

From BoP to ToP and Vice Versa: Daily Practices in Settings with Limited Resources to Inspire Designers

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Abstract

This paper reviews the methods and practices that reflect subconscious behaviours of people in daily lives. Cases, studied for this paper, show how practices of people living in poor settings, who are members of the base of the economic pyramid, contribute to designers, belonging to the top of the economic pyramid, in designing better products and systems. A new approach to the bottom-up innovation is suggested where the source of inspiration comes from the BoP populations to be implemented by ToP designers to generate ideas for BoP or ToP products.

Keywords

Daily practices; base of the pyramid (BoP); top of the pyramid (ToP); bottom-up innovations; culture; design methods

Design literature presents a vast amount of methods and approaches developed for tackling any possible problem in design processes. This library consists of methods, models, strategies, and perspectives that are employed broadly from the initial step of problem definition, towards understanding users, their needs and context, till concept generation and embodiment. Only recently, the world of design has shown strong interest in the niche market of developing countries. Numerous design activities have been directed at the underserved and shifted from traditional markets to the less-discovered pool of emerging markets. The significantly different design contexts of emerging nations and the developed world raised the need for new design approaches (Castillo et al., 2012). The top-down prescriptions of the post-World War II “development regime”, the UNDP development goals, appropriate technology, and “design for the other 90%” are some of the initiatives originated by people belonging to the top of the economic pyramid to alleviate the problem of poverty and increase development at the base of the pyramid.

The purpose of this paper is to reverse the source of innovation and to discover inspirations among daily practices of people living in economically deprived communities. The study extends the design practice of understanding target groups’ needs beyond co-creation and participatory methods and proposes an opportunity to learn from their daily inventions. We argue that daily practices of people in settings with limited resources can be used as inspirations for designers when designing new products for people in both the top and the base of the economic pyramid.

Background

The term base of the pyramid (BoP) refers to the global poor, most of whom live in developing countries with income less than \$2 a day. This group consists of over four billion people (almost 60% of world population), living in various geographic regions varying from South and East Asia to Sub-Saharan Africa. They represent multiple cultures,

ethnicities, literacy levels, skills, needs and live both in rural and urban settings. On the contrary, the top of the pyramid (ToP) are the 0.5% of the world's population that holds the 40% of world's wealth and mainly come from North America, Europe and the Asia Pacific. In between is the middle of the pyramid (MoP) that comprises the remaining 39.5% of the world population.

Top-Down Initiatives to Alleviate the Poor

The traditional methods employed to reduce the economic gap between wealthy and developing countries often involved sending humanitarian aid. Appropriate technology emerged from the need to transfer the technologies from developed world to developing countries by adapting to the local scale, economics and society. People-centred technology utilized small-scale, decentralized, labour-intensive, energy-efficient, and locally controlled (Hazeltine & Bull, 1999) technologies to assist economic development and transfer capital-intensive technology from industrialized nations to developing countries (Akubue, 2000). However, such initiatives encouraged dependency rather than empowerment. Consequently, in order to stimulate sustainable aid, social business initiatives emerged to not only solve the users' needs, but also allow them generate new revenue and self-sustain. For example, Grameen bank makes small loans to the impoverished to help them start their own businesses (Yunus, 2009). Multi-national corporations expanded their businesses and partnered with local entrepreneurs in product-service-systems that boosted local economy (Goedkoop et al., 1999). Companies developed innovative solutions to match the buying power of the emerging markets, such as a 2000-dollar car by Tata, a 50-dollar cataract surgery by Aravind Eye Care System and less than \$0.01 per minute of cell phone time by Airtel. These are all part of innovations for the base of the pyramid (Prahalad, 2012).

