

A report by

HYSTRA
hybrid strategies consulting

MARKETING INNOVATIVE DEVICES FOR THE BASE OF THE PYRAMID

Lessons from 15 global pioneers
that challenge conventional sales &
marketing approaches to successfully
serve the poorest



Final report – March 2013

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Cover pictures (anti-clockwise from left):

- 1 Project Dharma demonstration of solar lanterns at night in rural India.
- 2 KickStart clients working their irrigation pump.
- 3 Cambodian family with Hydrologic water filter.

ABOUT HYSTRA

Hystra is a global consulting firm that works with business and social sector pioneers to design and implement hybrid strategies and innovative business approaches that are profitable, scalable and eradicate social and environmental problems. In order to “be the change we want to see in the world”, Hystra itself is a hybrid consulting firm – a for-profit tool for social change. Hystra’s team combines top-tier business strategy consultants and senior entrepreneurs with a passion for development, present in 12 countries. Since its creation in 2009, Hystra has conducted in-depth sectoral studies on clean energy, safe water, affordable housing and ICT-based business models for development, designed new strategies to serve low-income communities with home improvement packages, irrigation pumps, solar lights, safe water, and improved nutrition products, prepared business plans for pioneering social businesses and supported the creation of a social impact fund. In four years Hystra has worked in close to 20 countries serving 25 clients, including large corporations, international aid agencies, foundations, and a government, to support business models that change the lives of low-income communities across the globe.

For more information and to download Hystra reports on *Energy for the BoP*, *Safe Water for the BoP* and *ICT for the BoP*, visit www.hystra.com.

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INTRODUCTION

Over the last two decades, a range of affordable devices and equipment have been designed and manufactured that can provide the 4 billion people at the Base of the Pyramid (BoP) with life-changing benefits.

Yet, progress in marketing¹ these devices has been frustratingly slow as marketers struggle to convince BoP families that future benefits (cost savings or increased income) justify these investments. These families usually do not have the cash at hand to make these investments and are wary of unknown technology and of the unavailability and/or cost of maintenance services or replacement parts. Because of geographic dispersion and poor infrastructure, they are also costly to reach in regard to their small transaction size. The “downstream ecosystem” of

marketers, distributors, financiers and maintenance service generally does not exist or is inefficient. These challenges are quite different from the ones faced by distributors of consumer goods, without maintenance or financing needs.

In short, engineers have done their job but marketers have not. As a result, addressing the marketing bottleneck has become a priority on the development agenda.



¹ In this document, otherwise specified, we intend “marketing” in the broader sense, including all marketing techniques, end-client financing, sales organization, physical distribution, and after-sales activities, as well as related overhead, needed to successfully bring devices to BoP families.

While this bleak picture is generally true, there are fortunately a number of encouraging exceptions that can be learnt from. Building upon our previous research,² we identified 15 organizations³ that have developed “best practices” in marketing life-changing devices to the BoP in Asia, Africa and Latin America.

While these 15 organizations address very different needs, the nature of the marketing challenges they face and the innovative solutions they have developed are remarkably similar across products and geographies. Yet local marketers are generally not aware of best practices developed by their fellow practitioners active in different sectors and geographies.



Home improvement projects

Patrimonio Hoy

Improved Cook Stoves

GERES, Toyola

Sanitation

BRAC WASH program, SaniShop

Solar Home Systems

Grameen Shakti, SELCO

Solar lanterns

Greenlight Planet

Water purifiers

Hydrologic, IVDP-Pureit

Irrigation pumps

KickStart

Multiproduct distributors⁴

Living Goods, Project Dharma, Sakhi Retail, Soluciones Comunitarias

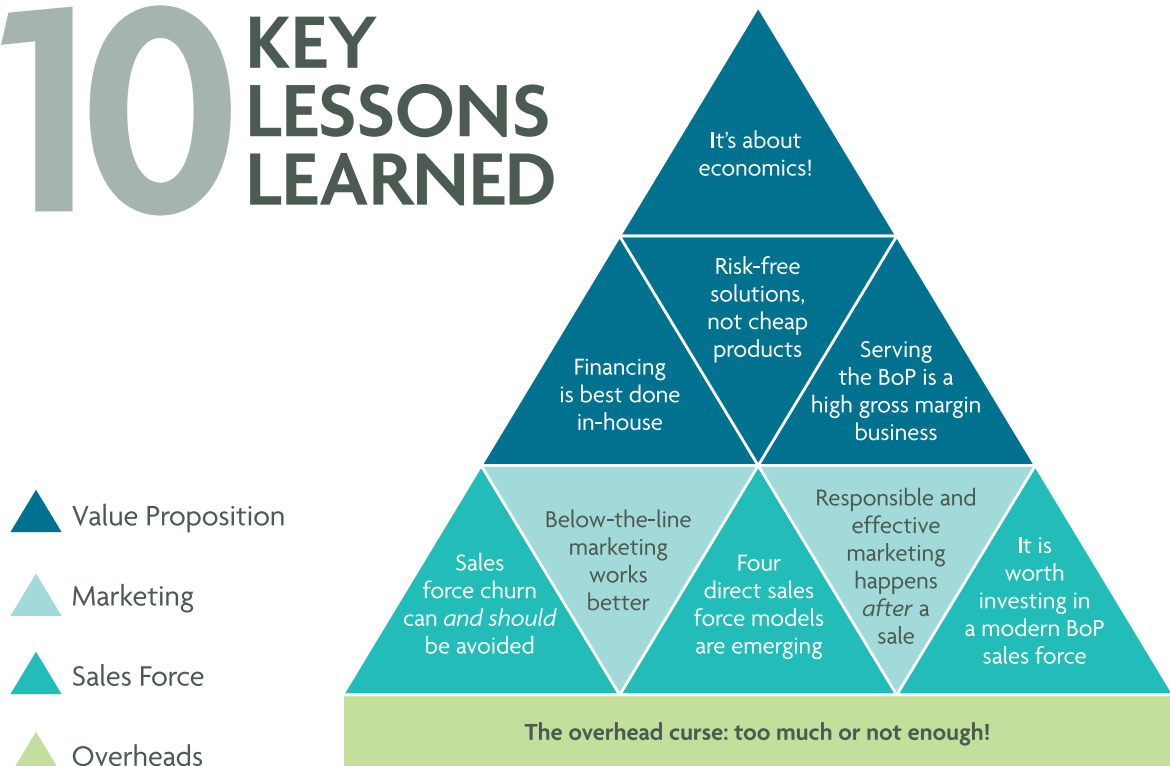
2 See Hystra reports on Energy, Water and ICT for Development on www.hystra.com, and on Affordable Housing on <http://india.ashoka.org/sites/india/files/AccessstoHousing.pdf>

3 We do not infer that these organizations are necessarily the “best” in the world. They however are reasonably successful and represent a diversified set of devices (including some marketing multiple products) and geographies. We learnt both from their successes and difficulties. We are grateful for their honesty.

4 Multiproduct distributors distribute products such as Barefoot Power and d.light solar lanterns, and First Energy and Envirofit cook stoves, that also helped us shape this analysis.

To help all businesses and NGOs involved in marketing life-changing devices to the BoP learn from existing best practices, this paper summarizes the 10 key lessons we have learned from these 15 BoP marketing masters.

10 KEY LESSONS LEARNED



Caveats:

- In an effort to illustrate the common features among best practices, we are aware that we have had to overlook some important nuances. For example:
 - We treat “the BoP” as a homogeneous group, whereas there would be distinctions to make by culture, level of wealth etc.
 - Given the wide range of products sold by the organizations we analyzed, it is possible that not all lessons summarized here are relevant to all products and geographies.
- As mentioned above, our study exclusively analyzes the marketing of consumer durables, not FMCGs. Some of the lessons learned here might apply to FMCGs, but we do not claim they all do.
- We draw conclusions from a limited set of 15 examples, and choose to put forward our views while acknowledging the risk of being proven wrong. We are however comforted by the fact that the 15 organizations generally support our conclusions.

1. IT'S ABOUT ECONOMICS!

Advertisers in the US spend a staggering \$140 billion⁵ each year with the aim of convincing American consumers to switch brands (\$440 per individual). Marketing to BoP families is a totally different challenge. Indeed BoP families face a radically different predicament from their US counterparts.

Their decision is not one between two brands of solar lanterns, but rather between a brighter solar lantern and a smoky kerosene lamp. Within the inelastic constraints of a typical monthly budget of \$100 (70% of which goes to food), the question is whether a \$10-25 investment will indeed positively replace a \$2-3 monthly cost in kerosene, candles and batteries, and what other goods might need to be sacrificed for this purchase.

