Guide III

Prototyping and Scaling
Work guide. Work 4 Progress Programme

This is a collection of 4 guides addressed to current and future organisations, by the Work4Progress (W4P) Programme of “la Caixa” Foundation:

I.– Community listening process
II.– Co-creation
III.– Prototyping and scaling
IV.–Evaluation and communication

These guides are intended to compile a series of best practices based on the working experience of the three W4P platforms and to establish a common language for them all.

They have been produced by the Innovation and Technology for Development Centre (itdUPM) of the Technical University of Madrid in a process of co-creation and comparison with the organisations that work on the Programme.

They include real examples from the experience of the W4P Programme, which will be updated and expanded in future editions.

W4P is a “la Caixa” Foundation programme intended to promote employment among women and young people in regions of Mozambique, India and Peru, through the creation of a platform for action and learning upon which innovative solutions may be scaled.

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The teams involved in the activity are shown here.

**Facilitating team**

**Working group**

**Evaluation team**

References

References to other guides are indicated with the icon of those guides.

- Guide I: Community listening process
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You will find fantastic TIPS and advice accompanied with this symbol. Make sure you bear them in mind to make sure the process is successful.

Work guide. Work4Progress Programme.
Guide III. Prototyping and scaling.

Online templates

Download this and more tools at “la Caixa” Foundation web page.
Prototyping

What is a prototype?
A prototype is the realisation of an idea in order to put it to test, to learn, to adapt it, to modify it and even possibly to discard it.

A W4P Programme prototype springs from an idea, proposal or initiative for the generation of employment, identified through the community listening process and developed through the co-creation process with the Community.

How is it done?
In W4P a prototype emerges from one or several prototyping sessions involving the Working Group and the Facilitating Team.

What can be prototyped?
We can prototype
- **Products** (including seeds, devices, etc.)
- **Services** (including public services, basic services, etc.)
- **Places** (including public, meeting, recreational, healthcare, sites)
- **Policies** (including regulatory frameworks on property and land use, for the management of natural resources, and financial intermediation, etc.)
- **Processes** (teaching, agricultural techniques, communication, etc.)
- **Software**
- **Etc.**

Steps in prototyping
Prototyping is an iterative process, which means it is repeated several times until the sought-after objective is achieved. The results obtained in feedback make it possible to adapt the prototype by returning to the previous steps and restarting the prototyping as often as required.

It is very important to keep a record of the steps and iterations involved in the prototype. Use the tool prototyping identification and description sheet on page 15.

Programming a prototyping session

1. Welcome and introductions
2. Present the day’s agenda and the work methodology (this will depend on whether it is a design and building or a prototype testing session)
3. Present the task to be performed. Make sure that participants understand what is expected of them. Inform them that all ideas are welcome.
4. Perform the activity.
5. Conclusions and forthcoming steps.

Bear in mind that “How to prepare a co-creation session” (Guide II – Co-creation) also applies to prototyping sessions.
How is it done?
With the specific ideas that have emerged from the co-creation sessions, prototypes are set in motion to test their feasibility.

To design the prototype the Facilitating Team needs to reflect on:

- What shall we obtain with this prototype?
- What are the key elements of the idea and its characteristics?
- What prototype model would be most useful for testing these characteristics?

The Facilitating Team could propose:

Prototype models

- Paper mock-up
- Physical object
- Storyboard or travel map
- Role play or drama

The results of the Conceptual Poster tool may be used as a starting point.
Paper mock-up
This is a **paper or cardboard item**, a drawing or a sketch that helps to visualise and test ideas in the initial stages of development. It is a tool for prototyping at very low cost and very quickly.

Recommended for: products, software, processes.

**Steps**

1. Divide the Working group into smaller groups.
2. Explain thoroughly what idea will go onto the prototyping stage and what we are trying to test with this prototype model.
3. Provide the material and time necessary to construct the prototype.
4. Observe carefully, take notes and make an audio-visual recording of the process, and of the reflections arising from the action.

