

ENERGY

ENGREENGIA

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Energy



@SOM_Mataró
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The Idea

The neighbours at 15 Main Street are debating whether or not to put solar panels on the roof of the building. Most of them are convinced, but first they have to make sure it's feasible: they can't afford to lose any more money.

ENGREENGIA are giving them the training they needed to take the plunge and to convince any reluctant neighbours. Plus, it's helping them with the viability study, helping them find funding for the installation and locating all the necessary professionals. Now, 15 Main Street is doing its part for a more sustainable city and a healthier planet.

Part One

Development of the idea

Need

An easier transition to cleaner energy adapted to meet the needs of different groups:

- Citizens and communities of neighbours who have a hard time reaching an agreement, analysing viability and managing a shift towards green energy generation in their buildings.
- Stores, businesses, organizations and residences that may have made up their minds but still haven't taken the plunge because they need a study, funding, or just aren't sure what the next step is.
- Industrial parks, local administrations and public facilities that need to get up-to-date with the energy transition.
- Cities or towns that are minimizing their environmental impact and becoming more self-sufficient, bringing down energy costs in the long run.

Who needs this?

This service is aimed at 5 groups in particular:

- Individuals and communities of neighbours.
- Stores, businesses, organizations, etc.
- Industrial parks, local administrations, public facilities.
- Citizens in general, especially in terms of conscientious and responsible consumption.
- The professional sector and initiatives involved in renewable energy: small electrical companies (especially cooperatives like Som Energia), technicians, engineers, legal and management services, financial institutions (especially ethical organizations or cooperatives).

Idea

A space for counselling and guidance in the creation of self-sufficient energy communities. The goal is to offer all the necessary information as well as the services of different entities in one place so customers can enjoy sustainable energy.

A space where citizens, communities of neighbours, local administrations, industry, commerce and other economic, social and cultural agents can find everything they need to make the shift to cleaner energy on different levels.

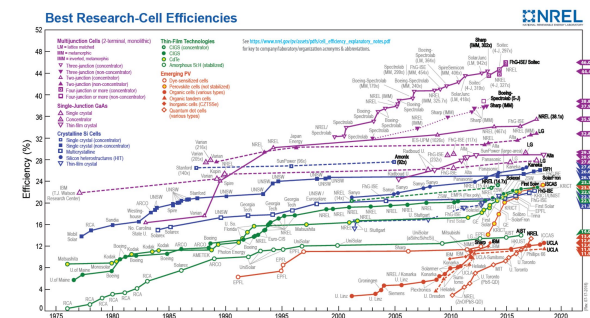
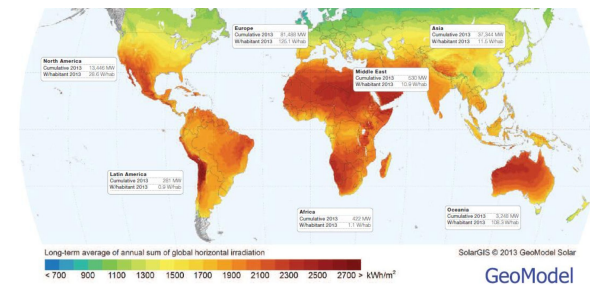
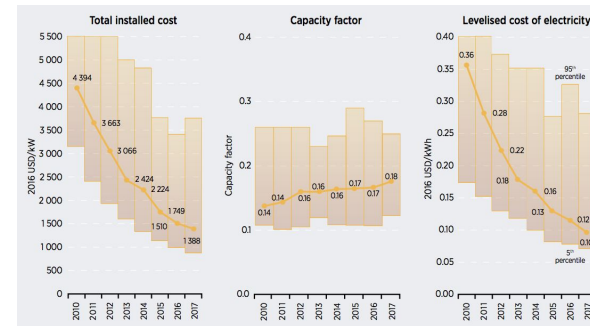
We hope to become a local point of reference in the promotion of a transition to cleaner energy. We hope to help promote more sustainable energy consumption, and to serve as a space for empowerment that promotes more conscientious, responsible consumption.



