Cover

Executive Summary

The goal of OSE is to develop the Open Source Economy. We will achieve this goal by developing the Global Village Construction Set (GVCS).

The GVCS is defined as, the minimum set of technologies which are necessary to create an advanced civilization from locally-available materials. A group of 12 people, starting with a complete set of GVCS tools, should be able to develop a modern self-sufficient civilization within a single year.

All of the GVCS tools will be developed on the Distributive Enterprise Platform. The Distributive Enterprise Platform is a scalable, transparent, open source product development platform which promotes the production and distribution of wealth.

This will allow people to regain their autonomy, improve their lives, and to pursue their mastery of the world around them. We believe this is a possible next step for humanity's evolution, similar to the Industrial Revolution.

We intend to grow the organization to 3000 facilities worldwide by 2028. At each of these facilities we will train Distributive Entrepreneurs to take the production knowledge and technology back to their own communities.

OSE is transiting from vision to institution, growing with learnings about the need for solid organizational and developmental infrastructures.

We believe these goals will address the issues of: artificial scarcity, the unequal distribution of wealth and knowledge, and human prosperity in harmony with our natural world. It will also drive the embodiment of a Higher Purpose within the current economic system.

"Openly licensing allows others to replicate, reuse, adapt, improve, adopt, bring to scale, write about, talk about, remix, translate, digitize, redistribute and build upon what we have done."

- Shuttleworth Foundation

POSITIONING STATEMENTS

Why, How, What?

Mission

The mission of **Open Source Ecology** is to create an open source economy: an economy that optimizes both production and distribution, while providing environmental regeneration and social justice.

Vision

1. the elimination of material scarcity
2. freedom for all
3. the enabling of the human spirit
4. the widespread adoption of the open ethic

Inputs

Machine Designers

Design Software

Collaboration Tools
wikis, video chat, email, cloud docs

Metal Fabricators

Fabrication Shops

Entrepreneurs

Farmers

Farmland

Volunteers

Educators

Activities

Machine Design

Design Prototyping

Open Source Documentation
videos, fabrication drawings, 3D models, manuals, etc.

Smart Mobs
global networks of technical experts collaborating online

Hands On Trainings

Design Field Testing

Outputs

Training Materials

Field-Ready Designs

Curriculum

Enterprise Plans

Field Evaluations

Outcomes

Individuals and communities learn to build, use, and repair their own industrial machinery.

New businesses and jobs are created.

Local economies are strenthened and adopt more ecologically-sound practices.

Other people are inspired to grant their inventions to the public domain under the open source license for everyone's benefit.

Global Village Construction Set Packages

Construction *Machinery*


Tractor


Backhoe


Loader


Bulldozer


Rotor


Chipper / Hammer Mill


Auger


Saw Mill


Soil Pulverizer


Cement Mixer


Well Rig


Brick Press


Micro Tractor


Power Cube


Trencher

Fabrication *Machinery*


Plasma Cutter


Drill Press


Press Forge

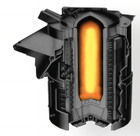

Iron Worker


Welder

Materials Production *Machinery*


Bio Plastic Extruder

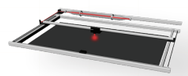

Aluminium Extractor


Induction Furnace


Hot Metal Rolling


Wire And Rod Mill

Precision Fabrication *Machinery*

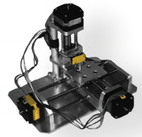

Laser Cutter


Hydraulic Motor

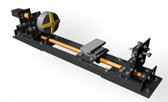

Torch Table


Multi Machine


3D Printer


3D Scanner


Robotic Arm


Lathe

Energy Production *Machinery*


Gasifier Burner


Solar Concentrator


Steam Generator


Steam Engine


Pelletizer


Wind Turbine


Nickel Iron Battery

Food Production *Machinery*

Bread Oven

Dairy Milker

Agriculture *Machinery*

Universal Seeder

Micro Combine

Hay Rake

Spader

Baler

Hay Cutter

Transportation *Machinery*

Open Source Car

Truck

Electronics *Machinery*

Universal Power Supply

Electric Motor

CNC Circuit Mill

Goals for 2013

Develop our Organizational Infrastructure

Develop our Organizational Infrastructure

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Develop our Organizational Infrastructure

