

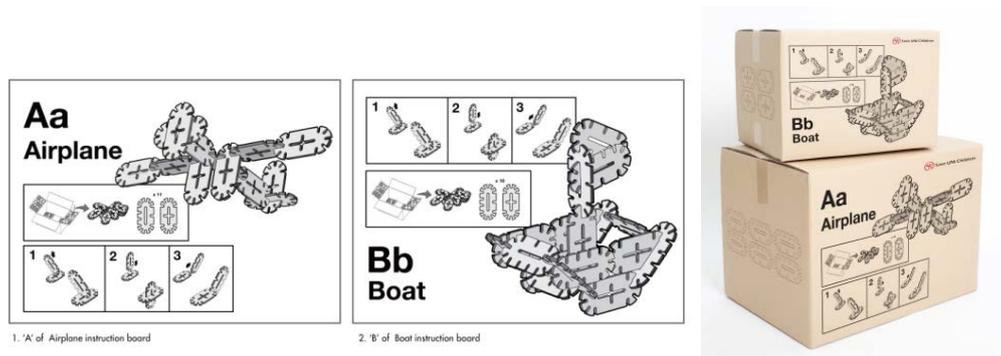
# From Utility to Delight | Changing the meaning of aid packaging to provide emotional relief to young hands and minds

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## Introduction

In 2010, the devastating disaster that struck Haiti took away the homes of over three million people, killing over 220,000 and injuring over 300,000 (Disasters Emergency Committee, 2015). Inevitably, the children of Haiti were worst hit by this disaster, suffering abandonment, homelessness, the loss of friends and loved ones and the devastation of their communities. These children later suffer from various forms of mental and developmental disorders including post-traumatic stress disorder.



**Figure 1** Toy Box, high-fidelity prototypes and packaging info graphics

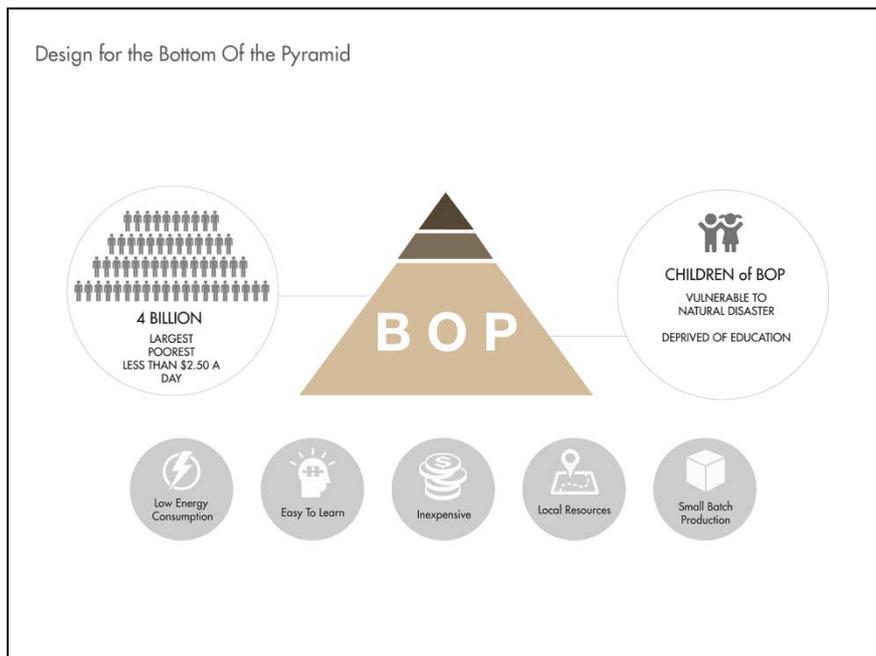
Originating from a course project, Toy Box (Figure 1) is designed to provide the most venerable children from the poorest parts of the world living in the most challenging of circumstances, play opportunities through the innovative re-appropriation of existing aid packaging ubiquitously used by charities and NGOs to distribute relief aid to disaster hit areas in the BoP (Bottom of the Pyramid) context (Figure 1). In this Toy Box is an innovation of meaning in that, through a design-driven innovation-in-use approach, it alters the meaning of an aid carton, from purely utilitarian and largely expendable cardboard box to an opportunity for engagement, play and discovery. In this it has the potential to provide much needed relieve to young hands, hearts and minds as they struggle to come to terms with the most challenging of circumstances.



**Figure 2** Toy Box, use-driven design innovation for the emotional relief of the world's poorest children

## BoP (Bottom of the Pyramid)

The poorest group of the world's population may generally be classified as 'The Bottom of the Pyramid' or BoP (Figure 3). The BoP can be further defined as the established poverty line of people with access to an income of less than two dollar per day. Children living in these circumstances often suffer from the most challenging of conditions, from the frequent occurrence of natural and man-made disasters, deficiencies in education and a basic lack of opportunities for play with little or no access to toys or other play opportunities.