Trends

Trends that back up the sector and our business idea:

- On October 10, 2018, the Spanish Government repealed the so-called “Sun Tax”, the world’s most restrictive regulation on self-consumption.
- Worldwide efforts to reduce our carbon footprint could lead to a rapid rise in investment in solar energy.
- Improved economic yields** in solar power installations. These installations will continue to grow cheaper, bringing down the cost of self-consumption. The time needed to recover the cost of solar energy installations in Europe is estimated at 1.5-3.5 years. (2)
- According to the International Energy Agency, getting 16% of energy from solar by 2050 is a feasible possibility. (1)
- Digitalization will be applied in solar power plants, which will go from adapting to the network to supporting it. It is estimated that over 80% of residential systems will be connected to the network of virtual power plants (energy on the energy “cloud”).
- The percentage of solar systems that include energy storage will continue to grow. Batteries have improved significantly in recent years.
- Solar is viewed as a clean, planet-friendly source of energy. Large corporations will continue to promote solar energy with 100% renewable goals in keeping with these values.



1 International Energy Agency
 2 © IEA, Technology Roadmap 2014, 2014, IEA Publishing. Licence: www.iea.org/t&c
 3 Best Research-Cell Efficiencies, National Renewable Energy Laboratory, USA



Conceptualization of the idea

What?

We want to be a point of reference in the shift to green energy in our city (and region), offering everything from information and training for different audiences to a range of services to help make the installation of green energy systems a reality.

Depending on the results of our needs assessment, which we will complete before designing a solution, **we will evaluate different phases for the project:**

- Raising awareness through information and training sessions.
- Community building: empower communities of neighbours and other parties involved, giving them the tools they need and accompanying them as they make the switch.
- Search for available rooftops and other spaces to improve the location of solar panels.
- Manage permits and provide guidance through the legal process of installation.
- Do the research on sources of funding and initial investment (investors) to help calculate the return on investment, output, maintenance, and general feasibility of the operation.
- Provide professionals and suppliers to ensure new energy systems are installed correctly.

How?

To make the switch to renewable energy, we need the support of the administration. They need to see this as an investment in a healthier, more sustainable future on both a local and a global level. As a result, public administrations can be both potential clients and pilot experiences for the first changes to the energy system.

The positioning of the project will depend on the needs assessment and the size of different installations by sub-segment.

The regulatory framework, the availability of appropriate spaces, the availability of funding, the profitability of the investment and the quality of the materials and installation will be key to the viability of the project.

The project will be founded using the basic structure and principles of a non-profit, and with the support of legal experts, engineers, tax consultants, insurers, technicians and suppliers.

Community building and the establishment of permanent alliances with leading entities in the sector will contribute to its viability.

