



A Win-Win: Communications Technology and Global Health

Just Business

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Transcript

JULIA KENNEDY: Welcome to Just Business, a series of interviews on global business ethics. Today we're talking about ways businesses can use technology to make global health profitable.

David Aylward of [Ashoka](#) specializes in a new sector called mobile health, which uses cell phone and other communications technologies to connect poor patients in developing nations to high-level health care.

You are working to educate corporations about the opportunities in these markets. But, David, why don't we start with your work at Ashoka, an NGO that specializes in social enterprise. Tell me how you got to Ashoka and what you do there.

DAVID AYLWARD: I was invited here several months ago—I've been here three months—to focus on helping them develop health in the developing world, to develop models for the delivery of primary care at the base of the pyramid.

There is a fellow here named [Al Hammond](#) who is a leader in that field, and I had been working with him in my last job. When I left the [mHealth Alliance](#), he said, "Come on over to Ashoka and let's work on different models to deliver health."

JULIA KENNEDY: And, of course, Ashoka is known for its social enterprise work. So why don't you explain to our listeners a little bit about the intersection between global health and social enterprise.

DAVID AYLWARD: There are social entrepreneurs all over the world who have been working on health for a long time, trying to figure out service models for the delivery of health to the poorest people in the world. They have new tools these days, the cell phone and wireless networks, which did not exist until recently. So what we're focused on is the intersection of social entrepreneurs with those new information technologies and then how those can fit together in a broader ecosystem, what we call a hybrid value chain, working with other entities, like wireless carriers, hospitals, insurance companies, and others to deliver a full package of health.

JULIA KENNEDY: Give me an example of how a cell phone can really help augment that package of health.

DAVID AYLWARD: There are really two levels of it. One, the easiest to understand, is voice, where

the ability for someone who is a long distance from a doctor or a hospital can simply pick up their cell phone, call, ask advice, and ask for help, just like we do in this country, where people can give guidance and instructions remotely.

The next level up from that is using it for data, information connections. Wherever you are, information about your electronic health record can be accessed and supplemented. In the not-too-distant future, we will have an array of remote diagnostic devices, monitoring devices, which, connected through your cell phone, will allow unskilled people to diagnose and yourself to diagnose illness at a distance.

JULIA KENNEDY: I heard something about this actually on NPR [National Public Radio] recently about contact lenses as a potential way to do diagnostics. But tell me a little bit about how cell phones can do that and what technology can be embedded to do that.

DAVID AYLWARD: In my last position at the mHealth Alliance, we gave the Innovation Award for 2011 to a company that had invented a plastic lens that costs about \$2 to put onto a cell phone. Then you take a picture of someone's eye, and it produces a prescription for eyeglasses.

JULIA KENNEDY: Wow!

DAVID AYLWARD: It sends it back to the factory where they make the glasses, and then they ship them out to the person in the field. So, if you can imagine, this would be making eyeglasses accessible to people without having to walk into the city, find an ophthalmologist or an optometrist, and buy them.

JULIA KENNEDY: That's incredible. And how do you start testing these technologies in the field and figuring out how common it is for people to adapt to using them, because I would imagine that's one of the hurdles to get over in the developing world—how do you make sure that they will be adopted?

DAVID AYLWARD: That's where groups like the social enterprises and Ashoka fellows set-up comes in. They create entities that can test these kinds of systems and devices in the field, figure out what works, what doesn't, feed that back into the global network that we have created and are creating, and then feed that back to manufacturers and others in, hopefully, what will become a more efficient feedback loop.

JULIA KENNEDY: Is the goal to make these products profitable? How do you make sure they're profitable but affordable and balance those incentives?

DAVID AYLWARD: Great question. That is really the challenge, how you make it sustainable. Once we find systems, devices, and products that have health impact, how do you get those spread out all over the world? The way you do that is you find out what is a sustainable business model to support them. Part of that is getting the price right, getting the price low.

By analogy, if you look at what happened with wireless, here you have devices that got very inexpensive, and service that got very inexpensive. Therefore people in the poorest parts of the world are now paying cash so that they can have access to information. We need to do the same thing in health.

JULIA KENNEDY: To find sort of a leapfrog technology, if you will?

DAVID AYLWARD: Yes, and pricing. A key to that is what are the global commonalities, so we don't end up trying to produce one set of devices for Tanzania, another set for Kenya, and another set for southern India.

JULIA KENNEDY: How do you go about trying to find that key—a common consumer product that will cross cultures like that?

DAVID AYLWARD: You work with networks. For example, Ashoka has more than 600 health fellows, and there are lots of people like that around the world. The wonder of the Internet is that we can connect them in real time and have these conversations, if you try. If you go looking for that conversation, you can find it. That is exactly one of the roles that we're undertaking.