**Figure 3** Design for the BoP (Bottom of the Pyramid)

A turning point in BoP design was Eric Schumacher’s first introduction of intermediate technology built around five principles: inexpensiveness, low energy consumption, easy to learn, local energy and small batch production (Basu & Weil, 1996, Figure 4). This push for design interventions focused on the world’s most disadvantaged has also be termed, “design for the other 90%”, with an exhibition at New York’s Cooper-Hewitt National Design Museum and related publication by the Smithsonian Institution (Smithsonian, 2007). Regardless of the title, there have been numerous attempts to adopt a design-driven approach to relieve the problems of poverty and improve the lives of people in the BoP context.



Figure 4 Principles of Intermediate Technology by Schumacher

Design for the BoP context has now entered a new phase in that it has started to take stock of and evaluate the effectiveness and achievement of past works. Paul Polak, a scholar and practitioner in the area of appropriate technology, has appraised the movement of designing for the BOP as inspirational to the public, but failing in its core aim of significant change in the lives of the world’s poorest with only a few exceptions, simply because solutions and interventions lacked practicality (Polak, 2010). As such, designers are now required to be more rigorous in their understanding of the context of the BOP to provide more practical solutions through greater contextual understanding.

In this way the Toy Box project presented to the Core77 design awards has applied the Principles of Intermediate technology presented in Figure 4 to drive the conceptual design and development of a more appropriate design solution (inexpensive, low energy consumption, ease of learning), effectively repurposing existing aid relief packaging to a new use. In this we adopt a mode-of-use innovation strategy to add value to the lives of deprived children in the most challenging BoP contexts.

## Innovation through Mode-of-Use

Mode-of-use innovation is a term used to describe an important lever in the design-driven innovation process (Rampino, 2011). A mode-of-use innovation strategy aims to create new meaning through adding to and/or modifying the function and/or use of an existing product. For the Toy Box project submitted to Core77, we have focused our attention upon

modification of use, to provide new meaning to the product for the benefit of the user. Adopting a design-driven approach, product packaging, used so ubiquitously by aid organisations and NGOs to deliver much needed relief aid to disaster areas in the BoP context, has been repurposed to change what it means to be an aid box. Rather than a pure utilitarian function, Toy Box offers opportunities for creative for the emotional relief of children in the most challenging of circumstances.



Figure 5 Toy Box, emotional relief for young hands, hearts and minds

In this way Toy Box effectively alters what it means to be a relief aid box, from a purely utilitarian product to a provider of play, stimulation and discovery; thereby bringing relief to young hands and minds. Thus, our innovative Toy Box concept has the potential to provide an inexpensive intervention for children in the most challenging of circumstances.

## Design Process

The design specifications for Toy Box are derived from consideration for the unique requirements of the BoP context and a design-driven, innovation-in-use approach to ideation. These requirements are outlined and summarised in the two sets of product specifications below:

### Specifications for *innovation-in-use*

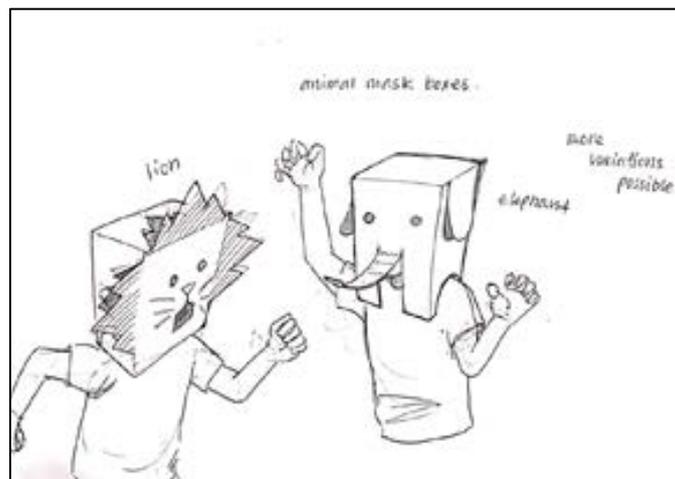
1. The design involved modification of prior use and/or function to add new use and/or function.
2. The new use and/or function add value for the specific user.

### Specifications regarding **BoP context**

3. The design involves the re-appropriation of available resources/products/materials.
4. The design is easily learnable for children aged 5 through 11 within the BoP context.
5. The result of the innovation-in-use responds to and takes consideration for the unique requirements of the BoP context.

After research related to a design-driven approach to mode-of-use innovation and an initial analysis of how mode-of-use may exist within and relate to the specific requirements of the BoP context, three initial design concepts were developed: *Role Play*, *Sand board*, and *Puzzle in the box*.

A first concept, entitled *Role Play*, involved turning the existing carton into masks that children may then appropriate in role play (Figure 6). The masks may be provided in variations such as different types of animals, super heroes etc. When children engage in role play, they naturally experience becoming someone else other than themselves, and this process would be both beneficial in their social development and provide opportunities for relief from an otherwise challenging environment (Bergen, 2002).