The role of design in helping the poor was recognized early in the seventies. Designer and educator Victor Papanek (1971) called for a new design culture based on social responsibility for the environment and the people living in it by making good design. Awareness of design for social change has gained momentum over the past decade when designers and researchers started addressing the needs of unprivileged groups. To better understand the context and culture of their users, designers engaged local people in participatory approaches and co-creation methods when developing products and services to address their problems. One such method, the Design for Sustainability is a collection of tools aimed at new product development with focus on sustainability assessment and business generation for emerging markets (Crul et al., 2009). Another is the HCD toolkit, which is a step-by-step guide for approaching BoP communities to create and deliver meaningful insights and ideas (IDEO, 2009). The BoP protocol is a linear approach with focus on business co-creation. It aims at bringing corporations into close, personal business partnership with BoP communities through mutual value creation (Hart, 2008). Frugal innovation is the process of reducing the complexity, cost of a good and its production to make products more accessible in developing countries (Bhatti, 2012). Traditional problem-solving methods, that turned out to be limited for the use in BoP context, were modified to fit the specific needs of the BoP context (van Boeijen and Stappers, 2011). Guidelines for developing successful products and services for the BoP have been created to include availability, affordability, acceptability and awareness (Prahalad, 2012), sustainability and reliability (van Boeijen et al., 2013) in their designs.

Bottom-Up Innovations

While the literature supports examples of top-down initiatives, little has been done in the field of learning from innovations of the poor. The purpose of bottom-up innovations is for

the developed world to learn from the unseen inventions by the poor in settings with limited resources.

A well-known case of bottom-up innovations is the initiative by the foundation “Grassroots innovations” by Gupta (2003) to encourage community-led sustainable solutions in India. The foundation collects examples of inventions by travelling around villages in India and helps the inventors realize their practices into industrialized products. In India, these ingenious solutions to deal with scarcity are known as Jugaad innovation. Some analogical practices are called in Brazil as “gambiarra”, in China as “zizhu chuangxin” and “jua kali” in Kenya (Radjou et al., 2012). Dharavi Diary is another initiative to help the poor in India to benefit from their own inventions. The organization teaches local people design skills to make products that help them cope with daily struggles (Dharavi Diary, n.d.).

Interest of business leaders in the topic of emerging-market innovation has recently grown as a phenomenon of “trickle-up innovation” or “reverse innovation.” The terms are associated with the idea that the low-cost products and services initially created for developing-world nations can be adapted for developed countries (Jana, 2011). An example is the ultralow-cost electrocardiogram by General Electric, which was custom-designed using commodity components, to be mobile, durable and cheap for use in BoP context. The benefits of this design, initially targeted at poor settings, found use in a specific ToP context, such as at accident sites (Immelt et al., 2009). This type of frugal innovation is also called “reverse frugal innovation” (Govindarajan & Trimble, 2012).

Learning from User Innovations

Design literature was also browsed to identify design approaches that learn from daily practices of people. The distinguishing feature of daily practices is that they can be observed from daily lives of their actors, using inspirations from explicit and observable knowledge. Techniques that go deep or generative sessions, such as contextmapping (Sanders & Stappers, 2012) are not addressed in this overview, because they are not based on observation only. Some of these approaches include the concept of affordances, thoughtless acts, unobtrusive trace measures and DIY practices.

Affordances are qualities of an object, or an environment, which allow an individual to perform an action. Perceived affordances, as defined by Norman (1988), suggest how objects may be interacted with and give clues as to how to use the properties. The following image (Figure 1) of a ‘well trodden path’ or a ‘desire line’ shows an example of an affordance. Instead of using the officially designed sidewalks, people perceive the shortest way of crossing the field as an affordance.



Figure 1. Well trodden path as an affordance (Van der Aalst, 2013).

Thoughtless acts are the subtle and amusing ways that people react to the world around them (Suri & IDEO, 2005). They reveal how people behave in a world not perfectly tailored to their needs and demonstrate the kind of real-world observational approach that can inspire designers and anyone involved in creative endeavours. These are the actions

that people take, the intuitive ways they adapt, exploit and react to things in their environment, things they do without really thinking. Following images (Figure 2) demonstrate examples of thoughtless acts by people that may become design ideas.



Figure 2. Thoughtless acts examples (Suri & IDEO, 2005).

Everyday Adaptive Design is a pervasive activity engaged in by people as they adapt resources at hand in their everyday lives. The concept is broadly developed in the areas of information technology and interactive systems. The adaptive design is argued by Moran (2002) to have many advantages over professional design, as the activity is situated in the context of need. Adaptive design responds to immediate problems and fixes them. For example, the original intention of e-mails was to contact remote colleagues, while nowadays people use it for multiple purposes such as sending to themselves a link they want to save or as a note-taking tool.

