

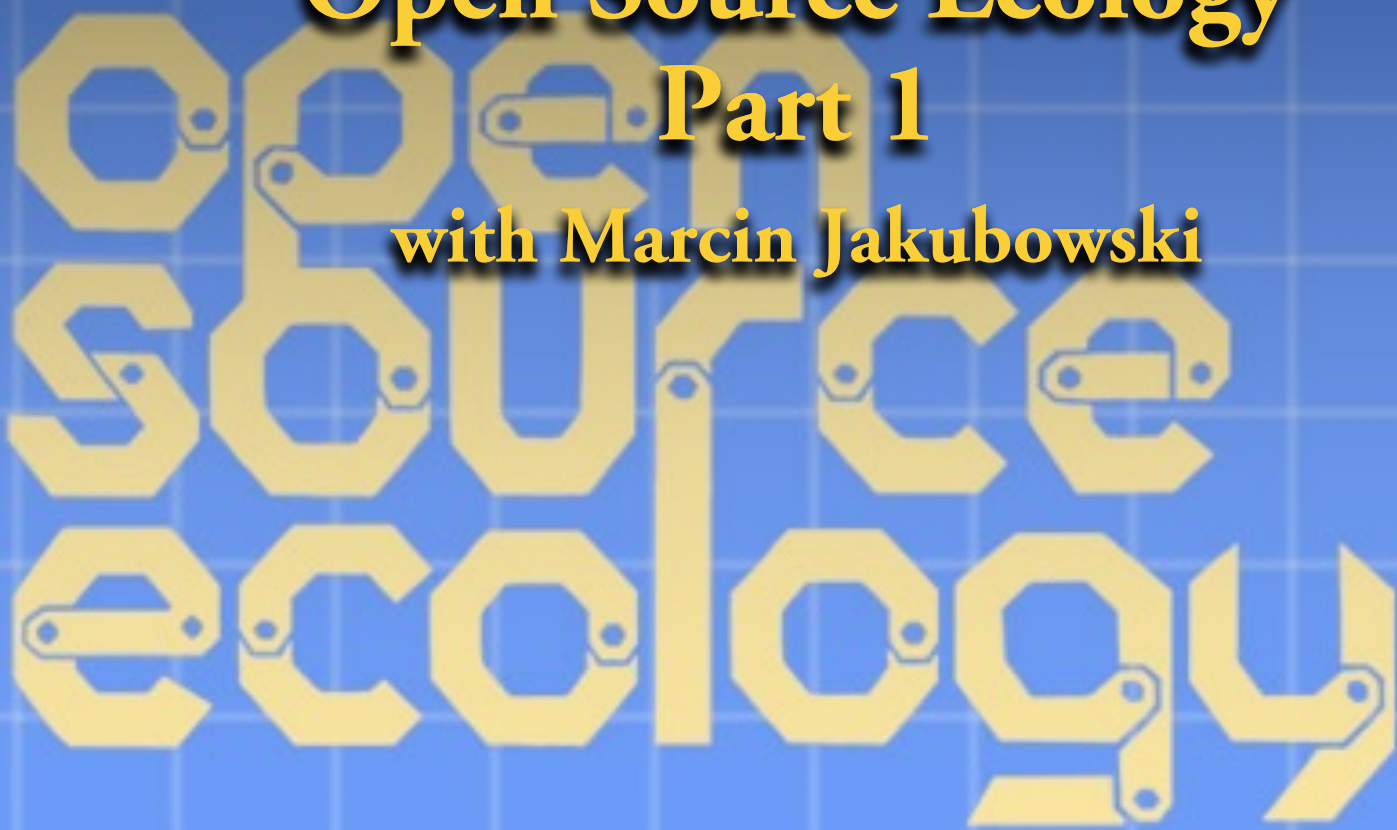


The Solari Report

AUGUST 8, 2013

Open Source Ecology Part 1

with Marcin Jakubowski





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C. AUSTIN FITTS: It's my pleasure today to introduce to you Marcin Jakubowski, who is both physicist and farmer and the executive director of Open Source Ecology, which he founded in the final year of getting his Ph.D. in physics at the University of Wisconsin. He's joining us today from his farm in Missouri where he's building something we're going to talk about called the Global Village Construction Set and he's doing it with a team that is both local and global onsite and online. I can't think of a more important project to building the kind of decentralized economy that we talk about here on the *Solari Report*. This is something, and we'll talk about it later, which is a very important option for the investment of your time and donations and I'm very excited that Marcin could join us today.

