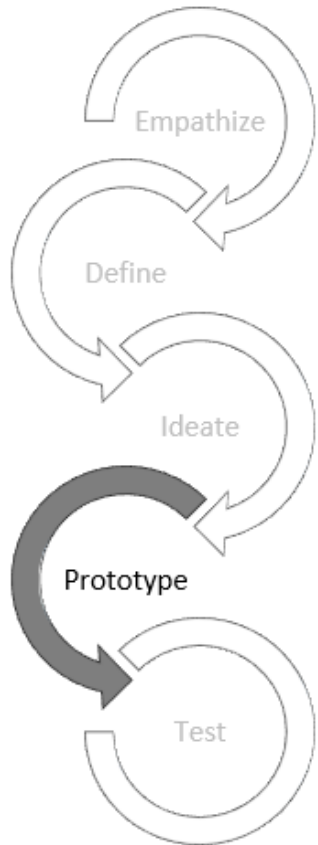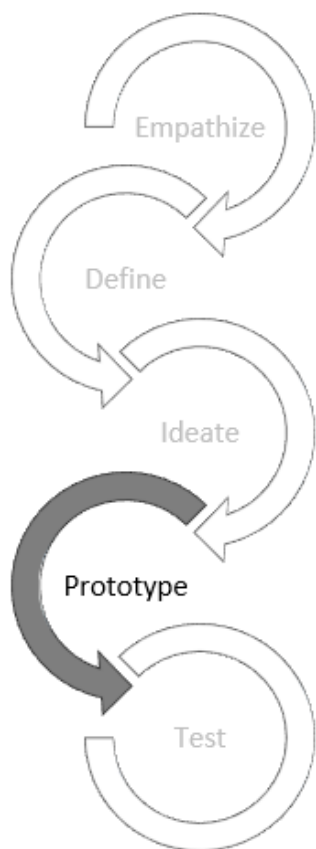

Photo by bridgesward from Pixabay

Prototype

Empathize

Define

Ideate

Prototype

Test

visualize the idea and be able to show it to others, as cheaply and quickly as possible, from what we have at hand

M. Wardaszka-Deręgowska, Jak wykorzystać narzędzia design thinking do budowania marki, www.wardaszka.com
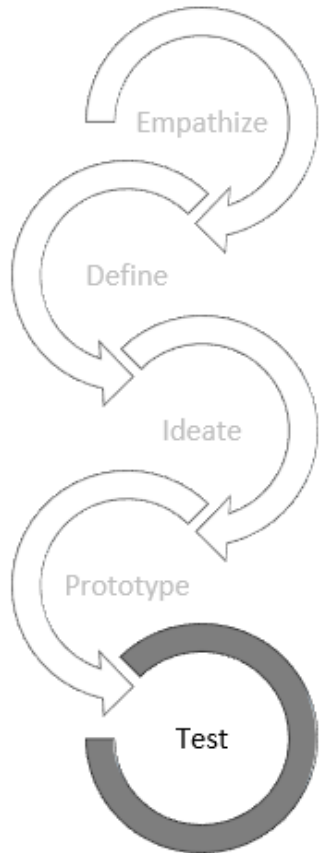
what we can use:

all materials - paper, plastic, wood, you can use the existing products, you can print in 3D...

REMEMBER that a prototype does not always have to be an object - for services you can use a comic book, storyboard or a user path

Photo by bridgesward from Pixabay

Test

checking the prototype in the actual environment in which the product will be used, the necessary parameters and their values should be determined, so that the results of the test can be clearly identified

J. Helman, M. Rosienkiewicz, *Design Thinking jako koncepcja pobudzania innowacji*, [w:] R. Knosala (ed.) Innowacje w zarządzaniu i inżynierii produkcji. T. 1, Oficyna Wydawnicza Polskiego Towarzystwa Zarządzania Produkcją, 2016