Appropriation in design is an example of designing to allow for end-users to adopt and adapt the technology around them in ways the designers never envisaged (Dix, 2007). The idea of designing for appropriation implies "plan for the unexpected". Designers can design so that people are more likely to be able to use what designers produce for the unexpected – they do the final 'design' when the need arises. For example, in MacOS you can associate colours with file, but there is no fixed meaning to a red file (maybe urgent or problematic) – it is the user who provides the interpretation.

Unobtrusive trace methods are used to acquire information without direct contact with participants, through nonreactive physical traces, archives, and observations. Unobtrusive trace measures often provide evidence of needed design change (Webb et al., 2000). Following (Figure 3) is an example of a temporary signage clarifying a misunderstood interface of a hot and cold water machine.

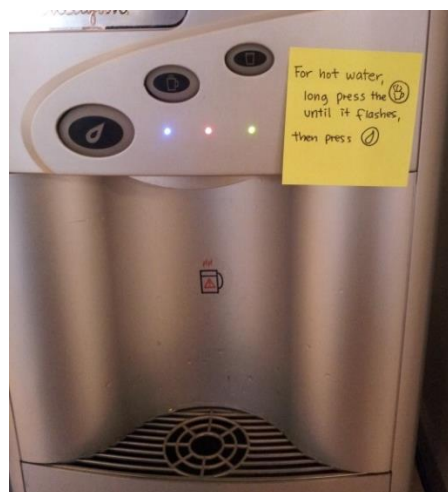


Figure 3. Unobtrusive trace measure indicating a need of design change.

Do-it-yourself is building, modifying, or repairing something without the aid of experts or professionals. The DIY trend has created technology independence by allowing freedom to creativity for end-users. This practice also adds to sustainability as the end-user him/herself has an active role in the creation of a product instead of the industrial approach of mass production (Hoftijzer, 2012).

Nevertheless, it was observed that none of the researched design approaches have a specific emphasis on the needs and practices of the populations in BoP settings.

Gap in the Existing Literature

The literature shows that the subject of learning from the underserved is still new in the field of design. Nevertheless, the authors see potential in indigenous innovations, igniting in unknown parts of the world and hidden by poverty, that can present solutions to daily problems of other people in need worldwide. In order to identify if and how the innovations from the poor can serve useful, it is important to study such practices. Therefore, cases of daily innovations in poor settings were looked into and analysed. The question of how daily practices in economically deprived settings can contribute to new product ideas is investigated further in this study.

Research Approach

This paper aims at understanding the value and meaning of bottom-up innovations.

The research questions were as following:

- Are the innovations originated in the base of the pyramid valuable for designers?
- What is the potential of studying such practices in the development of new ideas?

The examples of innovations in the economically-deprived settings were found mainly based on authors' own experiences living and traveling in different BoP countries. More examples were added via extensive search of literature in available master and graduation project reports, scientific articles, blogs and news on internet. The criteria for selection were that: a) the practice is originated from people in developing countries; and b) the practice is not (or little) known by designers in developed countries. About twenty cases of such practices were analysed according to the reasoning model (Roozenburg & Eekels, 1995) to understand them deeply, explore the context where these inventions have been created and their characteristics.

Daily Practices

The daily practices discussed in this paper are incremental innovations that people in impoverished communities perform in circumstances with limited resources in order to fulfil a needed function. These practices vary from small modifications of an existing product to constructions of new facilities. In this study, the daily practices of the poor are reviewed from a utilitarian perspective. These practices are characterized by the context of the base of pyramid, without attribution to specific culture. Following are some examples of such practices.

Refrigerating food outside. In areas with little or no access to electricity in a BoP context, during cold seasons people take advantage of the cold temperatures outdoors to refrigerate their food. The observed practice includes putting the food, such as fruits, vegetables or prepared meals in a plastic bag or a container and storing it outside to keep cold. This practice allows people to save money on electricity and preserve their food for long periods.

