How Can Open Source and 3D Printing Help Get New Energy Technologies Out Into the World? (Video)

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What do Open Source and 3D printing have to do with getting new energy technologies out to the world? Here is an excerpt from our ThriveTogether event describing their potential.

Just might be the way to get the toothpaste out of the tube!

Audio Transcription

Kimberly: Hi. We've had over 500 breakthrough projects come our way at THRIVE in the past three years, both technological and social innovations. We chose the top 70 of those. So, what criteria did we use to select those projects and what is the range of options for funding and manufacturing and distribution that we've been developing? We explored those questions and more with hundreds of people from our ThriveTogether network. It was a great conversation. Here's an excerpt from our team member, Goa Lobaugh, describing a little bit about open source and 3D printing, which are both great and important options for getting free energy out into the world without waiting for the cabal to think it's a good idea. Check it out…

Related Article: Will 3D Printing Make Gun Laws Useless?

Goa: The first, most common misconception about open source is that you have to give it away and you've relinquished your rights, or privilege, or even opportunity for income from

that. It really is not that at all. It's not necessarily a business model per se to do open source, but it's really a business strategy or a tactic. Let me drop in a couple of quick links in the chat that have a few articles about this. One is from the Harvard Business Review and one's from Open Health News. The one with Open Health News is actually quite interesting because it goes into 15 or 20 different distinct and most common types of licensing strategies that you can use for open source and they really range (and I'm not going to go through them all), but the most simple are dual license, where you give it away for free to the user but anyone that wants to use it in a commercial application needs to license it from the proprietor. Rob can speak more about that because he actually has done that himself. We did the same type of strategy for the toolkit that we developed for the THRIVE visual effects. We open-sourced that last year in the same kind of a dual license scenario.

The real heart of open source and the piece that makes it so valuable is that you push a lot of very expensive aspects out towards the community. It can be a really expensive endeavor to do QA (Quality Assurance) on a product or a service or a piece of software, but when you don't have to hire a hundred people but a thousand people out in the community can do that independently and still have that feedback loop, it really can race development along. It also proves, invests, and improves the technology as you go. It closes up security holes. The security aspect is another important one because from a certain perspective, commercial companies are dis-incentivized to actually be really tight with their security and reveal that they have holes or anything like that, whereas in an open source paradigm, you've got a community of people who are out there that are really trying to tear it down and make sure it's totally bulletproof and holds its water. Those types of projects actually stack up much higher from a security and safety perspective than similar commercial products. I think that's important to note.

Related Article: Engineers Pave Way Towards 3D Printing of Personal Electronics

Most people that are familiar with open source projects are usually on the software side because that's really where it's been developed and most popularized. The operating system of Linux is a great example of that. It's also a great example of where people are selling add-on services or different types of services, be it upgrades or add-ons, like I've mentioned, or even customer support/technical support (that's an add-on service) while they're still giving away the core software as an open source package. Red Hat is an example of that, or Linux.

But, hardware isn't really excluded. There are some fantastic open source hardware projects. Arduino is one of my favorite examples that have really leveraged the proliferation of and the expansion of 3D printing in the last several years. Also, many of you may know that Tesla Motors kind of did a quasi-open source. They told everyone that they're not going to enforce any infringements on their patents, so they've kind of open-sourced their patents and said, "Okay, go ahead and use them. We're not going to sue you for it." I think it's an excellent move in the right direction, but it wasn't quite a full-on open source kind of a thing.

There's one other link I want to drop into the chat, which is a new book by a fellow named Robert David Steele. The book is called "Open Source Everything" and I'm just actually starting this book. I haven't actually finished it yet, but there are some really popular ideas about the theory of open source and the benefit that can be had by open-sourcing, literally, everything.

3D printing is essentially a way to take a three-dimensional file and make it into a physical object. I've got a few examples of that. Here's something that we generated with the Toolkit that we devised, or designed, for the film, THRIVE.

The form is actually made in the software and this model is digitally sliced into hundreds of thousands of tiny little layers and then 3D printing, which is also called *additive manufacturing*, what it does is it uses a print head to lay down one tiny layer at a time on top of the next and so what you get at the end is a physical model of your digital design. That's kind of it in a nutshell.

What I think is really interesting and why it has really become so popular in the last few years is because the patents expired. Most people think this is a brand-new phenomenon, but I've been tracking 3D printing, literally, for 15 years. The patents just expired and those are 20-25 years. So, it's really been around for over a quarter century and it's because the patents have expired and the convergence of other open source technologies that really have enabled this huge proliferation of 3D printing now. Now, there are probably dozens of different 3D printers that are also part of an open source model.

Related Article: Deadly and Life-Saving: Printing Our Three-Dimensional Future

Resources

- New Energy Technology – Thrive
- Foster's talk at the 2013 Global Breakthrough Energy Movement conference in Boulder, Colorado
- Goa's talk on 3D printing at the same conference
- Yes, You Can Make Money with Open Source – Harvard Business Review
- Open Source Business Models – A More In Depth View – Open Health News
- Cosmic Geometry Toolkit – liquidbuddha.studios
- Linux
- Red Hat
- Arduino

- All Our Patent Are Belong To You – Tesla Motors
- The Open-Source Everything Manifesto