



## Customer Satisfaction Before Profits at the Base of the Pyramid

### After-sales service in the Base of the Pyramid can be a profitable driver of technology adoption.

Since the early 2000s, there has been an increasing interest in new, innovative technologies for low-income users in emerging markets around the world. Newly developed products like affordable solar lanterns, non-electric water purifiers, and smoke-reducing cookstoves have the potential to address the unmet needs of millions of people. Strong interest in these technologies is demonstrated by the growth of academic programs in which students design products for international development, and global initiatives like the Global Alliance for Clean Cookstoves, which plans to distribute 100 million clean and efficient stoves by 2020.

The idea of designing technologies for use at the Bottom of the Pyramid (BOP) is not new. After World War II, economists like E.F. Schumacher began considering a new form of technology to create non-agricultural jobs in rural areas of newly independent countries. Today, the idea of “**design for the other 90%**” is a growing movement that has inspired life-improving technologies like non-electric infant incubators, bicycle-powered mobile phone chargers, and drip irrigation systems for small-plot farmers.

There are hundreds of life-improving technologies that meet the critical needs of populations around the world. However, there is a very distinctive problem with these life-improving technologies for

development. No matter how well-designed or well-intentioned they may be, there is no guarantee that they **will reach the people for whom they are made**.

### Failure to scale

The failure in scaling the distribution of life-improving technologies occurs because of low consumer awareness, affordability, lack of availability, risk aversion, and lack of confidence in the **performance of these products**. Although non-profit organisations, government programs, large multinational companies, and small social enterprises have attempted to move these technologies out of the lab and into the land, no strategy has been completely successful. In particular, non-profit organisations that have traditionally distributed technologies on a project-by-project basis are limited in funding and scale. Additionally, inappropriate design and lack of long-term maintenance and proper incentives have led to failures, such as **Play Pumps** in Mozambique. Another well-utilised dissemination strategy consists of increasing consumer awareness and access through massive door-to-door campaigns that combine education and subsidised direct sales to consumers. However, managing the operations of these massive campaigns is expensive and labour-intensive, and scaling these operations is, in many cases, difficult.

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For social enterprises looking to achieve high customer adoption and satisfaction simultaneously, overcoming these challenges are crucial. In our working paper, **Consumer Education and Regret Returns in a Social Enterprise**, we sought to understand how such enterprises can be profitable while increasing the adoption of their products.

Our research was motivated by the operations strategy challenges faced by **Essmart**, a social enterprise that distributes life-improving technologies (such as solar lamps and clean cookstoves) in India. Essmart developed a novel distribution model that uses small local “mom-and-pop” retail shops as points of sale for new life-improving technologies, and also as warranty providers and collectors of returned products. This business model leverages the fact that, in India, **90 percent of the annual retail spending occurs through more than 14 million small local retailers**.

### Customer satisfaction is key

We developed a modelling framework to study how a social enterprise can deal with these problems. We use Essmart's operations strategy as a starting point, and we model a supply chain with a distributor (such as Essmart), a retailer and the consumers.

Essmart's operations strategy has three main components: distribute, demonstrate and guarantee:

- To *distribute* products, Essmart partners with local retail shops and offers expedited product delivery to these retailers. Specifically, they distribute a catalogue with all the products and a few sample items. When the retailer has a sales opportunity, Essmart delivers the product within a few days. This “deliver-to-order” strategy effectively removes the inventory risk from the retailer. This is important since the cost of many of the products sold by Essmart is equivalent to 2-3 weeks of the average salary in rural India.
- To *demonstrate* products Essmart representatives educate consumers and the retailer at local shops. These demonstrations are significantly less labour-intensive than door-to-door campaigns, but have a more limited reach.
- To *guarantee* the quality of their products, Essmart provides after-sales service to customers and also repairs faulty products under warranty. To do this, it operates “reverse logistics”, which is where companies create the ability for their supply chain to work backwards, buying back and collecting used or unwanted products, or in

Essmart's case, allowing for “regret returns” and warranty guarantees through its network of local retailers.

We find that if the distributor highly values customer satisfaction over immediate profits, which is likely in the case of social enterprises keen to increase adoption, reverse logistics is more effective in driving customer satisfaction than marketing efforts. Distributors who prize customer satisfaction are more likely to invest in reverse logistics versus information improvement, we observe. This finding is stronger when consumers are highly risk averse, budget-constrained and have limited protection from the risk of poor purchasing decisions, which is the case in many developing markets.

Our paper also finds that in equilibrium, both increasing the accuracy of information to customers through demonstrations and providing a reverse logistics channel are strategic substitutes, i.e. one could replace the other. This is especially important depending on the distributor's motivation. But generally, it is optimal to invest in one of them.

For Essmart, reverse logistics are in tune with its social mission, since both they and their investors are willing to sacrifice short-term profits in favour of increasing the customer base through adoption.

### Take on some risk

In emerging markets, retailers also take on a lot of risk when buying products. Essmart mitigates the risk by taking some on its own shoulders. It does this by removing inventory risk from its retailers by giving them a catalogue with all the products and a few sample items. When the retailer has a sales opportunity, Essmart delivers the product within a few days.

But this alone does not make sales easier. Another observation we glean from our model is that without the intervention from the distributor in the form of reverse logistics or information, it may be unprofitable for the retailer to carry the product even if the distributor provides delivery to order. This suggests that distributors should be proactive in providing information or increasing the salvage value from returns to allow for refunds or both, to encourage the retailer to carry its product.

By clipping the downside risk consumers face, Essmart can provide confidence and assure customers that they're not going to lose anything in the purchase. If they eventually deem the product's value to be less than a refund, they'll be fully empowered to take advantage of it.

Similar ideals are common in the developed world start-up scene, where customer adoption and

satisfaction are prioritised over immediate profits. There's a reason Zappos and equivalent online retailers bend over backwards to make sure you can return everything you buy for a full refund if it doesn't meet expectations.

While companies like Zappos and Essmart have discovered the key to customer adoption and satisfaction, many, especially those operating in developing markets, still operate like Amazon or Walmart, transferring existing operating models into such markets to distribute products. What our research shows is that getting it right is not easy and may not be immediately profitable, but driving adoption and satisfaction require organisations to lift some risk from the customers' shoulders.

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