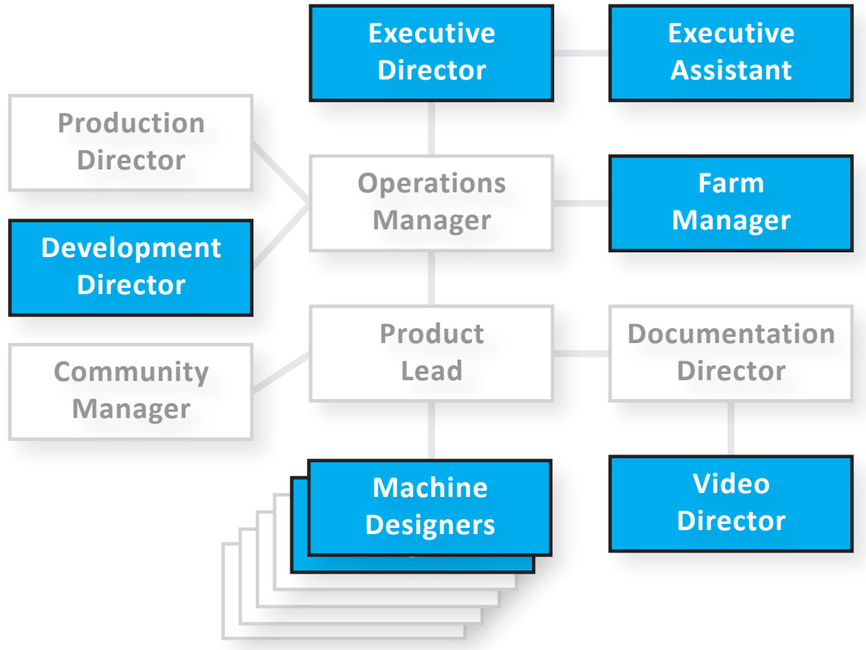
from vision to institution

Developing our Organizational Infrastructure

A Social Enterprise

To clarify our critical path, we are publishing a strategic plan, deployment strategy, GVCS rollout sequence, and a clear value proposition with the help of an open network of advisors. We will also incorporate as a for-profit/non-profit hybrid social enterprise and develop processes and policies that stabilize our organization's fundamentals.

Planning - we are publishing a strategic plan, deployment strategy, GVCS rollout sequence, and a clear value proposition.
Legal Status - we have filed for 501c3 status, and we are developing plans for a for-profit branch that generates revenue for our charitable programs. We will strengthen our operations to ensure lasting organizational stability.
Business Models - we are testing the development of the first OSE enterprise at Factor e Farm in Missouri, and it will be documented to serve as a model for others to adopt throughout the world.



Developing our Organizational Infrastructure

Building our Team

To coordinate our team, we will install performance management and quality control using transparent, online work logs as means to document, review, and plan team members' work product on a weekly basis. This turns into monthly and quarterly reports. We will also define quality control standards for production and refine an effective organizational ecology of Product Lead, Project Manager, Operations Manager, and others and figure out how to scale these roles.

Machine Designers - the core developers. We plan to expand from two to six by March 2013.
Product Lead - directs machine design effort.
Documentation Director - assures that documentation is produced alongside the development process and works with the Open Source Hardware Association on documentation standards.
Community Manager - facilitates remote contributions, coordinates volunteers, and recruits involvement in online technical collaboration sessions.
Operations Manager - handles all the moving parts by interfacing between the Executive Director and staff. The Operations Manager coordinates the interplay between machine design, machine builds, remote collaboration, and documentation.
Production Director - leads production and sales to generate earnings to make the operation

