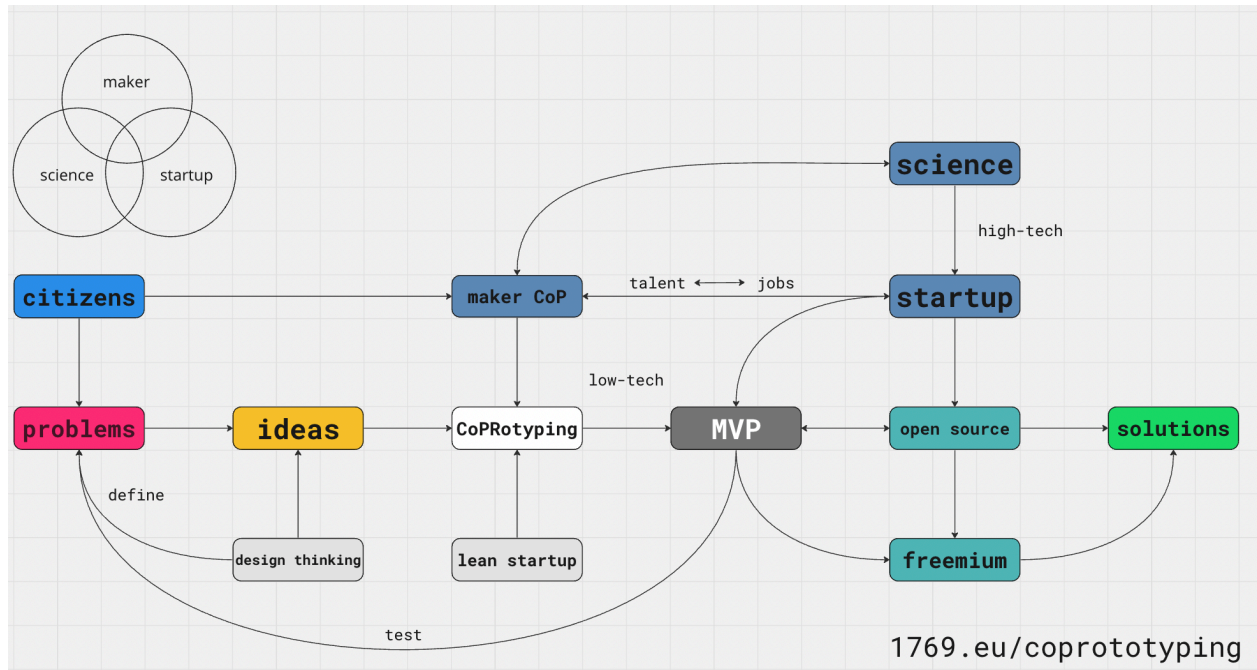


CoPRototyping



A community of practice (CoP) is a community that practices something together. Its members have common interests and goals. Together they find solutions to problems, exchange knowledge, learn by doing, learn collectively, support each other and have fun together. They collect implicit and tacit knowledge. A CoP is a collective intelligence! Also read Étienne Wenger.

CoPRototyping is when a CoP does prototyping.

The CoP meets frequently (online) to discuss features, requirements, acceptance criteria, todos, milestones and troubleshooting of a prototype the CoP has chosen to develop. The members of the CoP assign tasks to each other in order to develop the prototype. For example by doing sprint planning (Scrum, Kanban). Each member brings or learns (learning by ~~doing~~ prototyping) the skills needed for developing (parts of) the prototype.

The prototype can become a solution to a specific problem... a product, a service, an experience, a startup, an activist group, a technology, a strategy, a study, a PR stunt, a campaign, a policy, a petition, an artwork, a meme or even a movement! Anything that helps to reach our goal(s) or resolves our problem(s)!

virtual CoP (vCoP)

Members can participate from anywhere, when the CoP meets online via chat, video conferencing (virtual CoP) or hybrid-meeting. Members share videos, images and documentation with the rest of the vCoP and the world.

Inclusive

CoPRototyping is socially inclusive and welcoming.

Members of the CoP can be visionairs, engineers, designers, managers, employees, colleagues, partners, competitors, customers, makers, tinkerers, hobbyists, hackers, career jumpers, dropouts, autodidacts, experts, laypeople, students, retirees or anyone who just wants to join. This is the Co (Co-creation/Co-design) of CoPRototyping.

The inclusive character makes CoPRototyping a dynamic, flexible, unbureaucratic and low-cost alternative to conventional, scientific and industrial prototyping, where required titles and wages are limiting.