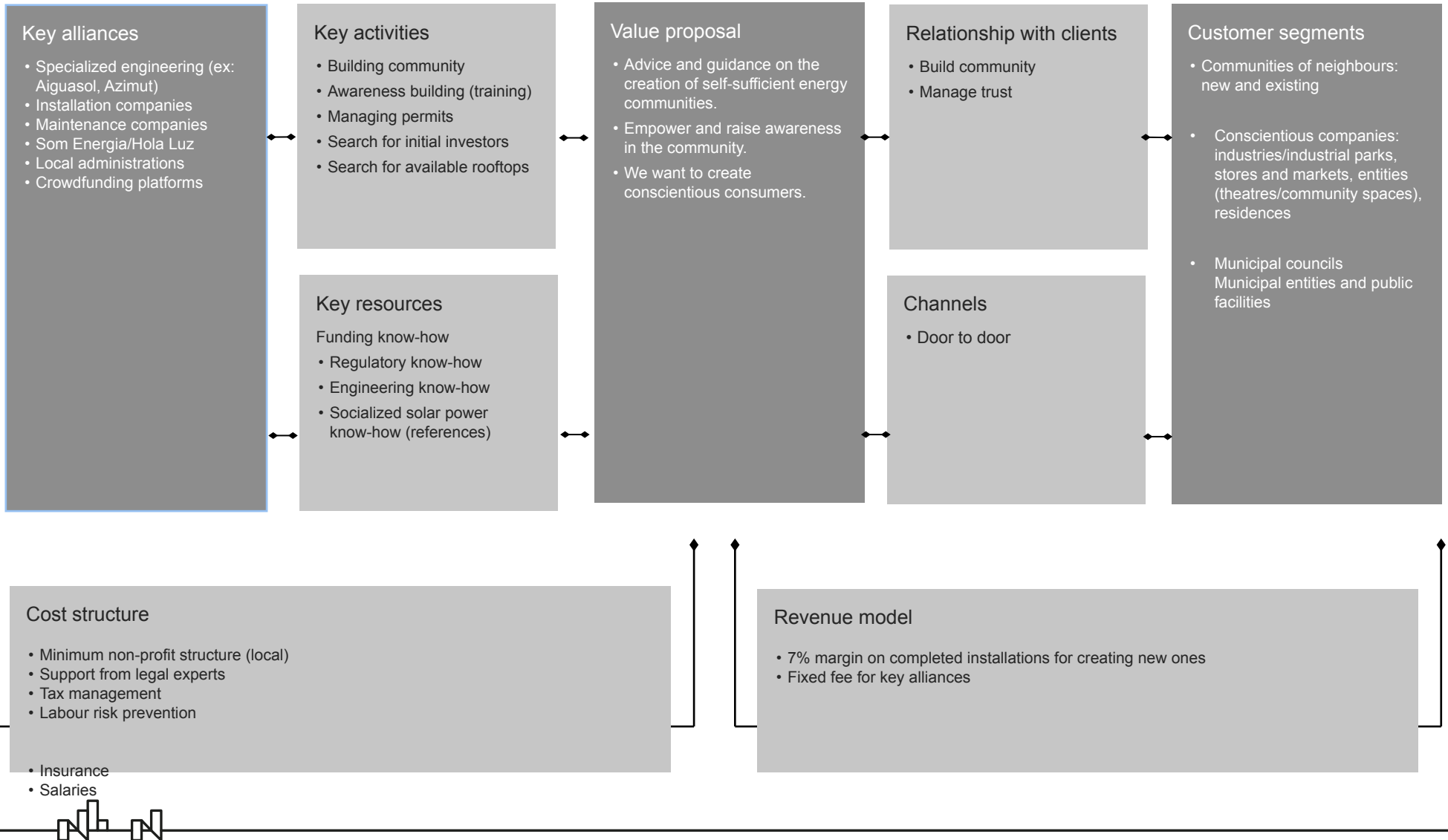
For whom?

The implementation of the initiative might begin in spaces provided by the administration (C), which would help to build the confidence needed to access other segments. The sub-segments we prioritize will depend on the results of the needs assessment, the type of solution required and the available resources.

- COMMUNITIES OF NEIGHBOURS AND INDIVIDUALS** with few resources and little space. They are composed of two sub-segments: those that have made up their minds, and those that have not and are having a hard time with coordination and seeing things in the long term.
- BUSINESSES, ORGANIZATIONS:** most have made up their minds and see things in the medium-long term. Differences in availability/rooftop sizes.
- PUBLIC FACILITIES, INDUSTRIAL PARKS:** committed. Available rooftop space.
- CITIZENS, EDUCATIONAL COMMUNITY**



Simplified layout of the business model



Pre-feasibility of the idea

Cost structure

(key activities, key resources, key alliances and channels)

INITIAL INVESTMENT

Social capital	3.000 €	Financing	100 % self-financed
Constitution	500 €		
Computers + space (external contribution – grant or agreement)			

PILOT PHASE¹ (1st and 2nd year)

Items	Costs
Hiring services ²	0 €
Salaries	3.000 €
Website ³	150 €
Brand	150 €
Tax management - Insurance	200 €
Communication	300 €
Phase total (monthly)	3.800 €

OBJECTIVE (starting in the 3rd year)

Items	Costs
Hiring services	0 €
Salaries	6.000 €
+ eCommerce	400 €
Updates	300 €
+ Promotion	700 €
Tax management - Insurance	300 €
Phase total (monthly)	7.700 €

- 1 In the pilot phase, we will consider the cost of living + minimum costs for communicating the phase. For this phase, we are expecting significant self-financing from the initiators.
- 2 In both phases we will attempt to negotiate that the website, brand, communication, eCommerce, etc. be paid using a flat rate to minimize initial investments and to make as effective a use of funds as possible.
- 3 Additional offers will be included in the continuity phase.

