Stanford eCorner

You Don’t Know Everything

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Entrepreneur Rebeca Hwang talks about her experiences at MIT, where she built products in the lab and then deployed them in the field to solve real world problems. Hwang also discusses why technologists don’t know everything, and why spending time in the field is necessary to appreciate all the institutional factors in play.

Transcript

I mentioned this because at some point in your life you'll have this calling eureka moment when you really fall in love with a topic or a subject matter.. And in my case I was in India and I was looking at this problem, the problem of water, having 2 million kids dying of diarrhea every year because they don't have access to clean water.. And I realized that this was my calling in life, I had to do something about it.. I came back to MIT and I discovered that these big problems don't actually need solutions that are really complicated.. You could have solutions that are very low cost and simple.. So I paired up with a number of professors and students at MIT, and we put together this technology solution that use ceramic filters as a way to treat water for developing countries, especially in rural areas where you don't have distributed provision of water.. So we did this, we got some patents.. We participated in some competitions, won some money and then we had this laboratory technology that we wanted to deploy in the field and we're so excited about it because as MIT technologists we thought that that was all that was needed, a technical product and when we put it in the field then magically all the solutions would come about.. So this is how it worked, we trained local artisans to make the filters with local technologies.. So we would have these workshops where we would develop the filters and then we created this cooperative with local factories, small factories that would store and sell some of these filters..

They would go house to house and then sell them or give them away and talk to the households and educate them on how important this was for their children and the safety of their families.. We had our own improv lab in one of our offices, it was a bench where we would do testing of all the result of the treatment that we would have in the field.. And then we will go and check how they're using it, for example this is a typical kitchen in Nicaragua, San Francisco Libre is one of the poorest towns in Latin America, it's the second poorest town in all of Latin America so the conditions are really primitive.. And I would see them, every now and then you would spot the filter being used or in the kitchens and that was a really joyous moment for us.. So this filter that had a ceramic component and a plastic bucket where the water was stored worked really well in the lab.. The treatment efficiency in the lab was close to 95% so we thought wow we got this, it's cheap, it's local materials, people know how to build it, there's no maintenance.. So why wouldn't it work? Well it turns out that it didn't work and we were in Nicaragua, we deployed about 3,000 of these filters and the majority of them were not used.. In fact I would do service regularly and people wouldn't really answer my questions.. So at one point I said, I really need to see the filter, you can't just tell me you're using it and you like it, I need to go and see where it is.. And I was really in dismay when I saw many of these filters being used as door stops or for plants or they're using the bucket in the field for irrigation instead of actually using the filters..

So I mean, as I said, I was a technologist from MIT thinking I have a technology, it works in the pristine lab, why wouldn't it work in the field.. And that's why I realized that obviously there was something missing and that I didn't know everything...