To facilitate onboarding, each newbie could get a buddy from the CoP-team who would tell him or her everything about the team, the prototype, the state of the art, future goals, etc. to make the newbie feel comfortable and welcome.

Individuals, members of startups, businesses, organizations, NGOs and universities can join the CoP, so it may become a thriving interface between communities, citizenhood, organizations, universities and businesses.

Especially *problem-bearers* participate in the prototyping in order to resolve their problems. They know their problems from inside and are the most motivated to find solutions.

Group development

A CoP may walk through the 5 stages of group development, a process where emotional challenges and conflict may arise between members, but which can be mitigated systematically to help the CoP to reach harmony, flow and productivity.

Members of the CoP can have any level of knowledge and engagement. Occasionally, as a hobbyist, or up to fully professional, for example as a project manager, once the CoP has reached the financial means.

Within the CoP the members can take roles such as being a newbie, watcher, learner, tester, developer, adviser, fundraiser, investor, supporter, marketing expert, project manager, team lead, facilitator etc. The CoP may or may not choose to have one or more team leads, a core team or a sociocratic group structure.

Citizen Science

CoPRototyping follows a Do It Yourself/Citizen Science approach to make it accessible to laypeople, amateurs and citizens with low budget.

Minimalism

Therefore CoPRototyping follows the principles of minimalism, keeping it low-tech and low-cost: "As much low-tech as possible, as little high-tech as needed!" "Doing more with less" (Buckminster Fuller) / "Less is more" (Ludwig Mies van der Rohe). It also follows the KISS principle ("Keep it simple, stupid!"). We can understand CoPRototyping as Grassroots Innovation, Reverse Innovation and Frugal Engineering done by citizens. Shodh Yatra (the hindi word for research trip) can be applied, where interviewers walk around to ask local citizens for innovations they came up with to tackle their specific problems. (Grassroots Innovation by Anil K. Gupta).

Minimal viable / fail fast

The prototype is aimed to reach a minimal viable state in order to make it testable ASAP. It follows the principle of fail fast.

Open source

Open source promotes knowledge exchange and the creation of mutually supportive communities. The prototype is open source, accessible and easy to copy by any citizen in the world: It provides easy to follow instructions on how to assemble the prototype/MVP, understandable by laypeople. The CoP encourages copycats to copy its prototype and provides troubleshooting support. Ideas and innovations copied from others can inspire one's own ideas and innovations and can be given back. Ideas-ping-pong helps society grow, unlike secretiveness.

Design Thinking

To initiate CoPrototyping or to target specific issues during the process, Design Thinking can be applied. It is a method that helps us to understand our fellow human beings (emphasize), to analyze their problems and needs (define), to activate our creativity (ideate) and to find solutions (prototype > test). It is essential that the *problem-bearers* participate in design thinking sessions, in order to help all stakeholders to understand very well the problems and root-problems to be resolved.

Mindfulness

Mindfulness can help us to emphasize and listen carefully to our fellow (human) beings and to ourselves.

Lean

Since the prototype is not developed in a secret lab, but rather observable in real time on social media, anyone anywhere can participate in the CoP/vCoP, can give feedback, do user testing, make questions and proposals, express needs, troubles and ideas. The prototype is developed by its users! This generates valuable insights from the early beginning. It promotes short feedback loops (lean startup: build-measure-learn, validated learning, fail fast, pivot) and allows the prototype to be adjusted quickly to needs and demands. It accelerates the R&D process, making it lean, reducing waste (muda) and the risk of dead ends.

Avataring

Avataring means that a member (the avatar) with few or without practical skills is guided by a more skilled member (the flight controller) remotely. The avatar uses a head mounted camera and headphones to listen to the instructions of the flight controller, who sees everything the avatar looks at in real time. This is possible even in remote regions because of improved satellite internet with low latency. The avatar can fulfill complex tasks, such as building a prototype or doing troubleshooting, following the instructions given by the flight controller. The avatar learns by doing. No expert needs to travel to the in-situ location of the prototype.

Business, education, science and charity

CoPrototyping can be initiated, sponsored and/or supported by companies, schools, universities and nonprofit organizations in order to stimulate and promote business, education, science and charity.

Business development

The open source prototype may be forked by companies to develop freemium versions. Companies can develop an open-source business model around the prototype. They can offer services and products such as installation, maintenance, technical support, customisations, consulting, coaching, selling building parts/sets etc. CoPRototyping can be a source for reverse innovation. Companies can send employees to join the CoP to bring in and take out know-how and to get access to the CoP's network.

Companies will find talent within the CoP. Talent acquisition is critical in order to face skill shortage nowadays.

