

## BASE OF PYRAMID HUB: CONNECTING SOLUTIONS

*It would be a more relevant definition of success if we redesigned our society norms and say that a 'billionaire' is one who improves the lives of a billion people.*

- Jack Sim, Founder BoP Hub

It was a warm day in October 2016, and Jack Sim, founder of Singapore's Base of Pyramid Hub (BoP Hub) initiative, had just finished speaking to the media about his vision for the enterprise. Sim came up with the idea of the BoP Hub in 2011, at a time when the poor appeared to have easier access to mobile phones than to clean drinking water. The world's population had been growing at an alarming rate over the past few decades, and even more notable was the fact that 60 percent of it lived in poverty—a demographic that was also known as the Base of the Pyramid (BoP).<sup>1</sup>

Before he set up the BoP Hub, Sim had established the World Toilet Organisation (WTO) in 2001 to raise awareness of the need to provide hygienic public sanitation facilities. WTO was created as a forum for similar organisations around the world to come together to discuss implementable solutions and share knowledge. Sim's experience in WTO made him realise the need for a social enterprise that could build solutions for a multitude of problems faced by the BoP population and motivated him to establish the BoP Hub, a non-profit social enterprise, in 2011.

Through the BoP Hub, Sim envisioned designing businesses to end poverty. The primary objective of the initiative was to provide a common business platform for social enterprises in Singapore and South Asia to share knowledge and create workable designs to serve the BoP population.<sup>2</sup> Another objective was to engage the poor as entrepreneurs, workers and salesmen by providing them with adequate training. The third key objective of the initiative was to act like an accelerator to replicate and bring to scale current best practices, proven business models and technologies such that all stakeholders (investors, social entrepreneurs, corporations, academia, technology pioneers, local community leaders and government agencies) could collaborate to align their missions and work in synergy to create maximum impact. Besides curating the alignment of all stakeholders, the BoP Hub also helped in providing research, design, prototyping, legal and financial advice, and testing facilities to support all stakeholders.

The BoP Hub required a large industrial space to provide design, prototyping and testing of services. In 2014, Sim started the construction of a 65,000 square foot industrial space in Ubi Road in Singapore to realise this bigger dream. He invested his family savings of USD 1.4 million and borrowed another USD 5.7 million from the bank to build this centre.<sup>3</sup> Called the BoP World Design Centre, the facility ran its operations 24/7. With a small team operating out of Singapore, and supported by volunteers, the BoP Hub operated like most other non-profit organisations, striving to efficiently execute projects on the field with limited resources and

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<sup>1</sup> World Bank, "Poverty definition", <http://data.worldbank.org/topic/poverty>, accessed November 2016.

<sup>2</sup> BoP Hub broadly categorised social enterprises into three key sectors: wellness, energy and housing.

<sup>3</sup> US\$1 = S\$1.3915, conversion rate as of 31 October 2016.

funding.

Support from the media had helped Sim garner attention from different stakeholders, but had not helped him much with fundraising. He was now at a crossroads: How could he further refine the business model to scale up his initiative with maximum impact by creating unprecedented efficiency in the development sector? How could he build more collaboration and attract investment and support groups to help expand its outreach? Summing up the scalability needs of BoP Hub, Sim remarked, “We have to chart out a comprehensive fundraising strategy and effective organisation structure to scale our BoP Hub initiative.”

## World Toilet Organisation

In 1998, Sim established the Restroom Association of Singapore (RAS) to raise public awareness of the importance of having clean toilets across the island. Sim discovered that there were other such associations around the world, including the British Toilet Association, that were also working to improve public sanitation facilities in their respective countries.<sup>4</sup> He felt that there was a necessity to bring all these associations under a single platform to create synergies and share knowledge, so in 2001, Sim founded the World Toilet Organisation (WTO), a global non-profit organisation committed to improving sanitation and toilet conditions worldwide (refer to **Exhibit 1** for a profile of founder Jack Sim).

Explaining the philanthropy behind his unique social cause, Sim said,

*A lot of rich people claim that there is no limit to affluence, but there is definitely a limit to how much you need. Consuming more than you need is a problem, because that means wasting resources. It makes more sense to lead a simple life and give back to society once you have taken care of your needs. With this philanthropy in mind, I had started the Restroom Association of Singapore to help create clean sanitation facilities for the people, and then I realised that there are toilet associations around the world—and so I started the World Toilet Organisation to bring all these associations under one forum.*

The aim of the WTO was to create awareness of the necessity of clean and safe sanitation facilities in communities with little or no access to these facilities, and build a local marketplace to source hardware required to build such facilities (refer to **Exhibit 2** for WTO’s operational strategy).

In 2001, WTO initiated the World Toilet Day<sup>5</sup> to raise awareness of the sanitation crisis, and held the first World Toilet Summit, a global event that brought together various sanitation stakeholders to collaborate on innovative inventions and solutions. In 2005, WTO established the World Toilet College (refer to **Exhibit 3** for WTO Friends and Donors).<sup>6</sup>

Through its various initiatives and yearly conventions, WTO had provided an international platform for toilet associations, academic institutions, foundations and United Nations (UN) agencies to exchange knowledge and use media as a tool to garner support from corporate and government stakeholders (refer to **Exhibit 4** for key WTO campaigns). Explaining the takeaways of social organisations connected to WTO initiatives, Sim said,

*Participating organisations get media coverage. My model for WTO is a leverage model. Media has to sell news, stories that are fresh, interesting and on a sensational subject. By garnering media attention, I was able to flip a taboo subject like a toilet into a fun project.*

<sup>4</sup> World Toilet Organisation, “World Toilet Summit”, <http://worldtoilet.org/what-we-do/world-toilet-summit/>, accessed November 2016.

