

iPRODUCE

Find here the tools to help you get started with your social manufacturing project. The methods are a “best of” selection from all methods used and described in the iPRODUCE toolbox



Follow us

iproduce-project.eu



@iproduce-project 

@iPRODUCE_EU 

Index

1. **Visualisation**
2. **Ideation through Brainstorming & Mind Mapping**
3. **Business Model Canvas**
4. **Affinity Diagram**
5. **Blue Sky Vision Exercise**
6. **Blueprinting - Replication & UX**

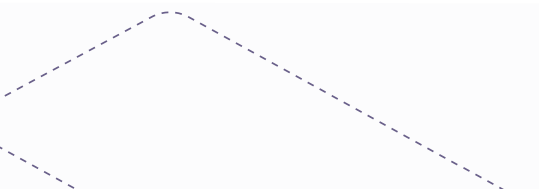
1. Visualisation

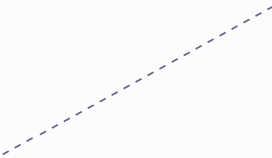
A visualisation is worth 1000 words. Visualisations are illustrations or other visual representations that make ideas visible or tangible to an audience. The method always refers to creating visual and often also tangible artefacts.

We distinguish between two types of visualisations: First, it is a method to illustrate, demonstrate and prove a team's working process (moderation method), and second it is a method to illustrate a single idea to solve a given challenge (prototyping).

In iPRODUCE both types of visualisation came to play.

Moderation method: When running face-to-face and remote iPRODUCE workshops, we followed three simple steps. First, we wrote the topic of the session (headline) and (some) leading question(s) on paper or a virtual whiteboard. Second, team members independently recorded their answers on sticky notes before reading their answers aloud to the group. Third, we placed the sticky notes on the paper or digital whiteboard and found agreements by voting or clustering as a group. After the session, the sticky notes, voting dots, and cluster themes used in the activity serve as evidence of the work done by the team. The method also creates an artefact (the paper) that serves as a record of the






team's working and decision-making process. Of course, there are many variations on how to implement this activity, but it is worth starting with three steps.

Prototyping: In iPRODUCE we used (rapid) prototyping on a nearly daily basis. Prototyping can be done in 2D or 3D. It varies from sketching simple use or service scenarios to crafting with cardboard, 3D-printers, or small electronic devices. Prototyping is a fast way to transform an abstract idea, something we often start with as a sentence on paper or words shared in a discussion, into a tangible artefact. For Prototyping, everything is allowed, we recommend using average office supplies, off-the-shelf microcontrollers, or other available resources to recreate a minimised

version of an idea/concept. Sketching and crafting are activities that help communicate and create a shared understanding of an idea and maybe a functionality. The iPRODUCE service “Produktschmiede”, was developed to provide customers with the tools to define a problem, ideate a solution, and prototype their idea in three days. Our customers used the artefacts they created to discuss their ideas with their teams and to present their ideas to stakeholders.



Pro Tip: Makerspaces or Fablabs often offer numerous tools to rapidly create tangible models or prototypes. Check [here](#) to find the Makerspace or Fablab in your area.

2. Ideation through Brainstorming & Mind Mapping

Ideation is the active reflection on solutions to a given challenge or problem. It is part of every innovation process. Ideation exercises enable the generation of new ideas related to a shared topic in a group or a single-person setting. Ideation exercises are free-flowing and explorative in nature. To facilitate effective ideation, start with two rules (1) quantity before quality and (2) avoid judgment to welcome crazy ideas.

In iPRODUCE we experimented with numerous ideation exercise variations. To begin, we recommend following these three simple steps:

First, ask participants to brainstorm silently. **Brainstorming** is the process of thinking about a challenge or question. Each answer should be noted on an individual sticky note. Second, share the results with the team. Third, build on the team's ideas and rethink them for new and improved solutions.

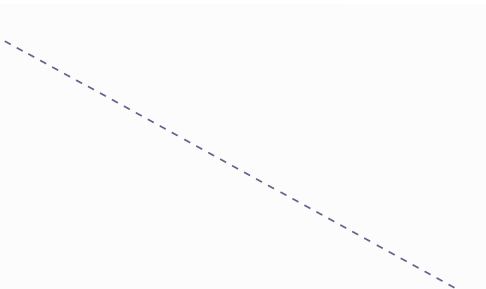
The basic procedure is to start with a silent exercise, share, and then brainstorm again. This was the most successful strategy in iPRODUCE.