Members of the CoP might become employed by the company for instance to develop a freemium version, because they have the vision and expertise. This can be attractive to career jumpers and autodidacts, who cannot or do not want to pursue a university career.

Users and early adopters of the prototype face specific problems and search for solutions. They participate in the CoPrototyping process by expressing their needs and troubles. They give valuable feedback and insights to the CoP. They may pay for a freemium version at some point later and become future customers. This should motivate companies to sponsor the CoP to develop open-source prototypes.

Transparence and trust

Potential investors can observe the R&D process and progress of the prototype, because it's fully transparent. This creates trust and motivation to make an investment.

Positive impact

CoPRototyping follows the principles of circular economy and degrowth to reach sustainability and resilience.

Hacktivists can join the CoP to co-develop a sustainable and open source prototype to contribute to a fair, circular and collaborative economical system.

Educators can join the CoP to find subjects and materials within the prototype. The prototype can be an object for applied and interdisciplinary learning and experimentation for scholars and students.

PR

Since the CoPRototyping is transparent and well documented on social media and integrates in local and global communities, followers and early adaptors spread the word of mouth. This creates visibility, a powerful marketing effect kicks in. It creates attention and involvement: Prototyping and marketing becomes one thing. This is the PR of CoPRototyping.

Legal

CoPRototyping is organized as a non-profit organization, cooperative or social enterprise. It may accept donations, public funding by governmental or educational entities or private sponsoring and funding by companies and investors.

Take your fate into your hands! Take control of production!

Empowerment

Neighborhood communities, friends and families, small-scale farmers join CoPs because they can fork prototypes and build a custom versions for their specific needs and circumstances. They share costs, effort, know-how, fun and revenue. They become more self-sufficient, reduce expenses, become part of a global, powerful and supportive network, become more independent from global supply chains and monopolies and become more resilient as a neighborhood.

A growing CoP can think of more (related) prototypes and different versions of each prototype. CoPPrototyping is R&D for sustainable innovation.

As an individual, team, organization, institution or business, start or join a CoP! Make a contribution, lend your tools and equipment, and most importantly, share your know-how. Participate in an open, collaborative, participative, democratic, circular, fair and truly free market!

Prototypes so far developed with CoPPrototyping:

xponix

An aquaponics-system for sustainability education, food sovereignty and "automated self-sufficiency" was built 2024/25 with CoPPrototyping. Aquaponics is multidisciplinary: It unites agriculture, crops science, livestock (water animals), permaculture, biochemistry (the nitrogen cycle, water nutrients and quality), plumbing, engineering, microelectronics (sensors, microcontrollers, Arduino, Raspberry Pi), power electronics (e.g. solar), programming, IoT (Internet of Things), big data, smart farming, product design (biodegradable plastics, recycling, etc.) and cooking. It is scientific, didactic, applied, and crafting. It speaks to different personalities, backgrounds, and levels of knowledge. It needs and promotes cross-functional teams. Learning about aquaponics is a great springboard into smart farming and cellular agriculture. Join our vCoP: smartcityfarm.de

si = smart irrigation


Low-tech smart irrigation prototype for schools and urban gardens. The goals are to educate and "learn by prototyping" about low-tech (sensors, IoT, electronics, programming, soil science), to sensitize about the value of water, to save water and work and increase yield (automated self-sufficiency). Read about the project: 1769.eu/si