Revenue model

(market sizing and fees for services)

Dimensioning:	Communities of 20+ homes	
TAM (total possible volume within our area of activity)	31.644	> CAT > Gencat ¹
SAM (serviceable volume with the model and resources at our disposal)	1.341	> Maresme ¹
SOM	134	> 10% of SAM
Dimensioning:	Municipal facilities (2)	
TAM (total possible volume within our area of activity)	12.165	> CAT > Gencat ¹
SAM (serviceable volume with the model and resources at our disposal)	700	> Maresme ¹
SOM	70	> 10% of SAM
Dimensioning:	Industrial parks (3)	
TAM (total possible volume within our area of activity)	1.750	> UAB > Study
SAM (serviceable volume with the model and resources at our disposal)	712	> Metropolitan area
SOM	71	> 10% of SAM
Approximate rates:	Euros	Euros
Communities (7% - Small solar farms - 100 m2 - 400 Euros/m2)	2.000,00 €	40.000,00 € (*)
Facilities (7% - Mid-sized solar farms - 300 m2 - 350 Euros/m2)	5.250,00 €	105.000,00 € (**)
Industrial parks (7% - Large solar farms - 500 m2 - 300 Euros/m2)	6.000,00 €	150.000,00 € (***)
Income / month (feasible > SOM >> continuity phase)	% SOM	Euros
Communities (X% SOM) - 6 per year	0,37%	20.000 €
Facilities (X% SOM) - 6 per year	0,71%	52.500 €
Industrial parks (X% SOM) - 3 per year	0,35%	37.500 €
Total income (monthly)		110.000 €

(*) > Average cost of small solar farm

(**) > Average cost of mid-sized solar farm

(***) > Average cost of large solar farm



Point of balance (monthly)

Scenario for the point of balance under the following conditions:

- Number of “small” solar farms around 100 m2.
- Sale price: €40,000.
- Variable costs related to the design, calculation and execution of the solar farm.

We will calculate the **point of balance** to determine how many product or service units need to be sold in order to cover costs, and see if this volume of units is feasible with the resources at our disposal. The **formula** for calculating the point of balance is:

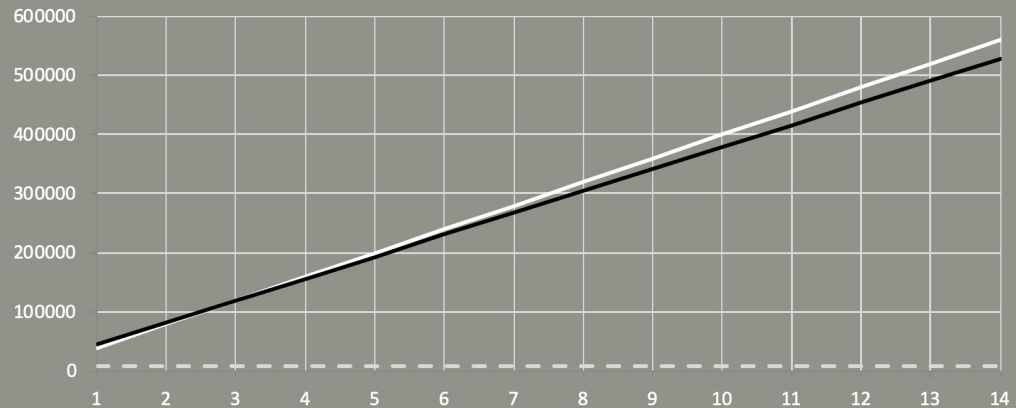
$$PE = CF / (PV_{unit} - CV_{unit})$$

- Expenses
- Revenue from sales
- - - Fixed monthly expenses

Turnover target:	110.000
Fixed costs:	7.700 €

Price (per unit):	40.000 €
Variable cost (unit):	37.200 €

Point of balance (units): 3 > Small photovoltaic field



Scenario for reaching viability

Planned scenario:

- **The first year**, no advanced payments (salaries) for founding members. The goal is to establish the project and get it up and running.
- **The second year**, the goal is to reach the point of balance with a minimal payment (50% of planned final payment).
- **The third year**, the goal is to reach viability. All expenses should be covered regularly. The project is viable.

We have projected sales and costs.

