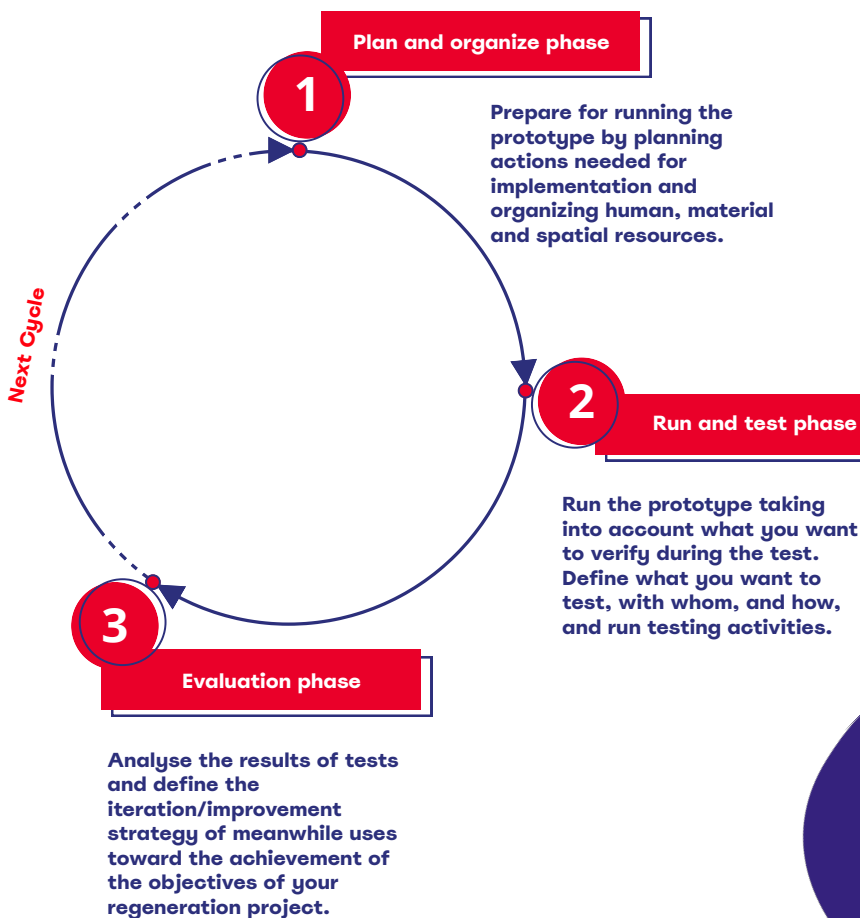# Prototyping Cycle
Method

Overview

Prototyping entails several steps and activities that all together can constitute a process, that we name 'Prototyping Cycle', to be iterated as many times as needed to refine the solution until it is ready to be implemented and made available to the public.

Each Cycle entails a process made of 3 phases, each one composed by a subset of activities and tools that you can decide to follow as a whole or in part, depending on your own context and the nature of the meanwhile use you are going to prototype.

At the end of each cycle, integrate the feedbacks collected during the test phase and evaluate, according to your objectives, how to proceed in the following cycle.

Running multiple prototyping cycles allows you to test several meanwhile uses within your regeneration project or to test the same use at incremental level of fidelity.

Process phases

Plan and organize phase

1

Prepare for running the prototype by planning actions needed for implementation and organizing human, material and spatial resources.

Next Cycle

2

Run and test phase

Run the prototype taking into account what you want to verify during the test. Define what you want to test, with whom, and how, and run testing activities.

3

Evaluation phase

Analyse the results of tests and define the iteration/improvement strategy of meanwhile uses toward the achievement of the objectives of your regeneration project.

The duration of each phase can vary according to your project schedules

Plan and Organize Phase
Process 1/3

Step 1 - Assembly your team

Since the prototyping process, as any other design process, should be highly collaborative, the first thing to do is to build a collaborative team consisting of people with the right skills and knowledge, to be involved throughout the different phases.

- Define how many team members you need, and with what skills, during the different prototyping phases. Reflect on which stakeholders of the local coalition you want to involve and with what role.

- Map the critical skills that are required to realize your prototype and order them based on priority. Check if they are present in your ecosystem and evaluate to expand the team to integrate the missing ones for some periods during prototyping.

- Similarly, assess if there are other stakeholders that you need to partner with and that must be included in your ecosystem. Don't forget to consider possible funders!

- In particular, decide what stakeholders you want to involve in co-design or co-production activities, thus involving them in decision making processes.

In preparation for prototype implementation you should be targeting specialised skills and technical abilities to complement your own or those of your partners. This could be a good time for some new team members to join.

Suggested tools/methods

Staff your project
(activity)

Circular buy-in
(canvas)

Team Dashboard
(canvas)

Step 2 - Plan your prototype

Make a plan of actions necessary to implement the prototype, detailing execution times and milestones.

