

unlocking the knowledge society

Free Knowledge and Commons perspectives on Industrial Production

Escola dels
Commons

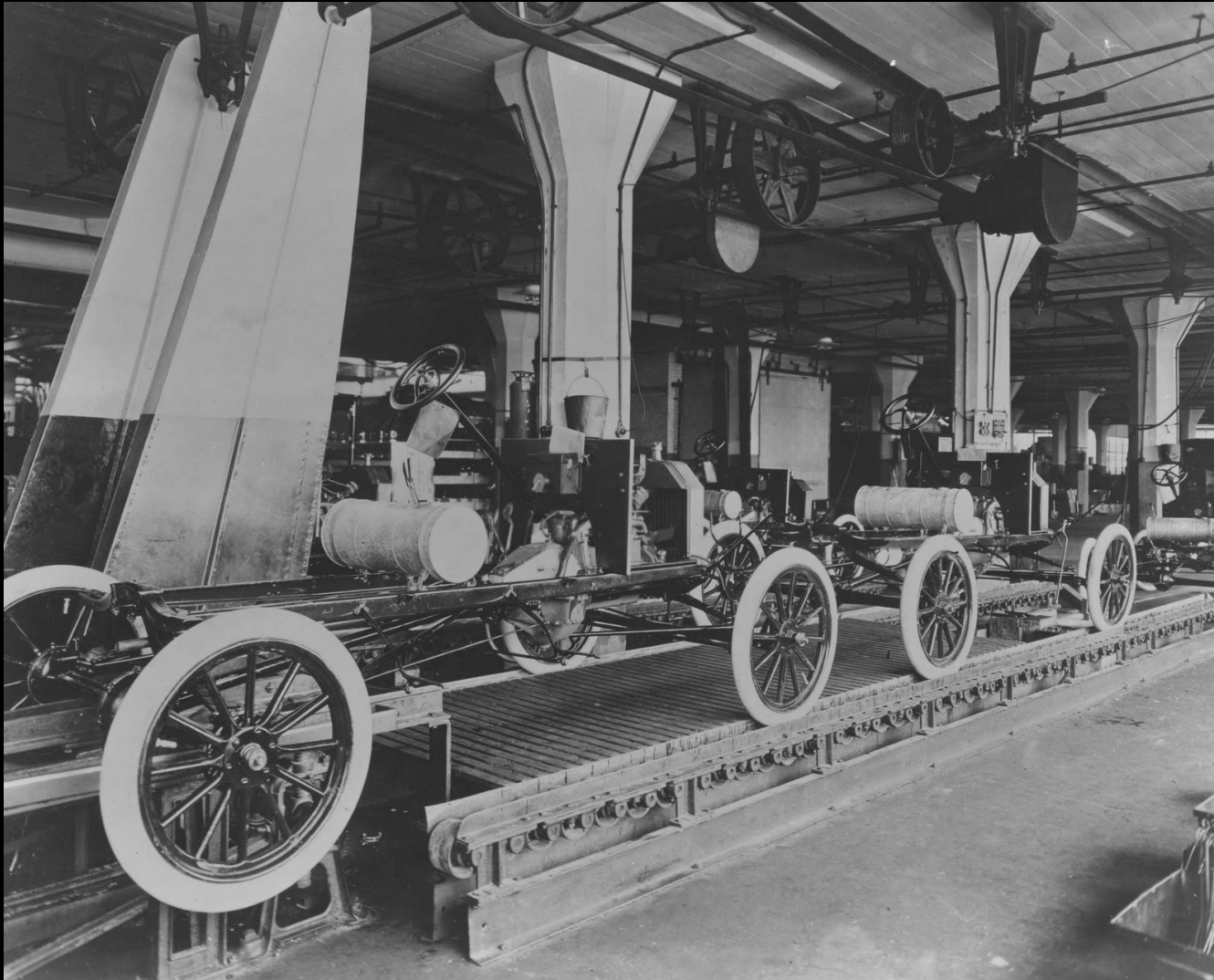
Barcelona, 20 March 2012

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PART I – Mass Production

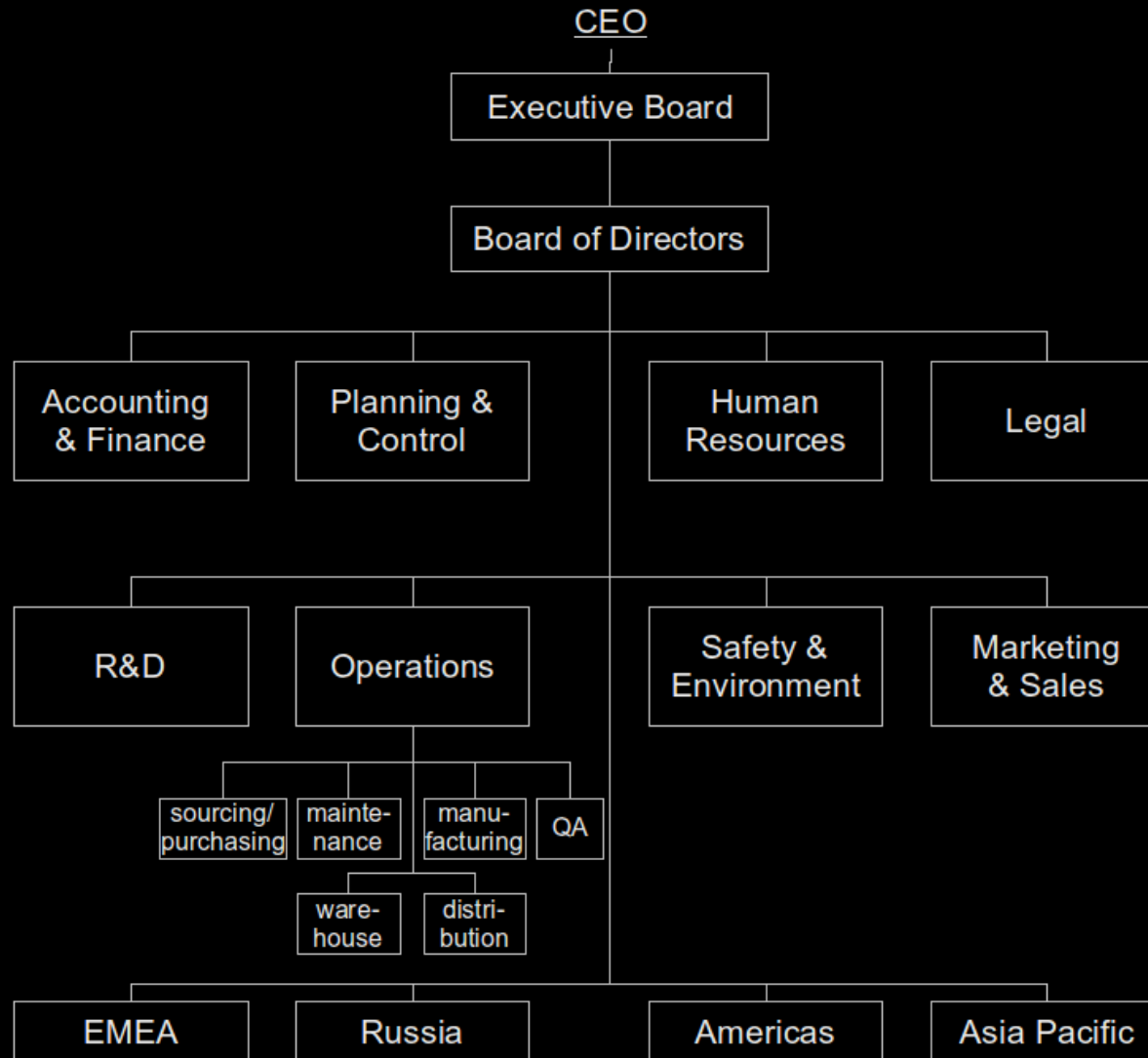
Mass production



Highly specialised



Organisational Hierarchy



Marketing

- Needs social control and predictability to assure all output is consumed
- Brand names to limit competition
- large % of costs
- push vs. pull

R&D

- Innovation to stay ahead of competition
- First-mover advantage
- Patents to block newcomers
- Secrecy, NDA
- Collaboration is hard (agency costs)
- Participatory / User Centred Design
- “Crowdsourcing” / “Open Innovation”

Innovations second half 1900's

- Just in Time, Lean, Kan-Ban, Kaizen, ...
- Concurrent engineering
- Production automation
- supply chain management
- General purpose machinery
- Flexible jobshops
- Networked production

Transportation

Factories moved to low cost labour, primary resources

Global flow of:

- Unfinished goods
- Finished goods

Since 2008 decline of global transportation

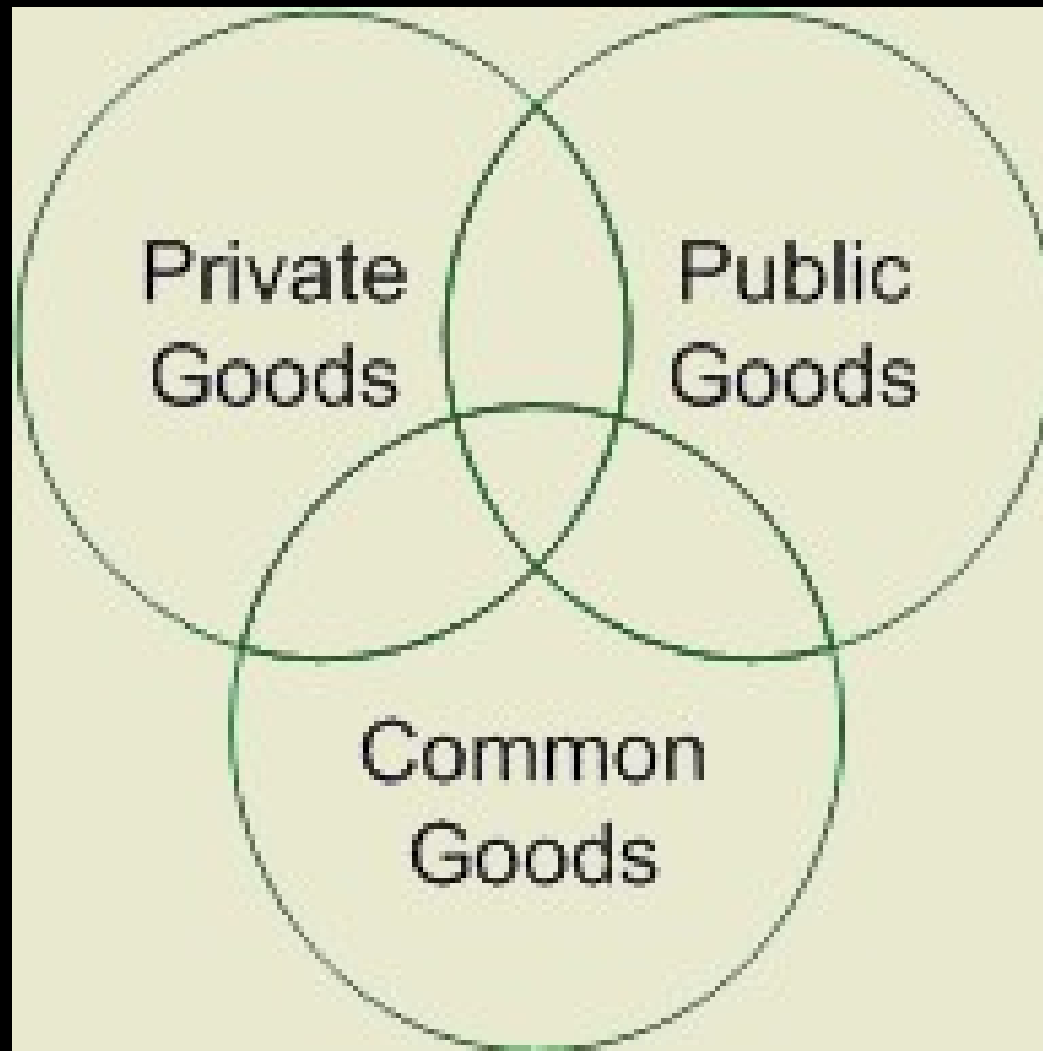
Some shortcomings

- Planned (or: built-in) obsolescence
- Innovations → productivity → less jobs
- Concentration of capital & power
- Profit maximisation leads to neglect “negative externalities”
- Non-aligned interests, “agency costs”
- Monopoly, patents, proprietary standards

Knowledge & Information

- Post-Industrial Society (Daniel Bell)
- Knowledge Society (Robert E. Lane)
- Knowledge Economy (Peter Drucker)
- Information Society (Frank Webster, ..)
- Network Society (Manuel Castells)
- ...

PART II - Commons



Commons (1)

Subtractability (Rivalry)

		low	high
Excludability	hard	Public goods	Common Pool Resources
	easy	Club/toll goods	Private goods

Ostrom, V. Ostrom, E. 1977. Public Goods and Public Choices.