<sup>5</sup> World Toilet Organisation, “What-we-do, world toilet day”, <http://worldtoilet.org/what-we-do/world-toilet-day/>, accessed November, 2016.

<sup>6</sup> World Toilet Organisation, “Who-we-are”, <http://worldtoilet.org/who-we-are/our-story/>, accessed November, 2016.

*Also, with media support, our WTO projects gained legitimacy and enabled us to implement them worldwide on a large scale.*

In 2013, WTO achieved a major milestone when the UN passed a resolution, co-sponsored by 122 countries, to designate November 19 as World Toilet Day. The Singapore government had aided WTO in liaising with the UN and passing this resolution. Later that year, WTO was granted consultative status with the UN Economic and Social Council.

## BoP Hub

While working on various WTO initiatives and coordinating with village councils in rural areas, Sim observed that the lack of employment, limited access to basic facilities, and inefficient delivery to a market serving the needs of the BoP population were the three primary issues facing businesses at the BoP.<sup>7,8</sup> Sim also realised that there was a need to bring together all these small businesses under one umbrella, and provide them with services that would help them create targeted products for the BoP market (refer to **Exhibit 5** for the world population pyramid showing the BoP).

In 2011, Sim established the BoP Hub in Singapore, with the vision of assimilating small businesses under one platform and providing them with services that would allow them to focus on their core competencies of meeting the BoP market needs on the ground and creating a sustainable marketplace for the BoP population (refer to **Exhibit 6** for BoP expenditure by sector).<sup>9</sup>

Elaborating upon the motivation behind the BoP Hub, Sim said,

*Poor people who form the BoP account for roughly 60 per cent of the world's population. However they are more or less excluded from the formal economy because of their lower purchasing power. Also, statistics show that the remaining 40 per cent of the population owns 95 per cent of the world's money. Most goods and services available in the market target the rich and the middle-class populations. The four billion poor who represent the BoP and earn less than US\$8 a day mostly do not have access to clean drinking water, basic sanitation and banking facilities.<sup>10</sup>*

*The fact is that the poor need all kinds of things—like clothing, food, water filters, cooking stoves, vehicles, entertainment products, solar lamps, low cost housing, sanitation, education, healthcare, pharmaceutical products—the list is long. It is for all these needs that social enterprises can come together to provide cost effective solutions that target this strata of buyers. Usually finding appropriate partners and suppliers and handling design and logistics are ongoing challenges for small scale businesses catering to the needs of the BoP. This is one area where the BoP Hub envisages providing facilitation and business matchmaking services.*

But designing solutions for the BoP market was a challenge. While in Western economies the extremely poor were often supported by government schemes, in developing economies the poor struggled to meet even their basic needs on their meagre income. This created a unique demand set that was subject to varied income and expenditure levels, due to which product or service solutions could rarely be interchangeable or readily transferable even within the segment.

<sup>7</sup> Tim Warstall, "More People have Mobile Phones than Toilets", Forbes, March 23, 2013, <http://www.forbes.com/sites/timworstall/2013/03/23/more-people-have-mobile-phones-than-toilets/#3dfb932772c0>, accessed November, 2016.

<sup>8</sup> Water.org, Water Crisis, Water-Sanitation-Facts, <http://water.org/water-crisis/water-sanitation-facts/>, accessed November, 2016.

<sup>9</sup> BoP Hub, <http://www.bophub.org/>, accessed November, 2016.

<sup>10</sup> Steven Strauss, *Planet Entrepreneur: The World Entrepreneurship Forum's Guide to Business Success around the World*, Somerset, NJ: John Wiley & Sons, 2013.

Another drawback was the primarily rural base of the BoP community. Communities were often located in remote areas and subject to harsh climatic conditions, making solutions specific to their needs even more challenging to design. The rural base of the target population also implied slow dissemination of knowledge to the end customers, since they had little benefit from existing customer experiences from outside their local communities. Low literacy levels were another inhibiting factor that ruled out marketing and communication materials commonly used by most commercial companies. Poorly executed and intermittent government schemes also introduced the acceptance of low-quality products that challenged the end customer's perception of better product choices. Additionally, short-term subsidy programmes led to a skewed price point perception.

Lack of civic and private infrastructure in rural markets, such as roads, water channels, electricity and telecommunications, had created an entry barrier for affordable, mainstream products. It had also added an additional financial burden on manufacturers to physically distribute their products, as they had to be designed in such a way that their operations and maintenance were more suited to local infrastructure availability and long-term market-based solutions (refer to **Exhibit 7** for key challenges in the BoP market).

Summing up the several challenges, Sim explained,

*Actually, the poverty market place is very similar to ours. The only difference is that the price point is lower because their affordability is much less. The poor buy very small packets of food and utility items as their meagre income allows them to purchase items only on a day-to-day basis, usually in cash. Also because the number of dollars that is circulating is less, the multiplier effect is not strong as it is a cash economy—the government cannot tax them and they cannot recycle the money around.<sup>11</sup>*

Sim further noted that a significant problem that the BoP population faced was the “poverty-penalty”, wherein the poor actually paid more for amenities like drinking water, healthcare, food and utility items. This was primarily because the BoP market was not well-developed, and there was not enough competition to bring down prices. The big corporations often found it hard and expensive to enter this market due to lack of market infrastructure. An example was the Pur water purification powder manufactured by Procter & Gamble which failed to generate a competitive return in the BoP market in spite of its low pricing and product relevance.<sup>12</sup> So this is where Sim felt there was an opportunity for the social and small scale enterprises to come in.<sup>13</sup> He said,