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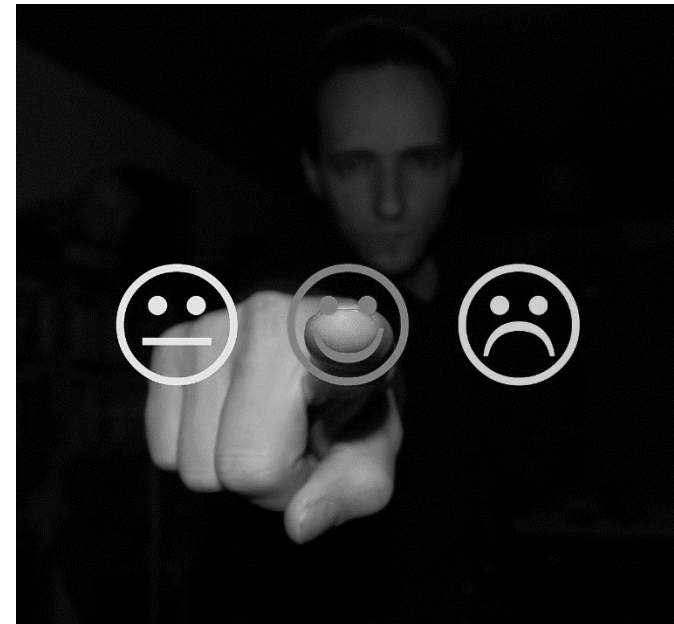
Road to perfection
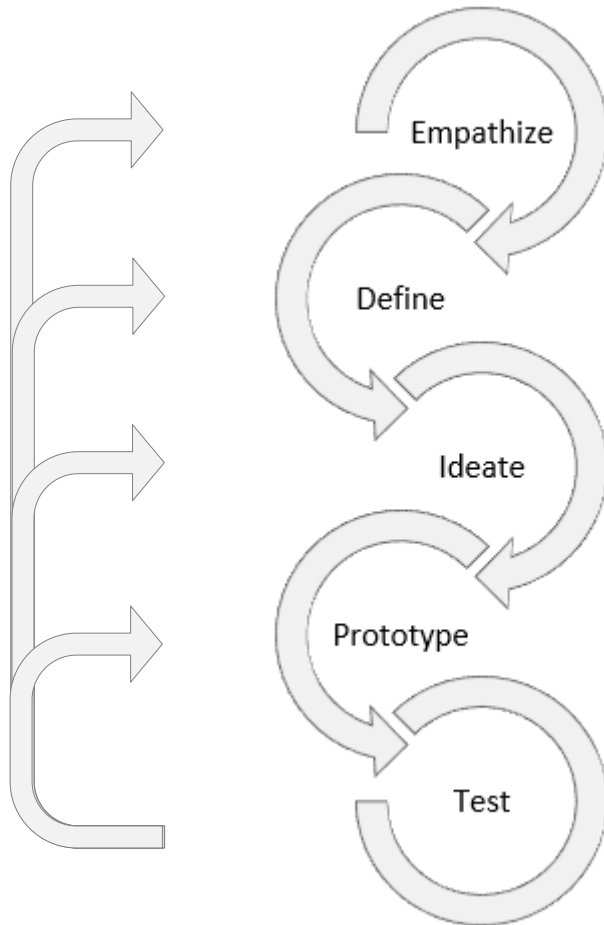
during tests we show the prototypes to our potential customers and let them evaluate, we don't have to worry that an idea has been badly evaluated, we did it quickly and cheaply, we just throw it away and go back to the previous stages
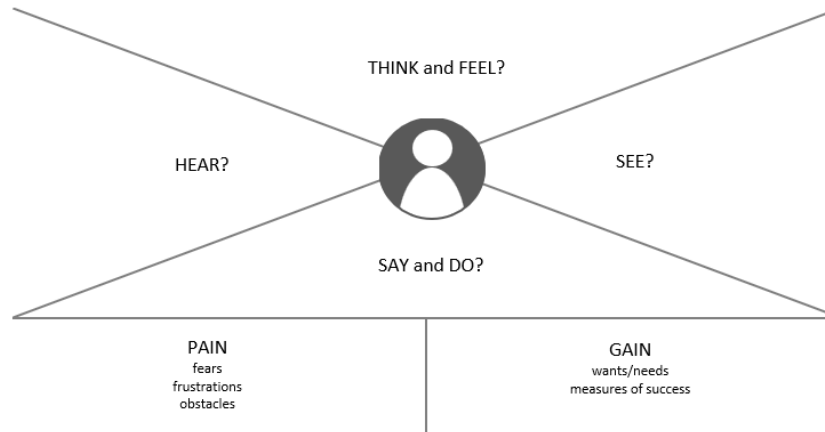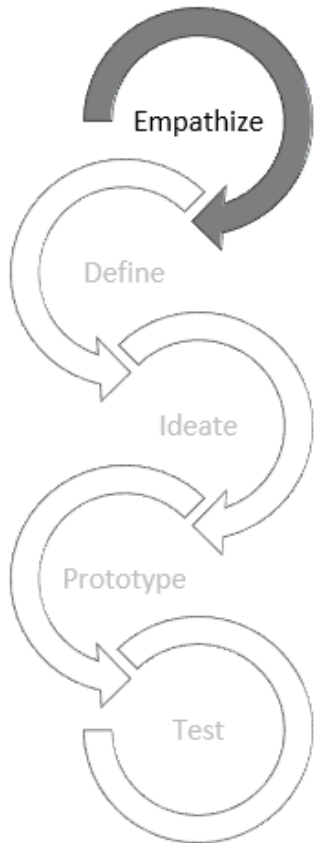
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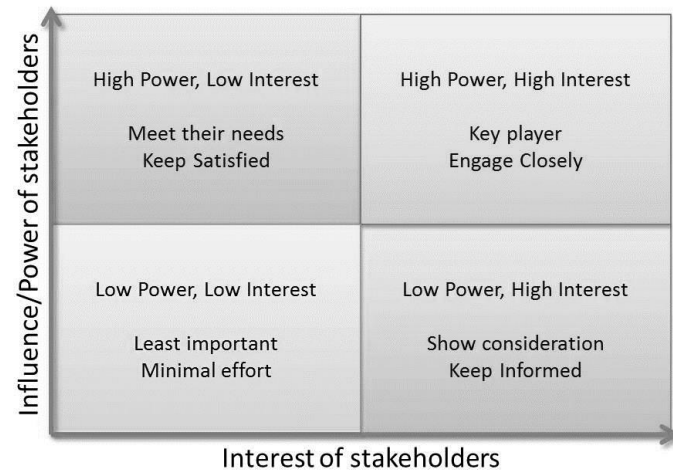
Let's start design thinking!