- First, arrange your timeline depending on the time available for prototyping. It could match with the regeneration time or not, depending on the prototyping purpose and how many Prototyping Cycles you expect to run .

- For each cycle, list down all the activities necessary to develop and test your prototype, including all the conditions that will enable it. You should consider all those actions that will allow you to:
  - build a network of partners/sponsors/supporters;
  - request and obtain authorisations;
  - communicate the initiative;
  - engage the audience;
  - seek/obtain resources and funding;
  - ...

- Set a time schedule for each activity, starting from key dates and milestones, such as the prototype launch, the testing phase, etc...It might be helpful to ask yourself: what do we want to happen by the next month? And in three months from now? What do we want to achieve in 6 months from now? And so on...

- Assign a person from your team or your network to each track of work. Find someone to own or champion each stream of activities, including someone in charge of tracking and reporting data on what is being done.

- You can eventually include indicators to keep track of your progresses. You can extract them from the monitoring strategy of your regeneration project (you should have one!), and integrate them into your time schedule.

- This step (2) is strictly related to the next one (3): one can be functional to the other and viceversa.

Do not start planning from scratch! Exploit the information you have entered in the Meanwhile Advanced Idea Cards and in the Prototyping Strategy Canvas.

Suggested tools/methods

Kanban Board
(method)

Prototype Testing Plan
(canvas p.101)

Prototype Mapping
(canvas)

Roadmap for success
(activity)

Plan and Organize Phase
Process 2/3

Step 3 - Retrieve resources and capabilities

Depending on the kind of prototype you want to run (product, service, event...), make an inventory of the resources (human, spatial and material) you have and those you lack, and activate to retrieve them, eventually establishing new partnerships.

- Identify the resources you need to develop and execute the prototype, considering different categories, such as people, spaces, materials, channels, etc...

- For each category, make an inventory of the resources you have and those you lack. If needed, look back at activities envisioned by the prototype plan developed in the previous step. Include in your plan activities related to the retrievement of resources, and, if possible, try to quantify them in terms of cost.

- If you didn't make it before, cluster needs according to the competencies of the team members, asking who is going to take care of what. Include a category for those needs that cannot be covered by the team. Do you need specialised support to take care of some tasks or to retrieve some resources? Do you need to establish new relationships or can you leverage those you already have?

- List down relationships and partnerships you need to activate: some of them could be already part of your ecosystem, while others might be built from scratch. Once you have identified the partners you need, set the parameters of your collaboration and engage them to start a negotiation: what do you need from them and what can you offer? What are your deadlines?

- Last, think at how you can optimise resources. For example, are there projects or activities already planned or in progress with which you could create synergies? Or can you establish agreements to obtain some of the resources you need?

Step 4 - Seek for funding

Implement actions to raise the funds necessary to run the prototype and define how to make the meanwhile use self-sustainable in the long term.

- Build a simple spreadsheet that shows all of the costs that the prototype would incur, from staff to production.

- If you're relying on grants or donations, think critically about how you'll raise money and how reliable your funding sources are, and when you can have access to them.

- If you need to apply for grants or raise money, determine which networks or consortia you may need to develop to help your chances.

- If you're selling a product or a service, how much of it do you need to sell to hit your revenue goals? How much should your product/service cost? Will you need to introduce new products/services over time? Make a One-Page Business Plan or Business Model Canvas can help you define the business model of your meanwhile use.

- Your funding strategy will get you to run and test your prototype, but what happens next? If your wish is to turn your meanwhile use into a permanent one, start reflecting on how to make it self-sustainable in the long term.

Do not forget to add actions needed to retrieve resources and capabilities into your prototype plan!

Suggested tools/methods

Capabilities Quicksheet
(canvas p.92)

Capabilities Quicksheet
(activity p.70)

Build partnerships
(activity)

Organize a session with your team, key stakeholders and partners to discuss about how you might fund your prototype.

Suggested tools/methods

Business Model Canvas
(activity and canvas)

One-Page Business Plan
(canvas)

Funding Strategy
(activity)

Sustainable Revenue
(activity)

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Plan and Organize Phase
Process 3/3

Step 5 - Do a stress test

Before going live share your plan with project partners and peers to make sure you have considered all risks and constraints.

- After completing all the tracks of work necessary to run your prototype schedule some time for a final check.

- Submit your material to different stakeholder groups, or organize a moment of discussion, to enable them express any criticalities they can identify.

- Reflect with your team on the criticalities that could emerge to refine your plan or to envision alternative strategies that will help you manage unforeseen events.

A stress test is a type of performance test that checks the upper limits of your system by testing it under extreme 'loads': taking time to check that everything works before running the prototype could be useful to prevent unforeseen events.