*While the rich and middle-class get electricity, water and sewage connections, the poor tend to live “off-grid” without these basic amenities. The result is they have to pay a poverty penalty for everything they buy. For example, the poor buy clean water at an exorbitant price in jerry cans and carry them home, while the rich get it almost free on taps piped to their homes.*

*If we include the poor in the supply chain as workers, distributors, sales agents, entrepreneurs and service providers, we can hopefully create a vibrant BoP market which is sustainable and has the right economy of scale. But the affordability will remain the same unless we create jobs and income. So we have to think holistically as to how we are going to bring enterprises to invest in creating solutions, as well as train the locals to develop requisite skillsets.*

<sup>11</sup> Sarah Praceus, “Consumer Innovation at the Base of the Pyramid: Emerging Patterns of User Innovation in a Resource-Scarce Setting”, 2014, Springer Gabler, accessed November, 2016.

<sup>12</sup> Harvard Business Review, “Reality Check at the bottom of the Pyramid”, 2012, <https://hbr.org/2012/06/reality-check-at-the-bottom-of-the-pyramid>, accessed November 2016.

<sup>13</sup> C. K. Prahalad, “Poverty Penalty, The fortune at the bottom of the pyramid”, 2008, Economic Affairs, Vol.28 (4), pp.89-91, accessed November 2016.

In 2014, Sim acquired industrial space in Singapore for the BoP Design Centre. The aim of the design centre was to facilitate the coordination of design solutions, provide a space to prototype and test possible solutions, and provide a location for procurement, training, distribution and market promotion of these solutions. The design centre would operate round the clock to enable borderless collaboration across multiple time zones. Explaining the importance behind operating out of Singapore, Sim explained,

*Singapore is the best model for a population seeking to rise out of poverty as it has a proven track record of moving from a third world to a first in 35 years. Also 70 percent of the poor live in Asia, hence an Asian country is the right choice to provide the expertise. The Indian government has asked Singapore to help in building a smart city called the Amravati city project. China had also asked Singapore to help them build their first eco-city in Suzhou. Technology is really a necessity in the BoP Hub for handling logistics, e-commerce, healthcare, solar energy generation and water purification, and we are very good at some of these areas. Again, Singapore can play a crucial role in introducing technology in these countries.*

*The idea is simple. If we pick the best social enterprises that provide reliable solutions for the BoP consumers and bundle them in an Artificial Intelligence portal which allows mapping and matching of resources, and then motivate these enterprises to try and adopt a co-design and distribute model, we can potentially save a lot of rework and provide a single channel to gain a larger customer base.*

However, while providing the poor with access to technology and solutions could help them improve their quality of life over the short term, for a long-term solution, the poor had to be self-sufficient. This not only meant providing them access to basic amenities and resources, but also helping them earn the means to afford these resources. Hence what was needed was a market-based model that could provide product solutions and create employment.<sup>14</sup>

One such example was the WTO's Sanishop project (refer to **Exhibit 8** for Sanishop's model of operation). This microfranchising programme trained local entrepreneurs to build toilets (onsite sanitation systems) that were sold at an affordable price of US\$45. The Sanishop programme had been successfully established in Cambodia, India, Vietnam and South Africa, and was proposed to be expanded to Mozambique, Nigeria, the Philippines, Myanmar and Indonesia.

Another successful project that Sim had initiated was the World Toilet College, in partnership with Global Interfaith WASH Alliance, a religious group in India wherein local entrepreneurs sold toilets on a commission basis. Such income generation not only helped the rural poor in gaining employment but also provided good sanitation facilities to the people, promoting safer and healthier lifestyles.<sup>15</sup>

In addition to the BoP Design Centre, the BoP Hub had also initiated the BoP World Convention, an annual global trade convention for cross-sector collaborations which brought together industrial players, public organisations, non-governmental organisations (NGOs) and social entrepreneurs venturing into this area. In 2016, the convention was held in Singapore and addressed by a panel of distinguished speakers.<sup>16</sup> Former Prime Minister of Singapore, Mr Goh Chok Tong launched the 2016 convention, while the inaugural convention in 2014 was launched by Singapore's Deputy Prime Minister, Mr Tharman Shanmugaratnam.

<sup>14</sup> Encyclopedia Britannica, "Bottom of the Pyramid", <https://global.britannica.com/topic/Bottom-of-the-Pyramid>, accessed November, 2016.

<sup>15</sup> Unilever, "Press Release", November 19, 2012, <https://www.unilever.com/news/press-releases/2012/12-11-19-Unilevers-hygiene-brand-domestos-to-break-taboo-of-the-loo.html>, accessed November, 2016.

<sup>16</sup> BoP World Convention, Speakers, 2016, <http://www.bopworldconvention.com/speakers/>, accessed November 2016.

The BoP World Convention provided organisations an opportunity to discuss best practices and innovative solutions targeted towards BoP markets. The event also offered an opportunity for businesses to learn more about the market potential and build new business ventures with like-minded organisations. Sim commented,

*The mission is to beat poverty via trade. The BoP World Convention is another step towards achieving this.*

Additionally, the BoP Hub had started the BoP Hub accelerator programme, which was created to map, match and motivate efforts of individual social workers and small groups into a more synergised unit such that it could have a larger impact on targeted consumers in a shorter time frame. The programme facilitated developing the social enterprise model by promoting joint ventures and product bundling to create faster, cheaper and improved products and services for the BoP community.