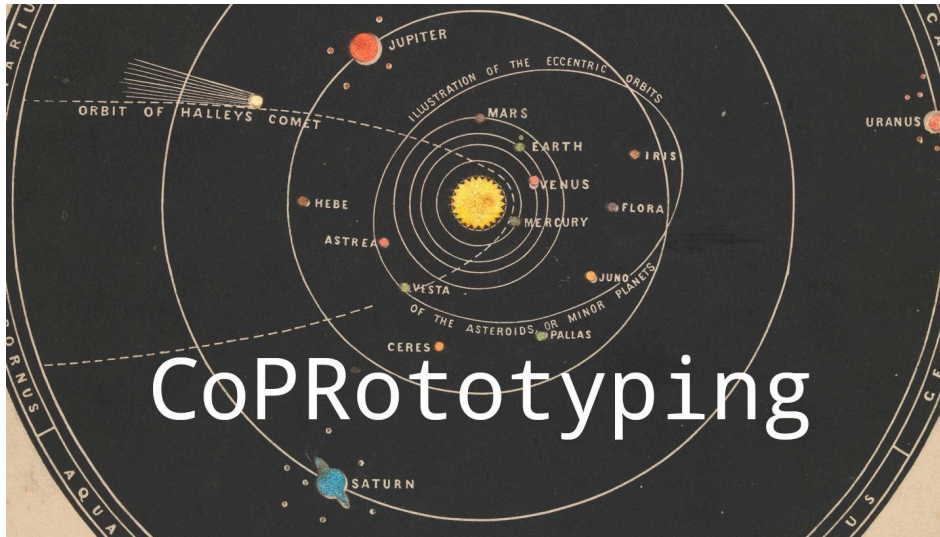
bubble tea

If there are algorithms that divide society (x, tiktok, instagram), there must be algorithms that unite society. during winter semester 2024/2025, students at the University for Sustainable Development in Eberswalde developed a prototype for a communication-codex to bring people from diverse bubbles together and counteract polarization, while having tea together. It originally was called 'Austauschbörse'. The prototype will be further developed during the wintersemester 2025/26: An algorithm to build trust and enable discussion about difficult social issues without aggression taking over. Randomly selected citizens will be invited as test subjects: In the market square, at the train station, by phone. The prototype is being developed using CoPPrototyping as a tool box and its industrial standards: Design Thinking, Lean Startup, etc. Ingredients include empathy, respect, non-violent communication, soft skills, diplomacy, active listening, conflict resolution techniques, mediation skills, emotional intelligence, and positive reinforcement. The prototype for participatory democracy will be tested as a

podcast/vodcast. See also 1769.eu/bubbletea



You can book a CoPRototyping workshop for your team, org,
school or business via 1769.eu/workshops or hi@1769.eu 



Metaphor: A CoP orbiting its prototype.

We do this not just to give them the thrill of peering behind the wizard's curtain but because we find that we invariably get much better results when the client is on board and actively participating.

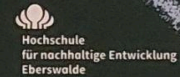
the next stage in the evolution of design as it migrates from designers creating *for* people to designers creating *with* people to people creating *by themselves* through the application of user-generated content and open-source innovation.

Tim Brown, Change by Design

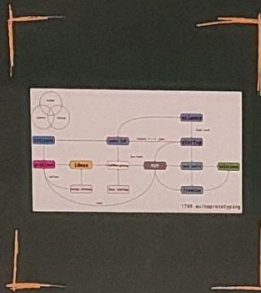
COPROTOTYPING

Einführung in die nachhaltige Entwicklung

Wintersemester 2024/25



Projekt - 32



Wie können wir unsere Lebensqualität gemeinsam verbessern? Wie organisieren wir uns in der Nachbarschaft und leben eine Kultur der Solidarität? Wie erreichen wir mehr Krisenresilienz in unserer Region? Ziel dieses Projekts ist es Lösungen für Probleme zu erarbeiten, die von und für Bürger*innen aus Eberswalde umgesetzt werden können. Dabei hilft uns CoPrototyping, eine "Werkzeugkiste" mit Methoden wie z.B. Design Thinking und Lean Startup. Wir fühlen uns in unsere Mitmenschen ein, analysieren ihre Probleme, aktivieren unsere Kreativität, lassen Ideen sprudeln, überprüfen diese auf Machbarkeit, nutzen unsere Ressourcen und entwickeln und testen einen Prototyp als Lösungsversuch. Dieser kann vieles sein: ein Produkt, ein Service, ein soziales Startup, ein Verein, eine Strategie, eine Technologie, ein Meme, ein Kunstwerk, eine Kampagne, eine Petition, Aktivismus, oder sogar eine Bewegung. Das Verstehen von Gruppendynamiken, Kommunikation und Entscheidungsprozessen spielt dabei eine große Rolle.

Aufgabe

Wir wählen eine konkrete Problemstellung aus unserem Kontext: unsere Mitmenschen, unser Alltag, unsere Region Eberswalde. Wir sammeln Ideen, wählen die geeignetste aus und setzen diese in Form eines testbaren Prototypen um. Unsere Ressourcen kommen zum Einsatz: Motivation, Teamgeist, Know-how, Zeit, Budget, Praxispartner und so viel mehr!

Sustainable Development Goals

SDG 9: Industrie, Innovation und Infrastruktur
SDG 11: Nachhaltige Städte und Gemeinden
SDG 12: Nachhaltiger Konsum

Mentor*in

David Zehnter, Softwareingenieur, Biohacktivist, Maker, Minimalist, Künstler, Coach und Bürger. Langjährige Erfahrung in der Industrie. Aktiv in der Umweltbildung, Nachhaltigkeits- und Resilienzentwicklung. Workshops und Projektunterricht für Jugendliche und Erwachsene.