Goals for 2013

Develop our Organizational Infrastructure

Strengthen our Technical Design Process

Develop our Organizational Infrastructure

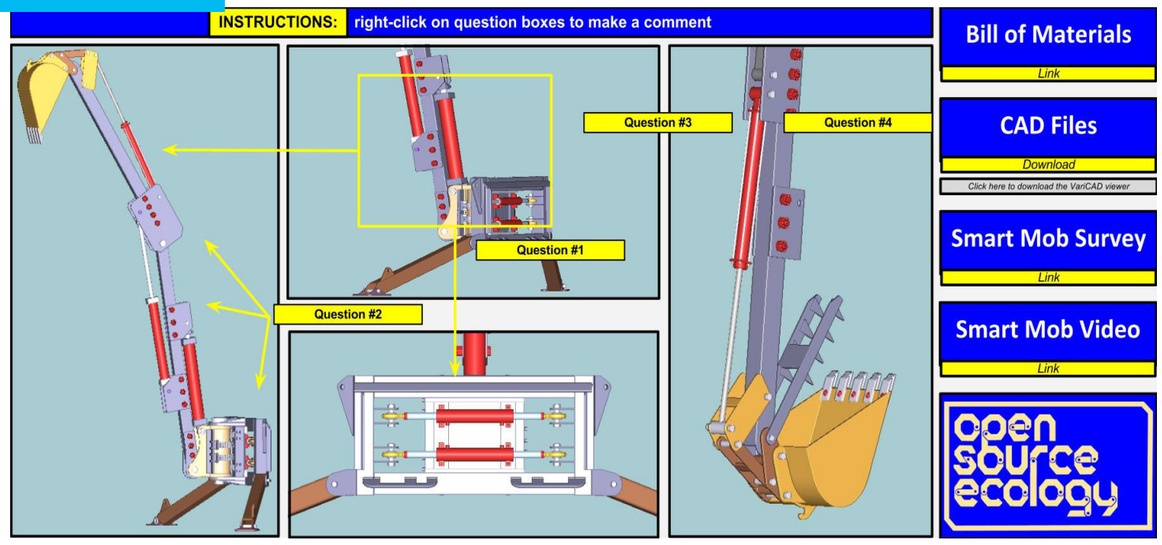
Develop our Organizational Infrastructure

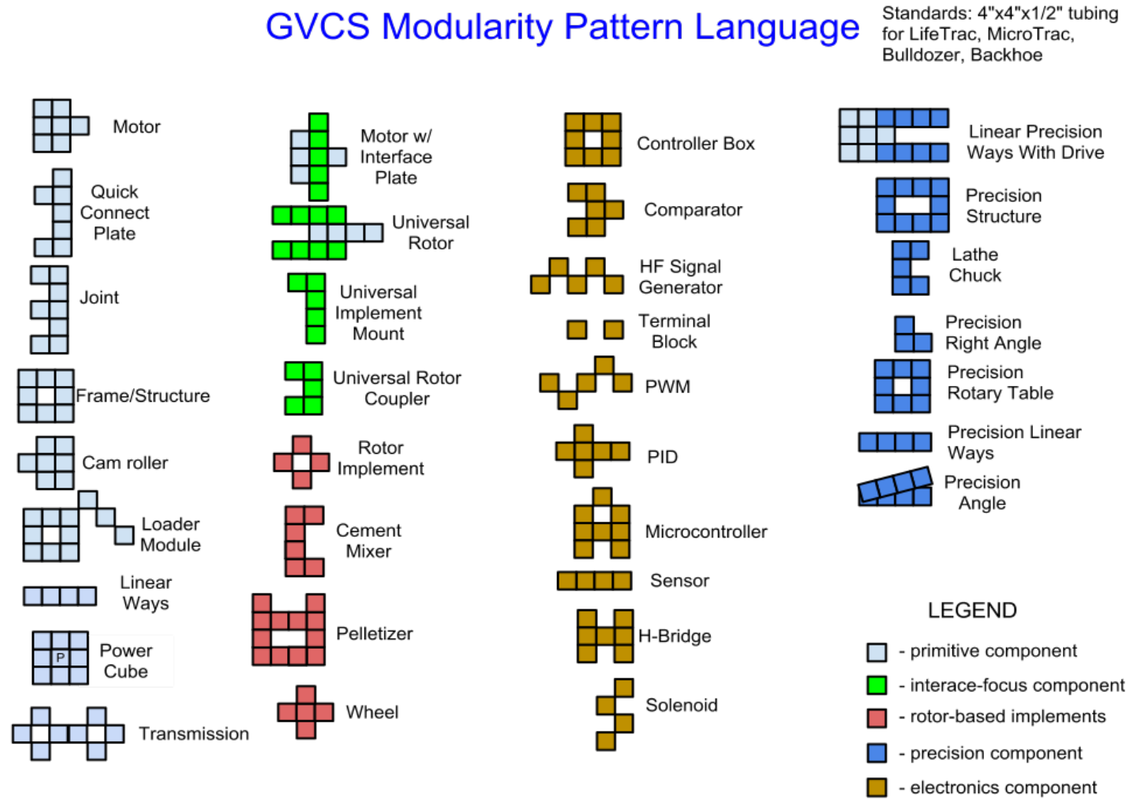
Develop our Organizational Infrastructure