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**EcoAd**

In several cities in the Indian states of Uttar Pradesh and Maharashtra, the use of plastic bags has been restricted. The W4P Facilitating Team explored the option of helping with enterprises in collaboration with EcoAd, a social enterprise that produces low-cost recycled paper bags in Pune.

A group of 12 women were trained by the company EcoAd in bag manufacture. 7 models of bags were prototyped for subsequent sale in the region.

Source: W4P India
Physical object
This is an item made from materials of any type that can either represent a functionality or be specifically manufactured to emulate a real object.

Recommended for: products (all kinds of devices).

Steps

1. Divide the Working group into smaller groups.

2. Explain thoroughly what idea will go onto the prototyping stage and what we are trying to test with this prototype model.

3. Provide the material and time necessary to build the prototype.

4. Observe carefully, take notes and make an audio-visual recording of the process, and of the reflections arising from the action.

TIPS
Bear in mind that the objective is to test functionality and not to have a perfectly finished object.

Fresh cheese
In the Community of Accocunca, Ocongate District, Quispicanchi Province, Peru, fresh cow’s cheese is produced to meet local and domestic demand. In order to attain a product marketable in the restaurants and hotels of the city of Cuzco, different tests were run to yield an attractive end product. Tests were run on the cheese to determine its sensory (organoleptic) and conservation (analyses of biological and physical parameters) characteristics, and sizes for sale. In this process, tasting sessions were also held with specialists.

Source: W4P Peru
Storyboard or travel map
This is a simple visual representation of a future scenario, which helps to convey the basic aspects of complex proposals or ideas. It uses narrative to focus on one person's experience in using a product or service and involves making quick drawings and sketches.

Recommended for: all kinds of services (including public services), places, policies, processes, software.

Steps
1. Divide the Working group into teams of no more than 4–5 people.
2. Explain what idea we are to explore with the prototype and the tool’s dynamic.
3. Hand over the “Storyboard” template (page #) and extra paper to modify or enlarge its structure.
4. Provide the time necessary to build the prototype.
5. Share the storyboards produced with all the teams and give them the chance to ask questions, make comments, etc.
6. Observe carefully, take notes and make an audio–visual recording of the process, and of the reflections arising from the action.

Optional
You may use a storyboard proposed by the Facilitating Team as a base for dialogue and invite the Working group to modify it. This may be combined with role plays.

Planning for the future
In India, the storyboard tool is being used in the “safe spaces” for women provided by W4P. Participants draw sketches through which they tell their personal story and express their hopes. This dynamic makes it possible for a person, with low or zero literacy levels, to express different options for their future and identify opportunities.

Source: W4P India
Role plays or drama
This involves producing a script and improvising a scene to explore the experience of people in a specific context.

Recommended for: all kinds of services (including public and basic services), places, policies, processes.

Steps

1. Divide the Working group into groups of no more than 10–12 people.

2. Explain thoroughly the idea to be prototyped and what we are trying to test with this prototype model. If it involves a service or process, it is useful to differentiate stages of this process in order to focus the group’s work.

3. Each team will think of:
   - Which characters are involved (user, supplier, assistant, etc.);
   - The setting of the scene (an office, a shop, in the countryside, etc.);
   - What triggers the scene off (the purchase of a product, a complaint, a payment, etc).

4. Write a short script that will be shared with the participants in the role plays.

5. Carefully observe all the action, take notes and make an audio–visual recording of the process, and of the reflections arising from the action.

SIYB entrepreneurs
The SIYB Game (Start and Improve Your Business) makes it possible to have practical experience of what managing a business involves. It is designed to offer participants the chance to make decisions in a test environment and to deal with the consequences of these decisions, as occurs in the real world.

Source: W4P India
For physical *products or prototypes*, the test is focused on:
- The object’s functionality
- Shape
- Weight
- Practicality
- Visual appeal
- Etc

For prototypes of *services*, the test is focused on:
- Roles
- Processes
- The tools that shape the experience of the service
- The performance time
- Etc

For *products that involve services*: the test must consider both aspects of the product and of the related service. For example, the sale of glasses (product) with which the prescription service (service) is provided.

