Summary – Here we explain a critical feature of collaborative development. The point to understand is that culturally, there are significant challenges to collaboration, and these must be addressed if the world is to transition to post-scarcity economics. **Applications** – We have the opportunity to enter onto a new level of human development by understanding the profound challenges involved in attaining true collaboration

Issues

- Collaboration Psychology 1.
 - What is Collaboration? Sharing and Economic Implications 1.1.
 - The Obvious: what we learned in kindergarten 1.2.
 - Barriers reptilian brain, fear, esteem, ego, vulnerability, and survival 1.3.
- Human Evolution Towards Freedom -2.
 - 2.1. Historical perspective from slavery and enclosure to open source
 - 2.2. **Economic history 101**
 - Material history 101 from real scarcity to advertising in 1920 with Bernays 2.3.
- Institutions of Greed: How Scarcity is Enforced Today 3.
 - Corporate form the corporate charters 3.1.
 - 3.2. The IPO (Initial Public Offering?)
 - The costs and benefits of the patent system 3.3.
 - Governance structures 3 examples 3.4.
 - Forms of Competitive Waste in the workplace 3.5.
 - Borders and their history 3.6.
- The Success and Unsuccess of Open Source 4.
 - Linux and co-option 4.1.
 - Open hardware and co-option 4.2.
- Aligning Incentives for new forms of cooperation -5.
 - 5.1. X Prize
 - **Popular Incentive Challenges** 5.2.
- The Potential Outcomes of Collaboration 6.
 - One Dimensional Man 6.1.
 - 6.2. Gini Coefficient
 - Education transition from workforce creation to self-determination 6.3.
 - Governance transition from redistributive politics to distributive politics 6.4.







- The First Example of Open Source 7.
 - Open hardware market share 7.1.
 - **OSE Incentive Challenge** 7.2.
 - The success and failure of 3D printing 7.3.
- Understanding human capacity to build the relevance of Open Source Blueprints 8.
 - Overall requirements for converting ideas to reality and having an impact 8.1.
 - Economic significance and changing the world 8.1.1.
 - Ability to design vs available design 8.2.
 - Ability to understand design 8.2.1.
 - Ability to modify design 8.2.2.
 - Ability to build vs automated build through robotics and automation 8.3.
 - Ability to DIY vs creating exchange value 8.3.1.

Solutions

- What OSE Specifications Say about Collaboration going through OSE Spec to understand 8. how to generate broad collaboration
- Why using Accessible Tools is important and why so few people use them 9.
- Here Comes Everybody vs Superheroes 10.
 - Scalable crowd processes 10.1.

The principles and scalability of module-based swarm design 10.1.1.

- Redundancy and access to talent 10.2.
- Participatory democracy requires participatory production 10.3.
- Roadmaps and Intents importance for involving others 11.
 - How to find a roadmap 11.1.
 - 11.2. How to publish a roadmap
- **Digital Age Tools** 12.
 - Cloud, collaborative, editable docs 12.1.
 - Wikis and repositories 12.2.
 - 12.3. FreeCAD
- 13. Extreme Manufacturing - a Team Based Approach
 - Why Extreme? Develop only once. 13.1.
- Distributive Enterprise 14.
 - Valuation of open hardware Pearce paper over space and time 14.1.
 - Revenue model: Extreme Manufacturing for products and services 14.2.
 - Global Logistics for workshops Amazon and the Open Source Everything Store 14.3.
- Business Models of Collaboration: Lulzbot, OpenDesk, Arduino, OSE 15.
 - Mass Creation of Right Livelihood upgrading the Declaration of Indepartment (a) 100 15.1.





Implementation

- Material security comes before personal and societal evolution 8.
- Network effect: towards the irresistible open source offer 9.
- Collaboration Process at OSE: Tools and Infrastructures 10.
 - Wiki, docs, logs 10.1.
 - FreeCAD, Stack Exchange, Incentive Challenges 10.2.
 - Scalable Mass Collaboration 10.3.
 - FreeCAD versioning on the wiki + Crowd Uploads simple and complex files 10.4.
 - 10.5. **Process Training via OSE STEAM Camps**
 - 10.6. Test Driven Design
- **Economic Incentives** 11.
 - The concept fo simple market substitution by 10x value generation 11.1.
 - 11.2. Distributed market substitution
- 12. Scalable Collaboration - tasks that take long and can be turned into Construction Sets
 - 12.1. Visual Admissible Bill of Materials
 - Visual Bill of Materials 12.2.
 - 12.3. Part Libraries in FreeCAD
 - 12.4. Design Guides + FreeCAD Designs
 - 12.5. Programmers and mathematicians: Part Generator Workbenches
 - Programmers and designers: Machine Design Workbenches 12.6.
 - Graphics Artists: FreeCAD part icons, icons for parts and systems 12.7.
 - **Book Sprints with templates** 12.8.
 - FreeCAD Part Spreadsheets 12.9.
 - 12.10. FreeCAD Technical Drawings
 - FreeCAD Exploded Part Diagrams 12.11.
 - 12.12. Doc+FreeCAD Machine and part diagrams
- **OSE Incentive Challenges** 13.
- Open source product repositories 14.
 - Product is more than the design 14.1.
 - Public enterprise infrastructure 14.2.
- Open source microfactories 15.
- 16. **OSE Campuses**
 - 16.1. Solving pressing world issues
 - 16.2. Operating Model
 - 16.3. Infrastructure
 - Exchangeable value creation (revenue streams) 16.4.
 - Addressing environmental integrity 16.5.
 - Pursuing self-determination 16.6.