Outdoor shower. In rural areas in developing countries, where plumbing facilities are not available, people use a large bucket of water installed over the head to wash themselves. A structure is built outside and used mainly in warm weather. The bucket of water has a tap lever to release and stop the water. The sun heats the water in the bucket (Figure 4).



Figure 4. An outdoor shower in BOP context.

Paperclip zipper. To replace a broken tab on the zipper, a paperclip through the zipper's hole is used to function as a tab for opening and closing the zipper. The practice can be used for clothes, trolley bags, or other objects with malfunctioning zipper tabs (Figure 5).



Figure 5. Paperclip as a zipper tab.

Flying toilet. Due to absence of toilet facilities in the house and dangers of going outside in the dark, some people in slums in East Africa relieve themselves above a plastic bag and throw the wrapped faeces out from their windows. Although this practice is a taboo and people are embarrassed if they are caught doing it, many people perform the practice for safety reasons.

A number of cases were studied to analyse these innovations' purposes and needs in order to understand them deeply, explore the context where these inventions have been created and their characteristics. Table 1 presents an overview of 11 of these practices.

Table 1. Overview of 11 daily practices in poor settings

Practice	Problem	Description (context/benefit)
Constructing a shoe-wiper to remove the mud and dirt from shoes.	In villages without asphalted roads, people's shoes get muddy, making it unpleasant to enter the house.	In front of the house, a knee-level structure is built with two vertical rods and a horizontal metal piece connecting them to wipe the mud and dirt from people's shoes. People rub their feet against the metal piece and enter the house without mud on their shoes.
Placing a brick on gas stove to store the heat.	In cold winters, some towns and villages have no central heating system in houses.	When the heating does not work, people place a brick on a gas stove to heat up the room. The need for affordable heat is solved by the property of the brick to keep (store) heat in it for a long time. Hence, the brick that had received heat from the stove will stay warm for a long time magnifying the heat to warm the whole room.
Keeping valuables in one's bra for safety and convenience.	When going out without a purse, there is an inconvenience of carrying one's money. In certain areas, it is also not safe to carry a wallet in a pocket.	Women, who are not carrying a purse or wallet, put their money in their bras. This invisible wallet provides both convenience and safety. The initial function of a bra holding a woman's bust obtains a new function of holding her valuables.
Tightening a head scarf (hijab) with pins.	Muslim women, wearing a headscarf need to affix the scarf in an unnoticeable way.	Women tighten their head scarves (hijabs) with a sewing pin. The almost invisible property of a sewing pin allows women to affix their head scarfs inconspicuously.
Creating toys from bicycle or car tires.	Children need toys for entertainment, social interaction, and acquirement of manual dexterity and other skills.	Children in poor circumstances, when not having real toys, use old bike or car tires to roll as a toy. A social play for kids, this toy is a low (no)-cost entertainment for a kid, while giving parents more time to spend on other things, such as household activities.
Making boots non-slippery by wearing socks over them.	People without proper non-slippery boots often fall when walking on the roads covered with sleet.	When people cannot afford expensive, non-slippery boots, they wear a pair of socks over the boots in order to prevent falling from slippery roads. The friction of non-slippery texture prevents from slipping on icy roads.
Creating light in houses using bottles with bleached water.	Need for lighting in huts in Africa, where electricity is too expensive or not available.	In windowless African huts, people fix a bottle with bleached water on the ceiling of a hut instead of a light bulb. The sun rays penetrate through a plastic bottle and lighten up the dark areas of the house.
Using cloth rag as disposable nappies.	Women in poor settings have no access to disposable hygiene products.	Women use re-washable cloth rags with cotton padding to hold the discharge during the menstruation period. Low-cost and reusable solution.
Finding fuel for stove.	In rural poor setting, people need fuel for stove, but cannot afford coal.	People collect sticks, shrub, grass or even cow dung to use as fuel for burning.
Using old billboards as home furniture	People in slums or homeless people cannot afford furniture.	In Thailand, we found people using old advertisement billboards in household to make partitions in the room or for homeless people to use as walls. The practice gives privacy, seclusion and certain furniture.
Using the back of the ceramic dish to sharpen the dull knife.	Knives and scissors become dull after certain time of usage.	In the household, housewives sharpen the dull knife by grinding the cutting side on the back of a ceramic cup/plate or other dish. The non-glazed ceramic's rough texture allows the sharpening of a cutting object.