Marcin, welcome.

MARCIN JAKUBOWSKI: I am glad to be here.

C. AUSTIN FITTS: Well, tell us how you went from being physicist to farmer and inventing the Global Village Construction Set.

MARCIN JAKUBOWSKI: Yes, the standard answer is – so maybe backing up a little bit, I always thought about the power of science creating good things for humankind, and moving further in the educational system. I felt more and more disillusioned about where I was going. And basically in the second year of the Ph.D. program, I was studying fusion. I got quite disillusioned with it. At first, I came into it thinking, “Oh, yes. Fusion is a great energy source for all humankind.” And then it kind of became clear; well, there are issues with it. There is radioactivity and always seemed to be ten years into the future.



So it was kind of disillusioning to see these sessions and, back at the university, just theoretical presentations. I was just starting to ask, “Well, how is this relevant? How are we really addressing pressing world issues when there are so many of them?” And I felt we were just getting farther and farther removed from that. So it was a trigger point, perhaps, just to give you an example of what I’m talking about here.

One time I went to a professor to ask about something I didn’t understand about this wave propagation; some equation that stretched across half the board. So I asked him, “Where does this apply? Can I see this thing? Is that some wave traveling through space here?” And he said, “No, it actually doesn’t exist. I just made it up.” So, all right, that was kind of one of those hits where I definitely started thinking about other ways and other options, even though I was disillusioned, I actually ended up finishing and it was a long five-year walk to freedom where *I* was out of it a couple of times, but finished it and the first thing I did was start up Open Source Ecology.

Basically, I would do a lot of time studying sustainability, economics, social justice issues and because Madison is kind of a radicalizing place, that definitely influenced me. I got highly involved in the student community and all kinds of organizing through groups. And then the last was Open Source Ecology and, the way that evolved, was by going from various organizing and a social scene and getting more into the sustainability forums, and into one group that I started called Gandhi Network where we actually got some hands on practical experience, such as building a bicycle power assist or a solar food refrigerator.

But then at the end of the day, I kind of felt disillusioned with that, too, because we all get into that on a weekend and become weekend warriors, then Monday, the person goes back to work for the man. So that wasn’t so satisfactory and at that point I felt, “Okay, well, if we’re going to do this, we’re going to have to jump in deep, create deep lasting solutions where people can check into an alternative reality.”

C. AUSTIN FITTS: So is that when you moved to Missouri?



MARCIN JAKUBOWSKI: So the first year right after that, we settled on five acres of land in Madison. Basically, I knocked on some farmers' doors and land is abundant. People actually get tax write offs for doing agriculture, so we did that and learned about weeds and equipment.

“People actually get tax write offs for doing agriculture, so we did that and learned about weeds and equipment.”

C. AUSTIN FITTS: And how did you choose Missouri?

MARCIN JAKUBOWSKI: It happened that some of the organizing friends in the nonprofit sector, had land down here so we just settled on it. It's great weather, not a lot of codes, cheap land.

C. AUSTIN FITTS: I know all about it. Of course, I live in Hickory Valley, Tennessee and it's the same thing here. I was talking to a friend in San Francisco the other day and I said, “To own my house next to you would cost \$10 million.”

Anyway, tell us what the Global Village Construction Set is and how it came to be.

MARCIN JAKUBOWSKI: Yes, the Global Village Set is a set of the 50 different industrial machines that it takes to build a small civilization with modern comforts. We talk about things to provide food, energy and fabrication. Everything from a tractor to an oven, a circuit breaker, industrial robots and renewable energy equipment. It's a set of tools that I basically asked what are some of the things that a person needs in order to be able to create a sustainable civilization or sustainable community or sustainable household?

