

Helping 400 million people give up smoking

With more than 1.6 million people dying annually due to smoke inhalation from indoor wood burning stoves, Philips Design came up with an idea to effectively tackle the problem. This was part of 'Philanthropy by Design' a program which looks at promoting social empowerment through knowledge sharing, creativity and co-design.



Social responsibility is climbing ever higher on many corporate agendas these days. But whereas in the past companies may have given cash donations to non-governmental organizations (NGOs), a new trend is now emerging. Known generally as strategic philanthropy, it usually involves companies applying their expertise or products in sponsorship projects targeted at local communities or specific segments of the population. The return on this participation is not measured in terms of profit, but by other indicators like an increase in brand equity and new learning to generate innovative sustainable solutions.

Meaningful solutions

At Philips Design this approach is known as Philanthropy by Design, a term coined by Stefano Marzano, CEO and Chief Creative Director. In short, it means leveraging on design creativity to provide meaningful solutions for empowering some of the more fragile categories of society. "Not only does it help many people living at very low income, it is also very beneficial for us," says Simona Rocchi, Director of Sustainable Design at Philips Design in Eindhoven. "It develops brand equity and trust, it is good for employees' motivation and can act as a source of inspiration. It also shows new ways of co-creating value through cooperation with 'unconventional' partners such as NGOs, local entrepreneurs and self-help groups for women."

An excellent example of what can be achieved by such an approach is the Chulha smokeless stove. The story of the Chulha effectively began in September 2005, when the Philips Design global community came together in Eindhoven for a workshop entitled 'A Sustainable Design Vision – Design for Sense & Simplicity'. The event aimed at envisioning products and services able to support NGOs in relieving the suffering of people in emergencies (e.g. earthquakes) or enhancing individual empowerment and local communities' socio-economic development. Approximately 80 design ideas emerged. After the workshop, these were filtered by criteria such as compliance with Philips corporate strategy, social investment policy alignment, technological feasibility and Millennium Development Goals fit (www.un.org/millenniumgoals/).

Killer in the kitchen

In the end, the proposal deemed most appropriate was a smokeless wood-burning stove, initially intended for rural and semi-urban India. "This idea seemed to have the best chance of helping the socially disadvantaged through leveraging our expertise and capabilities without involving sophisticated and expensive technologies," says Rocchi. The stove would be simple to use and maintain, locally produced and distributed, relatively cheap, easily made, and able to significantly reduce indoor pollution.

There are two versions of the Chulha smokeless stove; Sampoorna and Saral. The Sampoorna is an all-in-one unit intended for cooking/boiling with an integrated steamer for preparing rice, lentils etc. The Saral is a modular system which has a basic cooking block and which allows the addition of various other blocks for e.g. extra pots, steaming, or a 'hot box' for keeping food warm or heating it up. Both stove types are made of concrete and coated with local clay. It has been estimated that, compared to traditional cooking fires, the Sampoorna and Saral reduce indoor smoke pollution by up to 90%. The Sampoorna will cost roughly €8; the Saral €5. "We estimate that approximately 50% of the 700/800 million people living in rural and semi-rural areas in India who currently cook using biomass fuels could afford the stoves at this price," says Unmesh Kulkarni.

The last point is a major issue. Respiratory illness affects the health of the huge number of people living in developing societies who still cook indoors with biomass fuels (e.g. wood or dung). In fact, it is estimated that over 1.6 million people die as a result each year. India in particular is badly affected, accounting for 25% of such fatalities.

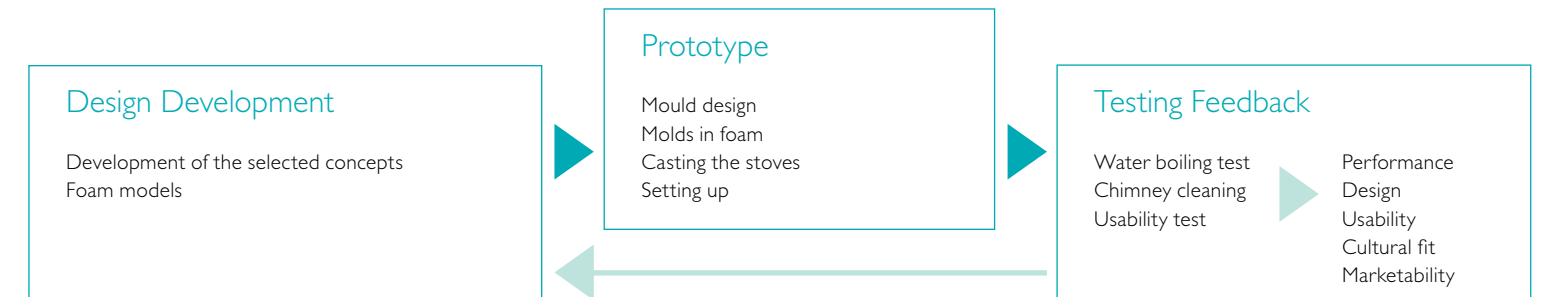
A collaborative effort

Over the course of a five-month period, a three-person design team from Philips Design Pune turned the initial design idea into two, field-tested prototypes. This was a collaborative effort involving local NGOs, entrepreneurs, self-help groups and a few families. Particularly fruitful was the cooperation with ARTI (Appropriate Rural Technology Institute), an NGO which develops and promotes innovative technologies to improve the quality of life in rural India. "ARTI has a lot of expertise in the smokeless cooking domain, and also has the facilities for training entrepreneurs locally," says Unmesh Kulkarni, Senior Design/Account Manager at Philips Design in Pune.