The analysed practices allowed interpreting what implications they have for designers to implement them as product ideas. Depending on the properties of each practice, these inspirations can be translated into either an improved BoP product or can even be applied to a specific ToP market. These possibilities are discussed in the following section.

From BoP to ToP and Vice Versa

The observed typical current practice of BoP-design is the practice of designers belonging to ToP to develop products and/or service systems for populations belonging to the BoP. The general approach is to break down the complexity of a ToP product to remove the unnecessary properties and only leave the vital function to fit the specific needs of people at the base of the pyramid.

Based on a review of numerous examples of daily practices (Table 1), it can be seen that these practices can serve modern-day designers in identifying right needs, understanding the culture and context and translating these needs into a product idea. The critical aspect, especially when dealing with users deprived of basic needs, is whether this identified need is on top of the users' priorities. The research method of learning from daily practices will help designers to tackle the actual high-priority needs that are observed from practices.

These practices have the potential to generate many inspirations. Depending on the purpose and target users, we identified two possible approaches for designers to benefit from such practices:

- Design an improved product to better fit the context of populations belonging to the base of the economic pyramid.
- Design a product that will benefit people at the top of the economic pyramid in specific contexts.

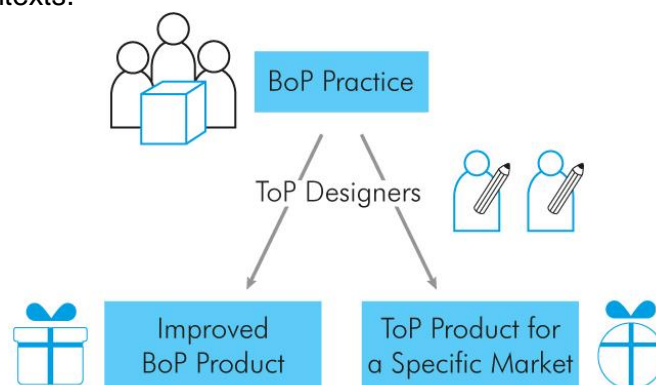


Figure 6. The two possibilities of design based on a BoP practice

The proposed two options are explained further in the following sections.

An Improved BoP Product

Daily practices can be used to generate product ideas targeted at the specified context. To benefit the user, a skilled designer can take the practice to the next level by identifying the pain points of the practice and using his/her analytical and creative skills to develop a better solution based on the original practice. If observed more carefully, the practice of keeping food in a plastic bag outside can have a disadvantage that a person going outside in the dark may step on the food accidentally, or a dog or cat can eat it up. It is in the designer's capabilities to address such problems and develop a design of a container or a hanging bag to better preserve food outdoors. The power of design will help to keep the practice, but eliminate the problems.

By identifying such daily practices, we are opening up new opportunities to design. Observing a practice can give a new use to an existing product. When working around lack of resources, members of the base of the pyramid create additional functions to their products, perhaps originally unintended by the designer. People come up with such solutions out of the need to survive and are forced to think of them in extreme situations. When trying to replace a device or product that is not available, they find other products (or set of products) that perform the same function and give these products a second, unthought-of life. For example, a paper clip is a tool to hold sheets of paper together, usually made of steel wire bent to a looped shape. In a BoP context, a paperclip is used instead of a broken zipper tab (Figure 7). This new function is obtained due to the facts that the whole zipper is too expensive to replace or a tailor is not available in the area. Another example is a sewing pin, which is originally designed for fastening objects or material together. It has two components: a long body and sharp tip made of steel and a larger head often made of plastic. The sharpened body penetrates the material, while the larger head provides a driving surface. It is formed by drawing out a thin wire, sharpening the tip, and adding a head. While the initial use was to temporarily fasten the fabric or material when sewing, many of the Muslim women use the sewing pin to tighten their headscarves (Figure 8).



Figure 7. Paperclip as a zipper tab.