And the Global Village Construction Set, was more dedicated towards the village scale or the city scale, and starting the infrastructures that are necessary to do that. People always ask me, “Well, why do you have this machine instead of that one?” “Why don't you have the biodiesel reactor in there?” “Well,” I say, “Okay, we're making a choice based on the complete set being sufficient to provide a modern standard of living



and we won't know that until we test the entire thing. So I'm sure there's many other options and iterations we can do, but for right now, let's just get the thing done and see if it works."

C. AUSTIN FITTS: Okay, so if you come in to Open Source Ecology, into the website, how do you find the Global Village Construction Set and what is in it now?

MARCIN JAKUBOWSKI: Right, so you can go to OpenSourceEcology.org and if you click on GVCS, which will list all the 50 different machines. Now if you go to our wiki, you will see a lot of development pages. The 4 machines that are closest to release, are the so-called Civilization Starter Kit Version 0.01 with a tractor, the brick press, soil pulverizer, and power unit, which you can download all that from the front page and build all of these machines yourself if you have the skills. The plans are all open. Our name of the game is replication and adoption.

One more thing, just to briefly mention what the GVCS is, it's a big, hairy, audacious goal. The claim here is that a person or a few people can take an entire set – well, actually, on the community scale, say 200 people can take this set and, I'm actually claiming that as few as 12 people with this set, can create an absolute modern standard of living minus semiconductors at two hours of work per day using local resources.

C. AUSTIN FITTS: When you say two hours a day, how long do they have to be doing it?

MARCIN JAKUBOWSKI: Sorry?

C. AUSTIN FITTS: How many years?

MARCIN JAKUBOWSKI: If we have the entire set complete, they can build it out in six months.

C. AUSTIN FITTS: Really?



MARCIN JAKUBOWSKI: Oh, yes.

C. AUSTIN FITTS: That's fantastic.

MARCIN JAKUBOWSKI: We can do radical efficiencies of production and we have the theme of one day pervasive now and are kind of branding it around this concept. But we built, for example, the brick press last December 18th. We built that thing in a single day. So we're pushing the limits of effective open source collaborative production where by module-based design, we break the machines down into the simplest modules possible so that many people can work to design and build them in parallel and then, if you're building this thing out, all the people work on the individual modules and the way these things fit together as clearly defined, you can just assemble them in the last hour. But that's the kind of model, that's really pushing the efficiencies of production because the technology know-how is there. It's just access to these enabling tools, to the knowledge, really. That's the key.

C. AUSTIN FITTS: And I think the confidence to know that you can make things.

MARCIN JAKUBOWSKI: Absolutely. The thing is, I've been transformed myself doing this to see that we have some amazing potential underneath us in our own hands and I'd like to show that to many other people on this planet.

C. AUSTIN FITTS: When I first read the story of what had happened to you and became aware of the Global Village Construction, and – in my experience, what the farmers always tell you is the thing that puts them on the treadmill is buying the tractor, paying the loan on the tractor, and then, of course, the tractor means they need gas and they're really on an equipment treadmill. And I saw the story of you starting this when your tractor broke down, right?

MARCIN JAKUBOWSKI: Yes.

C. AUSTIN FITTS: And so it was Marcin saying, "I want to get off the tractor



treadmill.” And you see farmers who, certainly over where I live, spend an inordinate amount of time learning how to fix their own equipment and, if you look at how much time they spend trying to fix their equipment or dealing with broken equipment, what you realize is if they just built it to begin with and did it in a simpler, streamlined form, they’d probably save time. And so I looked at this and said, “This is going to work. This is absolutely going to work.”

MARCIN JAKUBOWSKI: So right now, if you hear any of this grinding in the background here, we’re on the fifth day of building the tractor, the Version 5 now, and t now, the goal is actually to do it in a single day but

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C. AUSTIN FITTS: Really?