JULIA KENNEDY: Tell me how you got into public health. We were chatting a little bit before we started recording this interview, and you said you largely have a background in communications. You've been legislative director to U.S. Representative Timothy Wirth. You've worked with competition in telecommunications with the breakup of AT&T, so that maybe explains some of the mobile piece. But how did all of this really wide-ranging career come together with this public health mission?

DAVID AYLWARD: It's funny because sometimes people think I planned it, and I didn't. I just kept doing interesting things, one after the other, and ended up here. I spent about 15 years working on emergency response and emergency medicine in the United States, and how to use the wireless and modern information technologies to do that.

Then two years ago I was asked to head the mHealth Alliance, which is hosted by the [UN Foundation](#) and supported by the [Rockefeller Foundation](#) and [Vodafone Foundation](#) and others. So I had the privilege for two years of starting a new organization to globally take advantage of wireless and the linkage to health, so I got to learn a lot about what is possible and who needs to be at the table.

It's a fascinating area, because there's no one group that can do it by itself. Health people can't do it by themselves. They need to be working with the IT industry and the wireless industry. And they need to be working with the pharmaceutical industry and social entrepreneurs. So it is a very rich ecosystem which is exciting, and there is a lot to be learned there. On the other hand, it is very complicated and these groups are not used to working together.

JULIA KENNEDY: So communication becomes very key, right?

DAVID AYLWARD: Yes. The nice thing about the communication and the wireless is it's brand new, and so it becomes a neutral reason for people to get together to talk about doing something differently, approaching this in a different manner. So it's a new way to come together to have the conversation. Frankly, most of the conversation is about business models and procedural models and about people issues; it's not about technology. The technology is not that complicated, but the technology provides a reason for people to come together around the table and seek solutions.

JULIA KENNEDY: One of the issues with this kind of technology that I know has been brought up for similar initiatives in rural areas of the United States is that you can talk with a

specialist.

It's wonderful to have that kind of access to a specialist that might not be within reasonable driving distance of your home over Skype or something, which is a very basic level of the type of communications that you've been talking about. But one of the issues there is there are certain limitations to that type of long-distance communication, right? Are some of those discussions happening with these technologies in the developing world, too?

DAVID AYLWARD: Sure, yes. I think there are two limitations that are important in the example you raised. One is that a cell phone can't operate on anybody, so long-distance communication has its limitations.

The second one is that simply having a remote connection to a doctor is not at all the kind of transformation that we need to have. There are not enough doctors in the world. There are not enough doctors in the United States, much less India, to think that the mere remote access to one is going to solve the problem.

What we need is much more sophisticated information systems that use IT to be the force multiplier of a limited number of doctors and medical professionals. So we need a different system than you sitting across the desk or a TV screen from a doctor.

JULIA KENNEDY: **There is also the argument that touch can both transmit information that is difficult to capture over technology, but also can transmit healing properties to someone who is ill. So how to get around that?**

DAVID AYLWARD: A lot of people can touch. The much bigger problem that we face in the developing world is lack of knowledge, that people don't know what to do and that we don't know what to do with them. So being able to diagnose that you have malaria when you're 100 kilometers from the clinic allows us to give you the right medicine 100 kilometers from the clinic.

Most women give birth at home in the developing world. Making sure they know what to do and what are the signs of an emergency—so that the few who need to get to emergency care can do so—is much more important than having all of them go to a birthing facility, for example. Most health can be routinized. Most health can be standardized. If we can find the people who need the more expensive care and sophisticated care, and then get them to it—in other words, use information systems to triage—we will be much better off.

JULIA KENNEDY: **We've talked a lot about diagnosis. Let's also talk about pharmaceuticals and how mobile devices can help bridge that gap of making sure people are taking their medicine, making sure they have the right medicine. What are some of the issues that come up in the developing world that can be addressed by these types of technologies with pharmaceuticals?**

DAVID AYLWARD: A great issue, very important area, one we spend a lot of time looking at.

The first one is access to medicines. One of the big issues is stockouts. Because of the lack of good information on inventory, you find that it's very, very common for there to be enough of a medicine in a country but having it not be in the right places. So some places have far too much and some don't have enough.

The second issue is one you alluded to, which is adherence. In the developed and developing worlds, there's a huge problem with getting people to take their medicines. They don't come back for the refill for chronic medicines, or they don't take them on a regular basis. Having a real-time information system can track that, report on it, and measure what's going on. For example, with diabetes, taking your insulin level and your blood every day to see whether you're taking your insulin properly allows keeping track of a patient, and keeping track of what they are supposed to be doing. Plus you can use the system for reminders when they don't.