For *basic or public services*: the test should bear in mind the criteria mentioned for services in general. Prototyping of these type of services kindles public interest, expectations, etc. which must also be duly evaluated.
Dynamics for performing tests:

1 **Functional test:**
   This test is intended to yield information on a product's physical and functional characteristics. An explanation is given on how the prototype works and the prototype is issued to users so they can handle it. During the session, the user's questions, impressions and comments are noted.

2 **Representation:**
   This test is intended to yield in-depth information on relations, roles and processes. A group of people perform the scenes of a role play while another group observes. During the session record is taken of the reactions and improvisations of the acting group and, at the end, the opinions and ideas of the observer group.

3 **Constructive interaction:**
   This test is intended to yield the most spontaneous, the fastest and the least thought-out impressions regarding the prototype. The person testing the prototype (object/product) should say out loud everything they are thinking while doing the test. The person observing the action can record the user's impressions as they arise, without waiting until the end of the test.

4 **Usability test:**
   This test is intended to yield observations of the interactions of the prototype with activities in daily life. The user is asked to perform a sequence of tasks. After doing the first, the action is interrupted and he or she is questioned about the experience. The next task should then be done. The action is interrupted and questions are asked and so on.

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**Solar-powered COCO system**

The Ahirwar community of Madore, which is a settlement near the town of Orchha in the region of Bundelkhand, India, worked to co-create a solar power-based water supply system. The prototype includes a system of tanks with solar panels for water collection and distribution, a communal ownership and management model and a business model that combines monetary and work contributions. During the prototyping phase, the Facilitating Team will evaluate the efficiency of the technological solution and the potential of the system to be extended to more families, the capacity to deal with the possible increase in water consumption, and the new system's economic feasibility, as well as other matters.

Source: W4P India
To record the feedback received about each prototype, use the Feedback sheet Tool (on page 17).

Regulatory sandbox
A regulatory sandbox is a restricted environment, designed specifically to experiment with new business models, products and/or services. This type of test also makes it possible to try out new regulations or to modify existing ones. Regulatory sandboxes are created and controlled by the public administration.

Feedback is the information obtained during the test stage. Gathering feedback requires:

1. **The recording of information**
   The method for recording information depends on the prototype model and the test dynamics chosen. For example: audio-visual recording is the best way to record drama or role play.

2. **People**
   A diverse range of users is required to obtain validation and new perspectives and ideas. Not only potential users but also less mainstream users ("extreme users") should be included, with particular emphasis on gender, age, education level, employment activity, etc.

3. **Questions**
   Future tests should integrate new questions that may arise in the process.

4. **Neutrality**
   Do not try to defend or demonstrate the usefulness of the prototype, but rather generate information with which to correct or modify it or to rule it out.

5. **Suggestions**
   Allow the people testing the prototype to contribute new ideas about the prototype.

To record the feedback received about each prototype, use the Feedback sheet Tool (on page 17).
The prototyping process is iterative. The feedback obtained is used to modify or change the prototype and the process begins all over again. And so on successively until the desired result is reached.

Next steps
What to evaluate before continuing onto the scaling stage.

- **Environmental feasibility**
  This aspect will depend on each country’s specific legislation. It is often compulsory to perform environmental impact studies or analyses certified by expert professionals or organisations. Environmental feasibility studies analyse different aspects of prototypes such as product life cycle, carbon footprint, treatment of waste or waste materials, etc.

- **Financial feasibility**
  This aspect is crucial and must be undertaken parallel to the other tests on the prototype. The business model canvas or social business model canvas (Guide II Co-creation) may be used in the initial stages of the prototype. Depending on the product or service, a more elaborate professional or expert analysis should be performed. This should include analysis of capital flows (revenues, outgoings), seasonality of production or service, size of the market, current competitors, obstacles to entering or leaving the market, initial level of investment, sunk costs, etc.

How is the listening process maintained during prototyping?