MARCIN JAKUBOWSKI: Oh, yes. Our goal is to build each one of these machines in a single day by radically optimizing the production methods, breaking down the things into modules. Actually, I want to invite people in the audience, if you go to OpenSourceEcology.org/wiki, that’s our wiki, just search for design sprints. What we hold every weekend is sessions where we collaboratively develop all these different machines. So we basically sit around Google Docs, SketchUp, and other online tools, to do rapid development on these.

C. AUSTIN FITTS: Now design sprint is online or on site, or both?

MARCIN JAKUBOWSKI: It’s both, actually. The people on site, we may have six people on site, but it’s dedicated to the remote audiences where – I mean imagine the setting here where 100 of the world’s best engineers come together to do this. You’re talking about some serious progress that not even large corporations have access to and we have the advantage of the social mission that we carry that is the glue for all these people. Well, even if it’s just the open source method, we’re tapping the human – well, basically the people, who are interested in social good beyond what they’re doing. Say an older person who’s done something professionally for their life and now they’re contributing back to society. This is a venue where this can be expressed.



C. AUSTIN FITTS: Let's go back to you creating the Global Village Construction. Let's go back and talk about how you've organized people coming in and helping and supporting. You started out, 'because your tractor and your farm had run you out of money. You started with crowd funding, correct?

MARCIN JAKUBOWSKI: That's right. When we started, it was myself and my partner, that settled on these 30 acres of raw land in Missouri. The first thing we do is build a little house, start a little bit of agriculture. Then your tractors break down. Yes, and when that happened, I was broke and started crowd funding. I basically reported on a blog what I wanted to do, and started setting up funding baskets and people paid for it. 'Because I was committed to it, and this was my life. I was showing progress and that was, yes, a long time ago.

“The first thing we do is build a little house, start a little bit of agriculture. Then your tractors break down.”

C. AUSTIN FITTS: When did you create 1,000 true fans?

MARCIN JAKUBOWSKI: We don't have 1,000 true fans. We have about 400 right now.

C. AUSTIN FITTS: I know because I'm one of them.

MARCIN JAKUBOWSKI: Are you?

C. AUSTIN FITTS: Yes. I'm a true fan.

MARCIN JAKUBOWSKI: No kidding. So this goes into our explosive growth because since –

C. AUSTIN FITTS: One of my goals is to get you 1,000. I want you to get up to 1,000.

MARCIN JAKUBOWSKI: That would be great. So let me just tell you a little background on that. In 2011, we were operating on a \$2,000.00 per



month budget and I was putting all my money into the development. Then we got put on a world stage with a TED Talk and I've been growing 500 percent ever since.

C. AUSTIN FITTS: Fantastic.

MARCIN JAKUBOWSKI: So the true fans numbers grew and so forth. In the last year, lots of growing pains as you scale an organization. I kind of lost track with the true fans so that if you sign up as a true fan, I don't even know about it because we're just reorganizing all the databases and all that. But we're actually just setting up a true fans network where, every two weeks, there will be a conference call with me. We can discuss things. And I want to get the true fans involved in the design sprints much more because there is lot's of different areas that people can contribute in. But yes, we want to get those numbers up.

Especially, we want to diversify our funding sources because right now, foundations largely support us, and that comes and goes. So we want to go back to our true crowd funding groups and production. So right now, the brick press, tractor, mainly the fancy torch table are all very close to being viable products. I mean we did actually clear \$25,000.00 back in 2011 selling our equipment, so we've got proof of concept as we move forward. In order to scale this to the level of replication of all these OSC incubators worldwide, we need to do that by bootstrap earnings.

C. AUSTIN FITTS: Is it good economics for you to start a school? I know a lot of farmers who are going to be hesitant to download the plans and do it themselves. They're going to want human contact and so an opportunity to come to Missouri and just do a workshop with you. It could also be online but I think they're going to need personal contact.