Best selling devices do provide economic benefits to the families, the more tangible (i.e. direct short-term cost savings) the better:

- Improved cook stoves are much easier to sell to families who purchase charcoal daily than to the ones who get their children (or housewife) to collect “free” biomass. Despite the major health benefits of improved cook stoves (that can eliminate toxic fumes that kill 1.8m people a year), Toyola, a Ghanaian company that has sold over 250,000 improved cook stoves, has chosen a slogan that makes a straightforward economic argument: “Don’t burn your money”, focusing the sales pitch on the 50% reduction in energy cost to cook the family food (see picture below).



Toyola logo on a company vehicle

- KickStart Irrigation pumps can repay for themselves in a season from increased agro-production. The name of the pump, called MoneyMaker, makes this economic argument clear.
- Solar lanterns and SHS are very popular in unelectrified areas because they provide cost savings in candles or kerosene, and additional income (by extending working hours). They are also safer and provide a better light than traditional options.
- Reading glasses have huge success in rural areas where many people rely on their sight for livelihood, e.g. to make crafts and fabrics. Local entrepreneurs of Soluciones Comunitarias (SolCom), a company selling a range of beneficial products in Guatemalan rural areas, can easily sell 20 pairs in one morning of market campaign. The benefits of the glasses are immediately visible to prospects, even more so as the entrepreneurs encourage them to try on the glasses to put a thread through a needle.

Purchasing such devices are extremely lucrative investments for BoP families: generating annual IRR⁶ of 5000% for cook stoves (for families who previously purchased charcoal), 2200% for irrigation pumps, 400% for water purifiers (for families who previously boiled water or purchased bottled water), 150% for solar lanterns and 60% for SHSs, and so on. Such high returns explain why BoP families can afford to pay annual interest rates as high as 50% when borrowing money for such purchases. An (arguably provocative) definition of being poor is to be surrounded with inaccessible lucrative investment opportunities.

5 Kantar Media Intelligence.

6 Internal Rate of Return, calculated on the basis of new income generated and/or savings on previous expenses.

2. BoP CUSTOMERS WANT RISK-FREE SOLUTIONS, NOT CHEAP PRODUCTS

Given such high promised returns, what deters BoP customers from making these investments is the fear that something will go wrong. Experience shows that far from seeking the cheapest device, customers are not price sensitive as evidenced by their willingness to pay substantial price premiums to reduce their (perceived) risk of being disappointed.

- Toyola cook stove customers are offered an 11% discount on their \$10 cook stove if they pay cash. However 50% of them prefer to forego this discount in order to be able to test their stoves at home for a month. During their trial period, Toyola's sales agent provides families with the famous "Toyola box," a small can for families to deposit savings from reduced charcoal usage. A month later, the agent comes back to open the box (while neighbors watch) and demonstrate to the family that the cook stove is indeed delivering the promised savings!
- Similarly, the customers of Patrimonio Hoy, a subsidiary of cement manufacturer CEMEX selling home improvement packages, are willing to pay a 26% premium over the cost of building materials in exchange for complementary services. Through this "membership fee", they gain access to a range of services, which protect them from the many risks involved in building an additional room: architect advice to avoid poor construction design, fixed material price during the scheme to eliminate the risk of price increase, flexible delivery to avoid waste, theft or damage to building materials purchased in advance, and – probably most critically – fixed weekly payments with strong penalty for non compliance to overcome the family's own lack of discipline in complying with the savings program they have set for themselves.

BoP families are not price sensitive either when purchasing products with less immediate economic benefits. Once convinced to buy, many are willing to pay more for the same functional benefits in a premium version, if they see it as enhancing their social status.

- Hydrologic, which sells water purifiers in Cambodia, offers two versions of their products to customers. Twice as many families opt for the slicker \$24 model than the \$14 entry price model. Furthermore when credit is offered, 90% of customers opt for the more expensive version.
- Similarly, 80% of SaniShop customers would rather purchase a \$90 latrine with a solid zinc and cement cubicle than a \$45 latrine with an effective but modest bamboo shelter.



Choice of toilet structure: Zinc and cement cubicle or Bamboo shelter?



It thus makes sense that the successful organizations studied here were all focused not on reducing their price as much as possible, but rather on offering their clients the best possible value for their money (meaning a risk-free, good quality, comprehensive solution at a price comparable to alternatives). In fact, before launching Patrimonio Hoy, CEMEX tried to sell smaller (and thus less expensive) bags of cement in lower income neighborhoods – sales never took off. The company realized that their customers were not interested in buying cement, but in building a room. Focusing on their customers' needs, Patrimonio Hoy added additional products and services to cement in order to provide the comprehensive offer described above. The program has experienced great success with more than 350,000 families served, and what's more Patrimonio Hoy is today one of the most profitable sales channels of Cemex, with sales tripled compared to selling cement alone. Other organizations have added 15 to 30% to their revenues by providing services and financing for a fee.

These same successful organizations also go to great lengths to build consumer trust and hence reduce risk perception. For instance, many invest into building a recognizable brand, and many others pick their sales force among reputable local officials.

3. FINANCING IS BEST DONE IN HOUSE, WHENEVER POSSIBLE

Many manufacturers and distributors are wary of getting involved in the complex world of finance. Dealing with the risk assessment of customers and handling default payments are activities they much prefer to leave in the hands of specialized banks or MicroFinance Institutions (MFIs).

Some of the 15 organizations we analyzed have taken a radically opposite view and demonstrated that in-house financing can provide value to customers, reduce operating costs, increase revenues and allow their organization to reach more clients!

- Grameen Shakti, the largest company worldwide selling Solar Home Systems (SHSs) to the BoP, offers its customers in Bangladesh to pay for their \$150-300 SHSs over up to three years through a monthly service charge that combines the cost of the equipment, maintenance and financing. Technicians collect installments during their monthly service visits. Customers know that the technician-cum-money-collector will not miss a visit, and reciprocally, Grameen Shakti knows customers will not miss a payment for fear of losing maintenance. This way consumers only pay the operator if and as long as it delivers its promise.

- Patrimonio Hoy enables families to pay for their \$1,000 project over 70 weeks, through a membership fee which also includes their financing cost. Clients do not need any collateral (the only administrative requirement is an ID), but are instead requested to save money for 5 weeks before receiving their first 5 weeks of credit. The last cycle, at the end of the 70 weeks, asks for only 2 advance payments to get 16 weeks of credit. The credit granted increases again for repeat clients, making the advantages of being in the program – and thus the cost of default – higher for the most loyal clients. This, combined with steep penalties in case of non-compliance with the weekly payment, ensures that customers adhere to their plan and realize their dreams. Not involving an external financier results in leaner operations, very low default rates and a cash positive business as a significant proportion of customers request deferred deliveries, and in effect pay Patrimonio Hoy before receiving the material.



Patrimonio Hoy savings and credit scheme

In addition to reducing the risk both for customers and operators, in-house financing can be a profit-making activity that has been seen to increase returns on sales by 3 to 15% percentage points! This implies that operators manage to find very low-cost funds (e.g. relying on customer savings or concessional loans) or charge a high interest to customers (e.g. foregoing an 11% discount for cash purchase in order to pay a month later equates to paying a 311% annualized interest rate!), or both.

The alternative to in-house financing is working through banks or MFIs. This is sometimes compulsory in countries such as India where only financial institutions can offer interest-bearing credit. Working in partnership with MFIs is indeed enticing as they can provide easier access to large groups of prospects (e.g., at monthly MFI customer meetings) and faster penetration thanks to a combination of loans and endorsement by trusted MFI representatives. Yet, our discussions with organizations that have built partnerships with MFIs, networks of Self Help Groups (SHG) or rural banks indicate some limitations and challenges:

- Only a limited percentage of the BoP families can be reached through these partnerships. Despite a very rapid growth, MFIs and other providers of microfinance only reached about 10% of the world's poorest at the end of 2010.⁷ In addition, marketers report that only a fraction of these organizations are able and willing to build effective partnerships (one practitioner revealed that at best one in ten of these partnerships actually worked in the long term).
- Some practitioners indicate that there is a risk that MFI or SHG members feel pressured to buy the devices promoted by the institutions they trust and depend on, resulting in higher sales in the short-term but potential customer dissatisfaction and low usage rates in the long-term. This may explain why up to 69% of families who had bought water purifiers in such a group event had stopped using them two years later.
- While in theory MFIs or banks are taking a credit risk (and get paid for it), in practice, distributors are still compelled to handle default payment situations as failure to do so will lead the financiers to stop giving loans to future customers.

In short, offering financing in-house comes with a handful of issues (e.g., where to find working capital financing, how to keep collection costs low in particular for smaller ticket items); but even when working with MFIs and banks is a necessity, marketers should also know that they cannot just “outsource” the credit issue to financiers.