## Potential Value of the BoP market

Sim pointed out that as the world moved towards rapid technology adoption with emerging economies developing gradually and as economic conditions in the BoP improved with raised income levels, there would be a gradual shift in wealth across nations. People who were currently in the BoP would become the middle class, as they gained better access to education and economic development.

This gradual shift in wealth indicated the value of developing a BoP market. The value was not only in its potential to bring millions of people out of poverty, but also the potential to create new markets, drive economies and create more jobs in the process.<sup>17</sup> It was this unmistakable potential value that had recently attracted businesses and corporations to the BoP market.

An example was the joint venture between Danone and Grameen bank.<sup>18</sup> Danone, a multinational company came up with a fortified yoghurt product that met the daily protein requirement of a child, in association with Grameen, a social enterprise in Bangladesh. The yoghurt cups were priced such that they were affordable by the BoP population in the country. Also, raw materials for the product were sourced locally to create business and employment opportunities for the local people.

Citing examples of other projects executed by the BoP Hub that had generated revenue, Sim explained,

*The idea is to disrupt a market and think differently. Right now the average income of the people at the BoP is US\$2-8 a day. If we can increase that to US\$5-10, we can get a lot of people out of poverty.*

*We have a couple of projects that target generating a revenue model. Our Folia water filter project named 'Amrit-Pani' is working well in India. We are also trying to replicate the hawker centre model of Singapore in India, so people won't get the "Delhi Belly". We are trying to create a series of businesses internally, instead of depending solely on partnering with big organisations. It is very difficult for big organisations to disrupt their existing processes to incorporate services specifically meant for this sector, so this is where agile social enterprises like ours can step in.<sup>19</sup>*

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<sup>17</sup> Shusuke Watanabe, Tokutaro Hiramoto, and Naoya Tsuzaki, "Developing BoP Business as the Principal Strategy in Emerging and Developing Economies", Nomura Research Institute, April 2012, <https://www.nri.com>, accessed November, 2016.

<sup>18</sup> Danone, "Projects' Lives", Grameen Danone Foods Ltd, <http://www.danonecommunities.com/en/project/grameen-danone-food>, accessed November, 2016.

<sup>19</sup> Folia Water, "Amrit Pani, Social Enterprise", <https://www.foliawater.com/social-enterprise/>, accessed November 2016.

Sim further explained that since the social sector viewed the poor as people with very little choice, they often had the incorrect perception that they would accept and appreciate whatever products and services were offered to them. He elaborated,

*They are poor but they are not ignorant about what is available. They have feelings and aspirations. Hence marketing to the poor is no different than marketing to the rich and middle class. The WTO has tried to market toilets as a status symbol and also helped villagers understand the importance of hygiene. Combining emotions and aspirations with rationality is a great motivator for the BoP marketplace, and the BoP is frankly the next big blue ocean. I think that if companies do things that are culturally not acceptable and economically not viable, it will not work. Sensitivity to the social and environmental needs is very important.*

Sim believed that the BoP would eventually become the next wave of convergence. By aligning businesses and social objectives together, poverty could be eliminated and a more equitable and fair society could be established.

## Scaling up and Challenges

Moving forward, Sim believed that growing the BoP Hub was a primary focus for the organisation. But scaling up the initiative had its own set of challenges—of which the primary one was fundraising. He explained,

*We want to better strategise fundraising. Even though we are targeting a large market and handle projects in the millions, we remain a very frugal and underfunded organisation. We have grown now to eight people, out of which quite a few are volunteers. Our entire board is made up of volunteers, and they are very enthusiastic.*

*In the early years, we didn't have good fundraising staff. We did get episodic donations, but we didn't follow up with donors after they gave us money, so a continuous stream of funds was not created. In the past we had operated in a very opportunistic manner, but now we are better organised. We need to improve further, and create a stable fundraising strategy and organisational structure to grow further.*

There were multiple channels of fundraising opportunities for a non-profit organisation such as the BoP Hub. Social media and crowdfunding were two such avenues, but raising awareness through social media of the issues faced by the BoP was a challenging task. Collaborating with corporate organisations was an avenue that was slowly picking up speed as well in the social enterprise sector.<sup>20</sup> Microfinance was another such avenue, but testing out these channels of fundraising required a dedicated staff base. Sim had hired a fundraising staff with the hope of being able to reach some of these channels of fundraising. Noteworthy was the fact that with his world toilet projects like Sanishop, Sim was able to create a revenue generating model that was self-sufficient, and the idea was to implement more such projects, through collaborations, wherever feasible. A franchise-based model like Sanishop had helped them increase their outreach, as well as reduce dependence on grants and donations.

Sim had set up the BoP Design Centre by borrowing a substantial amount and paying up the rest from his own savings. But to grow his operations he now required external investments and funds. Reiterating the need for scaling up, Sim explained,

<sup>20</sup> “Acumen, Social Enterprises and Global corporations collaborating for growth”, Acumen Summit Report, October 2015, <http://acumen.org/>, accessed November, 2016

*I am not good at fundraising but I'm good at "friends raising" and they often support my work in kind instead of cash. We have a leverage model where we allow partners to gain from the partnership.*

*Creating a platform for small and low-priced items will not only create an economy of scale, but will also reduce the price of purchasing, the cost of distribution, and avoid the duplication of time and effort. These savings will have to be converted to profit, so scaling in a holistic manner will be the solution.*

According to Sim, over-reliance on donors for funds was a typical drawback of many social organisations. He preferred building a base comprising supporters who would volunteer and support his organisation ("friends"), as well as donors.