Mind mapping is a method that reflects the order of brainstorming results. Mind mapping activities help to collect information from the participants in an open and dynamic way. The most simple approach is to write the ideas on a flipchart or whiteboard to create a type of 'map' that the group can logically follow.

We recommend applying the Mind Mapping methodology once the brainstorming is done, as it will help you organise the 'purposefully messy' brainstorming activity into clearer ideas. Basically, mind mapping is about finding connections between

the brainstormed ideas and creating flows amongst them. You may use one of the many tools available online (a quick online search will bring up many options) or simply use paper, the sticky notes from the brainstorming session, and a pen. If you want to step up your mind-mapping game, you may also consider using different colours and adding images.

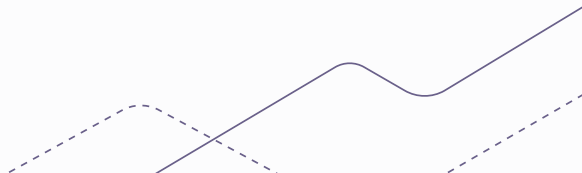
First, the mind mapping team must find a main topic for the mind map and place it at the centre of the workspace. Next, the team looks for sub-topics that directly link to the main topic before connecting them to the main topic using arrows. This is when 'purposefully messy' brainstormed ideas begin to make sense as a whole. The team continues looking for connections and adding elements to the map, always signalling the connections using arrows.



Let's look at an example to make things more tangible in your head. Imagine you have a really great idea for a new product and want to start developing it. So far you're calling it "amazing product." You pitch the "amazing product" in a team meeting and everyone gets excited about it - it can really change the market you operate in! Many ideas come up and a brainstorming session begins. Some colleagues see opportunities to innovate in design and functionalities, while others are concerned about high costs. Your boss stresses that this product could bring the company to a leadership position in the market, but the engineers and procurement colleagues are concerned about the unavailability of parts. The iPRODUCE representative reminds them that some parts can be developed and 3D printed at the FabLab. The finance coordinator jumps straight to budget and

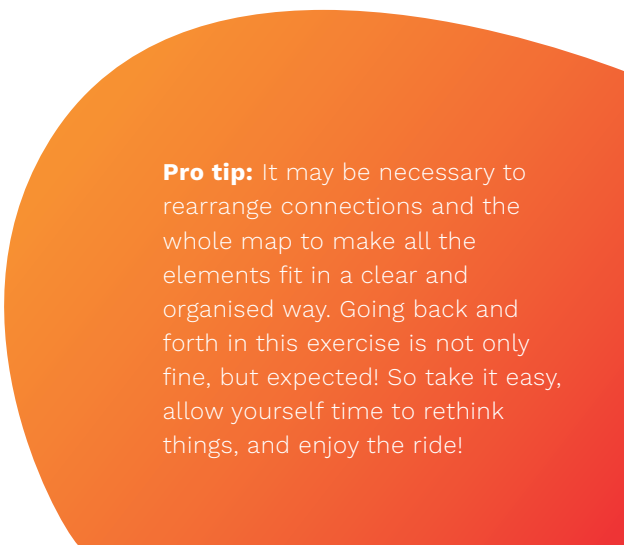
explains some limitations and opportunities, whilst the marketing representative is already making calculations on demand and price points.

Things surely escalated quickly. Now it is time to gather these elements and organise them in a clear and structured way. "Amazing product" is the logical main topic, so you write it in red in the middle of a large piece of paper. The team identifies connections among the brainstormed elements. Someone suggests the first two branches should be "resources" and "opportunities." You all agree and create these 2 branches. A few more branches grow naturally from resources such as budget, parts and suppliers, and internal expertise.



The same happens with opportunities, with increased sales, revenue, market share, and brand building as main connections. You may add a third sub-topic to specify processes and responsibilities required in product development. At this point, someone reminds the group about the new company sustainability policy, so now you must decide whether this is relevant enough to be a sub-topic or a smaller branch

under the existing three sub-topics. You repeat these steps until all the ideas are displayed in a structured way. Now you have a clear mind map to help you move to planning and execution with the certainty that all aspects inherent to the 'amazing product' are included in your project.