Suggested tools/methods

Critical Lents Protocol
(activity)

Business Model Stress Test
(tool)

Run and Test Phase
Process 1/2

Step 1 - Run your prototype

It's finally time to make your prototype tangible and expose it to envisaged beneficiaries.

- At this point you're testing an entire system, where the different elements (people, spaces, activities...) must work together for the achievement of expected outcomes and impacts. Make sure to have the logistics sorted: e.g. the booking of a physical space, permits, sourcing of uniforms, finding additional staff or briefing existing staff, etc...

- Keep in mind that it is not just a matter of launching the prototype, but to make sure it works for the entire scheduled time, eventually making changes in progress or inputting new resources over time. Try to predict these contingencies in advance and once the meanwhile use has started, you start working on them.

- Keep track of everything! Remember that the prototype is built for testing a solution before fully implementing it. This requires you to constantly check how things are going, from both the organization side (e.g. are people covering their roles and executing their tasks properly?) and the beneficiaries side (e.g. are people engaged and satisfied of the proposal?). If you haven't done it yet, it is time to setup a monitoring strategy, and assign the task to someone you can trust!

- Monitoring is not enough if you don't know how to use the data you are going to collect. Also, consider that such data should mix qualitative, quantitative and visual information. Some of them could be used for evaluation purposes, while other for communication purposes (especially pictures!). Make sure to build a fit-for-purpose plan, eventually including some dedicated expertise into your team.

Step 2 - Communicate and engage

Before and during the prototyping period, you will need to communicate what is happening to your audiences, and setup initiatives to engage with them. Document everything to then have enough materials to share the story, whatever format you choose to adopt (it could be a pamphlet, a website, a presentation, etc...).

- In your time schedule you should have planned activities to to promote and communicate your prototype. If not, it's time to add them.

- Choose the tone of voice and the channels you want to use to tell your activities. You can start telling the story before it starts, during the making-off. This will prepare your audience and you can find ways to engage them even before the launch of the prototype.

- Get help from experts in this field. If you don't have one in your team, look for someone in your ecosystem. A good communication cannot be improvised and requires specialized knowledge.

- We will never say it enough: document what happens as much as you can! Assign this task to someone you can trust and maybe with good photographic skills, to produce video and photo materials to be used in your communication channels.

- Remember to submit the necessary consent forms to portrayed people in order to be authorized to use the materials collected.

Suggested tools/methods

Monitor and evaluate
(activity)

M&E Framework
(tool)

Experiment Expedition
(method and tools)

Time for running your prototype has arrived, but your work has not finished yet! Now, it is all about making it work and adjusting what is not working as expected, keeping track at the same time of what can be improved for future iterations or implementation.

Monitoring and testing are different activities: the first is about checking the work-in-progress of your programme, while the latter is about assessing whether it is achieving expected outcomes and impacts.

Suggested tools/methods

Communication Plan
(method and tools)

Social Media Strategy
(method and tools)

How to Make an event Schedule
(method)

Run and Test Phase
Process 2/2

Step 3 - Plan and run prototype testing

Choose what to test and how (when, how often, with what tools), finding a balance between quantitative and qualitative measurements.

- Start by establishing what is the purpose of the test and what you are going to test. Make sure you bring key stakeholders into the conversation and get everybody aligned.

- Map out the most important moments and milestones in your prototyping journey. Choose what and when to assess, in consideration of expected outcomes and impacts, listing down indicators and thresholds.

- Now that you have clarified what to assess, you can define how to do it. Select the most useful tools for data collection (among the others, user studies offer many different options) or if you prefer, build your own tools.

- From a qualitative point of view, gathering people opinions and perceptions is crucial for prototype testing. You can approach the collection of feedbacks from beneficiaries in different ways, e.g. for long and continuous tests you can use diaries, for short (one shot) tests interviews or surveys are probably better.

- Consider the timeframe of your test, and who will take part in it: how are you going to recruit them? Do you have enough time and resources to collect all the data you need? Building a small but representative user sample might help you optimize resources and guarantee to have some useful data to analyse.

- Following your testing plan, collect the data you need to later express your assessments. Always keep in mind that the aim is to gather knowledge on your prototype performance and get feedbacks from people you're designing for, to then build improvements based on what you learned.

Design your tests as you design a user experience. Spend the necessary time on it and build each testing activity so as to be engaging, attractive and smooth for your testers

Suggested tools/methods

Prototyping Dashboard
(canvas)

Indicators Mad Libs
(canvas)

Prototyping Report Card
(canvas)

Embed Feedback
(tool)

Get feedback
(activity)

Recruiting tools
(activity)

Ethnograpy Fieldguide
(method)

...

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Evaluate Phase
Process

Step 1 - Analyse test results

Once tests are completed, organize collected data and draw meaning from results obtained.