Deeper, more specific insights

While a certain amount of research had already been carried out on indoor air pollution for the Sustainable Design Vision workshop, additional knowledge of people's culinary habits and cooking behavior was necessary to develop a truly effective, context-specific solution. The design team – with the support of Green Earth, a local sustainable development agency – gathered deeper, more specific insights by carrying out research in several villages in Maharashtra state. The research consisted of introductory meetings, observations and in-depth interviews. Particular attention was reserved for women – the ones carrying out cooking activities – aged from 23 to 45. It soon became clear from the research that any successful stove would have to accept different biomass fuels, be widely available in different seasons and locations, adapt to people's needs when cooking 'chapatti' (bread), steaming rice, boiling water, and be able to accept different, non-standard cooking vessels. A concept definition workshop was then held with various relevant stakeholders (e.g. ARTI, self-help groups, local entrepreneurs and potential users).

Design 1: Sampoorna



Design 2: Saral



The main problems associated with stoves were discussed, along with the design proposals for the Chulha. “For example, people liked the idea of modularity and the steamer integrated into the stove,” says Kulkarni. At the end of the workshop, key concept features were pinpointed and subsequently visualized in detailed design sketches.

Clever chimney

Another aspect identified as being crucial was the chimney. “It is essentially the chimney which reduces pollution,” he continues, “but the feedback we got was that conventional chimneys, which were made from a single length of pipe, were difficult to transport, often requiring a small truck or cart. They were also often damaged in transit, and were extremely difficult to clean. All of these factors are obstacles which prevent people from using them. This is something we definitely wanted to address.” The Chulha stove has a chimney assembled from several sections, which makes it easier to manufacture and transport. It can also be opened up and even partly disassembled for easy cleaning. The design team is currently making product modifications based on the feedback received during testing. A key focus area is improving the manufacturing process by using vermiculite

material that will reduce stove’s weight and improve thermal efficiency. Design modifications, so the chimney can be fixed to the wall, are also being considered. Adjusted versions will be tested in a number of homes for final evaluation.

Donating IP

But this project is about much more than just designing a healthier, safer and more efficient way of cooking. The whole business model surrounding the Chulha is aimed at helping it gain widespread acceptance, even if that means using what many would consider unconventional means. Take intellectual property as an example. “We allow local stakeholders to use the IP and design for free as our philanthropic contribution to sustainable development,” says Rocchi. “In this way we make it much easier to achieve widespread distribution of the stoves and help keep costs down. This will not only create better living conditions for the users, but also stimulate local entrepreneurial activities with a low environmental impact.” Local players have been identified who will take care of manufacturing and distribution. “We have found a number of companies with suitable facilities for making the stoves,” says Kulkarni. “We are helping them

to work with more robust moulds from glass-fiber reinforced plastic because they last longer than steel moulds and enable more complex shapes to be created. These moulds are then used by the NGOs to actually make the stoves.” A complete support package is being created which includes not just the details of the stove’s physical design but also marketing information for entrepreneurs, communication materials for NGOs and installation instructions. A training program is also being developed together with ARTI.

In line with the brand pillars

But isn’t it a bit strange when Philips, a company renowned worldwide for technical innovation, comes up with a product made of clay and concrete? “Not at all,” says Rocchi. “The Chulha is completely in line with our brand promise of Sense and Simplicity. We made meaningful and relevant propositions through extensive consultation with many different stakeholders. The stoves are definitely ‘designed around you’. We also made our proposition accessible to our targeted audiences by the design itself, plus the training and supporting material, which certainly makes it ‘easy to experience’ in terms of use, maintenance, distribution and reproducibility. And, although it may not initially appear so, it is definitely ‘advanced’. Not in a high-tech way, but purely because the proposed technology is considerably more effective and sophisticated than the one currently available. This simple stove demonstrates that we can clearly improve the quality of many people’s lives through design.”

Appropriate technology

“It is all about appropriate technology,” adds Kulkarni. “We tackled a huge problem using a minimum amount of resources. In many ways this is more challenging than designing a very advanced, high-tech solution. It certainly gives a great deal of satisfaction.” And, as Rocchi points out, it also makes business sense. “This project saw us supporting social innovation on one hand while contributing to business innovation on the other. Everyone benefits. That’s why it is our intention to carry out at least one Philanthropy by Design project each year.”



Made from clay and concrete, the stoves are simple to use and maintain. Unlike conventional chimneys, the Chulha stove has a chimney assembled from several sections, making it easier to manufacture and transport. It can also be opened up and even partly disassembled for cleaning.

