

Worksheet: Your tech's lifecycle

This worksheet will help you think through some of the many questions you'll face across the lifecycle of a project, including questions of upkeep, caretakers, and end-of-life procedures. Answer the questions as best you can for your chosen challenge. Of course, you'll have to make many assumptions and there will be some unknowns. Mark these as you go, so that you can do more research afterwards.

Deployment

What skills and materials are needed for set up?

How will you know that it's been set up correctly?

Upkeep and maintenance

Who will maintain it? How are they incentivized to do so? How will you know when it's failed or needs maintenance?

Replacements and diagnosis of broken parts: How often do you need to check on the tech? How will you plan and budget for this? How will the materials age, and how often will replacements be needed? Are materials and tools to maintain and repair readily available near the deployment?

Consider:

- Are the parts of your tech built for repair? If one part (e.g. a battery) fails, can you repair it or do you need to scrap the whole thing? How might you choose materials to minimize repair? How will you access it to repair it or update software?
- What happens if it loses its data/power connection? If your tech fails in the field, will you lose all your data?

Catching abuse: how will you prevent hacking, theft, interference in the field, etc.?

Impacts on the target ecosystem: how do you ensure that your tech isn't inadvertently abusing the ecosystem? What are worst case scenarios? What if the tech is lost or unrecoverable?

Power requirements and energy use: What is the ecological footprint of your ongoing activities? How will you monitor it? Have you accounted for the costs of power, carbon offsets, etc.?

Retirement

Clean up: Who will remove / wind-down the technology, and what budget do you need for this? What will it take to safely dispose of hardware? Can it be designed to be recycled or reused in some way?

Data storage and handling: if your project is collecting data, what is the plan for long-term storage of data, and/or deletion of old datasets? Should old data be purged, to reduce privacy concerns?

Communities impacted: After the project's end, what happens to the communities that were benefiting from the technology? How will you set clear expectations about your involvement (and their access to the technology) in the long run? Are there ways they might keep this work going if they find it valuable?