Sim believed that market-based approaches could be more successful than the charity buying models for the BoP sector. Reiterating the ethos behind a market-based model, Sim explained,

*It is clear that the challenges of global poverty and the United Nations 17 Sustainable Development Goals to transform our world is an impossible feat for individual organisations acting in silos to solve. As more silos act independently the complexity and complications create duplication of effort and inefficient deployment of resources. Despite roughly US\$300 billion of charity and foreign donations and funding per year, we still have four billion people at the BoP. We need more efficient and effective ways to disrupt the status quo.<sup>21</sup>*

*We should focus on unlocking the spirit of enterprise and good work ethics of the four billion poor and connect them more directly to the supply and value chain, train them on technology and invest in them. We need a system change that raises the collective efficiency and effectiveness of the entire ecosystem in the development sector.*

*Instead of relying on donations, we need to attract loans, equities, FinTech to interface with agricultural technology, energy, water, housing, sanitation, livelihoods, skills, education, information and communications technology, healthcare, cottage industries, etc. They all need to come together to form a holistic ecosystem that can collaborate to release synergies between the synapses of all nodes and players.*

Explaining the reason why he had opted for a loan to fund his BoP Hub Design Centre, Sim explained,

*If our initiative is successful, there is an exponential benefit from a loan based approach. Currently, most NGOs have a tendency to satisfy the donors instead of focusing on the needs of the poor. Thus they focus heavily on measurements, monitoring and evaluation reports. I think that this is a drawback, and our focus should be to make the poor happy.*

*People say I am good at "friend raising". I believe if we can collaborate with like-minded organisations and people, we can create a Gini coefficient of success, rather than trying to please donors for funding our projects.*

Remarking on some of the flaws of the existing NGO operations and humanitarian aid processes, Sim explained,

*There is a lot of double counting of work actually done in the social sector. For instance, if twenty NGOs are involved in the same project, then the same work gets counted twenty times, instead of being counted once. There is no audit on the impact of projects run by NGOs. How about measuring the number of lives actually saved, as a measure of impact?*

<sup>21</sup> United Nations, Sustainable Development, "17 goals to transform our world", <http://www.un.org/sustainabledevelopment/>, accessed November, 2016.

*Humanitarian aid should also think of market sustainable solutions instead of episodic funding/help. If you send, let's say, an aid of food supplies to an impoverished country, you could potentially put the farmers of that community out of a job. If you send, say, medical aid workers into a country, you actually hollow out the local medical capabilities, and as a result they do not get a chance to develop their own medical system and be independent. This can leave the community worse off in the long run after aid workers leave.*

Another challenge Sim anticipated was the different execution styles of various social enterprises, and their occasional inability to coordinate effectively due to a competitive mindset. He explained,

*Some social enterprises want to get involved at the grassroots level as they want their name attached to the projects. They are afraid that other social enterprises may get more coverage and hence do not like to collaborate. But the best way to execute social collaborative projects is to leverage all stakeholders into a harmonious best fit curve, using each other's strengths. We therefore have to look at collaborations with the broader picture in mind.*

Selecting social enterprises to form tie-ups required extensive research to make sure that they had similar objectives and goals. Authenticating the legitimacy of a social organisation was another important factor. But more importantly, collaborations were successful when all parties shared the same vision. Sim explained that the BoP Hub acted like a catalyst to promote social enterprises in taking up various projects, and provided the required support from the background as advisors and facilitators.

Sim had several projects running concurrently under his WTO and BoP Hub initiatives. Explaining how he managed to oversee all these initiatives and ensure their smooth running, he said,

*The idea is to create a global movement, a belief system that builds trust among all participants. So the objective is to hire entrepreneurs who are passionate ('angry') about the problem and want to solve it. And when each business is profitable, it can be scalable. We have to create an ecosystem where ideas and solutions can be replicated easily to create an economy of scale. Only then can the impact be huge.*

After he had started the WTO, Sim had gone to Strathclyde University, Lee Kuan Yew School of Public Policy and Singularity University for further education. There he discovered a lot of application platforms and solutions developed by students that could be replicated to assist him in seamlessly managing the BoP Hub services. However to replicate such application platforms, he needed additional funds and resources. Sim explained,

*We hope we can find a technology platform, because manually it is very laborious to coordinate all partners. When I went to university to study, I observed that there were a lot of parallel solutions available that I could copy and customise for the BoP Hub, but to copy them I needed to persuade people to work for me to open-source proven solutions freely. I have to partner and negotiate with several parties. So we are doing new things every day while looking for novel opportunities. Our objective is not to own things for ourselves, but to groom leaders and be a factory for entrepreneurs.*

## **Moving Forward**

### *Innovative Projects*

The first social business launched by BoP Hub was 45Rice, an enterprise that served to improve the nutrition of meals consumed by 350,000 construction workers in Singapore.

Noticing that the workers' meals consisted primarily of 700 grammes of white rice accompanied with some small portions of chicken curry and vegetables, BoP Hub partnered with DSM, a Dutch vitamin supplement company to substitute white rice with fortified rice in the meals of the low-income construction workers. The project received US\$0.7 million funding from an investor and Sim was confident that the payback would be well within the first three years of operations.<sup>22</sup>

The second business that the BoP Hub was preparing to launch was the Hawkerpreneurs Project. The aim was to share and export Singapore's successful hawker centre concept and replicate it in countries that would benefit from it, such as Myanmar, India and Africa. The Hawkerpreneurs Project would train people who had lost their jobs and help them consider an alternative career in running a food business. They would be trained to cook Singapore's heritage dishes and operate their own stalls, thereby generating employment while adopting new skills. This business model also aimed at bringing in investors to partner with the Hawkerpreneurs Project profitably.