Implementation

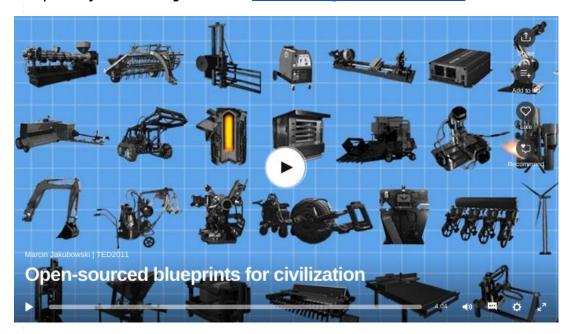
16. Exercises





Notes On Using this Guide

ABOUT: This is part of a design series on general machine design aimed at basic competency in the design of all 50 <u>Global Village Construction Set</u> machines.





HOW TO USE: You can use a QR code reader to scan the bar codes to access content online.

COLLABORATION: This is a collaborative effort. You are invited to help edit this guide. You can edit this document or make a copy, make your edits, and email us describing your proposed changes. To join our open source product development effort, join our Developer Team, or get hands-on experience in our Workshops. Email us at info@opensourceecology.org

This work builds upon these great open source



1.1 The Obvious About Collaboration *Sharing is good.*

Isaac Newton said - Isaac newton said: "If I have seen further it is by standing on the shoulders of giants"

- 1. Collaboration is sharing. Sharing creates good will. Sharing/collaboration on what?
- 2. The particular collaboration OSE has a particular goal: open information. Specifically, open information about products. OSE works on is open source product development.
- 3. That is because information is power. Economic power. Economics is 'housekeeping' it's our livelihood. If we want to change the world, we can do so by power or influence. When we talk about power, we typically refer to economic power.
- 4. We are NOT talking about collaboration on frivolous things which do not have any economic impact such as solving crossword puzzles. We are not talking about collaboration that leads to evil because that does not lead to life.
- 5. Why products? Products are economic they create livelihood. A product can be a product of any type.
- 6. For unleashed collaboration information must be open.
- 7. Anything that restricts free flow of information is deemed wasteful.
- 8. Distribution of information is distribution of power.
- 9. We stand on the shoulders of giants.
- 10. To deny Isaac Newton's statement to claim information as one's own is arrogant. Each person contributes a small bit. Denying this is ignorant.
- 11. This is not to diminish one's esteem. It is to frame it in a healthy way that leads to high life satisfaction.
- 12. Hero worship (such as patents) is based on low self-esteem.
- 13. High self-esteem is a critical aspect that enables open collaboration.
- 14. Fearlessness is a critical aspect that enables open collaboration. Open collab requires that individuals override their reptilian brain impulses of fear.





1.2 The Obvious

Prerequisite: Clear Common Goal. Blocks: Then Psychology of Non-Collaboration

In my 15 years of helping groups reach peak performance, I've noticed that many collaboration challenges — from lack of trust to poor communication — have a deceptively simple root cause: a lack of alignment around a clear and specific set of goals. Addressing this root cause often has a dramatic impact on a team's performance. -

Eugene Kim, author of Faster Than 20

Psychology of Non-Collaboration

Introduction [edit]

These may be traps that people fall into, so they are worth noticing

General [edit]

- 1. "Nobody in my area is using Linux, therefore it must not work."
- Use of exclusive tools "I want to use expensive AutoCAD, because it gives me exclusiveness. Few people can afford it, thus it's a marketable skill (by exclusion)"
- Or: "If everybody has it, I'm not special" regarding FreeCAD.

Industrial [edit]

- Complicated design companies will intentionally or unintentionally design things that are not easy to build so
 that it is difficult for others to copy. If non-intentional, that is design ignorance as simplicity (of build and use) is
 the genius of design. If it is intentional, that is evil. Recognizing this dynamic is an opportunity from the OSE
 perspective: by simplifying a design, we can build something more robust and valuable, thus gaining an
 advantage that facilitates widespread replication.
- Design for obsolescence this is clear waste that diverts energy from human evolution by preoccupying producers and users with running on the treadmill







16. Exercises

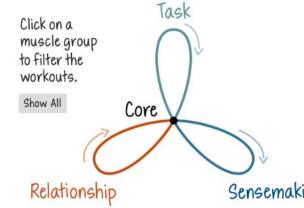
Attribution to **Eugene Kim**

Collaboration Muscles & Mindsets / Collaboration Workouts

Collaboration Workouts

These workouts emphasize "collaboration muscle" awareness, development, and habit-building through repetition. They can be performed both face-to-face or remotely. The more regularly and often you do them, the more likely you are to embody the lessons from these exercises, to apply them without having to think about them.

You can filter the list of workouts below by clicking on the muscle group you'd like to focus on.



Workout		Purpose	Participants	Time	Muscles
1 2 2 copsi woohaa!	1-2-3	Practice celebrating failure.	ተ ተ	♂ 10 min	& Working iteration
3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	100 Questions	Practice thinking in questions.	† +	15+ min	Asking generat questions
Coold you Sure! Outs Start Outs Start	Asking for Help	Practice asking for help, regardless of what the response might be.	↑ ↑	₹ 10 +	Listening active Asking for help Synthesizing / validating
(validating





10.1.1. Scalability 1.1.1. The principles and scalability of module-based swarm design

- 1. Module breakdown 1.2.
- Multiple people 1.3.
- Uploads on wiki 1.4.
- Interface design 1.5.