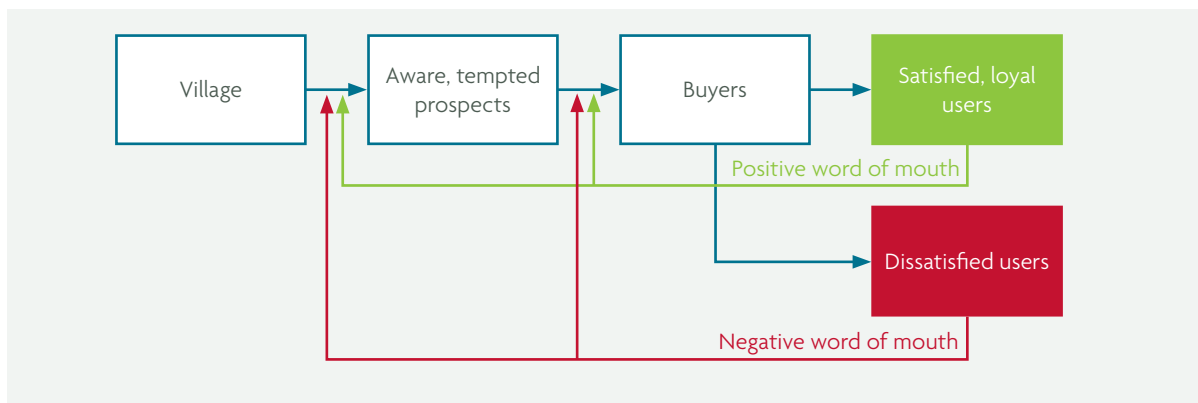


HUL sales agent conducts water purification demonstrations for a Self Help Group, with its partner IVDP that will arrange the product financing.

7 As of Dec 31, 2010, there were 137,000 MFI clients earning below 1.25\$/dayPPP out of 1.4 billion people in this income bracket. Source: http://www.microcreditsummit.org/pubs/reports/socr/2012/WEB_SOCR-2012_English.pdf

4. BELOW THE LINE MARKETING WORKS BETTER

The BoP market is won one village at a time. Each village takes several steps: first making villagers aware of and tempted by the offer, second overcoming the last barriers to purchase, and finally ensuring that buyers use and are satisfied with the products ... and tell their friends about it.



Many organizations place greater emphasis on raising awareness of their products by investing in “above the line” marketing campaigns, i.e. billboards, radio ads and even TV advertising. While these investments do raise awareness they generally fail to translate into actual sales.

For example, a year-long marketing push combining demonstrations by field staff and radio ads raised awareness and understanding about irrigation pumps among small farmers to respectively 84% and 63%, up from 65% and 44%. Yet sales penetration only increased to 13% (from 8% initially). Similarly, a marketing campaign stressing the health benefits of improved cook stoves resulted in an impressive 69% awareness of health impact among potential customers and a staggering 83% stated intention to buy, but a disappointing 2% made actual purchases.

Leading practitioners are plainly aware of the limitations of (above the line) marketing campaigns:

- Deepak Saxena, Head of Partnerships for Pureit at HUL, acknowledges that its sales of hundreds of thousands of water purifiers to the BoP in India “benefitted from the aspirational marketing campaign done for the middle-high class market. However, rural people would never have bought without further below the line marketing bringing them to trust the product.”

- Upmanyu Patil, the CEO of Sakhi Retail, a network of hundreds of women selling various beneficial products in India, adds: “A TV campaign would [never reach most people in the rural areas]. And people are very averse to change here. The only way to convince most of them is for them to see the product work long enough at their neighbors.”
- Iwan Baskoro, the Director of GERES Improved Cook Stove Program in Cambodia, which oversaw the distribution of over 1.8 million cook stoves, concurs: “[After 3 marketing campaigns through posters, TV, and radio] only 20% customers had bought based on the campaigns. Word-of-mouth was the most important information source for their purchase decision.”

Interestingly, in our sample of 15 organizations, the six largest (in yearly sales) were not spending any money on above the line marketing (they never had, even in their earlier years). Best BoP marketers shy away from expensive above the line marketing campaigns, the only exception being if they are paid for by a willing foundation or aid agency: clearly these campaigns cannot have a negative impact on sales, but their positive impact is notoriously hard to measure. And most importantly they do not replace the need for village-level demonstrations, allowing the targeted populations

to verify for themselves the product benefits. In one word, above the line marketing can in some cases help increase sales, while below the line marketing is an absolute requirement to sell at the Base of the Pyramid. It is thus not surprising that all the organizations studied here focus most – if not all – of their efforts on excelling at village-level tactics:

■ **Demonstrations in public places or small groups are essential for communicating product benefits.**

For example, Soluciones Comunitarias sales agents conduct free eye exams during their village-level campaigns. Visual and tangible proof works best, the more sensational the better. Sales agents of Greenlight Planet, an Indian company whose direct sales channel is distributing close to 25,000 solar lanterns per month, pour water on solar panels to prove their durability. Similarly d.light's sales agents throw their lanterns on the floor. It is also common for solar light vendors to conduct demonstrations at night, when the lighting superiority of a solar versus kerosene lamp is obvious. Similarly, improved cook stoves marketers such as the Sakhi ladies selling Oorja stoves in India, host live cooking demonstrations to illustrate their stove's shorter cooking time and good-tasting results, while at the same time attracting prospects with free delicacies!



Greenlight Planet prospect checking the solar panel water resistance

■ **Understanding and leveraging village politics is also key.** Marketers seek endorsements from village chiefs, recruit vendors from trusted locals, and offer free trials to opinion leaders. The sanitation program of BRAC, the world's largest NGO based in Bangladesh, even organizes Water Sanitation and Hygiene (WASH) committees. Six women and five men, including the imam and the local teacher, map out the village, singling out the homes that do not have proper latrines and pollute the water table. This peer pressure is combined with financial support to the poorest to ensure the village eradicates open defecation. Through this system BRAC has provided over 2.4 million latrines to rural Bengalis.



SolCom agents conducting reading tests during a village campaign



BRAC WASH village committee with the village map

5. WORD-OF-MOUTH MATTERS MOST – RESPONSIBLE AND EFFECTIVE MARKETING OCCURS AFTER THE SALE

A large percentage of BoP customers make a purchasing decision based on what their neighbors and relatives recommend to them: 92% for SHSs, 60% for home improvement packages, 60% for improved cook stoves and 49% for irrigation pumps.⁸

Given this acknowledged fact, it is surprising that many marketers do not place sufficient attention on measuring and ensuring that their customers are satisfied users. The reason may be that, in many cases, unsatisfied buyers are not visible (though they are certainly not silent!). In 4 out of the 15 organizations we analyzed, customers had to make a proactive effort to continue using their device, e.g. actually working the pump or replacing the filter in the water purifier. An annoyingly significant share of these customers (20 to 69%) were no longer using the product two years after purchase. This meant tens of thousands of families that had invested months of savings into a disappointing device (hardly the objective of these socially-minded marketers) and many more individuals who would actively discourage their friends and neighbors from making the same mistake.

What is even more troubling is that many of the marketers failed to investigate the cause of these users' dissatisfaction or to try to address their problems. It has indeed been proven that an initially dissatisfied customer whose problem has been solved through an effective after-sales service becomes an even more vocal supporter.

Frank discussions with some of these marketers revealed that their dependency on donors' money led them to focus on meeting short-term sales goals rather than on ensuring actual use and ensuing social benefits of these devices. Less donor-dependent organizations (i.e., more dependent on customers) were much more focused on activating word-of-mouth and hence ensuring customer satisfaction. These organizations however acknowledge that the powerful and cost-efficient word-of-mouth

lever takes time to produce results – time which may be considered too long in the impatient donor community.

It may then not be surprising that it is Patrimonio Hoy, a social business but subsidiary of a corporation, which stands out in their efforts to measure customer satisfaction, using the Net Promoter Score (NPS). This wide spread methodology in the commercial world calculates NPS as the number of clients who say they will recommend the product or service minus those who say they never will. Patrimonio Hoy uses NPS to track its monthly performance (a remarkable 90% on average in 2011) to immediately identify and follow-up with dissatisfied customers, preventing negative word-of-mouth. It also ties sales force compensation with their individual NPS scores to ensure immediate action.

Positive word-of-mouth can also be encouraged. Toyola sales agents enroll “evangelists” among their first clients, who inform agents of cook stove demand in their local village, allowing agents to visit in priority villages with guaranteed sales and avoid missing existing demand. Evangelists receive a commission for their work (e.g. around 5% cash commission or a free stove if they convince 10 friends to purchase).



Grameen Shakti clients attend women user training

⁸ Data from customer surveys conducted by 4 of the 15 organizations analyzed, asking their clients what triggered their purchase.

6. SERVING THE BoP IS A HIGH GROSS MARGIN BUSINESS⁹

As we have seen, effectively marketing products for the BoP demands the deployment of significant field resources able to conduct village-level demonstrations, provide technical assistance and after-sales service, and arrange financing. This amounts to a sizable cost to generate a relatively small transaction. In other words, BoP marketers need to ensure they have hefty gross margins in order to hope to be sustainable when they reach their targeted volumes.