Sim explained,

*Hawkerpreneurs will also be equipping the locals with management skills to nurture a team of Hawker Centre Managers who will replicate the Clean-Hygiene Food Standards into a design-build-operate-transfer investment scheme. Investors with regional ambitions can then bring this concept to the developing countries, thus improving local public health conditions through hygienic and clean food businesses.*

### *Positive Changes*

The BoP Hub had identified unfulfilled needs that were essential in raising the welfare, productivity and income of BoP households. Engaging the BoP in the formal economy by creating projects that would meet their needs as well as provide them employment in the process had several advantages. One of which was eliminating the poverty penalty, which would in turn increase the effective income of the BoP household.

The operating and regulatory requirements in developing countries were a challenge for micro and small businesses, although this was improving worldwide, and there was a growing recognition of the importance of enabling small- and medium-sized businesses to propel themselves into the formal economy.<sup>23</sup> Many countries, including China and Myanmar, had dropped their minimum capital requirements for small businesses, thus motivating more people from the BoP to become entrepreneurs in their marketplace.

Several international development agencies had launched investment funds to support the growth of small- and medium-sized enterprises across developing countries. These efforts and the growing interest of the private sector to invest in the BoP space had paved a way for efficient tie-ups and bottom-up businesses.

Under the influence of all these positive changes across the world, Sim believed that the BoP Hub was rightly placed to act as a catalyst to support social service organisations and to use one another's knowledge and mutual interest in more collaborative efforts.

The challenge now was to scale up the initiative and look for funds to execute larger projects and maximise its outreach across the BoP world. As Sim said,

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<sup>22</sup> US\$1 = S\$1.3915, conversion rate as of 31 October 2016.

<sup>23</sup> Allen L Hammond, "The Next 4 Billion: Market Size and Business Strategy at the Base of the Pyramid", 2007, Washington, DC: World Resources Institute, International Finance Corporation, accessed November, 2016.

*We can end global poverty by creating more efficient market connections and trade. When we map, match and create market players to trust each other, we can make delivery of products and services to the poor cheaper, faster, better and easier.*

**EXHIBIT 1: PROFILE OF FOUNDER****Founder: Jack Sim**

Singaporean Jack Sim was a leading social entrepreneur who broke the taboo around toilets by bringing the sanitation crisis to centre stage. He was the founder of the BoP Hub and World Toilet Organisation (WTO) and a leading global advocate for sanitation. Through the WTO, a Singapore based global NGO, Sim had mobilised a global movement involving governments, policymakers, UN agencies, international civil society, thought leaders and activists to work together to address the sanitation challenge.

A highly successful businessman and entrepreneur with more than 20 years of experience in running businesses, Sim, at the age of 40, decided to devote the rest of his life to social work. Growing up in a poor Kampong home with lack of proper sanitation facilities and having to deal with his family's night-soil bucket inspired Sim to think differently. In 1998, he established the Restroom Association of Singapore (RAS). He globalised his efforts for fostering media attention to create awareness of the global issue of sanitation and established the WTO in 2001.

In 2011, Sim founded the BoP Hub to help scale market-based solutions to cater for the needs of the BoP market. The objective of the initiative was to build collaborative efforts and strengthen cross-sector collaboration.

Sim received the Schwab Foundation award for Social Entrepreneur of the Year in 2006. In 2007, Sim was named the Asian Development Bank Water Champion. In 2007, Sim became one of the key members to convene the Sustainable Sanitation Alliance composed of key players for sanitation. He also received the Ashoka Global Fellow award, and was named one of the Heroes of the Environment for 2008 by Time Magazine. He was also awarded Channel News Asia Asian of the Year in 2009 and Reader's Digest Asian of the Year in 2011.

Widely known as Mr. Toilet, Sim broke the global taboo around toilets and sanitation by bringing the subject to centre stage with his unique mix of humor and serious facts.

**Source: Bop Hub, about-us, founder, <http://www.bophub.org/index.php/about-us/founder/>, accessed November, 2016.**

**EXHIBIT 2: WTO OPERATIONAL STRATEGY**

<b>WTO Approach</b>		
<b>Vision</b>		
A world with a clean and safe toilet for everyone, everywhere at all times		
<b>Mission</b>		
Our mission is to provide innovative and sustainable solutions that help improve sanitation in our target communities, and, in alliance with our local and international partners to drive global demand for better sanitation infrastructure.		
<b>Approach</b>		
<b>Education and Capacity Building</b>	<b>Sustainable Sanitation Solutions</b>	<b>Advocacy</b>
Building behavioural change	Build market-based approach	World Toilet Summit
Tackle community capacity building	Build holistic, sustainable solutions	Global Urgent Run
Engage in knowledge partnerships	Sanishop model	UN Toilet Day
		Active social media engagement
		Speeches in international symposiums

Source: World Toilet Organisation, who-we-are, annual-report, <http://worldtoilet.org/wp-content/uploads/2016/08/WTO-Annual-Report-2015.pdf>, accessed November, 2016.