So today's system in both the developed and the developing world is an intermittent contact with a doctor or a nurse. Every couple of weeks you come in for your appointment. Particularly when you're taking medicine and you have chronic diseases, what you want is a daily contact. That's simply not cost effective or possible in either of these markets. But the wireless technology makes it possible.

JULIA KENNEDY: Again, I'm just throwing out hypotheticals here, but what if you come up against a person or even a culture that eschews taking these daily medications? There is a certain level that you can't get to even with technology, right?

DAVID AYLWARD: Sure. You look at a culture like ours, which is certainly not a culture that's averse to medicine or taking pills, and we have a huge problem with people complying with what the doctors want them to do. There is both a laziness component, and there's a lack-of-education component. None of those are solved by the mere presence of a cell phone. All of those are made better by the possibility of an information pathway to and from a person all the time.

JULIA KENNEDY: And even an opportunity to communicate that—well, the reason I'm not taking it is there's this side effect.

DAVID AYLWARD: Yes, exactly.

JULIA KENNEDY: Or a place to go that's easy access.

DAVID AYLWARD: Exactly.

JULIA KENNEDY: I've heard these kinds of ideas to mobilize technology for public health from a variety of different organizations. You worked on it at mHealth Alliance. You're now at Ashoka. How much communication and coalition building is there within this space? Could there be more?

DAVID AYLWARD: Not nearly enough. There has to be lots more. I think the best way to describe it is that there is a necessary ecosystem that includes public and private parties, each playing different roles, each of which has a different need. Some have a return-on-capital need, some have a social need, and some have a governmental need. But all of them have different needs, and we need to determine who we need at the table doing what in order to deploy these modern systems.

To be more specific, assuming the presence of an active social entrepreneur serving people at the base of the pyramid, what are their costs, and what are their revenue needs? Those numbers will vary depending on what their IT costs are. What is it going to cost them to have an mHealth system? Well, it will cost them more or less depending on how much the wireless company needs. Then all of that will depend to some degree on how much the pharma company needs. All of that will depend on

how much support the government is providing.

So we need all of those people around the table to have a conversation about a new kind of transformed, more intelligent health system, one that's informed by these knowledge systems every step of the way. But in order to make that work, we need folks to plan it. It just doesn't happen on its own.

JULIA KENNEDY: You have a great blog, [Gray Thoughts from the Middle Kingdom](#). In a recent entry you wrote an entry/slash/manifesto about how pharmaceutical companies can really benefit from this mobile wireless technology or from mHealth systems. I am curious if you can summarize that for us here and then also talk about whether you're seeing more interest from pharmaceutical companies in these markets.

DAVID AYLWARD: What I wrote was that there are four major reasons why pharmaceutical companies should want to try to make these systems happen, why they should want to go out of their way to help create the overall ecosystem beyond their particular narrow self-interest. Because what I argued was that their self-interest will be served by these ecosystems. I wasn't asking for charity; I was asking for enlightened self-interest.

In addition to removing stockouts and learning about compliance issues, the most important thing that they would get out of this is a massive database of electronic health records. Here they could benefit from much broader and inexpensive research on what works and what doesn't work.

If we were successful in having an electronic health record for every person in the world—one of our goals—and if this record was accessible with a cell phone by all the parties that are treating that person and owned by that person, that provides, when you multiply that times millions of individuals, a very large database from which we can really make progress in understanding what works and what doesn't work in health, not just pharmaceuticals but any sort of health.

Now, I should add, what that comment raises is the need to very carefully build privacy and security structures into any such mHealth system, because I am not suggesting for one second that corporations should get access willy-nilly to anybody's personal medical records.

JULIA KENNEDY: Social security numbers, et cetera. Or whatever they may be. I'm sorry I'm so U.S.-centric in that question.

DAVID AYLWARD: But beyond the numbers, having a database from which we can research the impact on 30-to-35-year-old women of a certain kind of medicine is quite different than having access to those individual women's health records.

JULIA KENNEDY: Sure. The second part of my question is, are you seeing that buy-in start to happen? Are you starting to see any of these medical companies respond?

DAVID AYLWARD: Yes, a lot of individual trials of individual pieces are using this technology. For example, Novartis has worked very successfully with mHealth to deal with stockouts of antimalarial drugs in Tanzania, and Pfizer has a trial going in a number of countries.

But what we have not seen, and I think where the biggest benefit will come, is what I call integrated systems, where the IT—the information technologies and the wireless—underlies an entire health

system linking all the parties in it, so that information flows up and down the continuum of care, not just solving individual issues within it. We haven't yet seen those kinds of integrated systems.

JULIA KENNEDY: Another debate that you often hear about in the public health realm dealing with pharmaceutical companies is that there is an incentive in the pharmaceutical industry to develop, promote, and invest in drugs that are necessary for chronic illnesses, for expensive drugs, and that is often not what's needed as much in the developing world. That vaccines and critical illnesses really need treatments and that pharmaceutical companies aren't responding because that's not where the profit margins lie.