Kontakt

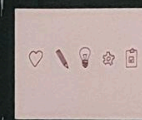
Emailadresse: hi@1769.eu
Website: 1769.eu



Praxispartner*in

Die Wahl der Praxispartner*in hängt von unserer Idee ab. Es sollte eine Organisation oder ein Unternehmen in der Region Eberswalde sein. Zu Beginn des Workshops führen wir Interviews mit Kandidat*innen, um Einblicke in ihre Situationen, Bedürfnisse und Probleme zu bekommen.

Kontakt



BUBBLE TEA

Einführung in die nachhaltige Entwicklung

Wintersemester 2025/26



Projekt -

Wenn es Algorithmen gibt, die die Gesellschaft teilen (X, TikTok, Insta), muss es Algorithmen geben, die die Gesellschaft heilen. Im letzten Wintersemester haben Studierende einen Prototyp für einen Kommunikationskodex entwickelt, um Menschen aus unterschiedlichsten Bubbles zusammenzubringen und der Polarisierung entgegenzuwirken. Der Prototyp soll weiterentwickelt werden: Ein Algorithmus, um Vertrauen zu schaffen und über schwierige gesellschaftliche Themen reden zu können, ohne dass Aggressionen überhandnehmen. Als Testpersonen werden zufällig ausgewählte Bürger*innen aus Eberswalde eingeladen: auf dem Marktplatz, am Bahnhof, per Telefon. Die Entwicklung des Prototyps findet unter Anwendung industrieller Standards statt: Design Thinking, Lean Startup, etc. Zutaten sind Empathie, Respekt, Gewaltfreie Kommunikation, Soft Skills, Diplomatie, Aktives Zuhören, Konfliktlösungstechniken, Mediationskompetenz, Emotionale Intelligenz, Positive Verstärkung. Der Prototyp für partizipative Demokratie wird als Podcast/Vodcast getestet.

Aufgabe

Die Studierenden lernen Social-Media-Algorithmen kennen und nutzen Methoden der Produktentwicklung, um Schwachstellen im Prototyp „Gegen-Algorithmus“ zu analysieren und zu verbessern. Design Thinking fördert Kreativität und unterstützt bei der Ideenfindung sowie Umsetzungsprüfung. Mit Lean Startup durchlaufen sie den Zyklus Build-Measure-Learn, um frühzeitig Fehler zu erkennen und unnötigen Aufwand (Muda) zu vermeiden. Für Tests werden Personen in Eberswalde gesucht. Die Ergebnisse und Entwicklungen werden in sozialen Medien veröffentlicht.

Sustainable Development Goals

SDG 11: Nachhaltige Städte und Gemeinden
SDG 16: Frieden, Gerechtigkeit und starke Institutionen

Mentor*in

David Zehnter ist Softwareingenieur, Biohackivist, Maker, Minimalist, Künstler, Coach und Bürger. Langjährige Erfahrung in der Industrie. Aktiv in der Umweltbildung, Nachhaltigkeits- und Resilienzentwicklung. Gibt Workshops im Bereich Bürgerwissenschaften. Mitgründer des SmartCityFarm e.V.

Kontakt

1769.eu



Praxispartner*in

Mediale Pfade ist ein Berliner Verein für Medienbildung, der sich dafür einsetzt, eine emanzipatorische Praxis mit digitalen Medien und neuen Technologien zu fördern, um eine offene, gerechte und solidarische Gesellschaft zu gestalten.

Kontakt

medialepfade.org



About the 1769 resilience lab



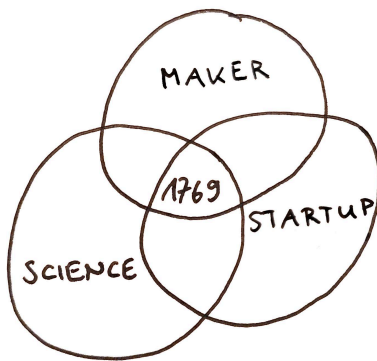
What does the Δ -logo stand for?

The triangle represents the intersection (Venn diagram) of three communities:
The maker, the science and the start-up communities.

On the frontiers cultural clash happens!

Permaculture Principle 11: Use Edges and Value the Marginal

The interface between things is where the most interesting events take place. These are often the most valuable, diverse and productive elements in the system.



What does 1769 mean?

1769 is the year when the building of the actual 1769 lab was built, a refurbished off-grid land house with 4 hectares. 1769 also is the year when James Watt was granted a patent on the steam engine. So, 1769 was a kind of starting shot for the carbon and copyright ages. The 1769 resilience lab now stands for the opposite philosophy: carbon-zero and open source.