Commons (2)

“Commons are inherited or created gifts that we organise, use and store in our lifetime through informal practices and rules which we pass on to future generations”

James Quilligan, <http://globalcommonstrust.org/>

Free Knowledge

Expressions that allow the four freedoms¹ to all users:

- to use, for any purpose
- to study and adapt²
- to copy and share
- to distribute modified versions²

1) Free Cultural Works Definition, derived from the Free Software Definition

2) requires access to source code

Free Hardware

Four freedoms applied to design files (CAD), documentation, Bill-of-Materials, manufacturing information (CAM), software, ...

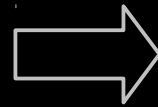
- cf. Open Design, Open Hardware, Open Source Hardware, Free Manufacturing

Protected by licenses

- Based on copyright, not patents
- Governs only the plans, not the device
- Hard to protect the idea without patents?
- Several licenses:
 - TAPR Open Hardware License (OHL)
 - CERN Open Hardware License (CERN-OHL)
 - OHANDA: labels the four freedoms

Arduino - ecosystem

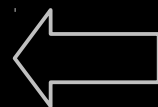
1) modify an existing design



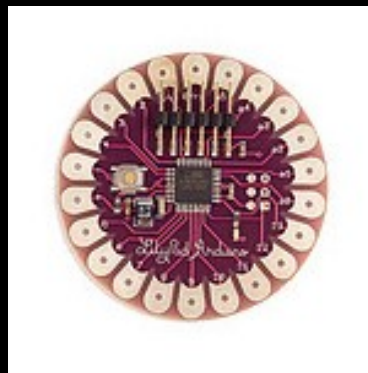
2) order prototype boards, components and build it



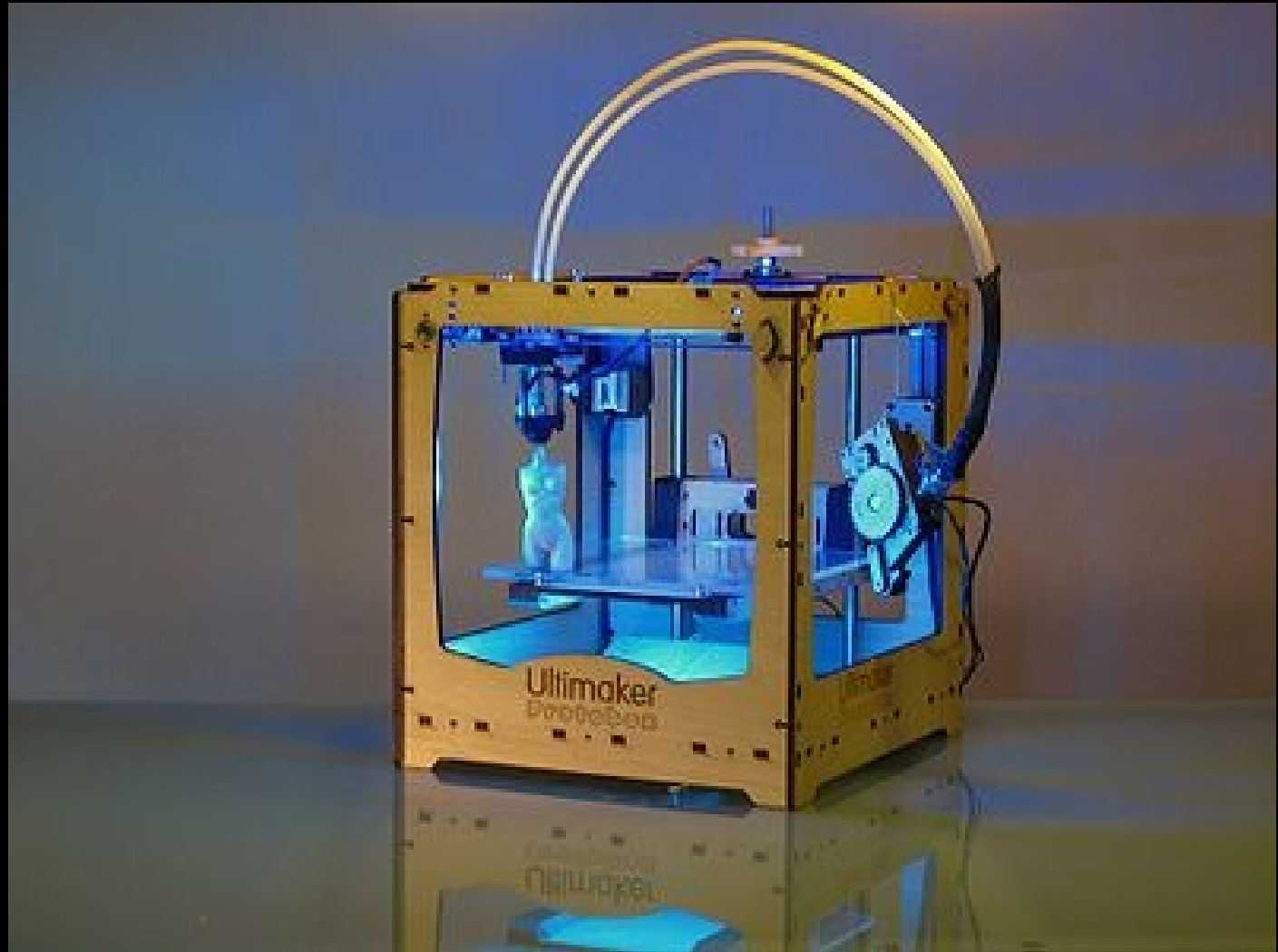
3) order small production run, or ask other shop to run it for you