MARCIN JAKUBOWSKI: Right. I'm glad you bring this up because we are talking a lot about that right now. So for one, we're creating a two-week crash program for developing all these skills and technical skills but also organizational skills. We're pairing up and this is just very recent. The tractor we're building right now is going down to our school at Blair Grocery, an urban farming project in New Orleans which is actually a



school. So the education part is something we are starting right now but the thrust is to finish the 50 GVCS tools by the end of 2015.

So we develop our techniques and in 2014-15, go into rapid development, and at which phase we turn pretty much the focus to education where we take individuals to become the OSC fellows to go in immersion training crash course for two years. It's like university except you get practical skills and, in the last six months, with our assistance and collaboration, we would build out a new facility elsewhere and then you would run it. That's the general concept.

C. AUSTIN FITTS: Well, ideally you can find a way to organize the education so you are paid to regularly draw in everything that's being learned by the use and prototyping and keep evolving both the set and the education and so it's a cycle.

MARCIN JAKUBOWSKI: Yes, yes. Maybe we can talk more deeply about this because I think that's actually a great revenue model where we put all the proceeds back into doing further development. One way we thought about it is the single-day production runs are an amazing, transformative experience. So we could have people coming in, actually paying us, and then the machine itself goes to some kind of a pilot project. So there are revenue streams and multiple locations.

C. AUSTIN FITTS: Oh, yes. It's real funny. I sat down in 2008 and I read the new housing bill that congress passed and I called my attorney. I'm friendly with the farm, it's a couple of hours away, in Tennessee, and they give home building courses and I always thought, "Oh, that's too hard." And I read the 2008 housing bill and I called my attorney and her son at the time was 16 years old. I said, "It is much easier for your son to learn how to build his own house than to have to deal with this system anymore." I think those kind of sprints would be very exciting for many people.

MARCIN JAKUBOWSKI: Let me actually add to that because there is one experience right now that we are offering. On September 28th, we are going to do a build of the OSC micro house where we show the use of



the tractor and the brick press and we build a 400-square foot structure. We're going to build a 400-square foot structure in one day.

C. AUSTIN FITTS: Oh, fabulous.

MARCIN JAKUBOWSKI: It's going to take 24 people. We can have a lot more people doing documentation and other things. We're going to charge people for that and other people get to come for free. This is actually part of our kickstarter reward structure. We still owe people this natural building workshop but actually this will be coming out. Follow us at OpenSourceEcology.org. You can follow the blog but that's going to be published this week, September 28th. And we actually have a world class, world leader architect landscape designer, John Motlock from Ball State University. They are collaborating with us to put forward the design and do the construction management. This is really exciting.

C. AUSTIN FITTS: And if somebody wants to sign up for that, how do they do it?

MARCIN JAKUBOWSKI: E-mail me, Marcin@OpenSourceEcology.org, M-A-R-C-I-N@OpenSourceEcology.org. So we're going to have probably 10 to 20 people from our side. We can open it up to about 10 to 20 more.

C. AUSTIN FITTS: And you're going to be building it with brick?

MARCIN JAKUBOWSKI: We're going to be building it with brick and we're going to press 5,000 bricks in a day.

C. AUSTIN FITTS: Oh, there's a wonderful Sidney Poitier movie about pressing bricks. I don't know if you've ever seen it.

MARCIN JAKUBOWSKI: Oh, no.

C. AUSTIN FITTS: That was my introduction to brick pressing. Okay, and it's going to be at the farm in Missouri.

MARCIN JAKUBOWSKI: Yes, it's in the Kansas City area of Missouri.



C. AUSTIN FITTS: Okay, perfect. You have to tell me, how many nationalities do you think you're working with around the world both online and people coming to Missouri to do this with you?

MARCIN JAKUBOWSKI: The global community is naturally global. There's been 12 replications around the world, I believe, 4 or 5 countries. Actually last month, the bricks started rolling off a press that was built in China.