- First thing to do when approaching data interpretation, is to organise data and materials you have collected. There is not a best way to do it, just follow a logic structure that fits with your way of reasoning. You can cluster information per type, per tool used to collect them, per time...

- You could realise that some data are not useful, while others might be insufficient. You can consider to fill the gaps through an ex-post evaluation, adding further evaluation activities that can help you complete the missing information.

- For qualitative data, clustering should help you spot emerging patterns and themes, summarize findings, and generate insights to improve what has been prototyped.

- Write a synthetic evaluation report to be able to share your evaluation results with other stakeholders, who could also take part in the process of data interpretation.

Suggested tools/methods

Download your learnings
(activity)

Share Inspiring Stories
(activity)

Find themes
(activity)

Affinity Diagram
(tool)

Step 2 - Integrate feedback and iterate

Once you have analysed results you can determined what to improve in your prototype. You can go back to 'Plan and Organize' phase to run a new prototyping cycle, repeating the process as many times as you need to get to the ultimate solution.

- As counterintuitive as it might seem, you're prototype is potentially never finished. Don't get scared by iterations, you can consider them as continuous learning process on your initiative that should also apply to the fully implemented version.

- Iterations are not necessarily radical. They could require to improve only some parts of your prototype or cutting some others that do not really work.

- During iterations, make sure that adaptations and modifications do not compromise those elements that made your solution successful in the first place.

- Finally, establish a new roadmap to replicate or scale the prototype, so that everyone is aligned on goals and milestones. You can go back to Meanwhile Advanced Idea Cards and your Prototyping Strategy Canvas and start the new cycle by updating them.

Suggested tools/methods

Integrate feedback and iterate
(activity)

Continuous Learning Loops
(method and tool)

Evaluation is about expressing a judgement on how the prototype has performed, thanks to data collected during testing, and making sense out of them to perform better in the next cycle.

References

The guidelines articulated in this document have been elaborated thanks to a review of the following sources and online toolkits, and from the direct experience of the authors.

SOURCES

Beaudouin-Lafon, M., & Mackay, W. E. (2007). Prototyping tools and techniques. In A. Sears, & J. A. Jacko (Eds.), Human-Computer Interaction Handbook: Fundamentals, Evolving Technologies, and Emerging Applications (2nd ed., pp. 1017-1039). Boca Raton, FL, USA: CRC Press.

Blomkvist, J., & Holmlid, S. (2011). Existing Prototyping Perspectives: Considerations For Service Design. Nordic Design Research Conference 2011, Helsinki.

Design Council (2015). Design methods for developing services. Keeping Connected Business Challenge. Available at https://www.designcouncil.org.uk/sites/default/files/asset/document/Design%20methods%20for%20developing%20services.pdf

Evans, M., & Terrey, N. (2016). Co-design with citizens and stakeholders. Evidence-based policy making in the social sciences: Methods that matter, 243-262.

Lockton, D. (2017). Design, behaviour change, and the Design with Intent toolkit. Design for Behaviour Change: Theories and Practices of Designing for Change, 58-73.

Rudd, J., Stern, K., & Isensee, S. (1996). Low vs. High- Fidelity Prototyping Debate. interactions, 77-85.

ONLINE TOOLKITS

Business Makeover Tools
https://businessmakeover.eu/tools

Ellen MacArthur Foundation, IDEO. The Circular Design Guide.
www.circulardesignguide.com

Google, The Design Sprint Kit.
https://designsprintkit.withgoogle.com/methodology/phase5-prototype/create-kanban-board

Hasso Plattner - Institute for Design at Standford. Tools for taking action.
https://dschool.stanford.edu/resources

Hasso Plattner - Institute for Design at Standford. Design thinking Bootleg.
https://static1.squarespace.com/static/57c6b79629687fdeO9OaOfdd/t/5b19b2f2aa4a99e99b26b6bb/152841O876119/dschool_bootleg_deck_2018_final_sm+%282%29.pdf

Hasso Plattner - Institute for Design at Standford. EXPERIMENT EXPEDITION A flight plan for design exploration
https://static1.squarespace.com/static/57c6b79629687fdeO9OaOfdd/t/5d98O5b759f2a34cdddcbef4/157O244O24755/Experiment-Expedition-Flight-Plan-Aug-2019-V2.pdf

IDEO. The field guide to human centered design.
www.designkit.org

Nesta. Development Impact & You: Practical tools to trigger and support social innovation.
diytoolkit.org

Nesta, IDEO. Designing for Public Services: A practical guide. Design for Europe.
https://media.nesta.org.uk/documents/nesta_ideo_guide_jan2017.pdf

Service Design Studio of NYC Mayor's Office for Economic Opportunity. NYC Civic Service Design Tools + Tactics.
www1.nyc.gov/assets/servicedesign

Strategyzer Canvases
https://www.strategyzer.com/canvas