The SunSaluter, One Year On

Speaker:
Eden Full, Roseicollis Technologies, Inc.

Video:
http://techonomy.com/2012/11/eden-full-of-rosiecollis-technologies-at-techonomy-2012

Kirkpatrick: Now, Eden Full, for those of you who were here last year, you know who Eden Full is. We had a competition, The Ashoka Youth Entrepreneur Award, which she won. She was 19 at the time, a Princeton student who had been given money by Peter Thiel to drop out and to develop her solar technology. And she's back here to tell us a little more about how her Roseicollis Technologies—did I get that? Roseicollis Technologies. And I never did ask her what the name is all about. But her problem product is doing and so we're happy to have Eden who is now all of 20, right?

Full: Thanks, David.

Hi, everyone. My name is Eden Full. And last year I pitched at Techonomy and it changed my life. And so it's an honor to be back here and to be presenting to all of you. And I'm really excited to share with you what's been going on over the past year. And a lot of it was because of Techonomy. Techonomy was really a turning point for me.

So the SunSaluter is a device that I have developed that rotates solar panels to follow the sun using mechanical water flow. And this will give you 40 percent more electricity and clean water.

And so just a little bit of a back-story, like I mentioned before, last year there were four of us. We presented at Techonomy. We had three minutes to pitch. And it was a wonderful opportunity for me to meet all sorts of great people who really helped me to cultivate my vision and what I wanted the SunSaluter product to be like.

And the grand prize was this trip for me to travel around the world and meet Indonesian villagers, learn how to walk on bamboo stilts, understand their way of life and just what is really important.

So as an inventor and an entrepreneur, how can I design a product that will fit their lifestyle and is something that fits that market need? And so I had the chance to demo the SunSaluter in Kenya, in Indonesia and in Egypt where my Ashoka tour took me. And it was a great chance to meet a lot of people. It was really interesting. I would, like, set up the SunSaluter in a village, and a lot of people would come and ask me, "Oh, this is cool, how do I get one?" And it would be awkward and I would have to tell them, "No, we're not ready to sell yet, but it's great that you are interested."

So this trip was really insightful for me and I learned so much. And it gave me just a way to move forward on the SunSaluter product. And now I want to share with you how I have kind of cultivated the company and the product vision now that we can move forward.

So as some of you might know, there is a big problem in terms of water-related deaths that happen in the developing world. And it occurred to me that I can link this problem with water and the problem with solar together. Water is such a big problem, right. 3.4 million people die each year from water-related diseases. And that's actually more than the number of people who die from HIV and AIDS.

And so if I thought about it, well, there's 1.5 billion people who don't have electricity and there's 780 million people who don't have access to clean drinking water. So what if I try to tackle both problems at once?

And so as you can see here, in Africa, where the areas where I want to work, there's so many people who have less than—in the country that have—less than 50 percent of that country has access to electricity. And then if you look at how many people don't have access to clean drinking water, there's also a big overlap in that region.

And visiting these countries helped me realize that if I could find a way to integrate both products together while keeping that same—the cost of the unit low, then that's really what I should be targeting.

And this isn't something that I learned until after I went on my travels. And so if we look at small-scale solar, which can be defined as anywhere from 30 watts to 15 kilowatts, there is a big need for that right now. And I crunched the numbers on this. 2 million SunSaluters could be deployed right now in the developing world to 2.5 billion potential users.

And actually going on the ground and seeing that helped me realize that this is the best way to move forward, is to focus on small-scale solar.

And so if you are wondering how other trackers on the market are, trackers that rotate to follow the sun, a lot of them use electronics or they use passive designs. And so a lot of these are either really expensive, really not counter-intuitive or they malfunction a lot. And what I realized was that those existing trackers are just designed for the completely wrong market. We still need rotating solar trackers because they give you 40 percent more electricity, but not the way that people are doing it now.

And so there's also a number that I noticed—is that stand-alone water products, they are only between 6 to 27 percent effective in health interventions. There's so many problems associated with those problems. But the biggest thing is, is that people aren't willing to pay money for plain-old clean water solutions. We need something that incentivizes them to use that system every day.