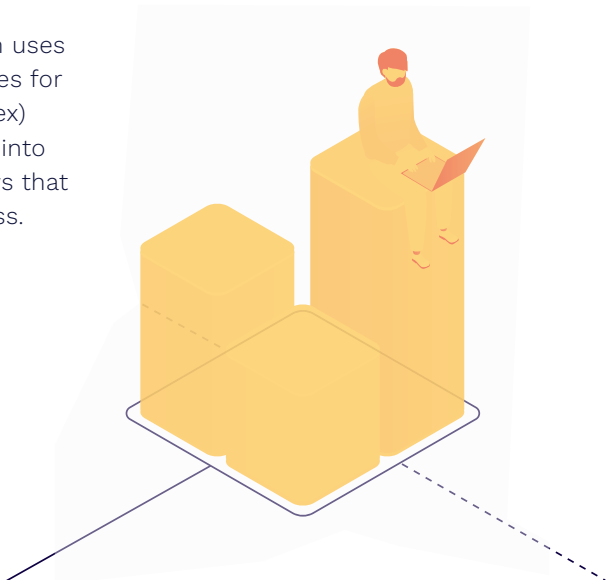


Pro tip: It may be necessary to rearrange connections and the whole map to make all the elements fit in a clear and organised way. Going back and forth in this exercise is not only fine, but expected! So take it easy, allow yourself time to rethink things, and enjoy the ride!

3. Business Model Canvas

The Business Model Canvas (BMC) is a strategic management template tool that helps identify and define key aspects of a functioning business model. It is grounded in the canvassing methodology, which uses structured but flexible templates for working and visualising (complex) information, thus simplifying it into easily understandable overviews that are adjusted to fit each business.

iPRODUCE kicked off business modelling by using the widely known **Strategyzer** BMC, which contains the 9 areas described below:



Value proposition of what is offered to the market – the core service/product offering.

Target **customer segments** addressed by the value proposition – the different customer groups to focus on while delivering and marketing the product.

Communication and distribution channels to reach customers and offer the value proposition – the means to distribute and reach customers.

Relationships established with customers – the different types of relationships one can develop with the customers.

The core **capacities** needed to make the business model possible.

The configuration of **activities** to implement the business model.

The **partners** and their motivations for coming together to make a business model happen.

The **revenue streams** generated by the business model constituting the revenue model.

The **cost structure** resulting from the business model.

These nine elements are organised in a structured layout to provide a unified overview (see below) to help businesses develop or reframe an understanding of their products /services.

Using the BMC as a starting point, several variations were created to cater to specific business needs. For instance, the consulting firm UX Berlin created a Refinement Sheet for Business Modelling containing an additional element called “values.” It allows for the identification and discussion of intangible and normative organisational aspects, such as principles, purpose, and objectives.

This template was used by iPRODUCE in the final stages of business modelling to allow for better alignment among the project partners from different industries, countries, and cultures. Thus, it enabled the development of common ground among these actors for successful exploitation in the medium and long term. Another example is the Circular BMC (learn more and see an example [here](#)), which supports businesses in the (re)design of their value propositions and flows from a linear to a circular perspective.



The Business Model Canvas

Designed for: _____ Designer by: _____ Date: _____ Version: _____

Key Partners Who are the key partners? Which partners are essential? Which partners are strategic? Which partners are complementary? Which partners are substitutes? Which partners are competitors?	Key Activities What key activities do we perform to create value? What key activities are essential? What key activities are strategic? What key activities are complementary? What key activities are substitutes? What key activities are competitors?	Value Propositions What value do we offer to the customer? What value do we offer to the customer? What value do we offer to the customer? What value do we offer to the customer? What value do we offer to the customer? What value do we offer to the customer?	Customer Relationships What type of customer relationships do we create? What type of customer relationships do we create? What type of customer relationships do we create? What type of customer relationships do we create? What type of customer relationships do we create? What type of customer relationships do we create?	Customer Segments Who are our target customer segments? Who are our target customer segments? Who are our target customer segments? Who are our target customer segments? Who are our target customer segments? Who are our target customer segments?
Key Resources What key resources do we use to create value? What key resources are essential? What key resources are strategic? What key resources are complementary? What key resources are substitutes? What key resources are competitors?	Channels How do we reach our target customer segments? How do we reach our target customer segments? How do we reach our target customer segments? How do we reach our target customer segments? How do we reach our target customer segments? How do we reach our target customer segments?	Cost Structure What are the most important costs? What are the most important costs? What are the most important costs? What are the most important costs? What are the most important costs? What are the most important costs?	Revenue Streams How do we generate revenue? How do we generate revenue? How do we generate revenue? How do we generate revenue? How do we generate revenue? How do we generate revenue?	

Pro tip: after taking a good look at the templates available online (there are many!), you can identify the one that suits your business needs. You may also take advantage of the immense

flexibility of business modelling and create your own template either by adapting an existing layout or merging two or more templates into one.

