# Better by design

'Design for development' is one of those trendy ideas that has captured the imagination of development professionals in recent years, particularly those looking for good news stories to share. Sometimes called 'design for the other 90%' or, more progressively, 'design with the other 90%', this movement fizzes with bright ideas, drawing clever people and their energy into the development space. **Michelle Matthews** looks at whether it's appropriate for CSI.

**C**reative approaches, ever-cheaper technologies, and an advanced understanding of how people use objects and how systems interplay, can all be harnessed to make life better for the world's poorest. The intentions may be good, but is it good development practice?

## Smart solutions that work

Like any development initiative, taking a design approach needs to start with asking the right questions, rather than imposing appealing solutions. If technology will be deployed, it needs to be appropriate technology, which takes into account energy sources and ease of maintenance.

While design for development is often criticised as West-driven concepts parachuted into developing world contexts, there are plenty of local examples of creative approaches using appropriate technology in South Africa. These include:

*FunDza* – South African NPO FunDza facilitates young adults' reading by publishing compelling short stories – usually with a social message – on various technology platforms, notably cell phones. FunDza boasts over 600 000 subscribers on cell phone messaging service Mxit, which was developed in South Africa and is free for users.

*Wind-up foetal heartrate monitor* – Designed for low-resource settings, UK-based Freeplay Technology, together with Dr Dave Woods, emeritus associate professor of neonatal medicine at the University of Cape Town, has made life-saving pre-natal technology accessible in places with no, or intermittent, electricity. This foetal heart rate monitor, which allows nurses to track a baby's distress levels during labour, is wound up by hand.

### Sustainable design

Joburg-based NPO Shift aims "to develop skills and opportunities for youth entrepreneurship in the field of sustainable design, as a precursor to environmental, social and economic wellbeing". Shift has developed the introductory *Sustainable Design Toolkit,* available for download from its website www.theshift.org.za.

*Agriprotein* – AgriProtein Technologies has developed a smart, sustainable solution replacing increasingly expensive fishmeal in animal feed. Fly larvae bred in the manure of cattle is used as a food source, closing the waste loop. While the concept has already been executed on a commercial scale, the company is now considering developing units that can be used by small-scale chicken farmers in urban areas.

*The Hippo Roller* – Developed by two South African engineers in the 1990s, this iconic water transport device has been recognised internationally for its simple, robust construction. International NPOs have tried to improve on the design by suggesting using recycled plastic for the body (it was discovered that the material wouldn't stand up to the wear and tear of rough terrain) or redesigning it for more efficient shipping. The Hippo Roller Project now proposes that the machinery to manufacture the roller be shipped, and training in how to make the roller provided. The roller remains a popular CSI investment, especially as the canisters can be branded.

## Too clever for good

For every smart design innovation that seems to work, there's another with a seductive story, but poor, or even negative, social impact. For example, the PlayPump, which drew millions of dollars in funding by showing smiling children playing on a merry-go-round, pumping water while they had fun. In reality, the mechanism was expensive and difficult to maintain.

Like improving access to clean water, reducing infant mortality continues to be one of the world's biggest development challenges. Many of the casualties are underweight or premature infants who succumb to hypothermia. A team of Stanford University students developed the Embrace Infant Warmer, a heated sleeping bag that costs 1% of conventional incubators, or just $25. However, there is an even simpler and cheaper solution that has been proven to work: kangaroo care. Skin-on-skin contact between the baby and a parent has physiological and psychological benefits for both. Could the money and effort spent on developing this design be better spent on training nurses to implement kangaroo care?

## From design to design thinking

The lure of the new is ever-present in the design paradigm, but it's imperative to work at actually solving the problem, not just creating another, albeit beautiful, thing. Tim Brown, of innovation and design consultancy IDEO, has popularised moving from design to 'design thinking'. Design thinking is about the process of designing solutions, and it comprises a few simple principles:

- Design starts with what humans need, so the designer needs to understand the culture, aspirations and motivations of the people he or she is designing for.
- Instead of thinking of what to build, build in order to think. In other words, learn by making – the faster you prototype, the faster ideas evolve.
- Rather than seeing the end point of your design as a product for consumption, aim for encouraging participation throughout the design's life cycle. "Design may have its greatest impact when it's taken out of the hands of designers," says Brown.
- Solution-seeking usually aims for 'convergence', which involves selecting one of a number of options already available. Design thinking encourages practitioners to 'diverge': to create and explore fresh options and solutions.

The changes don't have to be dramatic. A Cape Town initiative called Design Storming is an example. This is a collaborative approach to the design process that encourages incremental improvements to existing initiatives. According to the Cape Town Partnership (CTP) website: "It's not about reinventing the wheel, or generating new programmes, but rather about working with the stakeholders of the issue to come up with ideas that will result in improvements." The CTP, together with the Cape Town Design Network and the Social Justice Coalition, have organised two Design Storming sessions bringing together designers and individuals working at grassroots level – one on waste and another on early childhood development. The waste session has already resulted in a pilot programme being run by the City of Cape Town.

Design thinking is becoming a popular business tool, and CSI departments have already used it to bring benefits to their companies. At Apollo Tyres (manufacturers of Dunlop), CSI practitioners harnessed the brain power of schoolchildren who were visiting the company as part of an organised career guidance programme, dividing them into think tanks and asking them to solve a

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> *Design for development customers are like customers in any society – except they are vulnerable.*

Krista Donaldson in *Ambidextrous*, Stanford University's journal of design



### WDC2014

Cape Town was elected World Design Capital 2014 (WDC2014) by punting a strong sustainability and social responsibility agenda. WDC is essentially a year-long series of conferences, events and projects which will focus the international design community on the city and showcase South Africa as "a global innovator in socially transformative design". The organising committee has actively wooed NPOs, and CSI practitioners are sure to find more design-oriented project proposals in their funding inboxes.