Strengthen our Technical Design Process

distributed design and collaborative review

Goals for 2013





Strengthening Our Technical Design Process

Collaborative Review

We are developing a platform for networks of subject matter experts to collaborate online providing technical review and strategy development. We are also recruiting a high level Technical Review Board for design review and fabrication optimization. This will add our capacity to distill rapidly to the best industry standards - and modify them for our purposes.

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Strengthening Our Technical Design Process

Module Based Design

We are refocusing development strategically around module-based design – as opposed to machine-based design. It turns out that it takes about 13 modules to build any of the 30 mechanical GVCS machines. To this end, we are developing these 13 adaptable modules with attention to interfaces between these modules - to build a larger set of 30 tools. We are doing the same for electronics and precision machinery. This is a work in progress, and we plan to publish a white paper in 2013.

Open Source Hardware includes:

Mechanical devices - heavy equipment, cars, and various implements of agriculture, construction, and production.

Electronics and Power Electronics - from Arduino to electrical motors to Induction Furnace power supplies. Combined with mechanical devices, this constitutes mechatronics.

Hydraulics and Pneumatics - power delivery systems more flexible than mechanical drive

Automation - adding sensors and feedback to mechatronics constitutes automation systems

Precision Drive - adding precision motion to automtion system makes devices such as CNC machines. Teh limit of metall

Metallurgy - metal melting, rolling, and casting constites the basis of the advanced civilization. The limit of metallurgy and CNC machines involves production of bearings and ball screws.

Materials - metallic ores feed metallurgy, and nonmetallic ores (such as sand) yield semiconductors - the basis of the information age. The limit of materials is biomass converted to all organic chemistry including plastic and rubber, rocks turned into metals, and crushed rocks turned into semiconductors.

Optics - lasers, mirrors

Goals for 2013

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Streamline Prototyping and Production

