ANTI-POVERTY PROJECTS:
Scaling Up Effective Innovations
case study | rich and poor unit

EARTH matters
Studies For Our Global Future

Want to change the world? Stop inventing.

At least that is what Nicholas Fusso will tell you. Fusso manages D-Prize, a competition that focuses on supporting scalable innovations to reduce poverty. The premise is that the world already has effective poverty solutions. That's where the "D" comes in. It stands for distribution: getting the proven solutions into the hands of the world's poorest people. Fusso posits that inventions only become world-changing innovations when they make it out of the lab and reach the people who actually need them.[1]

This message may be heartening to those of us who are not yet engineers, programmers, or designers, or just feel daunted by the idea of inventing something from scratch. Many anti-poverty tools are out there; great minds just need to employ them.

Bed nets for malaria prevention

Bed nets for malaria prevention are a prime example of the power of distribution. Malaria is a life-threatening disease spread by mosquito bites. The World Health Organization estimates that in 2015 there were 212 million cases of malaria globally. Some 429,000 people died of the disease, which is particularly dangerous for children. Half of the global population is at risk for the disease, which currently has no approved vaccine.[2]

Babies protected by a bed net in Malawi.

One of the best ways to stop the spread of malaria is by keeping mosquitoes away from sleeping people with insecticide-treated bed nets. Research shows that every 1,000 nets deployed can avert at least 5 childhood deaths. At a cost of about $5 per net, a $1,000 investment can save a child's life.[3]

Fusso notes that the modern insecticide-treated mosquito net was developed around 1980, but deployment was meager, and malaria fatalities continued to increase. It wasn't until after 2004, when the development community began taking net distribution seriously, that malaria deaths began to drop. In that year, just 3 percent of the sub-Saharan African population at risk of malaria had access to a treated net in their household. But an increase in funding for net distribution allowed some 30 million mosquito nets to be distributed globally that year.

Net distribution efforts have increased since. Between 2013 and 2015, 510 million insecticide-treated mosquito nets were distributed in sub-Saharan Africa. By 2015 over half of the African population at risk of malaria was sleeping under a treated net. By itself, the invention of the mosquito net saved zero lives. But getting treated nets to people who would use them has saved tens of thousands.[4]

Sugar daddy awareness classes

Improving health outcomes is one key for reducing poverty. Part of that is **family planning**. In sub-Saharan Africa, as many as one out of every ten teenage girls becomes pregnant, dramatically increasing the odds that she will drop out of school and lose access to that important ladder to climb out of poverty. A root cause of this is the "sugar daddy" problem, where older men give teens gifts and money with the expectation of developing a sexual relationship. Girls in these relationships often lack negotiating power to demand abstinence or safer sex practices, like the use of condoms. They also tend to have the misperception that men with more money and stability are less likely than other teens to be carriers of HIV, when the opposite is true.[5]

In 2004 Pascaline Dupas, now a professor at Stanford University, conducted a randomized control trial in Kenya to examine how providing information about HIV and AIDS affected teen sexual behavior. She found that eighth grade girls who participated in a single 40-minute class focusing on the relative risks of HIV transmission—including a short video about "sugar daddies," a statistics review of how infection rates increase with age, and an open discussion period—were 28 percent less likely to become pregnant over the next year than a group that received a traditional abstinence-focused HIV/AIDS curriculum. And they were 62 percent more likely to avoid pregnancy by an older man.[6]

This is a high success rate for a low-cost intervention, yet D-prize's Fusso laments that in the years following the study, the successful curriculum was just sitting on a shelf. That's where D-prize came in. It gave modest start-up funding, which was then multiplied by other grants, to a group called Young 1ove. Young 1ove (pronounced "love" but with a numeral one instead of an "I") was started by a young MIT graduate named Noam Angrist in 2013 with the goal of bringing "sugar daddy awareness" classes to millions of youth across Southern Africa. In the organization's first two years it taught well over 30,000 Botswanan students. With the support of the Botswana Ministry of Education, it took the proven curriculum into schools across the country, likely preventing hundreds of HIV infections and teen pregnancies. Now other groups are working to distribute the curriculum in Togo and Ghana.[7]

Light for the poorest

Another arena where the distribution of development solutions can make great gains is energy. Around the world, more than 1 billion people do not have access to electricity. Most rely on kerosene lanterns to see at night. The problem is that kerosene is a dirty and dangerous fuel. Burning it worsens indoor air quality, harming health. It can cause burns and start fires. And kerosene lanterns generally do not even produce good quality light—the kind of lighting that is useful for reading or studying. The fuel is also expensive. The World Health Organization notes that "those without access to electricity spend up to 1,000 times more per unit of light than those who have a reliable electricity supply." They are spending a greater share of their income for worse quality light.[8]

Women holding solar-powered lights they can use instead of kerosine lamps.

Enter Essmart. Essmart is one of the 2013 D-prize winners. Founded by Jackie Stenson and Diana Jue, Essmart works to get solar lamps to the over 400 million people in India who rely on kerosene lanterns. Essmart bulk orders solar lamps, which are 15 times brighter than kerosene lanterns, and gets them into small rural markets around the country that otherwise would not be able to carry them. The logistics challenges were ample; the pair of young entrepreneurs took lessons from far larger corporations, like Coca-Cola, that manage to move their products to some of the most remote areas on the planet.

In addition to the lamps, Essmart delivers solar phone chargers, cleaner cookstoves, reusable water filters, and irrigation devices. Just in the company's first two years, it helped to sustainably light the homes of nearly 50,000 people. In late 2016 the company surpassed the break-even point. With 90 percent of India's consumer spending occurring at these small village shops, their room for growth is huge.[9]

With solar lamps, families are more productive. Work hours can increase. Household incomes increase by up to a third. And children's time studying doubles. But so far only 5 percent of the world's people who could benefit from them have them. Thus the importance of creative thinking about distribution.

Innovation, not invention

What connects all these endeavors is that the products were not new. Fusso explains that these entrepreneurs "never spent time in a lab. They never prototyped anything. Instead they bought a plane ticket, they hired a staff, and they started turning a proven invention into a real high-impact innovation." Distribution was the key.[10]

Distribution innovations can help lift hundreds of millions of people out of poverty. The exciting thing is that the ideas for spreading life-changing inventions can come from people young and old, rich and poor, educated and unschooled. No training in engineering is necessary. To be clear, new inventions will certainly assist and accelerate development efforts in the future. Work on HIV or malaria vaccines should not stop. But with 10 percent of the world's population living on less than $2 a day, it seems immoral to not try to spread the high-impact and low-cost poverty-reducing technologies that already exist their way.[11]

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[1]Note: this case study draws on communications with Nicholas Fusso, D-prize and Fusso's 2015 TedX talk in Provo, Utah, available at https://www.youtube.com/watch?v=GN1MEHHD6OI&t=213s

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[11]The World Bank. Poverty. http://www.worldbank.org/en/topic/poverty/overview.