*For more information go to www.wdccapetown2014.com*

problem that was plaguing operations (how pieces of tape were finding their way into tyres). The learners discovered that workers were finding it difficult to place a particular component so they were sticking it down with the tape. Company technicians could then step in to address the issue.

## Creating shared value through design thinking

At Tongaat Hulett, CSI practitioners, who work closely with the farming communities that supply the sugar company's raw product, have a problem that requires an innovative solution. Sugar cane farmers lose crops to cattle farmers, whose livestock break through fences to eat the cane, causing tension in the community. Theoretically it is possible to take the sugar cane leaves after harvesting and turn them into cattle feed, creating a win-win for everyone. However, there are many competing claims on the resource; from the farmers, who use the leaves to enrich the soil, to the company, which needs the leaves for co-generation of energy. CSI practitioners have seen the opportunity; the challenge is to convince their colleagues of the benefits to the organisation more broadly and to come up with creative ways to manage this valuable waste stream.

Within most large companies it is the CSI department that understands development. CSI practitioners are in a unique position in that they understand the business, too. By coming up with innovative solutions that align with the business, CSI departments can find the sweet spot of creating shared value, generating benefits for society and the company.

Appropriate CSI design solutions can harness underutilised assets, or close a waste loop. The shipping industry is one that has been blessed with an abundance of useful waste products. At some point a creative person looked at the sturdy shipping container and saw something else – a room. Hundreds of containers have been kitted out as kitchens, community policing stations and libraries, and now there are projects that have gone beyond this.

The New Jerusalem Children's Home in Midrand was creatively designed, by 4D and A Architects, using 28 containers configured in unusual and beautiful ways. In Philippi in the Western Cape, Alan Fleming from The Business Place has converted a container into a fish farm. Comprising a series of solar-powered pumps and tanks in a 12-metre shipping container, Fleming claims that the mini aquaculture unit can produce up to four tons of fish a year and waste from the fish can be sold to small-scale vegetable farmers.

## Interrogate design

So, are you feeling inspired? There's still some hard work to be done. You need to bring creative thinking not only to the design of the initiative, but into the critical assessment of the design. Successful design thinking should:

- *Get the form-function-affordability balance right* – All good design balances desirability with technical feasibility and economic viability. Does the project cover all three bases?
- *Work with communities* – A design-for-development approach can easily fall into the 'parachute ideas in' trap. Some practitioners suggest working together with communities to come up with innovative ideas. However, motor industry pioneer Henry Ford reportedly said that if he had asked his customers what they wanted, they would have asked for a faster horse. It's not always easy for people to envision innovative solutions, not least because they don't have access to enough information to imagine something new. It's sometimes more productive to work with communities to make improvements to an external designer's offering.
- *Ensure that the initiative supports, and can be supported by, the community* – Is the intervention appropriate technology? Can it be maintained locally? Do community members form part of the value chain and how are they supported in doing so? Does the innovation piggyback on an existing ecosystem, allowing for scale? Examples include Paperight, a local social enterprise which uses existing small copy shops to distribute licensed copies of books, turning them into on-demand bookstores, and Iyeza Express, which employs young men in Khayelitsha to deliver people's medication by bicycle, saving them having to travel or book time off work.
- *Think about how communities will adopt the innovation* – Many designed solutions, such as solar lights, rely on 'soft networks', which leverage community connections to help people without easy access to information to learn about the benefits of an unfamiliar product or service. This peer-to-peer education through existing groups, or door-to-door sales, helps boost demand or, in the case of subsidised services, buy-in.

*Take money into account* – Can the designed product or system help people make money or save it? If so, it's more likely to work. Research, such as that presented in Banerjee and Duflo's *Poor Economics*, show that people are slower to accept products that might have some positive effect in the future, which is why many vaccination projects struggle. They prefer to receive concrete benefit, such as increased income, in the present. However, money-saving devices will work only if they are cheap since cash flow is a poor person's biggest constraint. Product-related design initiatives which are pricier will often include a financing model that is better suited to the beneficiaries' economic situation.

## Incorporating design innovation into CSI

Taking CSI into truly innovative spaces is challenging. Companies are wary of losing money on untested programmes, requiring evidence of impact before they invest CSI funds: an approach that obstructs innovation. However, CSI practitioners can keep these considerations in mind when attempting to introduce design thinking into their programmes:

- *Use design thinking in processes* – Start slowly by harnessing design thinking to make incremental improvements to existing programmes. Bring in a variety of people with different backgrounds to brainstorm solutions to sticky problems in your CSI programme.
- *Work with marketing* – Interesting design-related projects could attract budgets dedicated to branding, as they often make compelling stories. This could also boost the implementation budget.
- *Tell the story internally* – Very often the resources to make an impact through design-for-development projects, particularly when these are aligned with the business, lie in other parts of the company and can be difficult to mobilise. Come up with a compelling case that will get people excited.
- *Practice leadership* – Convincing the board to try a new approach to CSI will take all a practitioner's powers of persuasion. Don't only work on the business case, but on your ability to inspire people with your vision. ■