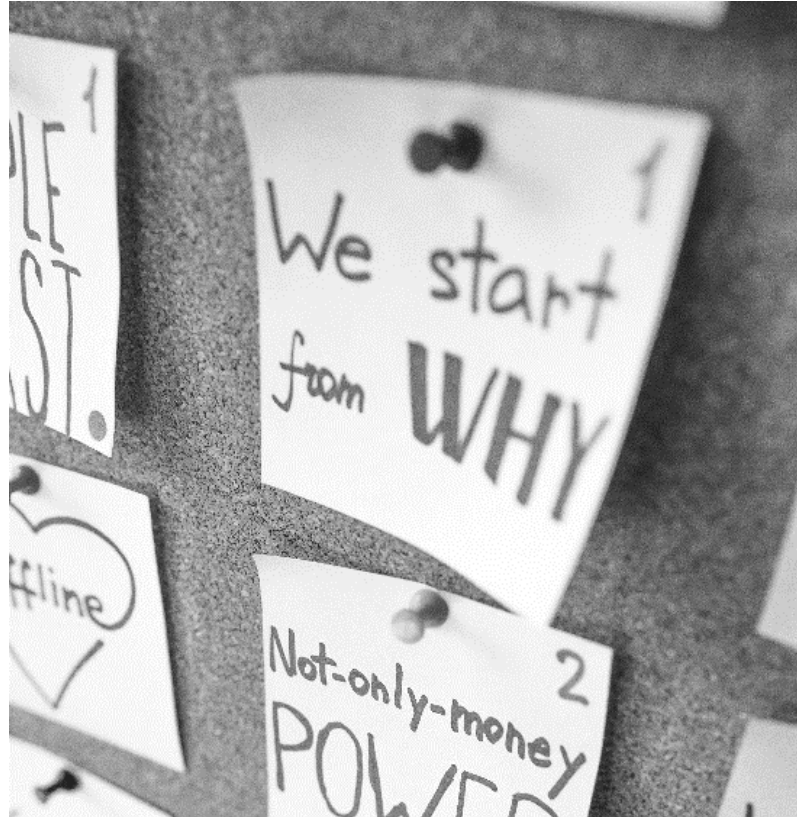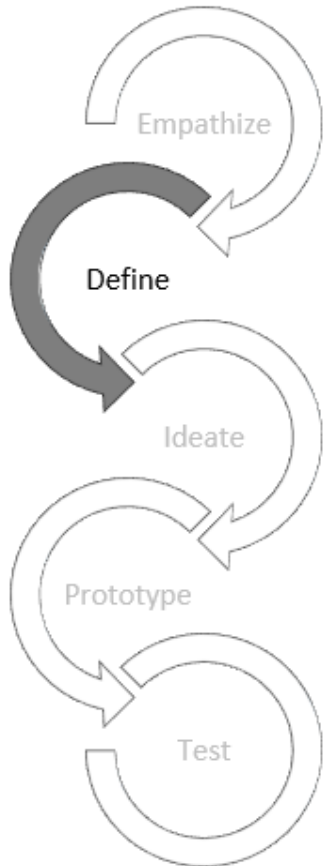Photo by Polina Zimmerman from Pexels

Empathize

Empathize
Define
Ideate
Prototype
Test

THINK and FEEL?