C. AUSTIN FITTS: Really?

MARCIN JAKUBOWSKI: Yes. It's a person who actually came here as a dedicated project visitor. That way we can have people involved on site. They were actually organizing their project and event. So it's interesting to see here and there, "Whoa. Hey, that's my machine." And we encourage that. We're not afraid of that. We want these good tools to come out there because they don't have to compete with us. It's an open market. So we're actually reinventing the open market here.

C. AUSTIN FITTS: Has there been any connection between you and the woofers?

MARCIN JAKUBOWSKI: Yes, we've had woofers here. There have been a few people on it. Right now we're looking for a full-time farm manager as well. Our priority right now is to get a production manager to actually produce the machines, and also farm manager. So we're trying to work that into the budget. I think the production manager would be self-supporting by the model of production and education and we're trying to get our economics –

C. AUSTIN FITTS: This is why I think it's very important to grow the 1,000 true fans because it would give you the steady inflow you need to build the management infrastructure.

MARCIN JAKUBOWSKI: Yes, that would be great.

“We want these good tools to come out there because they don't have to compete with us. It's an open market.”



C. AUSTIN FITTS: I'm the queen of business models.

MARCIN JAKUBOWSKI: Okay, we need to talk because what I've learned, one of the main lessons, is there's a difference between vision and execution, isn't there?

C. AUSTIN FITTS: Although I will say this. My generation was not trained in project management where you really break things down to a granular level unless you're an engineer or you had certain kinds of particular training. Whereas I find your generation, because they've grown up with the software tools, is much better at complex project management collaboration. So I'm hoping that that has made a difference.

MARCIN JAKUBOWSKI: Oh, I see immense potential just coming from that. There's this software model called -Oh, I forget the name- where they have demonstrated already that if you take a complex software program, you can actually divide it into tiny parts and give it out as little chunks to many people and it ends up costing you much less and that's where they

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C. AUSTIN FITTS: When I worked in the Bush Administration, I discovered the Internet and software tools and the web was just starting. So I went to the software industry to get the project management tools we needed because I was trying to reinvent the capital formation process for what the new tools would allow. And yes, the software world has those. We used something called the MIT Project Management System, which was fantastic.

MARCIN JAKUBOWSKI: Was it open source?

C. AUSTIN FITTS: I believe so. Anytime you want to, I'll give you a little mini course in the MIT Project Management Software.

MARCIN JAKUBOWSKI: Well, that's one thing we're really trying to get up here and we just got our operations manager in place. We need to install it. We're not doing much for project management right now so we need to really master that.



C. AUSTIN FITTS: If you have time after the interview, I'd be delighted, or give me a time and I'll let you know.

Okay, so one of the things that I realized looking at the construction set was when you build something and you want to just make it available open source, you think, "Oh, this is really easy. I'll just make it open source." And then you discover, "No. I have unbelievable global issues in terms of the law related how I protect this from somebody else copyrighting it and basically reverse engineering it out of open source." How have you grappled with legal issues of protecting the intellectual capital for the commons?

MARCIN JAKUBOWSKI: Yes. So for one, we're installing a contributor agreement where people agree that OSC becomes the owner of this intellectual property in order to keep it open forever. So people give their rights up to us as the protectors of the IP. Now the good news is that anything that you publish openly even on a wiki, you cannot get a patent on it because it becomes prior art. Now the thing that does happen is that improvements can and do get patented, so what's the solution for that? Well, we have a viral clause in our IP policy that says if you use our materials, then you have to contribute them and any improvements back into the open, and that's how it works. So far we haven't had any problems but not like we've got any extraordinary IP right now.

The thing is, there's a question of sufficiency that I actually believe in quite strongly. It's okay that we built this brick press. You can put all kinds of bells and whistles on it but a ten brick per minute brick press is as good as you need. You don't need any more for most purposes unless you're really insane. So there's a sufficiency aspect. It's like we only need so much to thrive and beyond that, it's extras. So there's that element that a lot of people are forgetting. Now I do believe that innovation occurs constantly and things will get better and better, but there is also this sufficiency aspect.