4) publish your design so others can reuse it



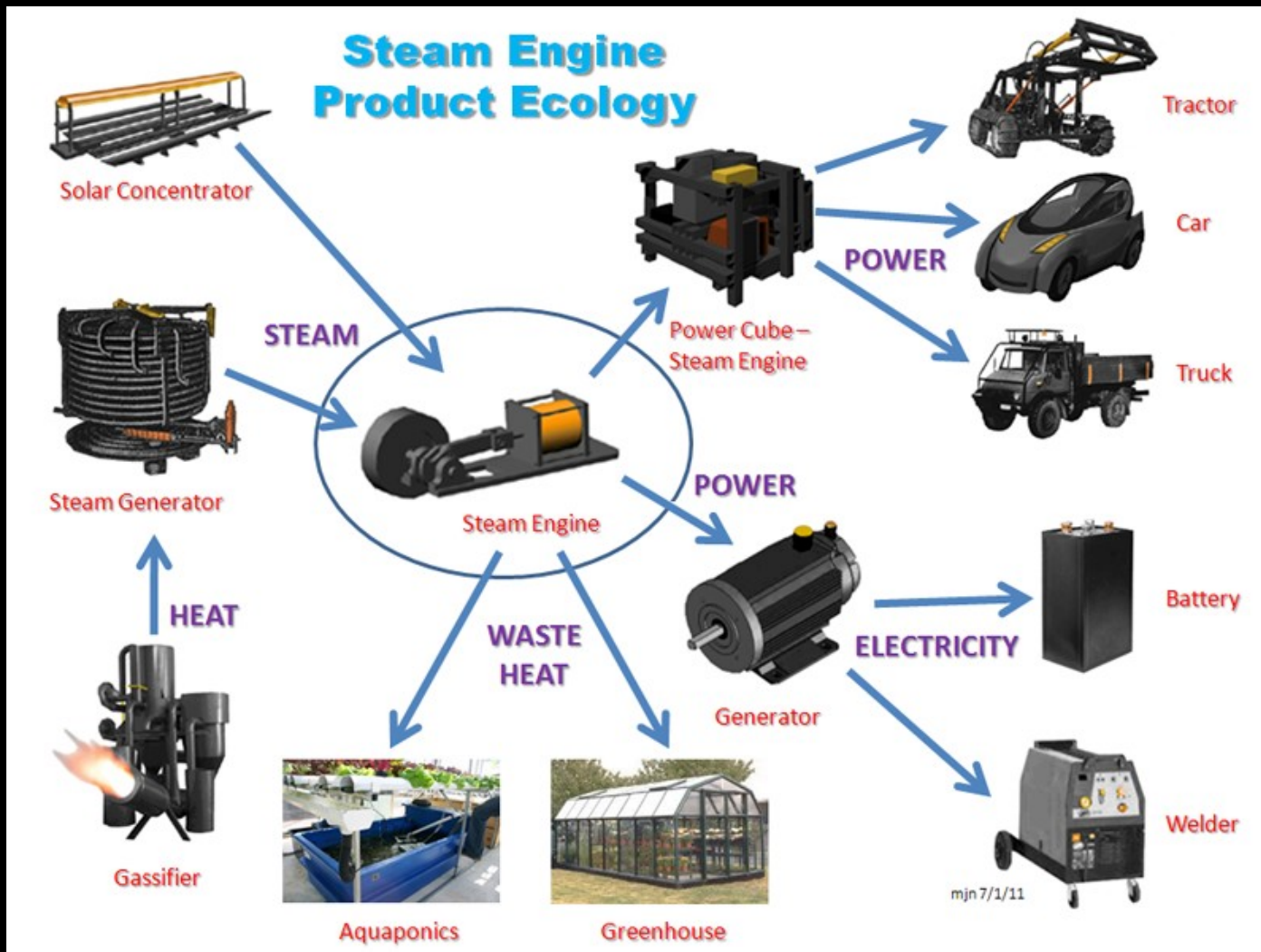
Ultimaker 3D Printer



Elphel Camara



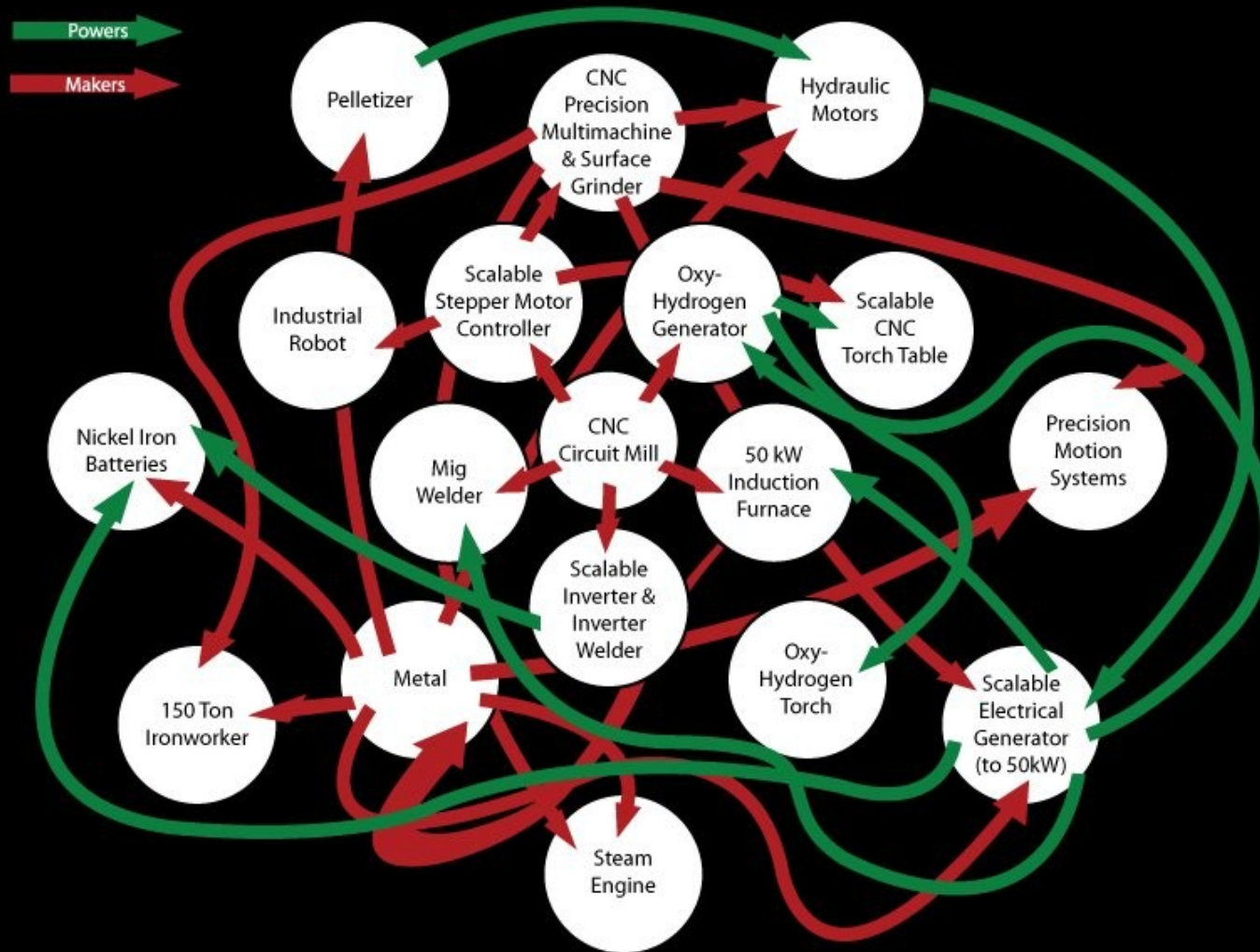
Open Source Ecology



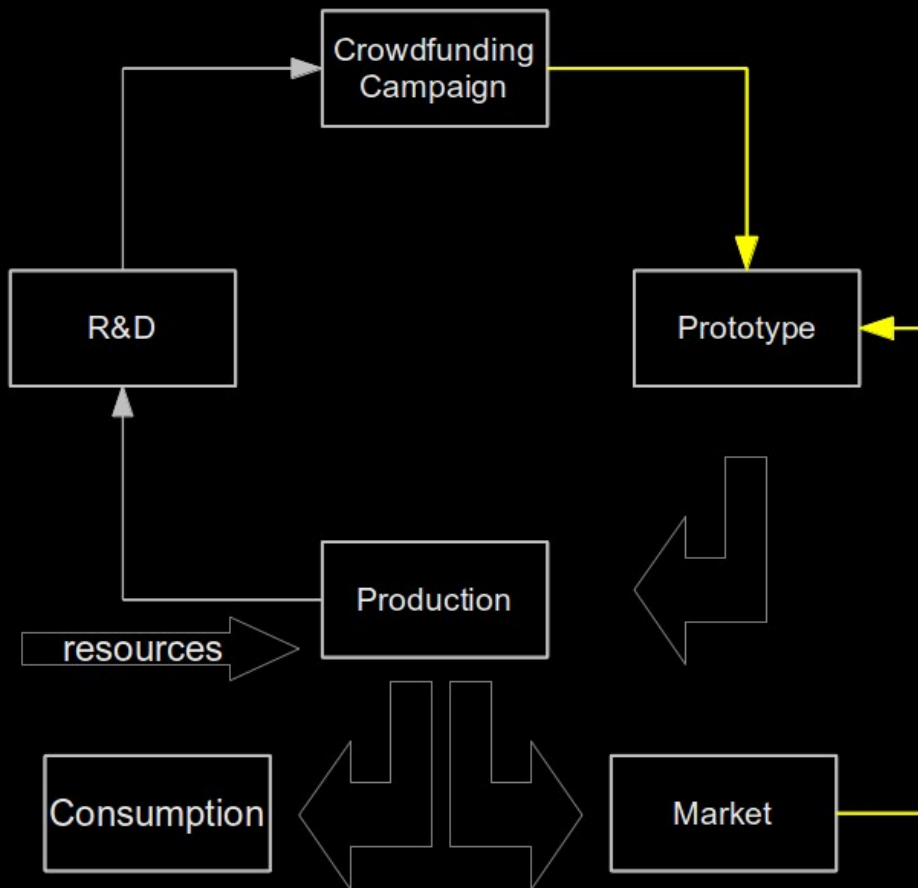
OSE's Industrial Commons Vision

- Freedom, open dev. & self-sufficiency
- Community: local & global
- Ecology and design for durability and reuse (modular, standardised, repairable, ...)
- Distributed enterprise
- Low cost
- Flexible

OSE Microfactory



Production model



- **R&D:** global community
- **Marketing:** global com.
- **Production:** local com.
- **Financing:** crowd + market exchange
- **Transport:** little
- **Env. Impact:** low
- **Social:** less work, more autonomy, creativity, solidarity