HEAR?

SEE?

SAY and DO?

PAIN
fears
frustrations
obstacles

GAIN
wants/needs
measures of success

based on wardaszka.com

Influence/Power of stakeholders

High Power, Low Interest

Meet their needs
Keep Satisfied

High Power, High Interest

Key player
Engage Closely

Low Power, Low Interest

Least important
Minimal effort

Low Power, High Interest

Show consideration
Keep Informed

Interest of stakeholders

C. Serra, *Stakeholders Analysis: Power/Influence - Interest Matrix*, 2014,
https://www.linkedin.com/pulse/20141209102103-26759263-stakeholders-analysis-power-influence-interest-matrix

Define

Photo by Polina Zimmerman from Pexels

Ideate

Empathize

Define

Ideate
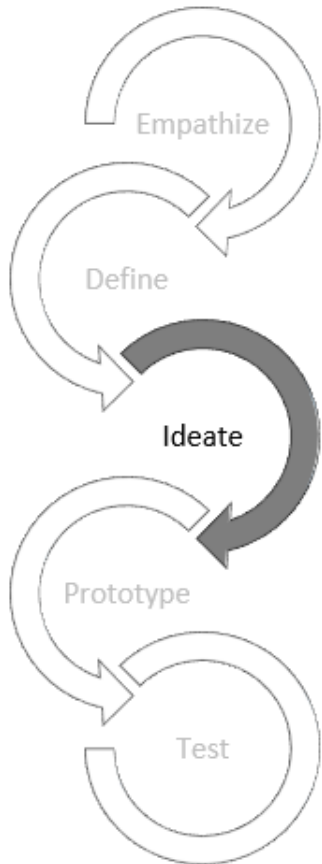
Prototype

Test

Photo by Andrea Piacquadio from Pexels

Substitute

Combine

Adapt

Magnify

Put to Another Use

Eliminate

Reverse

Prototype

Empathize

Define

Ideate

Prototype

Test

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Test

Empathize

Define

Ideate
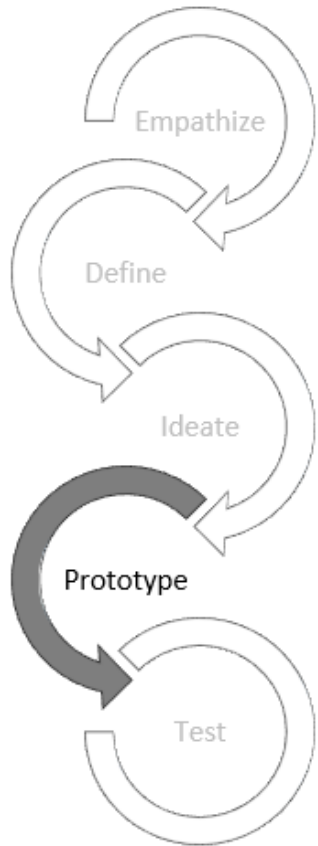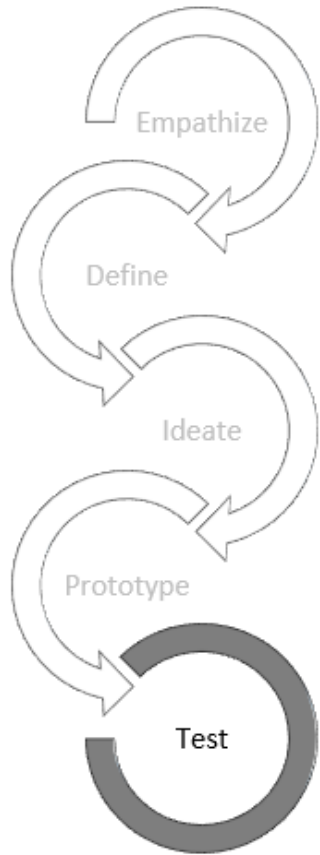
Prototype

Test

Photo by Andrea Piacquadio from Pexels

And now... the floor is yours!

Photo by freestocks.org from Pexels

It's time for improvement

Photo by geralt from Pixabay

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