Figure 8. A woman tightening her scarf with a pin.

Designers can learn from a local practice to incorporate it into their new design. A good example is the biodegradable bag called Peepoo with a bacteria-neutralizing urea liner (Lysen et al., 2010). Designers observed people in slums in Kibera, who, in the absence of an indoor toilet, relieved themselves over a plastic bag and threw the bag out of their windows – a practice called “Flying toilet”. These bags with human waste were scattered in the slums and caused diseases, such as diarrhea. To prevent that, the practice was translated into the design of disposable biodegradable bags, which can be used as a portable toilet and later decomposed into a fertilizer (Figure 9).



Figure 9. Peepoo, plastic biodegradable toilet bag (Lysen et al., 2010; Peepoople, 2013).

A ToP Product for a Specific Market

Not only the daily practices of the underserved can be an inspiration for a better design for them, but also serve as an inspiration to design a low cost, practical product that will be used in a specific ToP market that has similar constraints as in developing countries. One of the studied examples was the outdoor shower, used in developing countries (Figure 10). While this practice is carried in BoP countries, there is an equivalent of such a facility in a specific market in the ToP context. A product based on a similar principle of providing showering possibility in a setting without plumbing facilities is designed for campers in developed countries. A shower-head is filled with water and can be heated by sunrays. It has a built in on/off control. The user can hang the shower head anywhere on the tree and take a shower underneath (Figure 11).



Figure 10. An outdoor shower in BoP context.



Figure 11. A shower bag in ToP context (Shower, 2010)

The existence of the daily practice of outdoor showers and the camper's shower bag, although developed independently from each other, suggests that, a clear link between a practice and a product idea can be established if identified at an early stage. Designers, who are aware of such practices can benefit from saving research and development time and cost. This emphasizes the opportunity to provide a translation from a BoP practice to a new product idea. For instance, the aforementioned example of a biodegradable bag to use as a toilet could be beneficial in a disaster context in the developed world, such as during earthquakes in Japan.

A product that was inspired by a BoP practice and has been designed to fit specific needs of a developing country can be later thought to be a good idea for a specific ToP market. Western designers and companies are more and more interested in designing for the BoP. These solutions that they come up with are often to accommodate the low budget of target users. Ultimately, the benefits of accessibility could be beneficial for the ToP as well. The example given earlier about GE's electrocardiogram is a case of reverse frugal innovation. A low cost, portable and cheap product was designed for India and China, that later was picked up by ToP to use in specific context, such as at accident sites. Similarly, designers of the camping shower bag could have gotten inspiration from the outdoor shower in BoP setting. Another example is a woodstove developed by Philips to accommodate the cooking of Indian women and replace the inefficient solid fuel stoves that fill their houses with smoke. A fan blowing heated air through the fire and low mass, were the main reasons for this high combustion and heat transfer efficiency. After the launch of the product in Indian market, the manufacturer questioned whether the technical system could also be used in a cooking appliance for the Western camping market. A design graduate proposed a redesign of the woodstove for a Western camping market (Zeijlstra, 2006).

The authors believe that the credibility of a BoP product is increased, if it can also be simultaneously developed for ToP situations. The special characteristics of a BoP product being low-cost, low-scale and easy-to-use can benefit in similar context with similar needs in BoP and as well as in ToP.

Discussion

For designers, the base of the pyramid presents opportunities: the four-billion-population is a large market with a large number of unsolved needs. People belonging to this population have many ideas for solving their daily life inconveniences. The strength of designers is their ability to get a hint from such ideas and apply their knowledge and skills in designing a better and more effective product. However, these practices are undocumented and unavailable for designers living in the other parts of the world. The aim of this study was to investigate how can the essential links be made to connect the unaddressed needs of the local people at the base of the pyramid with the designers from the top of the economic pyramid, in order to facilitate an effective design process for a designer to create solutions for the BoP members?