**EXHIBIT 3: WTO FRIENDS AND DONORS**

<b>WTO: Friends and Donors</b>	
<b>FRIENDS</b>	<b>DONORS</b>
<ul style="list-style-type: none"> <li>•A4A (AQUA FOR ALL)</li> <li>•Andhra Pradesh State Government</li> <li>•BoP Hub</li> <li>•Care Today</li> <li>•CDD Borda</li> <li>•FINISH Society</li> <li>•GIWA (Global Interfaith WASH Alliance)</li> <li>•Swachh Andhra Corporation</li> <li>•UN-Water</li> <li>•Waste</li> <li>•Wetlands Work</li> <li>•Wuhan University's Wei Ai Er Sheng Organisation</li> <li>•Skilled volunteers and Interns</li> <li>•Urgent Run Singapore participants</li> </ul>	<ul style="list-style-type: none"> <li>•American Standard</li> <li>•Asiamin Capital</li> <li>•DN &amp; Associates</li> <li>•Google</li> <li>•Jets Group</li> <li>•Kimberly-Clark</li> <li>•Lee Foundation</li> <li>•Mitsubishi Electric</li> <li>•Reckitt Benckiser</li> <li>•Sanistål</li> <li>•Space Executive</li> <li>•Unilever</li> <li>•Zentree Investment Management</li> <li>•Unilever UK</li> <li>•Domestos Unilever Asia</li> <li>•Mitsubishi Electric Asia Pte ltd</li> <li>•Rotary International</li> <li>•Sanistal (Denmark)</li> <li>•Insead Business School, Singapore</li> <li>•Toilets Hackers</li> </ul>

- Singapore Technologies Engineering Ltd.
- Government of Singapore
- Lee Foundation
- Wartsila
- SP Services
- Government of Brunei Darussalam
- SFA
- Participants in the urgent run 2014

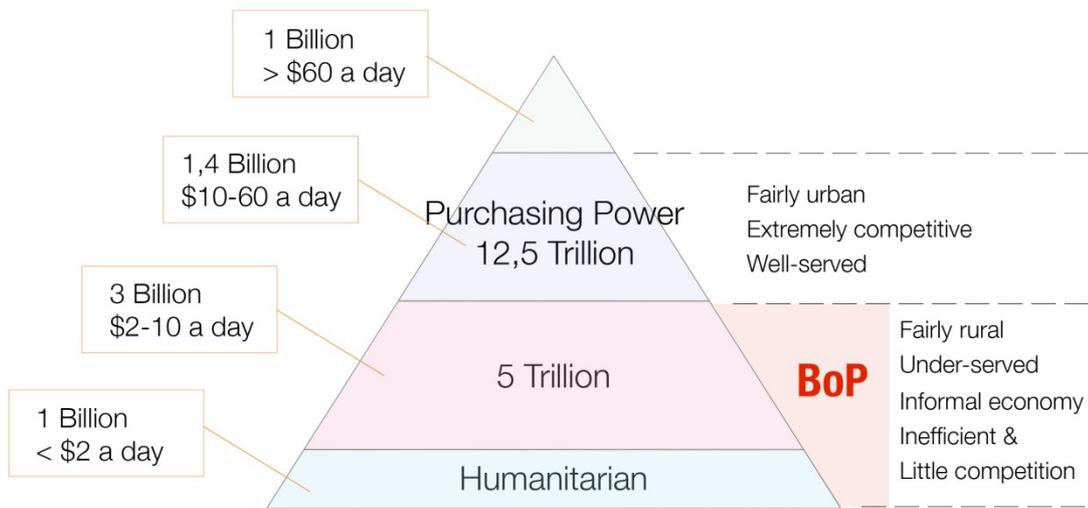
Source: World Toilet Organisation, who-we-are, annual-report, <http://worldtoilet.org/wp-content/uploads/2016/08/WTO-Annual-Report-2015.pdf>, accessed November, 2016.

#### EXHIBIT 4: WTO CAMPAIGNS

Major WTO Campaigns	
Urgent Run	The Urgent Run is World Toilet Organisation's advocacy campaign for UN World Toilet Day. It was organised both in Singapore and globally across several countries.
World Toilet Day	Observed on 19 November every year to raise awareness of the need for action to end the sanitation crisis.
World Toilet Summit	Annual conference that brought together key stakeholders and decision-makers in the sanitation sector
World Toilet College	A programme to empower trainers and sanitation workers in both urban and rural contexts
Sanishop	Social enterprise with the mission to create a sustainable sanitation ecosystem in local communities
Raise a Stink	"Raising a Stink for Sanitation" advocacy pack provided suggestions for raising a stink for sanitation in your local area.
Invest in Sanitation	Donation campaign
Fundraise in a Flush	Fundraising campaign for sanitation
Start at school	Toilet awareness toolkit for schools
Social Media	Campaign in Twitter to raise awareness of sanitation
Talk Shit	Campaign on Facebook to raise awareness on sanitation issues

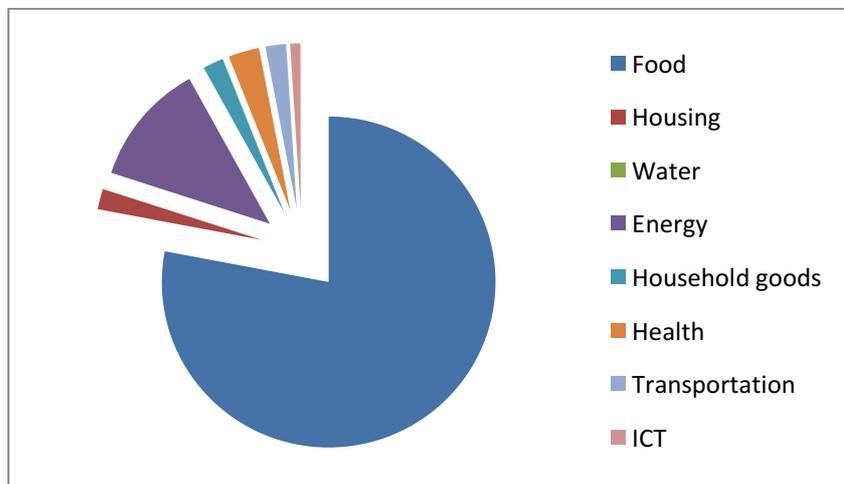
Source: World Toilet Organisation, what we do, <http://worldtoilet.org/>, accessed November, 2016.