C. AUSTIN FITTS: I'm an investment advisor, so I work with individual families, and one of the things you see is their entire balance sheet and



income statement has been intermediated by large organizations and what they haven't really thought about is, "Okay, if I could reengineer my time and do a lot more for myself or use my money." My famous story is I had one person that kept complaining that the yields on their portfolio were going down and their water bill was going up. I said, "This is very simple. Sell your stock and build a well." But there are all sorts of opportunities to dis-intermediate throughout their balance sheet and income statement but it requires understanding what tools like yours can do and, "Oh, why don't I just do that myself? Why doesn't the family get together and learn how to do this ourselves?"

MARCIN JAKUBOWSKI: What are some examples? So, okay, build a well. Can you tell us a little bit? That's an interesting story.

C. AUSTIN FITTS: So another example is somebody pays a utility bill for their energy but it also exposes them to an increase in inflation. So if you look at the economics of providing the energy myself, and it could be providing my primary source of energy. It could be providing my backup source of energy. What you discover is maybe it's economic to do it myself, maybe it isn't, but if I do it myself, it will protect me from further increases. If suddenly the cost of energy should skyrocket, I'm protected. And in fact a lot of what whipsaws a family is you get these cycles of sudden price changes and they get whipsawed and part of making them strong is to protect them from those whipsaws.

MARCIN JAKUBOWSKI: Yes. I kind of look at it very simply as that we're in control of our own destiny. Being off grid or doing things yourself means that you're not susceptible to all these uncontrollable market forces.

C. AUSTIN FITTS: Well, if you look at what somebody has to do to generate an income, there are tremendous expenses involved in it. I have to get my clothes dry-cleaned. I have to buy more and different kinds of clothes. I have to commute to the office. I have to pay taxes. There may be professional taxes and fees involved. And so for me to get a dollar to pay my energy, I have to make \$2.00 or \$3.00. And then suddenly you say, "Wait a minute. How much time does it take me to make that \$3.00?" If I do it myself, maybe I get a lot less revenue's but if you look



at my wealth in terms of my financial or living equity, I can show you models where, yes, your revenues go down but your savings in terms of things that create equity go up. And it can be pure financial equity because, in fact, I have less revenues but I'm building the assets within my home base that make this whole operation require much less cash flow.

MARCIN JAKUBOWSKI: Right, especially if those assets are generative where they generate more value over time. And that's the nature of the Global Village Construction Set. It's a constructor. It's not a static thing. You can make more of these things with it.

“That’s the nature of the Global Village Construction Set. It’s a constructor. It’s not a static thing.”

C. AUSTIN FITTS: So one thing I've always wanted to, and I've worked occasionally with a permaculturalist on, is looking at a family budget and how much money they spend on landscaping and then you realize, well, wait a minute. Why don't you convert that landscape into an edible landscape? And so the economics of that both in terms of your food budget but also your health budget are much better over long periods of time. And to me, part of it is it's 1,000 little things. That's why I love the permacultural approach because it's 1,000 little things of putting your herb garden next to the kitchen instead of far away and little things that save. Something that saves ten minutes a week and, if you come up with 100 of those over 30 years, it makes a difference.

MARCIN JAKUBOWSKI: It does and I think the main challenge for a lot of people is dealing with the complexity involved and that's what we have to be open to that, I mean to be integrative thinkers.

C. AUSTIN FITTS: Right. Not everybody's a brilliant physicist so that's why we appreciate your help. Okay, so just describe the term open source ecology. I think it's very valuable to understand this notion of an open source ecology and how you came up with the name and what it means and why it's important to everything.

MARCIN JAKUBOWSKI: So I will first refer you to the wiki regarding the



definition as we phrased in about 2004 in a legacy site for OSC. I talked about open source ecology being a system that integrates human and natural parts in complete harmony along the lines of open source or open collaboration or just flow like flow happens in nature. So ecology refers to the integration of many things and open source, was the best name I could come up for what I was thinking. It includes an open source economy, open source institution, in harmony with how natural resources are extracted. The sunlight, rocks, soil, plant's, water is where all the wealth of the economy comes from so we have to integrate that with the human experience.