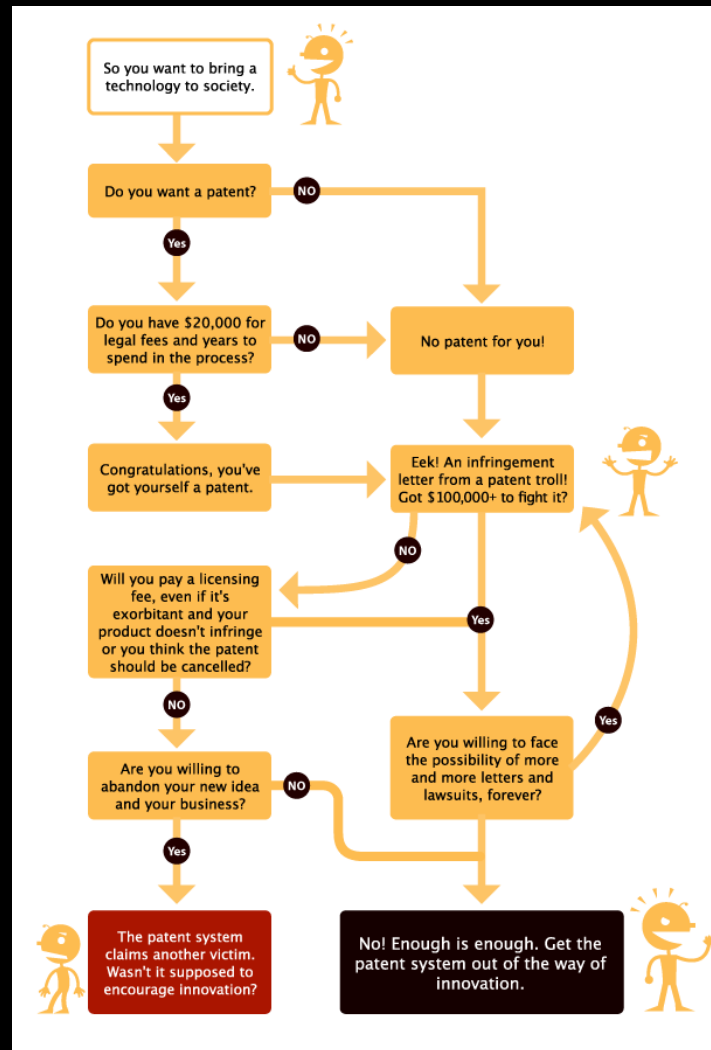
Commons Production (1)

- No need for profit
- Low overhead
- No IPR costs, no monopoly rent
- Takes intangible assets out of the RoI equation
- => Less financial resources needed

Commons Production (2)

- PROD: Flexible, small-scale, distributed
- Relocalisation
- R&D / MKT: Global cooperation on intangibles
- No customers, but users, co-owners, participants, True Fans
- FIN: Crowdfunding, donations, market exchange
- ORG: distributed networks of individuals, companies, cooperatives, associations, foundations

The Patent System by EFF



Legislation

- Pro-Commons
- Stop relying on (or eliminate!) patents
- Right-to-Repair
- Open Standards, compatibility
- Require published specifications
- Favour non-market sharing
- Public funded research into OA repository

Challenges

- Spaces
- People
- Resources

References

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- Peter Drahos: Information Feudalism
- James Boyle: The Public Domain
- David Bollier: Viral Spiral
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- Juliet Schor: Plenitude
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- Chris Anderson: The Long Tail
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- Free Knowledge Institute: [The Knowledge Society from a Freedom-centred perspective](#)
- Microfactoria Blog: <http://microfactoria.wordpress.com/>
- Richard Stallman: Free Software, Free Society
- Michele Boldrin and David Levine: Against Intellectual Monopoly
- Eric von Hippel: Democratising Innovation
- Kevin Carson: The Homebrew Industrial Revolution.
- Christian Siefkes: From Exchange to Contributions

What can we do?

- Learn & make in local workshops
- hub / incubator / hacklab / microfactory
- Detect needs
- Produce local & global solutions
- Create economic opportunities for commoners

Patrick Anderson (AGNUcius): <http://socialsufficiencycoalition.blogspot.com/>

*We must reorganize our production to regain control of the planet
Once we realize property ownership can be used for our own good, we can stop using it against ourselves.*

But this will also require us to reconsider our errant view of Profit so this new form of organization can grow without yet again consolidating power into the hands of those originators.

Profit is the difference between the Price a Consumer pays, and all the Costs the Owners paid (including Wages) for that production.

But when the Consumers truly co-own the Means of Production, their reward will be the Product itself, and there will be no need to sell any commodities except in the case where late-comers do not yet have sufficient ownership.

In that case, where surplus is sold, we should still collect Profit from those payers, but we must then treat that special value as a Negative-Feedback loop by investing it for that payer - with the real property co-ownership finally vesting to that payer as his new assets.

*Doing this will cause late-comers to slowly grow the collective in exactly the manner in which they *prove* it needed to grow.*

For example, if someone paid \$5 for a hamburger that only cost us \$2.75 (including all wages) to deliver, then we would invest \$2.25 toward purchasing or raising more cattle, tomatoes, eggs (for mayonaise), herbs, salt-mines, etc. and all the land and water-rights needed to insure that production continues.

As we grow in this way we will begin to be able to ignore the corporations that we currently support, and in doing so we will regain political control at the most local level.

Eventually the City, State, Nation and World governments will be reduced to their true purpose of our meeting for our collective reasoning of how to guide the planet.