And so if we can combine 40 percent more electricity and clear water in the same integrated product, that would make a difference to a lot of these villagers' lives. I interviewed a lot of different people, and they told me they would be interested in this product if it combines both together.

And so the SunSaluter is a device that will use mechanical water flow in a simple way so that the design is very tangible. It can be manufactured locally. And so our next plan is to actually establish a subsidiary in East Africa where we can make these locally. And it uses common materials that are easy to find on the ground. And it's really intuitive one-step maintenance. And I'll explain how it works to you. But basically, the economic value behind this is that installing the SunSaluter, which will be $20 to $25 at a unit cost is cheaper than buying another 40 percent of a solar panel to get that increase in electricity.

And so what we want to do is reduce not only the amount of water-borne diseases using a filter that's built into the SunSaluter, but we also want to reduce the payback for these systems and reduce the amount of maintenance that people need to go through in order to use it, because in the village, they really don't have that much knowledge of how to maintain solar systems.

And so how does it work? We filed a patent on this recently, over the past year. And how it works is you pour water into the system on one side of the panel at the beginning of the day. And we have a special valve that will control the flow rate of the water so that the flow rate of the water dripping out of that container, it matches the rate at which the sun is moving across the sky.

And so if we filter that water while we're at it, then you're now getting clean water at the same time that the physical imbalance is causing the solar panel to rotate.

So it's really the simplest design ever. And one big realization that I took by meeting all these people was, you know, the solution just has to work. No one cares about whether or not the technology is fancy. You just need to get a solution that gives you clean water and more electricity.

And so this was the pilot that we deployed a couple of years ago in Kenya. And now that taught us a lot about how to move forward. And this was the most recent pilot that was deployed two months ago in Tanzania. And so one of the things that I did this year was I hired a number of team members to work with me, so the guy in the photo is our first hire of the company.

And so we also deployed in Uganda. And Uganda actually turned out to be our most promising market. And so we're likely going to be setting up our subsidiary in Kampala.

And so the daily impact for having a SunSaluter is you can charge a whole extra lantern, two extra cell phones or an extra 12-volt battery just by having 40 percent more electricity, plus the 4 liters of clean water you get, and this is all for a $20 to $25 unit cost.

And so we're providing that value that the villagers need that they've never really been able to experience before under the same integrated product.

And so far we have reached 5,000 villagers, but we want to reach more. And I believe that this is possible through licensing of the SunSaluter product to companies that have expertise in other countries. We already have two companies in India and the Philippines that are interested in working with us. And we're also interested in starting local manufacturing subsidiaries.

And so because of the award that I won here at Techonomy last year, I was able to deploy three pilots this year, reach over 5,000 villagers, incorporate the company, hire our first employees, file for the patent, raise a little bit of non-dilutive funding. The Postcode Lottery Green Challenge gave me $250,000. And I also got a lot of mentors out of this conference.

And I think that I want to move forward even more now. We want to deploy 500—at least 500 units in the early quarter of next year. We'll have started our first manufacturing run. And we'd like to reach over 15,000 villagers and even build out the team even more. And another thing that I want to do is start thinking about some of these global health partnerships and how the SunSaluter can apply to existing initiatives to reduce water-borne disease.

And so I want to reach out to you now here and ask for a little bit of help to move forward. I'm looking for three things right now. I'm looking for support in finding solar and water distributors in Africa or Asia or in any other country. We're really interested in talking to anyone who is passionate about the area and might be able to work with us.

And another thing is we're interested in setting up some potential health intervention studies using the SunSaluter to see how genuinely effective it is. So we'd really like to reach out to organizations like the Gates Foundation or Partners In Health because they already have some existing infrastructure to help with this.

And, of course, we're interested in manufacturing the SunSaluter so that it can get to as many places as possible. So either manufacturers in China or East Africa are good people to talk to for expertise. So if any of you have any knowledge or connections in that area, that would be greatly appreciated.

And so thank you so much for your time. It's an honor to be able to speak here and share about my progress over the last year. I just want you to know that Techonomy changed my life for the better. And I'm just so thankful. And I hope to be able to move forward on this. Thank you.

Kirkpatrick: Thank you, Eden. That's what it's all about.