Streamlining Prototyping and Production Runs

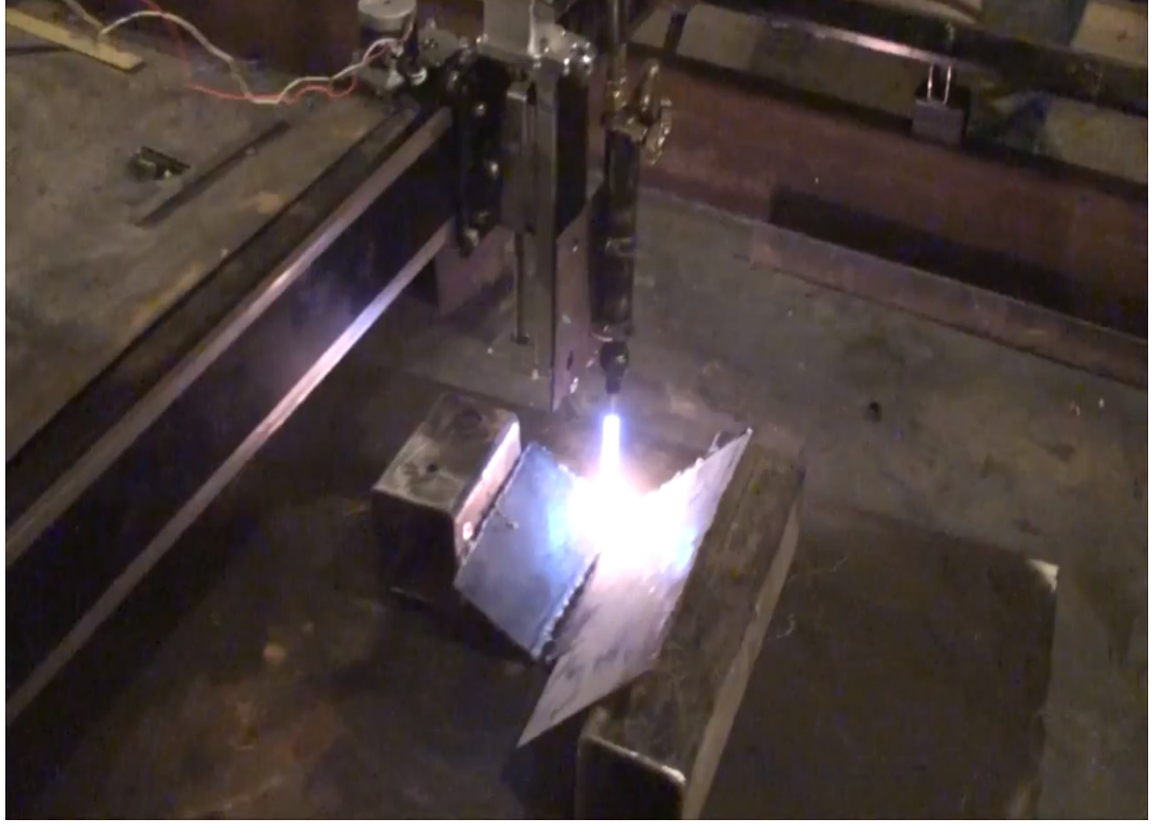
Prototypes & Production

At OSE Headquarters, we have a 4,000 sf. production facility where we build design prototypes and fabricate models for sale to bootstrap fund our operations. In 2012, we learned that a team of novices can effectively work together with impressive results, and in 2013, we plan to streamline the efficiency of collaborative prototyping and production runs.

Optimize Prototype Building - we are optimizing machine builds down to a single-day of production time. We aim for a 1-day build of the brick press in December. We aim to optimize several more machines to 1-day production times - including Tractor, Microtractor, Bulldozer, Power Cube, Soil Pulverizer, and Backhoe - as proof of concept that any of our GVCS machines can be taken down to a single day of production.

Optimize Production - we are optimizing production to demonstrate one-day builds of heavy machinery for $5k/day net production earnings. We are considering hiring a full time production director to run these production runs as 1 day events - netting significant revenue for growth of the organization. We see the Brick Press as the furthest-developed candidate, but the Tractor is close second and it has a much larger market. If we achieve the efficient 1 day production run per machine - we will be well-positioned to fund additional growth from our off-grid production workshop.

Shift to Collaborative Production Runs for Prototype Builds - on the prototyping front - we are taking a major shift away from full time prototypers and towards 2-day intensive production runs with our on-site team. We are further inviting guest Production Run Directors from collaborating open source projects. We will shift focus on extensive preparation for one month - and a rapid build in 1-2 days - as our standard method of development. To facilitate production - we also plan to invite the intended audiences - our users - to the Collaborative Production Run of their own machine.



Streamlining Prototyping and Production Runs

Streamline Toolchains

We will strategically develop tools that will accelerate our manufacturing processes to achieve the goal of one day production runs in 2013.

Streamline Production and Development Tool-Chains/ Processes - we will refine physical production tool-chains based on ongoing results, starting with full deployment of CNC Torch Table and Ironworker Machine. We will also streamline complex development path to 24 mission critical steps while creating documentation in an ongoing fashion.

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Develop Remote Collaboration

Develop Remote Collaboration

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Develop Remote Collaboration

Pilot Projects

By utilizing NGO sector partnerships - such as tractor deployment in urban agriculture projects or house-building in Haiti with Habitat for Humanity. This addresses product sales at the same time that it feeds test data and documentation back to the project. This would allow our home team to focus on product refinements based on the feedback.