4. Affinity Diagram

The affinity diagram - also known as affinity chart, affinity mapping, K-J Method, and thematic analysis - is a method to organise ideas according to their natural relationships. It is often used in connection with brainstorming to group output (individual ideas) into umbrella terms, thus consolidating information related to a service, product, problem, process, or any complex issue.

Just like the Business Model Canvas, the Affinity Diagram is flexible by allowing the working team to freely create the umbrella terms (or category titles) according to their needs and to group and regroup items as many times as necessary until a final diagram is defined.

The Affinity Diagram is particularly useful when a large chunk of facts or ideas are loose and it is difficult to make sense of them. For example, iPRODUCE used this method during the business model sessions. A selected group of partners met to define the business model under which they would operate together in the future. When discussing the underlying values of their partnership, a series of terms were written down and spread out on a board. Using intuition, the working team quickly spotted the connection among the following: Circular design, sustainability, responsible sourcing, 3R's (reduce, reuse, recycle), social impact, social responsibility and environmental concerns.

The sticky notes containing these terms were removed from the general collection of sticky notes and placed together in a separate area thus creating a cluster of items. A discussion to define a title for this cluster followed, and by consensus, it was then named triple “social and environmentally sustainable design.” The same procedure was adopted to other relationships until all or most sticky notes were assigned to a cluster.



Pro tip 1: Some items may belong to more than one cluster. In this case, write it down on multiple sticky notes and assign them to the corresponding clusters. It is ok to repeat items.

Pro tip 2: We advise you to strive for consensus in the face of potentially controversial items before assigning them to clusters. The same goes for defining the category titles once the clusters are formed.

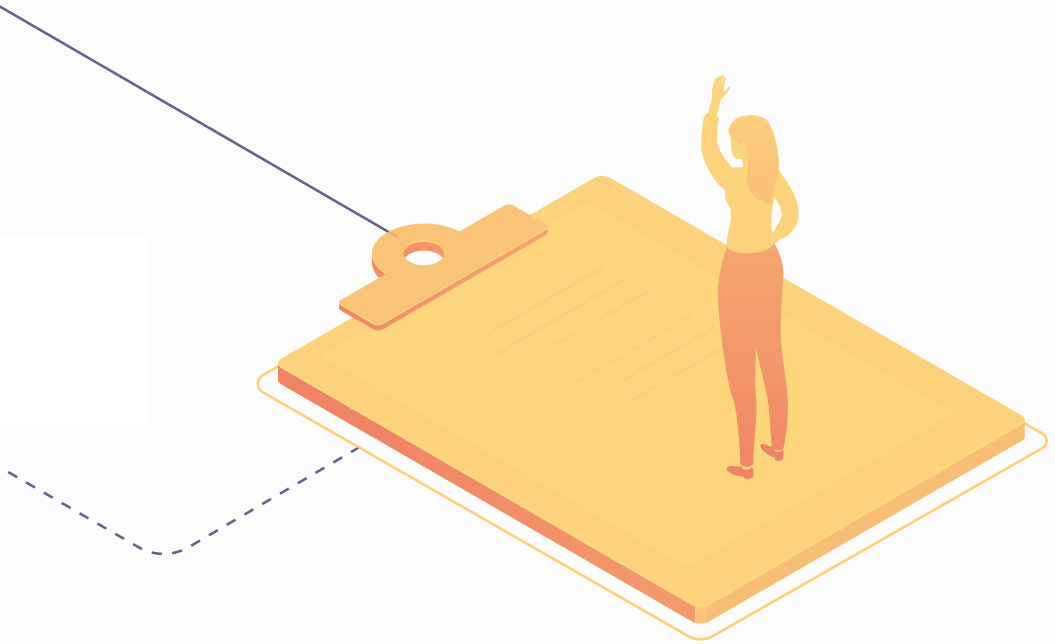
Pro tip 3: Some items can remain unclustered at the end of this exercise, which will require the working group to pick one of the following solutions: (1) create an “others” cluster, (2) allocate the “loners” to existing clusters as long as there is a minimal connection between them, or (3) dismiss the item if it does not seem relevant to solving the issue at hand.

5. Blue Sky Vision Exercise

The Blue Sky Vision is an exercise to help identify a shared vision or goal amongst one or more teams as well as expectations for collaboration from the teams and company members. It is derived from the “visioning method,” which is used to conceptualise a desirable future state or to set a goal - also called vision.