The **formula** for calculating the projection is:

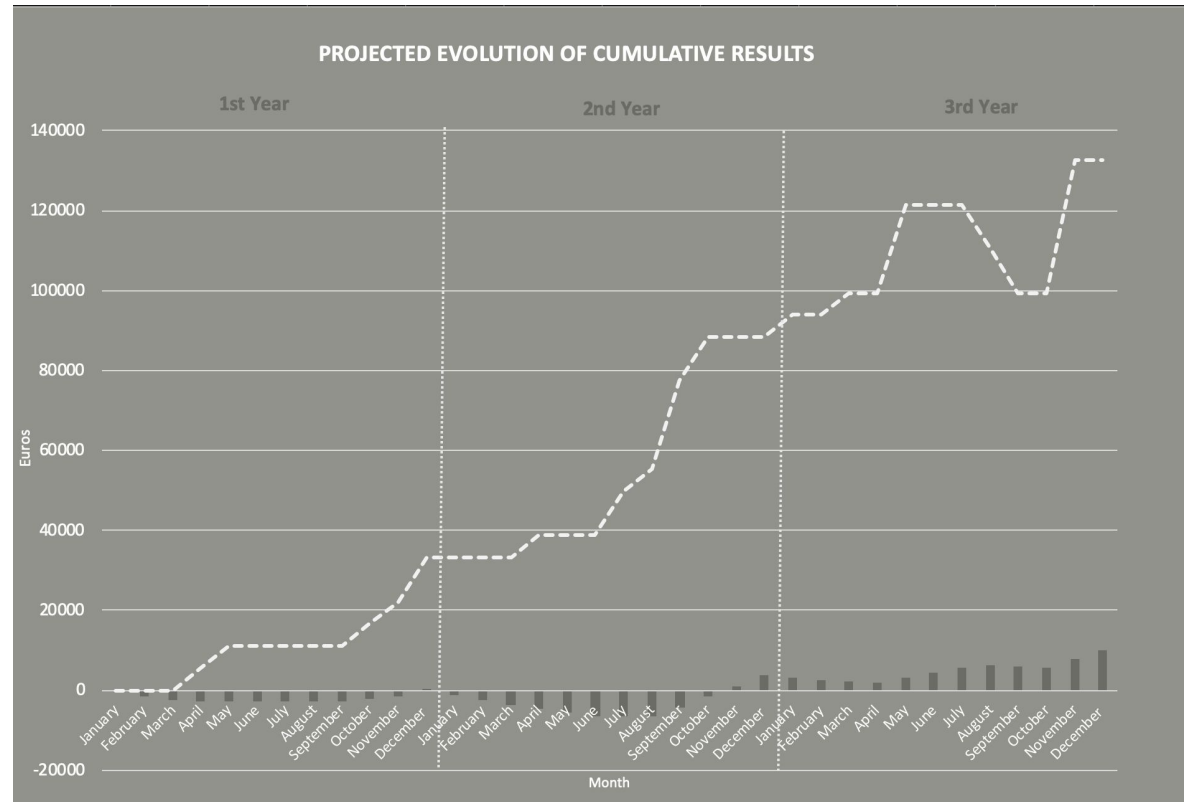
The first year, 0-15 % of the sales target.

The second year, 30-50% of the sales target.

The third year, we will reach 100% of the sales target.

— — Monthly income

— Cumulative monthly results



Validation



Part Two

Validate needs with those that have them

Phase description: in all new products, before designing a possible solution for the detected need, it is a good idea to validate the needs themselves with those that have them. Therefore, in this phase, we need to (a) list the needs we think need to be addressed, and (b) check those needs with the people we believe have them.

Hypothesis of needs:

A. Segment of final users:

- Desire to reduce energy costs, modernize installations, reduce dependency on the traditional energy sector.
- Desire to help improve the environment.
- Ignorance about the energy sector (green energy and energy in general), its effectiveness, profitability, costs/investment.
- Lack of time and resources to start a project, conduct a study and supervise the process.
- Ignorance about the possibilities of accessible or available spaces (rooftops).
- Ignorance about suppliers, distrust.

B. Segment of the green energy sector (organizations, professionals):

- The organizations and professionals from the sector would like to increase the number of green energy projects.
- They have a hard time reaching communities, businesses, industrial parks...

C. Segment of the administration and public facilities:

- Desire to reduce energy costs, contribute to sustainability and a more self-sufficient city.
- Difficulty promoting the shift to sustainable energy among private entities (communities, businesses, organizations...).

Actions or strategies

Below are a series of actions and tools to fulfil the detected needs.