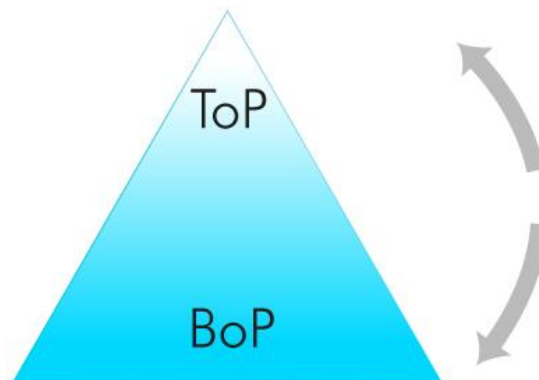


Figure 12. A link between the base and top of the pyramid

Design research and practice is advancing in accommodating the specific needs of BoP context. From the traditional approach of considering users as users only (audience), the BoP design methods are improved to the level that co-participatory design methods are encouraged to involve and co design with the users, in order to better understand their context and needs. The next level is to take the work and daily life of the people at BoP as inspirations and learn *from* them how to develop better products *for* them. Another approach to benefit from BoP practices is to design for specific ToP context that has similar circumstances as in a BoP setting. The two possibilities are explored below.

A. BoP Practice to a ToP Product.

The analysis of the cases showed that BoP practices can be used as inspiration for ToP products. By observing the innovations of the poor, ToP designers can improve their products to become more:

1. Back to basics. The observation of daily practices of the poor allows us to uncover the basic needs. These people are dealing with the most primitive needs of people revealing the most essential properties that products should have.
2. Intuitive designs. If people at the base of the pyramid realized that they can use a paperclip instead of a broken zipper tab, this clearly shows how intuitive the product is. From learning from these practices designers can create more functional, more intuitive and simple products.
3. Sustainable designs in terms of efficient use of resources. Studying these practices helps designers to become aware of efficient use of resources.



Figure 13. BoP to ToP approach

B. BoP practice to an Improved BoP Product by ToP Designers.

The focus of this paper is not only to learn from BoP, but it is also to help designers to understand what their prioritized needs are. If designers look carefully at the daily practices of the people at the base of the pyramid, they are able to see the real needs – the ones that they are actually struggling to solve. These practices reveal which ones of the local needs are the most important. They can discover the local people’s value of the potential solution to these needs, their acceptance of the future improvement of these needs and their ability to adopt the product to their needs.



Figure 14. BoP to BoP via ToP approach

Conclusion

The study for this paper started with the question how practices in poor settings can contribute to new product ideas. The study shows that driven by necessity, people living in poverty can be innovative in making efficient use of available resources. Designers can find opportunities to develop products by learning from practices of these people. The daily practices can benefit designers in designing both for the BoP and ToP markets. A BoP design can be an improved, accessible product for the people living in poor settings. Studying the practices in daily lives of people at the bottom of the pyramid will allow designers to see what needs have highest priorities in their lives. This will prevent from designing obsolete products that have little chance to be integrated in their lives. By observing the innovations of the poor, designers can improve the designs of developed world products to become more intuitive, sustainable in terms of efficient use of resources

and addressing the basic needs of people. The examples can serve as an ingredient for a tool for designers to make them aware of the possibilities, embedded in the daily practices of the populations belonging to the bottom of the economical pyramid. The cases studied here already contribute as means for designers to be aware of such practices and present the first step to a systematic approach of discovering daily practices, interpreting and implementing them in designs.

The limitations of this research included the difficulty to find the cases of daily practices in poor settings. The scarcity of such examples in the vastness of available to us information resources will also create a barrier for designers who would like to learn from daily practices for their projects. Here is an opportunity for a follow-up study in which the elicitation of daily practices is key. Future research will consider developing a strategy tool for designers to identify such practices, discussed in this paper and translate them into product ideas.

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In 1990 Annemiek graduated as industrial design engineer with the design of a lightweight, racing wheelchair. During the nineties she worked on international design projects for and with universities and companies in developing areas, including the development and production of a hand operated tricycle and design for sustainability projects. Since 2000 she is a full time assistant professor for the faculty of Industrial Design Engineering at the Delft University of Technology. Her research focuses on the role of culture in design processes. The aim is to develop knowledge and design methods & tools that support designers to design culture consciously. She developed the card set 'crossing cultural chasms' for designers. Together with her doctoral thesis, the card set will be published before the end of this year.