The exercise begins with a session where the workshop participants can freely share their expectations, goals, and an ideal objective or future state to be achieved once the project or initiative is completed. At this stage, participants are encouraged to aim high, regardless of resource and time limitations.

This session is followed by a joint assessment of the individual contributions in an exercise to converge expectations and polish objectives according to feasibility criteria, which are usually related to time constraints, available personnel and expertise, infrastructure, and financial resources. At this point, other tools described in this document such as the Affinity Diagram can be helpful.



The Blue Sky Vision exercise was used in iPRODUCE prior to the Business Model Workshop to help partners discuss and find a common vision as a group, facilitating the establishment of common ground for collaboration and the most promising and viable product and service offerings they can provide.

6. Blueprinting - Replication & UK

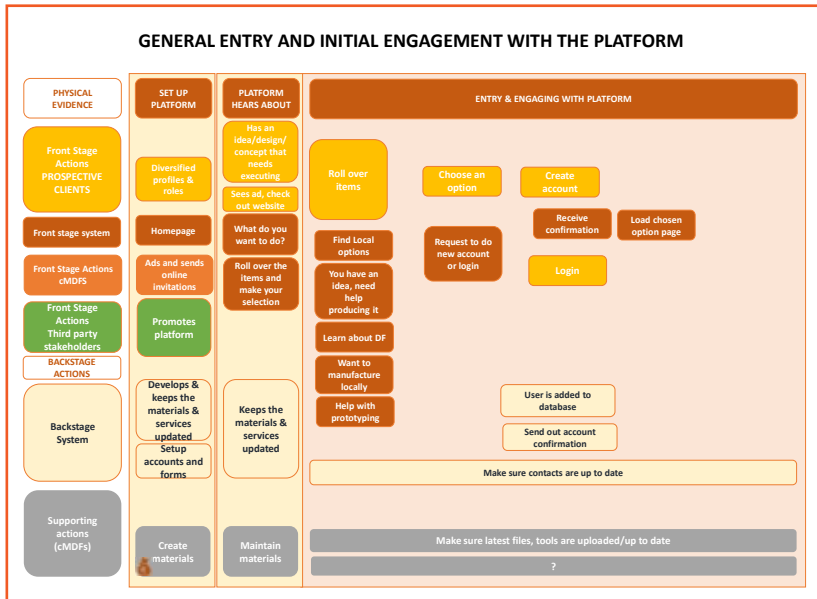
Blueprints have become a popular tool with service designers as a way to visually demonstrate different journeys while maintaining a primary focus on customer experience. Blueprints provide an overview of the various processes, touchpoints, and physical evidence required for customer-centric service deployment. Whilst blueprints are associated with representations of technical drawings from architecture and engineering fields, recently the term has been applied in design to describe detailed journeys, processes, and how digital and physical elements are intertwined with each other.

Blueprints' design tends to have two main axes and it uses the theatre metaphors of "front stage" and "backstage" to symbolise what is visible to all stakeholders and what needs to be done in the background in order to support the front stage activities, which tend to be invisible to the primary customers/users of the platform or service.

In the iPRODUCE project, blueprints were used to both demonstrate and plan how various customers and stakeholders interact with the platform. They illustrated events, actions and activities, and which groups of stakeholders engaged with the platform and how.

This visualisation tool serves as an illustrative guideline of the project platform user experience (UX). The blueprint serves as a way to demonstrate various types of interactions and the uses of services and products provided by the platform, creating narratives that

help avoid ‘missing’ steps or underestimations. Moreover, by providing an overview of different user journeys, blueprints can aid designers and developers in identifying initially missed opportunities that can be explored in the suggested journeys.



iPRODUCE Partners

AIDIMME
TECHNOLOGY INSTITUTE

LAGRAMA



**OCÉANO
NARANJA**

Fraunhofer
FIT

ZENIT

MATERALIA
pôle de compétitivité

aidplex

Excelcar
ACCÉLÉRATEUR D'INNOVATION INDUSTRIELLE

Energy@work

TRENTINOSVILUPPO
RISORSE SVILUPPO E INNOVATIONI ECONOMICHE DELLO SVILUPPO

HI
HUB INNOVAZIONE
TRENTINO



CBS **COPENHAGEN
BUSINESS SCHOOL**
HANDELSHØJSKOLEN



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



SIEMENS
Ingenuity for life.

EUROPEAN DYNAMICS



WHITE
RESEARCH



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement no. 870037. This material reflects only the views of the Consortium, and the EC cannot be held responsible for any use that may be made of the information in it.