What do you think about that debate? Is it really reflecting what is going on?

DAVID AYLWARD: I think it's a valid debate. I think it's an important one. We've seen significant success in that area. So folks like [GAVI](#), the [Clinton Foundation](#), [Bill Clinton](#) individually, and others have done a terrific job trying to aggregate demand for vaccines—I should mention the [Gates Foundation](#) as well—to aggregate global demand so that volume purchasing can drive down prices for the developing world.

We are not going to change the fact that a blockbuster cholesterol drug will make lots more money than a vaccine for measles. But if we aggregate the demand across the developing world for the measles vaccine, then we can drive the price down or we can create interest in manufacturing it.

In a similar way, we want to bring together the demand for wireless for mHealth software, devices, and products, so that those become available at the low prices, and at high quality that we've seen in the underlying wireless systems globally.

JULIA KENNEDY: What's next in terms of your strategy to develop mHealth databases and to move this to the next step?

DAVID AYLWARD: We're assembling with other parties trying to get that ecosystem around the table that I was talking about, in Bangladesh, in India, in a couple of other high-profile countries, and then at a global level. We are trying to get the conversation going between leaders of these different pieces of the ecosystem who need to work together to develop an understanding of how they work together. Then we need to have specific plans to put that on the ground in countries, like India-specific programs.

Ashoka has a spinoff called [E Health Points](#)—the actual name of the company is [Health Point Services](#). This is a for-profit clinic model that is now being demonstrated in the Punjab of India, where for very, very small amounts of money people can get diagnostics and see a doctor over a video link. We are adding mHealth to that, and then we will be working with other partners to build a full ecosystem around that. But it is through examples of that kind that we think can show how mHealth can be brought to scale both abroad and, frankly, in this country.

JULIA KENNEDY: Why are India and Bangladesh good places to start?

DAVID AYLWARD: They have excellent wireless coverage. They have massive needs in this area. And they have very, very strong in-country leadership. There are very strong NGOs in both countries that want to be involved. There are very strong Ashoka fellows that want to be involved. As I mentioned, there is a Health Point Services, which is an Ashoka spinoff, a social business, in India.

We have very, very strong interest in both countries in taking advantage of this, both for rural areas but also for the urban poor.

JULIA KENNEDY: When you were at mHealth, you partnered with Health Point Services back in 2009, right? How have you seen that kind of take off over the last couple of years?

DAVID AYLWARD: It's very interesting. That's why I came here, because I already knew about them. They have developed a for-profit, successful model combining the sale of clean water and health services. I think one of the insights that we and others are having is that we need to be focused on more than health care. We need to be focused on wellness, keeping people well. So combining clean water with health for starters was a good model. Finding a for-profit model that works addresses the sustainability issue. So, for both reasons, I was attracted to working with these folks.

JULIA KENNEDY: I can imagine you have to be measuring the impact to look and see if you can scale this elsewhere.

DAVID AYLWARD: Yes. You are really trying to measure two impacts. You're trying to measure the health impact, on the one hand, but also the economic impact, on the other. If you have a model that is making money, that is supporting itself, almost by definition it has the possibilities of scaling. So part of this is how to figure out that side of the equation, while we're working with global and regional experts on the health side.

JULIA KENNEDY: Why public health? Why does this speak to you? Why have you stayed in it, and why are you passionate about it?

DAVID AYLWARD: I have always been passionate about the power of information technologies to improve society. That is really the thread that runs throughout my career, from understanding the value of opening up to the very powerful forces of competition, opening up our market to that in the 1970s and 1980s when we used to have a monopoly here. We've seen the power of that globally. Having more than one provider of wireless in most of these countries is the reason that we have this wireless revolution across the world, that unleashing of competition.

About 15 years ago, I got interested in the application in emergency response in medicine and saw what was possible. And today, globally, we have this enormous challenge of chronic disease, on the one hand, which is challenging the United States and developed countries. At the same time we have in the developing world the problem of access to quality medicine.

The old systems simply cannot work. They are not going to work. So there is an opportunity to apply to this new problem of the tidal wave of chronic disease, and the old problem of access to medicine from these new technologies. That is very, very exciting to me.

JULIA KENNEDY: After listening to you for half an hour, it's exciting to me, too. Thank you so much for explaining it and for coming onto Just Business.

DAVID AYLWARD: Thank you very much.

Audio

David Aylward of Ashoka specializes in a new sector called mobile health, which uses cell phone and other communications technology to connect poor patients in developing nations to high-level

health care. He is working to educate corporations about the opportunities in these markets.

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