1. By performing new rounds of interviews or using any of the tools for collecting qualitative data explained in Guide I Community Listening Process

2. By guaranteeing a channel for giving feedback, for example: running sessions with the community and working groups to gather impressions about the results of the prototyping sessions.
Prototype identification and description sheet

<table>
<thead>
<tr>
<th>Prototype name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name on the &quot;Co-creation general chart&quot;:</td>
<td></td>
</tr>
<tr>
<td>Description:</td>
<td></td>
</tr>
<tr>
<td>Need/requirement to be covered:</td>
<td></td>
</tr>
<tr>
<td>Other related W4P prototypes:</td>
<td></td>
</tr>
<tr>
<td>Associated external initiatives:</td>
<td></td>
</tr>
<tr>
<td>Innovation yielded by the prototype:</td>
<td></td>
</tr>
<tr>
<td>Working group (participants):</td>
<td></td>
</tr>
</tbody>
</table>

Prototyping sessions (brief description of activities and progress):

<table>
<thead>
<tr>
<th>Date</th>
<th>Activities</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Envisaged impact level:

(1) community initiative without a business model, (2) small and medium-sized initiatives with a business model, (3) large initiatives with a business model, (4) public services and/or (5) regulation initiatives

Barriers and Enablers matrix

<table>
<thead>
<tr>
<th>Factor</th>
<th>Type</th>
<th>Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Barriers</td>
<td>Enablers</td>
<td>Impact</td>
</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>

To complete this table, see Guide IV Evaluation and Communication

Add pictures

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## Feedback sheet

### Prototyped product or service:

**Date:**

**Place:**

**Participants:**

### Notes

#### Positive aspects

#### Aspects criticised

#### Questions

#### Ideas

#### Observations

### Steps taken

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Scaling

What is it?
Scaling entails replicating, adapting and increasing innovative solutions in order to yield greater impact. It may also consist in implementing or transferring prototyped solutions to public institutions or programmes (e.g.: a portable ultrasound technology that is used successfully with pregnant women who live in an isolated area of Peru becoming incorporated into the offering of the national health system for the entire country).

Scaling involves complex and diverse processes: the dissemination or propagation of a product or model, the promotion of changes in legislation or existing policies and even the introduction of new laws, etc.

Scaling may refer to:
- Greater
  - Scale up
  - Impact on laws and policies.
  - Change in institutions at a policy, regulatory and legislative level.
- Exterior
  - Scale out
  - Impact in large numbers.
  - Replication and dissemination, increasing the number of people or communities reached.
- Internal
  - Scale deep
  - Impact on a cultural level.
  - Change in relations, values and beliefs.

Source: Darcy Riddell and Michele-Lee Moore (October 2015)

When are we ready to scale?
Innovative solutions must fulfil several requisites:

- **Effectiveness**: fulfil the function they were co-created for or, in other words, offer a solution to the needs or challenges identified.

- **Demand**: people, organisations, etc. should be willing to adopt the solution.

- **Feasibility**: environmental and financial.
### How to scale

A prototype may be scaled using multiple strategies. Different scaling strategies are not exclusive.

<table>
<thead>
<tr>
<th>Scaling strategies</th>
<th>Description</th>
<th>Most common initiatives</th>
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</thead>
<tbody>
<tr>
<td><strong>Direct control</strong></td>
<td>Replica and increase process undertaken with the Platform current resources, which design and performs the plan to increase the number of users and/or the geographical territory of action.</td>
<td>Community without a business model</td>
</tr>
<tr>
<td>Franchises</td>
<td><strong>Transfer the operation of the prototype to organization/s with quality guarantee systems to maintain integrity.</strong></td>
<td>Small and medium-sized enterprises</td>
</tr>
<tr>
<td><strong>Creation of new companies</strong></td>
<td>Creation of social or traditional enterprises that may independently make use of the initiative.</td>
<td>Small and medium-sized enterprises</td>
</tr>
<tr>
<td>Open source</td>
<td>Dissemination of best practices, guides, free access manuals – internet, fairs, information points, public events, etc. –, and mentoring activities -knowledge transfer and experience-based learning-, etc.</td>
<td>Community without a business model</td>
</tr>
<tr>
<td>Networks and alliances</td>
<td>Affiliation with other organisations: Multi-agent partnerships, formation of networks and coalitions.</td>
<td>Small and medium-sized enterprises</td>
</tr>
<tr>
<td>Advocacy</td>
<td>Technical advice, policy design, promotion (advocacy) of legislation or public policies.</td>
<td>Large–scale initiatives</td>
</tr>
<tr>
<td>Dissemination</td>
<td>Promotion of success or transformational stories through theatre, films, campaigns, publications, etc.</td>
<td>Small and medium-sized enterprises</td>
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</table>
Financing

Financing is one of the items upon which the success of scaling actions depends.