While this is ideologically difficult to accept for some, successful marketers are pricing their products to have sufficient gross margins for financial sustainability while keeping prices at a level that ensures their customers still enjoy very attractive returns on their investments. Given the range of returns we described in the first section, there is often room for marketers to ethically increase their prices, provided they do indeed provide a risk-free, holistic solution to their customers. One organization we worked with, encouraged by the benchmarking exercise, decided to break an internal taboo and raise prices for a new product by 40%, with no observable negative impact on sales.

With this in mind, what gross margins should marketers target to sustainably serve the BoP?

To provide an answer to this question, we analyzed the data provided by the 15 organizations, looking at the current gross margins of companies that are currently profitable or that could be if they were managed to solely maximize profits. We also calculated the gross margins required for currently unprofitable companies in order to breakeven when they reach their volume targets. The gross margins required depend on the type of business model of each organization:

- Organizations that focus on working with existing local value chains (e.g., providing networks of masons with efficient designs to build latrines) need to ensure their local partners enjoy gross margins of 25-30% to be sustainable.

- Distributors of single (manufactured) products (e.g. solar lanterns or water purifiers) need gross margins of 35-45%.
- Multiproduct distributors need gross margins of 30-50%, as the increased complexity of their product range offsets the revenues generated by an increase in sales per sales person.
- Equipment and service suppliers (e.g. SHSs) need gross margins of 25-40% as the larger transaction amounts (more than \$100) help pay for their full suite of installation, maintenance and financing services.

These gross margins are quite high when compared with “rich world” benchmarks such as Best Buy, a leading US distributor of consumer electronics that enjoys a 19% return on equity while operating with gross margins of 26%.¹⁰

Perhaps controversially, our finding is that marketing innovative products to the BoP must be a high gross margin business if it is to ever be sustainable. Volume will not compensate for low margins, given the geographic dispersion of the market and the required village level marketing efforts.

The good news is that as long as marketers provide solutions that indeed change the lives of BoP families, customers will be willing to pay and able to afford the price that is needed for the organizations that serve them to be sustainable.

⁹ Gross margin is defined for the whole downstream value chain, from distributor to end-consumers, independently of the number of intermediaries. $\text{Gross margin} = (\text{price for end-consumer} - \text{COGS for distributor}) / \text{price for end-consumer}$.

¹⁰ 5-year average performance. <http://finapps.forbes.com/finapps/jsp/finance/compinfo/Ratios.jsp?tkr=BBY>.

7. SALES FORCE CHURN CAN AND MUST BE AVOIDED

Many marketers we have met say they struggle with reducing their sales force churn (i.e., the proportion of their sales force that leave within a year of hire and need to be replaced).¹¹ Some organizations operate with churns between 40% and 80%, incurring high costs in recruiting and training.

There is often some confusion as marketers include in their “churn” numbers two very different types of sales agents: lead generators who occasionally get a commission when they provide a referral and naturally drop out when they have saturated their contact list; and sales people who earn most of their income through sales activities. Confusion also comes from the fact that organizations do not remove from their lists of “sales agents” individuals who have stopped actively selling for some time. Finally, “short term” churn (i.e. experienced during the first three months after hiring) is quite different from longer term churn.

While offering career opportunities and organizing team events may help, the lesson from our benchmarking is clear: providing a competitive compensation is a necessary condition for keeping churn below manageable levels. When compensation is sufficiently attractive, churn can be reduced to a manageable 30%, even with purely variable commission-based incentives. For products requiring customization (and thus a long lead-time, discouraging a sales force on commission only), providing a fixed compensation is key for sales force retention. SELCO, a social business that has installed over 135,000 SHSs in Indian rural homes, achieves a record single digit percentage churn of its sales force through its attractive compensation package, with a fixed salary and performance-based commissions. SELCO is also applying two good practices for retention: its sales force is full-time (among the 15 organizations, full-time sales force averaged a 22% churn versus 48% for organizations using part-time sales force), and is tightly managed (i.e. with less than 8 sales agents per manager), which also appears to reduce churn.

In addition, some best practices in recruitment can help lower recruitment mistakes: referrals of candidates by existing performing sales agents (Project Dharma); and village level conferences to present the product and company and the opportunity, offering interested candidates to come to a next session (Soluciones Comunitarias). Clearly stating the difficulties of the job during the recruitment process, and finalizing it with shadow training with a more experienced sales person, helps avoid misconception about the job and subsequent churn.

Some organizations such as Sakhi Retail go even a step further, recruiting sales agents with a minimum vetting process, paying them on commission only and waiting for a couple of months to observe the ones that have the right skills and motivation. Only then do they invest in training, coaching or a partly fixed compensation.



SELCO technician paid like SELCO sales people a fixed salary with commission on each system installed

¹¹ Depending on the models, sales people can either be employees or independent entrepreneurs.

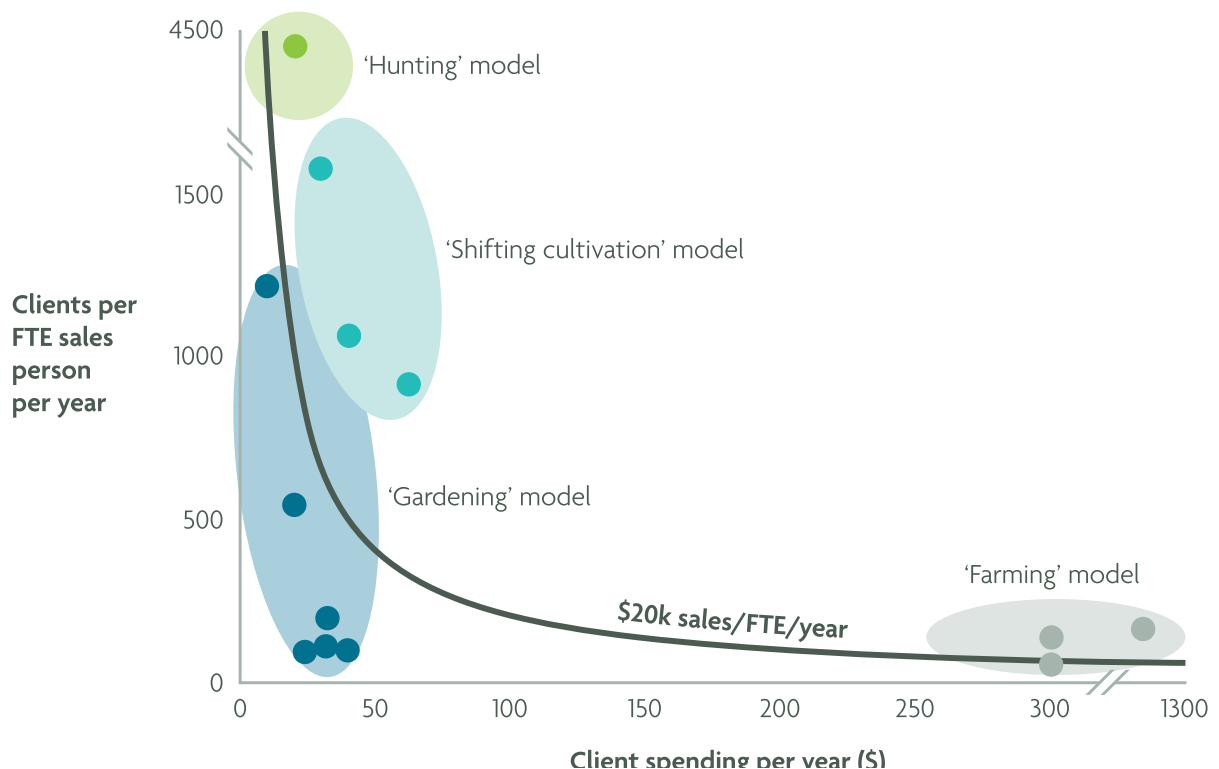
8. FOUR DIRECT SALES FORCE MODELS ARE EMERGING

Most of the organizations we have analyzed fall into four sales force models. As they market consumer *durables* (as opposed to consumer goods that families buy every day or week), all these marketers face the challenge of progressively saturating the markets they serve and having to choose between redeploying their sales force to other areas, diversifying their product range or disbanding an organization that took much efforts to build.

The organizations studied have found different ways of ensuring sales people generate sufficient sales to pay for their salary, by increasing the number of clients served, or by increasing average client spending per year.

$$\text{Number of clients per salesperson} \times \text{Average client spending} = \text{Sales per salesperson}$$

As the graph below shows, four different models are emerging, partly driven by the products sold.¹²



¹² FTE (on the graph) means Full-time Equivalent. For companies employing a full-time sales force, the sales per sales person FTE equals the sales per sales person. For companies employing a part-time sales force, the sales per sales person FTE have been computed as the sales one sales person would make if working full-time. One household is counted as one client.