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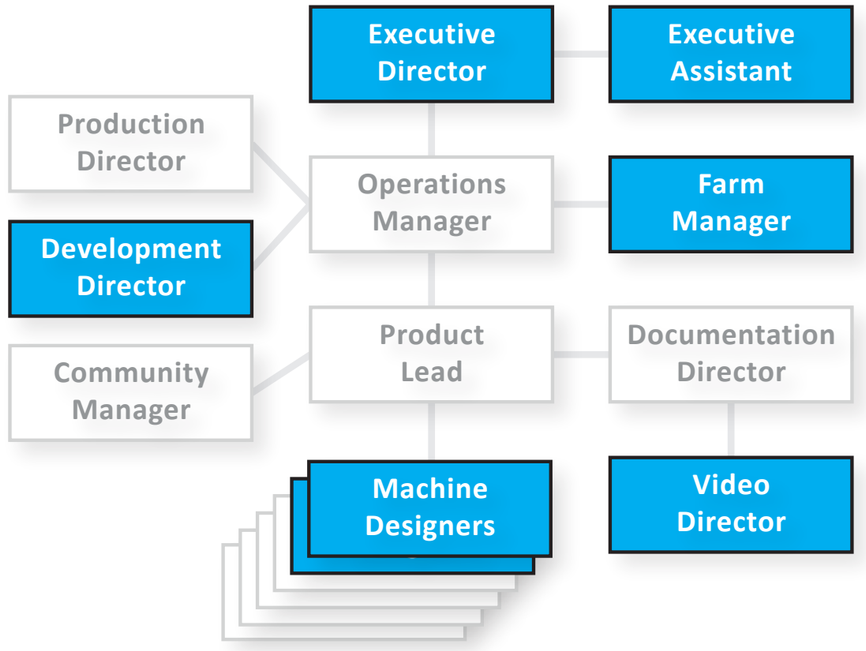

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It took MacDonalds about 20 years to scale to 5000 branches from start-up. We are aiming to match this rate for startup of open **OSE Incubators** *and* **OSE Campuses** *by achieving about 3000 branches in 12 years from the first OSE Incubator. An OSE Incubator is a training facility for training the distributive entrepreneurs - those who will train others to replicate further Incubators. We intend to, first, create 144 Incubators - and these incubators will train entrepreneurs who then build open source ecology in their respective communities. The distinction between Incubator and Campus is that the explicit role of the Incubator is to train distributive entrepreneurs* **(OSE Distributive Enterprise Fellows)** *- while the role of the Campus is to unleash entrepreneurs* **(OSE Fellows)** *dedicated to community economic development, without the explicit role of training other distributive entrepreneurs.*

Beyond 2013: the Open Source Economy

OSE Incubators

We intend to spend 2016 creating a curriculum for a 2-year replication training immersion program for social entrepreneurs - and specifically, for OSE Distributive Entreprise Fellows. We intend to start the first class of Fellows in 2017, with 12 graduates by 2019. During the course of their immersion curriculum, Fellows will participate in production runs and capture their productive value as capitalization assistance for their future startup. Upon graduation, these Fellows will work closely with OSE International to set up 12 Incubators by 2020, and 144 worldwide by 2023. This includes:

Recruiting Incubator staff
Building Incubator infrastructure with the Staff, with capitalization assistance of $100-150k as above ($80k/month net production model from OSE Microfactory)
Recruiting a class of 12 further Fellows

The established Incubators will work closely with the Fellows to reach the 144 Incubator milestone. Upon these being established, the function of the Incubators will shift from training OSE Distributive Eneterprise Fellows to OSE Fellows. The distinction is that the latter are agents of open source economic development in their communities, as opposed to trainers of new Fellows.

Beyond 2013: the Open Source Economy

OSE Campuses

An OSE Campus is defined an a land-based, autonomous entity with a 4000 sq ft workshop which clears approximately $1M of value generation per year and serves as a economic engine and responsible development hub within a surrounding economy. OSE Incubators train OSE Fellows - the startup entrepreneurs who build the OSE Campus.

The design of the OSE Campus is intended to be scalable on a month replication time scale, such that the OSE Campus may scale its operation readily. Because Campuses are autonomous in operation, they may scale as the centers of a networked economy in a world where nation states have diminished in their relevance as political centers of organization. The OSE Campus is intended to be an economic hub of a regional, resource-based economy.

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