**Figure 6** Concept 01, Role Play

A second concept, *Sand Board* (Figure 7), involved turning packaging into a drawing pad. The inside of the box being colored to contrast the color of sand, children may then use their fingers to draw on the pad, easily erasing and redrawing. Sand is also a type of resource that is common to and easily acquired in a BoP context. Sand play is a ‘hands-on’ activity and is used often in play therapy for children under stress (Friedman & Mitchell, n.d.), making it particularly attractive given the project’s own aims and design requirements.

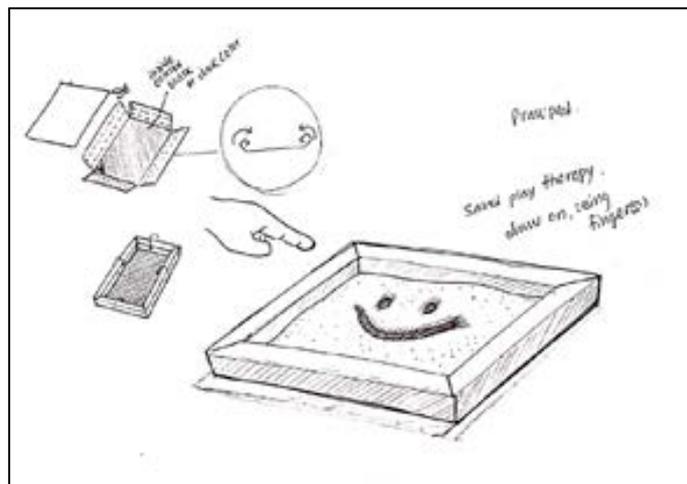


Figure 7 Concept 02, Sand board

A third concept, initially termed *Puzzle in a box* (Figure 8) is a design where puzzles are cut into the box with perforated lines so they can be easily removed without the use of additional tools. The resulting puzzle pieces could then be repurposed to provide a variety of building and making options. Construction toys like puzzles are beneficial for children in developing motor skills and hand-eye coordination, as well as spatial skills. The building and making nature of the concept made effective in providing potential as opportunity for play and diversion for children in the BoP context.

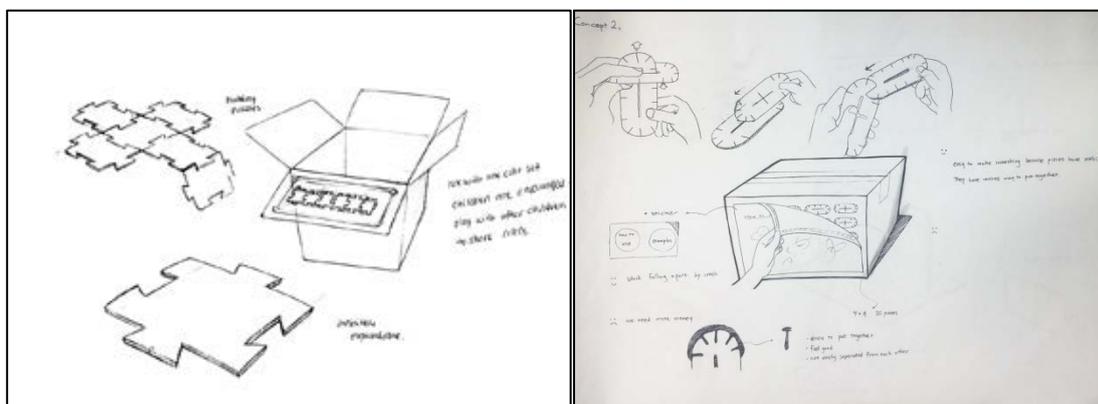


Figure 8 Concept 03, Puzzle in the box (became Toy Box)

As final selection, *Puzzle in the box*, was chosen and later re-names Toy Box for its potential to provide opportunities for creative engagement.

## Prototyping & Further Development

Prototyping was undertaken to further develop the Toy Box concept and provide opportunities for initial user tests and refinements. Through an iterative process of

prototyping, revision, refinement and further development, the design has been revised to its current stage of development as a high fidelity prototype expressing the form, aesthetic and function details of the intended design (Figure 9).



**Figure 9** design workshop to develop and refine fixing and attaching details

For the material of the packaging carton, double-sided corrugated cardboard was selected with reference to the guidelines for foreign aid packaging published by Red Cross Korea. Laser cutting was used to process the corrugated cardboard material for its accuracy and ability to perforate the board. Through an iterative process of trial and error, the student design team progressed the detail of the design including revisions to the blocks and their positioning on the carton. The instructions for use were also revised extensively to provide the most engaging imagery within the constraints of economy of printing and production costs.

The final prototypes offer the expression and communication of Toy Box to a high level of detail and fidelity. In this they provide opportunities for user interaction and define, in detail, the potential of Toy Box as an innovative intervention in the BoP context.

For the future we are now actively seeking the involvement of aid organizations and NGOs to fund the further development of Toy Box with a view to commercialise the design for application in the aid relief packaging used by charity and relief organizations worldwide. In this we envision a not-for-profit venture to support the development and manufacture of Toy Box cartons for use, at cost, by aid and other non-commercial organizations.

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