Organizations providing equipment and related services with a price point above \$100 need to have a constant local presence to serve their clients well, leading them to adopt a “farming” model:

- **“Farming”:** Organizations such as Grameen Shakti or Patrimonio Hoy, selling equipment and services as a package, organize their sales force in hundreds or thousands of local branches, each sales agent serving a few hundred clients per year. They offer credit and maintain regular contact throughout the year to ensure after-sales service and customer satisfaction. They take over a decade to reach full penetration in a given village. These models are the only ones that have reached tens of millions of dollars in sales. Their model is very robust, provided there is no technological discontinuity that would make servicing useless. They still show large discrepancies in sales per sales person, ranging from \$20,000 to more than \$120,000/year/FTE.¹³ Given their limited reach (a radius of 50km max around each branch), the main lever for them to increase sales per FTE is to provide the widest possible range of complementary products and services to holistically fulfill their clients’ needs. This unique set of services, paid for by clients, also allows and justifies sufficient gross margins for these businesses to be sustainable.

For devices priced below \$50 such as improved cook stoves, water purifiers, or solar lanterns (or a combination of them), three very different models emerge:

- **“Hunting”:** Organizations selling “simple”, low-cost products (less than \$20) such as Toyola with its cook stoves in Ghana, employ full-time mobile sales agents serving each many thousands of households. They cover extensive, non-exclusive areas, leveraging lead generators (called “evangelists” at Toyola) or retailers to aggregate demand. They will be successful as long as the products they promote are new and cannot be found in traditional distribution channels. They will probably need to switch products or revise their business model when this happens.
- **“Shifting cultivation”:** Organizations dealing with more complex products such as Pureit-IVDP selling water purifiers in India, set up highly specialized marketing and sales teams that focus on a region until they have achieved their target penetration; then they shift to the next area, and go back only when replacement needs start. These distributors face the same challenge of finding a new product to sell once theirs becomes mainstream.
- **“Gardening”:** Distributors such as Project Dharma or Sakhi Retail in rural India employ a local, mainly part-time sales force reaching a relatively limited number of households in a 3-10km radius. Whether single product or multiproduct distributors, they sell goods that throughout the year will amount to \$15-40/client household. These entrepreneurs typically manage to sell \$3-12,000 worth of products per year on an FTE basis, a fraction of what a full-time sales force achieves for similar devices (\$40-60,000 in the hunting and shifting cultivation models).

¹³ Estimating that the part-time sales force works half time and is 5 times less productive than a full-time one (\$10,000 of sales/FTE versus \$50,000/FTE)

For sales agents, this corresponds to annual revenues of \$300-1,000/FTE only, sufficient as complementary revenue for households with other income sources. Such distributors are faced with additional challenges compared to their full-time model peers:

- Their sales force, part-time with a lower sales productivity, must be at least ten times bigger than a full-time one to generate the same amount of revenue.
- Higher churn (due to lower salespeople revenues) increases management time (and cost) spent on recruiting and training new agents.
- Day to day management of a larger, dispersed sales force is also more costly than that of full-time models.

To increase their agents' income and avoid churn, some distributors try to diversify their product range. They are then faced with additional complexity of sourcing and distributing multiple products, often resulting in higher overhead costs as % of sales than a monoproduct leaner model. Sales agents themselves struggle to master all the marketing techniques of such diverse products. Multiproduct distributors recognize these challenges and are busy refining their business models, redefining their range of products to ensure greater coherence, empowering their more seasoned entrepreneurs to recruit and coach new ones and leveraging IT to cost-efficiently manage their large sales forces.

These four models of direct sales force make sense for products that require either personalized advice and local services in addition to products (farming model), or consumer education (hunting, shifting cultivation and gardening models). Yet, once products become widely known and trusted, retail will probably take over, as it has already done for kerosene lamps or mobile phones.

A fifth model consists in upgrading local value chains, integrating new products in traditional production and sales channels. For example, GERES in Cambodia trained existing cook stove manufacturers in making improved cook stoves, while organizing the value chain so that each player would make more money than with traditional stoves. GERES also promoted quality standards to protect consumers, set up a professional association of producers and distributors, and paid for the initial below the line marketing to get sales started. In such models, it is key that the industry building organization be willing to hand over power to long lasting partners: GERES is currently trying to get the government to take over enforcement of the quality standards countrywide.

GERES stove manufacturer



Sakhi Retail urban store, complementing the direct sales channel of Sakhi ladies in rural areas



9. IT IS WORTH INVESTING IN A MODERN SALES FORCE FOR THE BoP

While different types of sales force organization exist, the most effective marketers have developed a number of operational best practices that are quite consistent. By combining these, we can sketch out the key features of what may become the model of a modern sales force for the BoP, relying on sound Human Resources management and smart utilization of technology. Such a modern sales force marketing innovative devices for the BoP would combine four elements:

- **A mobile, full-time sales force:** The beauty of a local, part-time sales force is that it leverages local relationships and avoids travel time. Indeed, part-time sales people spend 82% of their time facing clients against 58% for a full-time mobile sales force that spends 26% of their time on the road.¹⁴ In practice however, a full-time sales force benefits from at least three times more hours of training in part because they are twice as loyal. As a result they are better trained and as we saw in the previous chapter, become more productive sales persons, more than compensating the time spent on the road with increased sales success rates. At the end of the day, the cost of direct sales force as a percentage of sales is comparable be they part-time or full-time.
- **A local network of “lead generators”:** A key element to make a mobile sales agent efficient is a network of commission-based local individuals who inform him or her that it is worth coming to a village, and aggregate orders. They can for example be chosen during the first visit to a village by the sales agent, who identifies motivated individuals among first clients or interested prospects. Lead generators can also take care of collecting payments for the sales person who then only does delivery on his or her subsequent visits, saving a lot of time to promote the product in new areas. Such lead generators typically cost 2 to 3% of sales. In dense enough areas and once the product gets better known, retailers can also play
- this aggregator role. Toyola has such a network of about 100 evangelists and retailers per vendor. An alternative is to work with NGOs who can request their social workers to play this role once they are convinced of the product benefits, as does NGO IVDP for Pureit water purifiers as well as d.light solar lanterns, among other beneficial goods.
- **Good coaches as managers:** Some of the 15 organizations have a very “loose” management, with 16 salespeople FTE per manager. This keeps sales management cost down (3% of sales) but seems to negatively affect churn (60% in average). The most effective model seems to be a “tight” management, with 7 full-time salespeople per manager on average, resulting in a higher cost (4-6% of sales) but much lower churn (25%). Importantly, the most effective sales managers are not necessarily the best salespeople, but are selected based on their coaching skills, and usually paid twice as much as the sales people they manage.
- **A mobile technology platform for Customer Relationship Management (CRM) and sales force management:** An effective sales management relies on a smart use of technology to reduce reporting time: Greenlight Planet collects sales and training attendance data over the phone, Project Dharma automates their sales agent reporting through a JAVA application which sends data directly to headquarters, Soluciones Comunitarias does live

¹⁴ Based on our sample of 15 organizations

tweets of its entrepreneurs' performance. Living Goods, selling a wide range of life-saving and life-changing products through over 800 Community Health Promoters (CHP) in Uganda, has gone further with a (cloud-based) mobile platform that combines sales force management and CRM:

- Sales agents (the CHP) use their mobile phone to register patients' treatment real-time, as well as report on daily sales;
- The central platform automatically sends reminders of client follow up to sales agents and also announces new products, promotions or programs;
- Sales managers track sales agent performance and can send text messages or call for coaching sessions;
- Clients receive text messages encouraging them to comply with their treatment, providing timely information (e.g., to pregnant mothers) or informing them of promotions. Clients can also use messages to ask for a sales agent visit.

Such a platform could probably easily integrate text messages from local "lead generators" and optimize the routing of the sales agents.