Empathy exercise (focus on need)

In empathy exercises, we “put ourselves in the shoes” of the end users. We live their experiences first-hand in order to better understand their needs.

- Witness first-hand the debates and doubts in communities of neighbours on the convenience of solar panels, hiring processes, supervising installation...
- Accompany professionals (engineers or installers) as they complete the study, the installation...



Stroll through online forums

This “stroll” through online forums can help us validate or even discover customer needs.



Interviews with users, customers

The goal of these interviews is to validate each of the needs of the end users (list of hypothetical needs).

- Review the list of hypothetical needs with each interviewee. 10-15 interviews.



Agent interviews

These fulfil the same purpose as the interviews with customers. However, in this case, they involve the end users of the service or products.

- Review the list of hypothetical needs with each interviewee. 10-15 interviews.



Validation of product or service/solution

Phase description: in all new products, before designing a possible solution for the detected need, it is a good idea to validate the needs themselves with those that have them. Therefore, in this phase, we need to (a) list the needs we think need to be addressed, and (b) check those needs with the people we believe have them.

Product hypothesis

A. Segment of end users:

- End users are interested in searching, getting informed and hiring the service from referential organizations that are present throughout the process (trust).
- These users also want to invest their loyalty in a turnkey system followed by maintenance.

B. Segment of professionals and suppliers

- Professionals and suppliers have the knowledge, the technology and the supplies needed to fill the need.

C. Administration

- At the start of the project, it will be interesting to see the position of the administration (especially the local administration) in how they promote the initiative, facilitate administrative processes and provide permits, spaces and rooftops.

Actions or strategies:



Solution interviews

Solution interviews are an opportunity to validate the intended purposes of the service or product (list of functionalities) with the end users..

- 1-on-1 interviews on functionalities with potential users, together with an online or physical prototype.



Solution interviews with agents

These serve the same purpose as customer interviews. However, in this case, the interviews are with the agents that interact with the final users of the service or product.

- 1-on-1 and group interviews with agents on functionalities for potential clients, together with an online or physical prototype.



Online prototype

Online prototypes allow us to show the service or product to the customer. The objective is not to have a finished product, but to show customers some basic functionalities and get an idea of their impression and possible suggestions for improvement.

1. Mock-up of the website (layout and functionalities)
2. Web template with ecommerce and catalogue functionalities



Physical prototype

Physical prototypes allow us to show the service or product to the customer. The objective is not to have a finished product, but to show customers some basic functionalities and get an idea of their impression and possible suggestions for improvement.

- Brand mock-up
- Flyer/catalogue



Validation of numbers

Validation of numbers:

Phase description: in this phase, we will confirm the information or hypotheses related to our economic and financial plan (fixed costs, variables, prices, margins) in the two dimensions related to our project (internal and external).

A. Internal dimension

- We will review the principal fixed and variable costs for the product.
- We will confirm the margins applied to the products or services offered by analysing those used in the sector.
- We will ensure that the price of our products and services covers costs related to creation, production, assembly and commercialization.

B. External dimension

- We will confirm our costs based on customers' perceptions and, in particular, on direct and similar competition from the sector.

Actions or strategies

Below are a series of actions and tools to pursue in this phase.

A. Internal dimension



Review of fixed costs, variables

We will review fixed costs using information from the sector's main agents. We can also download economic-financial reports (for example, this [balance sheet](#)) from companies from the sector that could provide additional details on costs and margins.



Review of prices

In this case, we will use a price analysis based on a collection of our fixed costs, variables and the margins of our products or services.

B. External dimension:



Comparative table of related entities

This comparative table will help us to collect and analyse the prices charged by the competition (direct or similar), to distinguish between those with high, medium and low prices, and to determine average fees in the market. This tool can also help us to collect and analyse other aspects of the competition such as the communication they use (brand, language, tone, etc.), the contact channels they use, etc.



Customer perception

It is also a good idea to see the perceptions our potential customers have of our products and services.

Interviews with potential users of our services using the data obtained from the comparison with the competition in order to gauge their impression.



Thanks!



Socialneet@ajmataro.cat
www.mataro.cat/socialneet
@SOM_Mataró

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Socialneet@almataro.cat
www.mataro.cat/socialneet
[@SOM_Mataro](https://www.instagram.com/SOM_Mataro)