C. AUSTIN FITTS: So the way I would say it, is what you're doing or what open source ecology is about is sort of a process and methodology to optimize living equity and that's how a financial weenie might say it.

MARCIN JAKUBOWSKI: Okay. I'll try using that to my financial pals.

C. AUSTIN FITTS: There was one question I had to ask you because I've been fascinated by it. You mentioned weeds and the thing that I have found is the real killer in terms of making – growing fresh food economic is the weeds.

MARCIN JAKUBOWSKI: Weeds, yes.

C. AUSTIN FITTS: There's one group out in California that's been working on building robotics tools that can identify and weed without a human having to do it and I was wondering what you're doing in the weed area and what you think of that.

MARCIN JAKUBOWSKI: It depends what scale you are, but, upscale agriculture, has cultivation, and that's one way to go, or you can go with beds. Say you get semi-field scale beds. One technique I've heard about but I've never done it is have wide rows that you mow in between and you put all the clippings in the growing beds, so basically it's constantly mulched. But the other thing is the robotic thing, so our tractor and automated controls yields GPS precision automated farming. But we don't need to go there. There's simple tools available right now; for example agro crew.



Maybe some people in the audience have heard about it, but it's basically a pivot system where there's a pillar weeder that goes around on a pivot. The thing pivots and can manage like a 30-foot radius or 50-foot radius pivot where, essentially, automatically you can have this thing in your backyard, hit the return button when you program it, and you've got weeding, tilling, and can have planting done automatically. It sounds a little bit like we're getting away from nature here but this could be something that the person who has no time for it could actually get immersed in their agricultural system. I see a lot of potential.

C. AUSTIN FITTS: Right, I think there is a lot of potential. For many years, I was persuaded that the federal government did everything it could do to hire up the smart guys so they couldn't go off and figure all this stuff out, but as the deficits compound that's changing and that gives me a lot of hope.

MARCIN JAKUBOWSKI: That the system cannot suck up all the smart guys? Well, there is too many rebels out there. That's never going to happen. And there's Joy's Law, whoever you are, all the talent is outside of your organization.

C. AUSTIN FITTS: Okay, so before we close, walk us through again. I want to make sure everybody in the audience knows how they can connect, learn about, plug in, or if they want to participate, the different ways of doing so.

MARCIN JAKUBOWSKI: Okay, so first of all, I'd like to open up my e-mail. E-mail me at, Marcin, M-A-R-C-I-N@OpenSourceEcology.org. If you've got any questions regarding signing up as a true fan, joining on site for a dedicated project visit, which could be university internships, community service or a project that you can do on site here, there's the design sprint. So one thing we're really trying to get up in numbers is the design sprint. You can look that up on the wiki under design sprint but we're trying to get those numbers up to get the radically efficient development cycles where we can design a complex machine in as little as a single day. That's one of the goals within the next six months. We'll see if we can organize that.



As far as getting in touch and just finding out about us, the best place to follow the continuous progress is the blog, which would be, blog.OpenSourceEcology.org and our main static site is simply OpenSourceEcology.org where there's links to the wiki, to the blog, and everything else. But if you talk about points of entry, I mean true fans for donations and basically where people sign up for a \$10.00 per month donation for the next 24 months, the dedicated project visits on site, and the design sprints held every single Saturday. I'm committing to that. I find a lot of good energy comes from that, design sprints on Saturdays from 9:00 to 5:00 Central Standard Time.

C. AUSTIN FITTS: Okay, 9:00 - 5:00 pm Central Time. Okay, well, Marcin, thank you so much for joining us on the *Solari Report* and if you feel like it, hold on and I'll give you a ten-minute overview of the MIT Project Management System.

MARCIN JAKUBOWSKI: Absolutely. That would be great. Thank you so much, Catherine. This is great. I'd love to be in further contact and scheme on some of these things we've talked about.

C. AUSTIN FITTS: We're in cahoots.

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