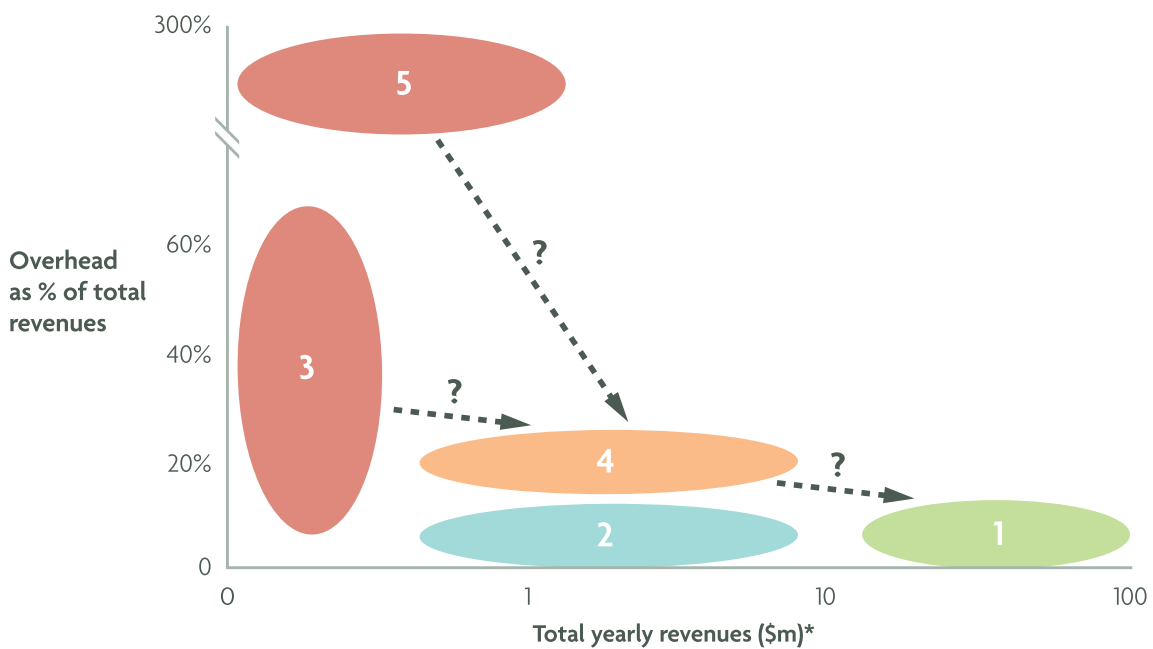
Living Goods sales lady sending report

10. THE OVERHEAD CURSE: TOO MUCH OR NOT ENOUGH!

Last but not least, we looked at the cost of overhead as a percentage of total revenues.¹⁵ We defined overhead as any costs that are above the field level layers of sales managers to whom sales agents report. This is a broad category that includes the local back office, general management, recruiting and training (other than the ones done by sales managers), fund raising teams, and impact monitoring.

The resulting map (see below) features five types of organizations with strikingly differing situations:

- 1 At the bottom right, very large, successful organizations have reached the “overhead heaven”, keeping it below 10% of revenues while benefiting from substantial professional management structures.
- 2 Other quite mature organizations have voluntarily maintained low overheads as % of sales, often by sticking to social sector salary levels below the commercial sector for their highest positions. These players seek to achieve greater impact by influencing others rather than growing their organization.
- 3 A number of local social entrepreneurs are “bootstrapping” their launch, relying on their own savings, their families and small grants to fund their first years. They keep their overheads below \$200,000 and might be trapped, unable to scale up if they do not raise the necessary funds...
- 4 ... which is what several fast-growing organizations have done, investing ~30% of their revenues in building professional overheads (hopefully this number will decrease to 10% as they grow and join the ranks of the first group).
- 5 A last group has made a “big bet” in staffing their overhead substantially from the beginning. These organizations have made themselves heavily donor-dependent, which in turn explains their high overhead as they have high fundraising expenses (including impact monitoring often requested by donors). These organizations have a short few years to demonstrate they can innovate enough and reach scale.



¹⁵ We defined revenues as the revenues of the entire value chain, including product revenues at the price at which they are sold to clients (including entrepreneurs' commissions when relevant), servicing, financing and consulting revenues, and output-based subsidies such as carbon credits, directly linked to the sales made. We did not include other subsidies and grants.

CONCLUSION: TOWARD MORE COLLABORATION

The 15 pioneering organizations that have been our masters have shared their insights with generosity and honesty because they know that this emerging field needs more collaboration.

Indeed, across the globe, dozens of management teams are building similar sales and marketing organizations. Collaboration among peers will enable them to share best practices, benchmark and improve their performance, and ultimately bring the benefits of innovative products and services to more families living at the Base of the Pyramid.

The virtuous cycle of collaboration

Benchmarking performance against KPIs

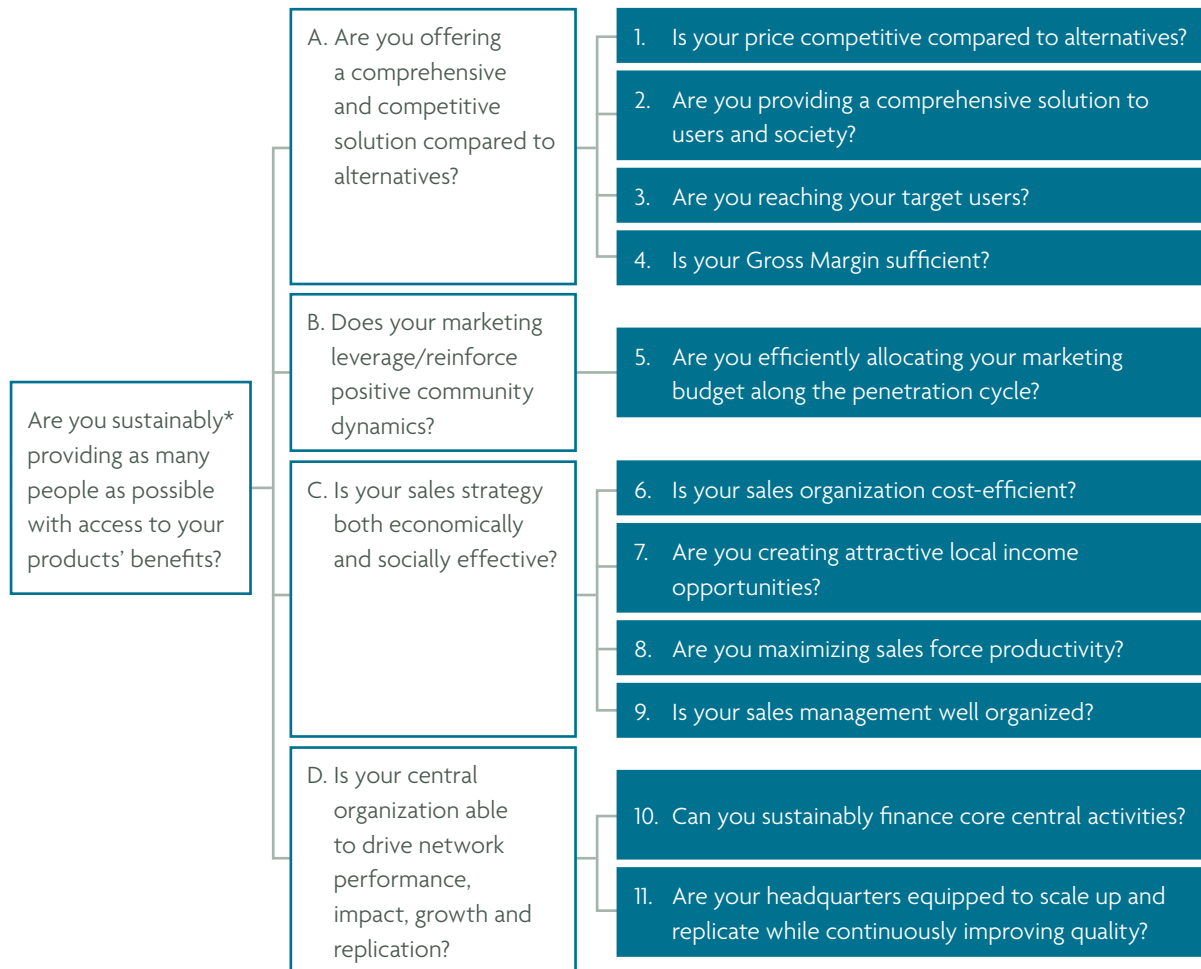
The image displays three overlapping screenshots of spreadsheets, likely from a software application, showing performance data. Each spreadsheet has multiple columns and rows of data. In each screenshot, a specific row is highlighted in yellow, indicating a focus on that particular data point or comparison. The spreadsheets appear to be used for tracking and benchmarking performance against various Key Performance Indicators (KPIs).

Learning from best practices



APPENDIX A: ANALYTICAL FRAMEWORK

In our analysis we have followed the following framework. For each question we have developed a set of KPIs that we have used to benchmark the various organizations studied here, allowing to identify best practices and potential areas for improvements.



*Sustainably: guaranteeing your clients quality service in a long-term financially viable way for your company

APPENDIX B: ACKNOWLEDGEMENTS

We would like to give special thanks to the teams without whom this study would not have been possible, who have welcomed us and given us their time and insights over the past few months.

