

Bob Barrett: This is the podcast from '*Clinical Chemistry*.' I am Bob Barrett. The focus of translational science is to bring inventions and intellectual property developed in an academic environment into the commercial marketplace where it can meet a need.

In an opinion paper published in the September issue of '*Clinical Chemistry*,' Dr. Una Ryan from Diagnostics for All, a Massachusetts-based nonprofit organization, presented a unique approach to business strategy as a means to enable change in global healthcare. She is our guest in this podcast.

Dr. Ryan, it's difficult enough addressing issues in developing world, low resource situations, but how does one deal with those in the face of a tough economic climate like this?

Dr. Una Ryan: Yes, Bob, these are very tough economic times, but what I have found, and I've lived through similar downturns in the economy, is sometimes it's better to think of others. And if you can identify a clear need and you have a case for a good solution, I think the mission is important and that drives the ability to get funded.

Bob Barrett: What are the advantages of a nonprofit versus a for-profit startup for addressing global health?

Dr. Una Ryan: Well, a nonprofit gives one access to what's called a non-dilutive funding, what the rest of us call grants, and these are extremely useful for developing technology, not requiring you to have an investment of a financial return type and as you improve and develop the technology, you find you have really leveraged that grant income.

If you have a for-profit, I think the importance of that is, it helps you to understand the market, and in our case what was really important was to understand affordability.

We are not against profit, we just want to make sure that the products that Diagnostics for All makes are affordable to end-users, and by end-users we are really addressing the 60% people who live beyond the reach of major medical centers and big laboratories.

So a for-profit gives you sustainability, because those people need your product. If they are affordable and useful, they buy them. So both nonprofit and for-profit provide somewhat different advantages.

Bob Barrett: Is there a way to combine the benefits from each model?

Dr. Una Ryan: Well, that's what we try to do at Diagnostics for All, which I will often call DFA. DFA was initially founded as a nonprofit, and so it was eligible for grant funding, but I come from the biotech community and I feel that there is an importance to revenue because of this issue of sustainability. It's the concept that you can't live on other people's charity forever.

Some people manage it, some organizations manage it, but I think if you really want to get products out there and test whether they are what people need, there is a huge advantage to having a revenue stream and that goes on so long as your product is useful and affordable.

Bob Barrett: But then why are there so many global health initiatives that never make it to the product stage and end up really not helping anyone?

Dr. Una Ryan: I think that's a very good point. There are many needs, big needs in the world, and there are many people with noble ideas, but I think this word I keep using and I use it a little differently from others, is sustainability.

It's important to think long-term. It's important for the management to think long-term, and if one brings in investors, it's important that they think long-term, because if the inventors simply want to exit when they believe the company has some value and they can get a good return, you may never get to those products that were part of the original mission.

So at DFA we wanted to be sure that we stayed on message, on mission, all the way through to the end. That was the point of initially developing the technology with grant money, but then having a wholly-owned, for-profit subsidiary that could receive royalty income, revenues, in general, to see DFA into the future. Give it its own legs to stand on.

Bob Barrett: We hear so much about the work of the Gates Foundation. Are they really the only source of funding for charitable efforts in the developing world?

Dr. Una Ryan: No, I think that that's actually quite a common misconception. They certainly do the biggest job and it's a wonderful foundation without which we probably wouldn't survive, but DFA, for example, has funding from USAID, from the British organization DFID which stands for Department for International Development.

We also have some US government funding through DARPA and DITRA, and those two grants are held jointly with the Whitesides laboratory at Harvard University who originally developed the patents behind DFA's devices, and remember,

there are different sorts of Gates funding. There are the Grand Challenges and Exploration. So we have managed to diversify funding with several different grant sponsor organizations and there are many more, many more.

Bob Barrett: How do you recruit people for a nonprofit with the small margin opportunities and no stock options?

Dr. Una Ryan: One might think that that would be a problem and that the whole world is out there greedy for stock options, but I have found throughout my career that people want to do something useful, they want to do something important.

So I think first of all you need to inspire them with the message, with the mission, with the story. Tell them how important their work will be in that mission, and I think you do have to pay fair wages. Just because people are doing something "good," they shouldn't be shortchanged.

But I think sometimes the stock options are overrated when you compare it with the concept of really making a contribution, solving problems in the world. So inspiration, I think, comes first.

Bob Barrett: Well, since you've run both public and private companies and always managed to address pressing problems in the developing world such as diarrheal vaccines, clean water, inexpensive diagnostics, can you tell us which business approach actually works?

Dr. Una Ryan: It's a good question, and unfortunately, these take a long career or perhaps even a lifetime to answer. I did find that running a public company, again, one can make very, very good use of the Gates Foundation funding. For example, to take a product that would be useful for a high-margin opportunity, let's say, traveler's vaccines, and take those same product opportunities and address children who are actually dying of these diseases in the developing world.

So sometimes when you have a dual market like that, a for-profit public company model works very well, but it doesn't work for everything. You have to have a product that's accessible and useful to both markets. I don't think that the combination of two markets work so well for startups, because as I said at the beginning, I think VCs have their own agenda and as they should, it's investor's money. They want to exit at a good multiple in a relatively short time and that's their goal, and fine, a worthy goal, but it's not always the way to get to a product.

So I'm not sure that the two markets, the dual markets, or the tiered pricing works very, very well for startups. So that's why, to ensure sustainability, DFA has both of these

arms, a nonprofit that receives grants, and a wholly-owned for-profit subsidiary that can receive royalty income, revenue income.

So this gives you the best of both worlds. You can receive charitable donations through the nonprofit and you pay taxes on and repay your IP or whatever other obligations you have with your for-profit arm.

Bob Barrett: Well, finally, Dr. Ryan, do you think you've created a business model that others could use?

Dr. Una Ryan: Initially, I was just anxious to find a business model that would be useful for DFA and would achieve the original mission of DFA to help people in the developing world, and a very much broader vision of trying to give a different way of looking at healthcare costs in both the developing and the developed world.

But it seems now, from the kinds of questions I get at meetings, that people see this as a very useful model and there have been many requests from nonprofits, and actually from venture capitalists, to describe the model and see if others could use it.

My caution would be: you have to have the right kind of technology. We have the Whitesides paper microfluidics technology which is really a platform technology. So we have many ways we can get to value.

I am not sure for a single product company this model would work, but I hope that we will be able to forge the way so that other people can be very successful too.

Bob Barrett: Dr. Una Ryan is President and CEO of Diagnostics for All, a nonprofit focused on low-cost, easy-to-use diagnostics for the developing world. She's been our guest in this podcast from '*Clinical Chemistry*.'

I am Bob Barrett. Thanks for listening!

Total Duration: 10 Minutes