

1.1 **Open source hardware for a resilient economy (Lars Zimmermann, Bauwens)**

Open source – digital technology? Social knowledge?

How can these systems made viable, are they possible?

1.1.1 **larszimmermann.de : open-it agency**

Open source hardware: whose design is made publicly available...study modify distribute and sell (oshwa.org/definition)

Recent technology, interesting potentials, the concepts will grow...

1.1.1.1 **Potentials and possibilities for degrowth and sustainability and subsistence economy**

OS-project (open structures): open decentralized catalogue of parts, which share the same geometrical grid and can be combined to structures (modal system)

1. Recycling becomes easier – cradle to cradle design
2. Reuse and hack/"alienate" parts thanks to modular design
3. Repairing – online building plans facilitate repair and planned obsolescence cannot be hidden

Together: A technological system for more **Resilience**

4. Educational aspect: objects invite to be not passive consumers but active designers inviting to a **subsistence economy**
5. The issue **Freedom**, vis-à-vis intelligent, connected devices that can manipulate users (see also blog), getting smaller and more integrated into the body: Open source is a way to control the data collection, transmission and resulting manipulation
6. Creates a **new logic for economy**, "commonistic" ... but also capitalistic: big companies can use open source software (reliable and cheap)

See: Open Software and Open Design Business Model Matrix

1.1.1.2 **Become active: How to open source your hardware**

"open source it manual" owiowi.net

1. Publish design files
2. Open data formats and software (or cheap alternatives)
3. Use free licenses (creative commons)
4. Easily available hardware components
5. Easy to find, visibility promotion

IPO tables project: "make makers aware of circular flow economy"
(certification of companies according to ISO norms)

1.1.2 **Michel Bauwens: P2P Foundation, Economics of the commons**

It's not about technology for itself but about technology as a societal system,

Hidden costs in Products: debt and transport costs, and cost for IP-rents

1.1.2.1 Farm-hacking

“The nutrient dense project”

science by the people for the people <http://nutrientdenseproject.com/>

Networks of Community of farmers all over the world with similar projects, distribute the research effort

Based on contribution

Commercial issue: participants still have to assure their livelihoods...you can't sell an open source design, but related services (teaching, maintenance...)

“ADABio autoconstruction”: French biological farmers' association

Ecuadorian project: indigenous people were mistrusting because of their experiences with biopiracy by big companies....

New License (to prevent piracy and scaling up, also for open hardware commons): For-profits that use without contributing have to pay a license fee (Ethical entrepreneurial commons)

(solidarity economy excludes for-profits per principal)

Open Core: Everybody affected has a say

FarmHack: big American project for open agricultural designs

Issue of cultural transmission – mutual adaptation

The global village construction kit – civilization in a box

<http://opensourceecology.org/gvcs/>

“Modern lifestyle without proprietary technology”, distributed micofactories

Patents: 90% of innovation is closed away in drawers...unseen in the market

Innovation on companies is for scarcity, obsolescence and the market...such a waste of human and natural capital

“The hacker movement is the new working class”, highly educated but working in precarious conditions, not necessarily conscious of environmental aspects....bring awareness into maker and hacker movement

<https://opentechco.co/> **Open tech collaborative**,

“Slow tools projects”: tools that work without external energy (human power only)

1.1.2.2 Conclusion

Demand driven, not supply driven

No mass markets, sharing economy: build an open-coop economy around it..

“I'm no technodeterminist - technology won't save all our problems but open hardware is an essential ingredient to the transition.”

“The more communistic the license, the more capitalistic the economy”...

Have sharing economy and protective open source licenses

1.1.3 Questions/Discussions

- How to bring together the ecologically conscient, slightly hostile to technology degrowth movement with the “nerds” of the maker culture (Bauwens project in Ireland)
- How to end mass production?
Workers becoming freelancers (deproletarianising economy, destroying welfare states) ... ethical entrepreneurial licences are a way - digital cultures, the greens, the progressive entrepreneurs: transition from labour to commons to a p2p based economy
Open source hardware is ideology free: you can use it differently
- Destructive use of open source technology? ... our current society is more vulnerable already! (zimmermann)
Two different kinds of regulation: pro regulation that protects small people and sharing networks from companies (bauwens)