BRAC WASH: Dr. Babar Kabir, Senior Director

GERES: S. Yohanes Iwan Baskoro, ICS Program Director & Technical Advisor

Grameen Shakti: Abser Kamal, Acting Managing Director

Greenlight Planet: A. Thakkar, co-Founder and CEO; S. Mohanty, Zonal Business Manager for Orissa; M. Mohanty, Regional Sales Manager; A. Pradhan, District Sales manager; P. Behera, Team Leader; P. Shaw, Saathi; and B. Mishra, HR manager

Hydrologic: Ros Kimsan, Managing Director

IVDP-Pureit: Mr. Francis Kulandei, President of IVDP; Deepak Saksena, Head of Partnerships for Water Business, Hindustan Unilever Ltd; Prakash Satyavageeswaran, National Manager of Partnerships

KickStart: Martin Fisher, CEO; Alexandre de Carvalho, COO; Oscar Ochieng, Budgets & Grants Finance Officer

Living Goods: Chuck Slaughter, CEO; Molly Christiansen, Director of Research and Partnerships; Chris Murphy, Director of Marketing & Development

Patrimonio Hoy: Israel Moreno, former CEO; Henning Alts Schoutz, Marketing Manager

Project Dharma: Gaurav Mehta, CEO; Pankaj Kumar, Product Development & Research Manager; Saurav Kumar, District Sales Manager; Mritunjay Kumar Vaday and Amit Kumar, Block Supervisors; Gautam Kumar Pandey, Anil Kumar Pandey, and Sashibushan Kumar, Village Level Entrepreneurs

Sakhi Retail: Patil Upmanyu, CEO; Prashant Dange, Account/ Admin executive

SaniShop: Jack Sim, founder, Mr. Pich Sen, latrine manufacturer and Yam Yorn, sales agent, Sokun Sum, Country Program Manager

SELCO: Dr Harish Hande, Founder and Managing Director, Mrs. Revathi, CFO; Sree Harsha Karanam, Senior Manager; Ananth Aravamudan, Senior Technical Manager at SELCO Labs; Mrs. Ramamani Rao, Manager – Mission Projects; Mr. Krishnaraj, Puttur Branch Manager, Mr. Radhakrishna, Sullia Branch Manager

Soluciones Comunitarias: Greg Van Kirk, co-Founder; Miguel Brito, CEO; Ricardo Guzmán, Regional Manager; Luke Burchell and Anna Moccia-Field, CE Solutions field consultants

Toyola: Suraj Wahab, co-Founder and CEO; Ernest Kyei, co-Founder

APPENDIX C: DESCRIPTIONS OF THE 15 ORGANIZATIONS

BRAC WASH Sanitation

www.brac.net/content/environment-water-sanitation-hygiene



Program for sanitary latrines in Bangladesh

History of organization: BRAC is the largest Southern NGO in the world. In 2006, it scaled up its Water, Sanitation, and Hygiene (WASH) program to solve the problem of unsanitary latrines, contaminated water and unsafe hygiene practices in rural areas. For sanitation only, the program aimed to reach 18m people in 150 districts. The core of the program is to set up local Village Water Committees (VWC) of 11 members (6 women and 5 men) in each village (~300 households), to promote the use of toilets by everyone in the village. The program targeted and reached over 80% coverage in each area to have maximum health effect. The total program budget is €58m with a total financial contribution of €52m by a donor (the Netherlands), €4m by BRAC, and €2m by local communities. In addition, WASH set up 2 revolving funds: \$190k to support local entrepreneurs manufacturing slabs and rings, and \$10m to support poor households for the installation of slab latrines.

Product/service offering and value proposition: BRAC WASH Sanitation program makes sanitary latrines essential and affordable for each income segment through segmented offerings (1) for the non poor, it ensures proper design and site selection for the installation of latrines by providing technical support; (2) for the poor, it provides micro-loans through WASH microfinance program for slab latrines; (3) for ultra-poor households, it offers subsidies (BRAC and governmental) for two-pit latrine construction materials. BRAC also builds shared latrines for schools and other public places.

	Non poor	Poor	Ultra poor	Shared latrines
BRAC WASH brings:	Technical support for installation	Microcredit for latrines (-\$12.5 loans, 10% interest rate in 11 monthly installments)	Grants for two-pit latrine construction materials	
How many latrines / year?	Jun 07-Apr 2011: 370k/yr	Jun 07-Apr 2010: 1.8m/yr	Jun 08-Apr 2011: 240k/yr	May 06-Apr 2011: 13K
What model of latrines?	Septic tank, brick wall and ceramic pan	Twin pit (ring-slab), superstructure of CGI Sheet	Twin pit, superstructure with bamboo wall	Single pit, superstructure with bamboo wall or plastic wall
Price of the latrines	\$ 225	\$44	\$22.5	\$6-18
Paid by the consumer?	all	all	\$6 (cash & kind)	Govt. fund /NGOs or clients

Value chain: BRAC WASH Program is active both at fostering demand and supply. On the demand side, BRAC WASH trains VWC members who then meet bi-monthly, monitor usage and maintenance of latrines, monitor latrine quality, select poor households eligible for micro-loan to help them install sanitary latrines, and identify ultra-poor households eligible for grants. BRAC WASH also provides support to organize community events about sanitation. On the supply side, to manufacture the latrines, BRAC WASH program relies on over 1.5k local entrepreneurs

(manufacturing slab and rings) that are trained for different latrine designs, and provided with loans through WASH microfinance program (-\$120, 10% interest rate in 12 monthly installments) to develop their activity. To support this value chain, BRAC WASH deploys a pyramidal organization:

- Program Assistant (PA) per 10 villages (3k total staff): doing surveys, organizing awareness raising meetings in clusters with women, girls and children, and visiting households
- Field Organizer (FO) per 20 villages (1.5k total staff): Supervising work of PA including organizing awareness raising meeting in clusters with male and adolescent boys, social mapping, community institution building, latrine distribution to hard core poor, and household monitoring
- Program Organizer (PO) per 60 villages (450 total staff): orientation of and liaison with stakeholders, local government representatives, school management committees and teachers; selection of school for latrine installation; review & planning meeting with Village WASH Committees; organizing grant and loan support to clients; and supervising the work of FO
- 'Upazila' (sub-district) Manager per 200-225 villages (150 total staff): Supervising and coordinating upazila level activities
- Regional coordinator per 10 upazilas (2.5k villages – 15 total staff).

Other BRAC staff (not in the WASH program) who promote sanitation especially includes 2.4k Community Health Workers, and 24k Community Health Volunteers.

Results: BRAC managed to improve access to sanitation for 25.8m people in 40k villages (out of 38m people, from May 2006 to April 2011) and increase latrine coverage from 33% to 83%. 40k VWCs were formed, 9k BRAC field staff received WASH Training, and 1.5k local entrepreneurs (with previously limited means of subsistence) were trained in manufacturing latrines. At the height of the program, over 2m individual latrines and 68k shared latrines were built per year, and an additional 305k ultra-poor households were installing their own latrines with BRAC support. Social impacts are followed closely by BRAC Research and Evaluation Division. Main reported impacts are increased latrine coverage and improved hygiene behaviors.

Exchange rate: 1 USD = 82 BDT

Sources:

Interview with Babar Kabir, BRAC WASH Senior Director, August 2012. Visit of BRAC WASH program, November 2009. www.brac.net/content/environment-water-sanitation-hygiene

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BRAC RED, Willingness to Pay for Improved Sanitation Services and its Implication on Demand Responsive Approach of BRAC Water, Sanitation and Hygiene Programme, 2008

<http://issuu.com/brac/docs/brac-ar-2009-programme-update/search?q=wash>

Contact person for the project: Dr. Babar Kabir, Senior Director, BRAC WASH: babar.k@brac.net

CEMEX Patrimonio Hoy

www.cemexmexico.com/DesarrolloSustentables/PatrimonioHoy.aspx

Home improvements in urban low-income communities of Mexico



History of organization: Patrimonio Hoy (PH) is a subsidiary of CEMEX, a global building material manufacturer and the 3rd largest cement producer in the world. PH story started with a “Declaration of Ignorance” from the company in 1998, acknowledging its lack of understanding of the self-construction market, the only one that did not crash in the Peso crisis of 1994. CEMEX conducted three years of market research on construction habits in the low-income segment of Mexico (including a 10-month ethnological study), discovering that an estimated 2.2m rooms were added each year in Mexico in the self-construction segment, taking 4-5 years each to build at a cost of \$1.5k. Patrimonio Hoy (PH) was launched in 2001, targeting these self-builders: low income families in urban and peri-urban areas traditionally building at a pace of 2m²/year. The average PH family (with on average 4.5 children) earns between \$4k and \$8.5k per year, i.e. 2-5 times the minimal yearly wage. PH was designed to overcome all the barriers they face in improving their home, and was refined over the years to manage to reach more than 40k families annually today.

Product/service offering and value proposition: PH offers a package that greatly simplifies the adventure of building an extra 10m² room for poor urban families of Mexico: \$1k worth building material, coupled with technical assistance and home delivery, payable in installments (-\$17 or 240 Ps per week for 70 weeks, including costs of material and all related services). 20% of total price is a “membership fee”, covering all the services provided and also financing community projects such as school renovations. The technical assistance component corresponds to 1 hour assessing the home improvement project with a PH architect to decide on design, construction method, appropriate product mix, construction and material delivery timeline, before entering the program. The architect remains available for free discussions at the local cell during the full time of the project, while extra assistance (going on site) is a paying service (190 Ps per visit). Customers get an increasing amount of credit as they successfully repay their installments: initially they have to make 5 payments before being delivered 10 week worth of material (effectively being given credit for 5 weeks) – in the next period only 2 installments give the right to material for 12 weeks, etc.