A non-exhaustive list of financing options is shown below. Availability depends on the country in which the operation is performed.

- **Donations**: Voluntary issue of funds without repayment obligation from private or public institutions (tender awards).

- **Public subsidies**: Award of funds by the public administration of a country or an official body.

- **Loans**: Issue of funds with repayment obligation that generally involve the payment of interest. They may come from investment funds, banking institutions, public programmes, etc.

- **Issue of shares or debt**: A mechanism to obtain funds for share companies.

- **Outcomes-based mechanisms**: Financial mechanisms that include what are known as social impact bonds and the outcomes-based payments system. See Social impact bonds database, https://sibdatabase.socialfinance.org.uk/


- **Collective financing**: A mechanism for making donations and establishing participatory loans. They are also known as “crowdfunding” and “crowdlending”.

- **“Venture philanthropy”**: Investments made by traditional companies in social enterprise organisations, the return upon which is measured in social rather than financial impact.
Information Kiosks

The information kiosks (IKs), developed by W4P India, are one of the enterprises accessible to women and young people taking part in the programme.

Each IK offers several services: use of computers, internet connection and document printing; and allows access to online services such as banking or insurance, etc. They also operate as a point of contact and information on business opportunities for new enterprises.

These IKs may be scaled by means of a host of simultaneous strategies:

- Direct control from the platform of the number of future IKs, recruitment of personnel, control of opening dates, geographical zones of installation, centralised training, etc.
- Creation of an IK association that independently allows the IKs to be replicated throughout the territory.
- Transfer (by franchise) of the IK model so that other organisations may replicate it while the platform supervises quality control.
- Allow free access to manuals or guides so that anyone can set up either an online or physical IK.
- Disseminate “entrepreneurial culture” so that anyone can own a business and access the information of the IK, for example: through stage play.

Source: W4P India
Script for evaluating the scaling process

General

Current operational level of the prototype/pilot
Local – regional – national – international

Scaling strategy
Dissemination, growth, replica, etc.

Characteristics of the prototype that must be maintained during the scaling process

Gender perspective

Current and potential partners

Partners’ key capabilities and resources

Key partners’ needs and interests

Leadership (partners’ level of involvement)

Identification of potential partners

Financing

Available financing options
short-, medium- and long-term

Financial sustainability
long-term financial plan

Communication

Scaling process communication strategy

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# Glossary

**Resources**  
Set of elements available in order to satisfy a need, carry out an initiative or explore opportunities. They can be of different types: economic, technical, human, etc.

**Social innovation**  
“new ideas (products, services and processes) that simultaneously satisfy the needs of social networks in a more efficient way than existing ones and create relationships or new and long-lasting social collaborations. They are innovations that are not only good for society, but also improve its ability to act.”

**Spaces for collective sense–making**  
Meeting places where, for example, events, meetings and workshops are held, and in which the dialogue and control groups take part with the aim of comparing the information gathered.

**Thematic group**  
Set of ideas or solutions, related in terms of topic or scope, identified during the listening process.

**Theory of change**  
This is a hypothesis that outlines a strategic vision of the desired change by thoroughly analysing and describing the hypotheses behind each step (...) identifying the conditions that allow or deter each one of them, as well as the activities that produce the conditions and explain how these activities could work...

**Working group**  
Set of people participating in a co-creation or prototyping session, made up of different profiles of people, both from the community – in a broad sense – and experts. Its composition can be modified, and its number increased or decreased depending on the progress made as regards the idea being developed.