**EXHIBIT 5: THE BASE OF THE PYRAMID**



Source: BoP Hub, “Base of the Pyramid”, About BoP Hub, <http://www.bopworldconvention.com/about-bop-2/> (all currency in US\$), accessed November 2016.

**EXHIBIT 6: BOP EXPENDITURE BY SECTOR (INDIAN RURAL)**

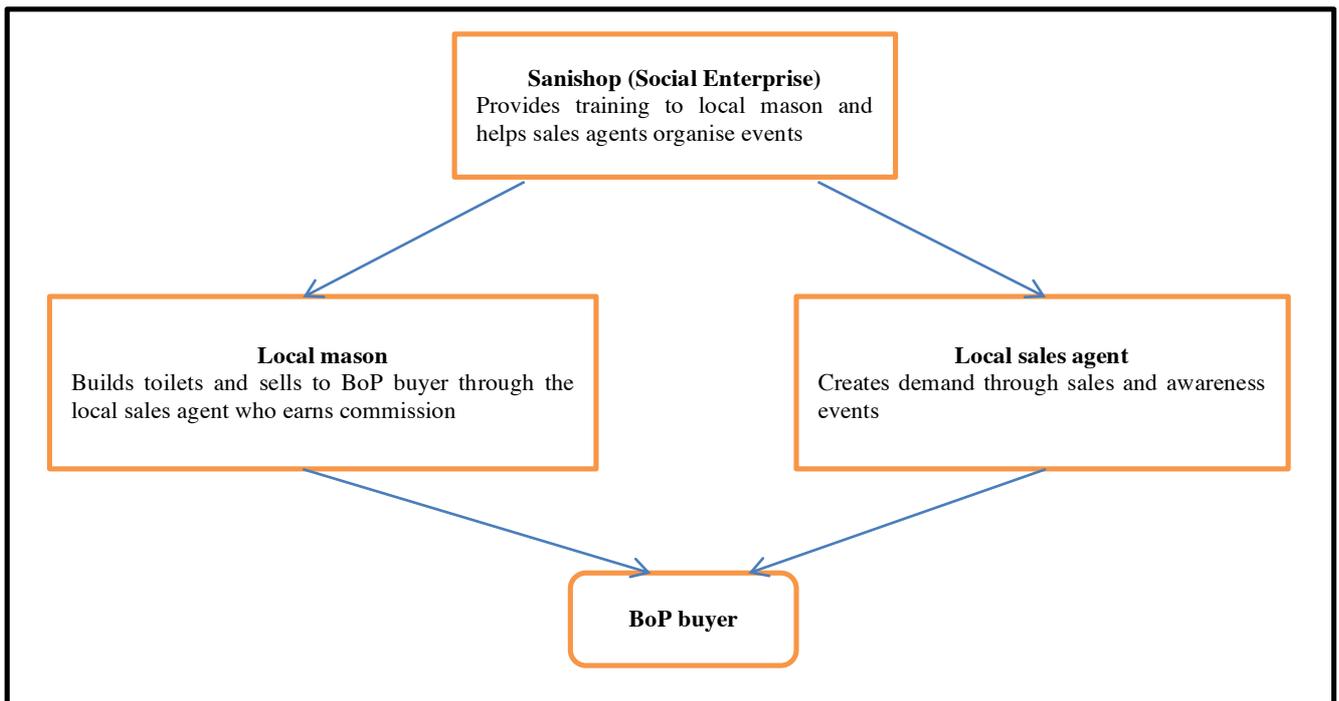


Source: World Resource Institute, International Finance Corporation, “The next 4Billion – Market Size & Business Strategy at the base of the pyramid”, <http://www.wri.org/publication/next-4-billion>, accessed November 2016.

**EXHIBIT 7: CHALLENGES IN THE BOP MARKET**

<b>BOP Market Challenges</b>		
<b>Customer Challenges</b>	<b>Product Challenges</b>	<b>Environment Challenges</b>
low per capita income	products sold by pull	poorly executed government schemes
low disposable income	skewed purchase choice	wide introduction of low quality products leading to shift in customer perception
minimal savings	denied or not recognised latent needs	short term subsidy programmes skewing price points
retain liquid assets (land, gold, animals)	social proof requirement for new products	lack of adequate infrastructure
less capability to handle economic shocks	limited product acquisition models	absence of technological interventions
low literacy levels	dependence on rural logistics	extreme weather conditions
information asymmetry		hostile terrain and long distances
long gestation period for adoption of new product introductions		sparse population density and huge geographical spread
restricted mobility and limited travel		lack of homogeneity among key BoP stakeholders
slow dissemination of knowledge		
resistance to change		
little benefit from customer experiences from outside their local communities		
high degree of customisation demand		
deep cultural beliefs and preconceived notions and experiences		

**Source: Dennis A. Pitta, Rodrigo Guesalaga, Pablo Marshall, (2008) "The quest for the fortune at the bottom of the pyramid: potential and challenges", Journal of Consumer Marketing, pp.393-401, <http://dx.doi.org/10.1108/07363760810915608>, accessed November, 2016.**

**EXHIBIT 8: EXAMPLE MARKET-BASED MODEL FOR BOP**

Source: WTO, what-we-do, "Sanishop social franchisee model", <http://worldtoilet.org/what-we-do/sanishop/>, accessed November, 2016.