Value chain: 84 offices (staffed with an architect and office manager) support a network of 800 local saleswomen (-675 promotoras and -125 coordinadoras) in 21 states of Mexico. 170 distributor shops (CEMEX exclusive distributors) distribute the materials (from CEMEX and other non-competing brands for complementary products) by truck. PH distributors are selected first among existing CEMEX distributors present in the coverage area of the PH local office who have delivery capacities (trucks, drivers etc), then based on their service performance.

Results:

- *For clients:* Through PH, over 350k families managed to build an extra 10m² room at a third of the time (1.5 years instead of 4-5 years) and at roughly two thirds of the cost of typical auto-construction. Client satisfaction is shown by very high Net Promoter Scores¹ on all aspects of the business (for example in 2011, average Net Promoter Score for “Product/ Offer”, “Technical Assistance Service” and “Delivery Service” was between 82 and 91%), as well as by repayment rates of 99.8%, and rates of repeat clients of 85%.¹ 60% of clients come following the advice of one of their friends or family members.
- *For CEMEX:* The program is profitable in itself with revenues of \$45 million in 2011, and additionally increases cement sales for CEMEX. Today PH is active in 45 Mexican cities and has initiated replication in 4 other countries.

¹ Net Promoter Score: % of client who would recommend the service -% of people who would recommend not to use it. Rate of repeat clients: 85% of clients who complete a first cycle re-enter a second round of 70 weeks.

Exchange rate: 1USD= 14.2MXN

Sources:

Interview with Henning Alts Schoutz, Marketing Manager, July 18, 2012 and September 2012.

Interviews with Israel Moreno, CEO of Patrimonio Hoy (at time of interviews), Sept 21, 2011 and January 2012.

Visit of Patrimonio Hoy operations, October 19, 2011.

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Ricardo Sandoval, Block by Block, How one of the world's largest companies builds loyalty among Mexico's poor, Stanford Social Innovation Review Summer 2005

Contact person for the project: Henning Alts Schoutz, Marketing: henning.alts@ext.cemex.com

GERES (Group for the Environment, Renewable Energy and Solidarity)

www.geres.eu; <http://www.cambodia.geres.eu/>



Improved cook stoves in Cambodia

History of organization: GERES is an NGO created in 1976, specializing in the implementation of efficient energy solutions adapted to developing countries. Since 1997, GERES has been running a program in Cambodia to disseminate improved cook stoves (ICS) using market-based approaches. After several attempts and studies, in 1999 GERES decided to select a stove design developed in Thailand that could easily be adopted by local manufacturers and whose design and functions resembled traditional Cambodian cooking habits. GERES then trained selected producers all over Cambodia into making the “New Lao Stove” (NLS). Sales picked up in 2001-02, when GERES helped organizing, structuring and consolidating the whole supply chain for its ICS, piggybacking on existing industrial clusters and networks, and promoting the creation of a professional and regulated association of producers and distributors called the Improved Cookstove Producers and Distributors Association of Cambodia (ICOPRODAC). Following donors’ requests, GERES launched a pilot of a cheaper version for rural areas in 2007 – the Neang Kongrey Stove (NKS) – whose design and manufacturing is still being improved.² It plans to scale-up production for this cook stove in 2013 thanks to grants and carbon credits.

Since 2008, GERES has financed its NLS program exclusively through carbon credits.³ The additional income also allowed GERES to launch related initiatives such as sustainable fuel-wood supply/harvesting in villages, production of char-briquettes made of agro-waste, and introducing more energy-efficient charcoal production practices and technologies. Starting in 2013, GERES will take the lead in the Global Stove Program/Academy, to replicate the Cambodian success in South East Asia and West Africa.

Product offering and value proposition: The NLS is an improved cook stove for both charcoal and wood, adapted to local cooking habits, with an improved design and more efficient fuel consumption than traditional Cambodian cook stoves (22% fuel savings in average).⁴ The cook stoves follow quality standards (which GERES helped establish and endorse by the Institute of Standards of Cambodia). The NLS is priced at \$3.5-5 (vs. \$1.5-2 for a traditional cook stove), while the rural version (the NKS) costs around \$1.5-2. The product does not come with a guarantee but the NLS lasts longer on average than traditional cook-stoves⁵, looks better, and induces significant charcoal savings (-\$7 per year for households using firewood, and more than \$12 for households using charcoal).

Value chain:

- GERES played a critical role in organizing and professionalizing a sustainable supply chain for the production of NLS. In 2002-03, clashes opposed producers and distributors due to miscommunication, mismatch between production capacity and demand, unhealthy price wars and payment delays. GERES helped set-up ICOPRODAC, an industry association grouping producers, wholesalers and distributors. This association meets every quarter to address coordination issues, and set/adjust minimum selling price at producers’ gate (distributors and retail price is not regulated). GERES is not part of this association, but has delegated one staff as secretary and facilitator. It does not impose any regulations either, with the exception that a) members adhere to strict quality standards, and b) all transactions be recorded.⁶ GERES is now also training the association on quality control, with the goal

2 This version has no metallic envelope, bringing down the production cost significantly.

3 However, the registration of the carbon credits has been a lengthy process, lasting from 2003 to 2007. The money received through carbon credits was not directly returned to the users (as subsidies) but rather used to fund marketing, R&D, quality control, etc. To do so, GERES sought explicit recognition from the government to utilize the carbon revenue to develop its programs in Cambodia (at least 95% must be reinvested).

4 This is achieved thanks to the design of the cook stove mostly: the thickness of the ash grid, the size and shape of the combustion chamber, and the isolation layers.

5 The NLS lasts 4 years with maintenance, 1.5 years without, vs. 1 year max for traditional stoves.

6 GERES closely monitors quality compliance in the network. Non-compliance is reported to the ICOPRODAC Executive Committee and a warning is sent to the producer. A producer may receive two warnings before being removed from the organization.

of handing over this aspect of the work to them. Furthermore, it is currently trying to engage the government to endorse the ICS standard countrywide and help with enforcement.

- As of 2011, GERES is supporting 35 production centers (of which 33 for NLS and 31 NKS) in 9 provinces, with varying ICS production capacity (between less than 1k to over 60k stoves per year). Producers used to manufacture traditional cook stoves, and were selected by GERES according to their interest in learning about a new design and business opportunity, and their production capacity. NLS are distributed all over the country via a network of existing wholesalers, distributors (over 170) and retailers (over 110).⁷
- Since 1999, GERES has trained 124 NLS producers, and 63 NKS producers. Through the ICOPRODAC, GERES also trains distributors. Retailers do not receive formal training, but are coached by the GERES team on how to best explain the advantages of the stoves to potential buyers, when the team goes and collects sales data.
- Producers earn ~\$0.50 per NLS sold, compared to \$0.13-0.18 for a traditional cook stove. Distributors buy NLS from producers at \$2.12 minimum (price is set by ICOPRODAC). Retailers buy from distributors at 2.63-\$3.00 per unit, while customers buy at \$3.50-5.00. For NKS, the producers' profit margin is only slightly higher than for a traditional cook stove, i.e. \$0.31 per unit.
- GERES has also been experimenting with providing loans for producers to invest into equipment, through a savings cum credit cooperative scheme. Ten producers were supported in 2012 for a total of \$14k, and are in the process of repayment.

Results:

- Between 2003 and September 2012, the supply chain that GERES helped set-up had sold 1.9m NLS in urban and semi-urban areas. In addition, 363k NKS have been sold since 2004. GERES achieved an impressive penetration in urban areas where 40% of households have at least one of its stoves. The production averages at 28k NLS/month and 8-9k NKS/month. In 2011 and 2012, NLS yearly sales amounted to around \$1.6m.
- As of 2011, the NLS project had created more than 1.1k jobs, saved 500k tons of CO₂, 5k ha of wood, and \$9m fuel expenses for households (generating \$4m in carbon credit revenues).
- In 2011, GERES budget (\$444k) was fully financed by carbon credits. In 2012, to expand its support to NKS, GERES increased its budget to \$668k (including donor grants).

Exchange rate: 1 USD= 4000 KHR

Sources: www.geres.eu; Interview with Iwan Baskoro on 10th and 28th of May 2012; GERES, *Dissemination of Domestic Efficient Cookstoves in Cambodia*, 2009; GERES, *The success story of improved stoves*, 2010

Contact person for the project: S. Yohanes Iwan BASKORO, ICS Program Director & Technical Advisor: i.baskoro@geres.eu

7 There are 171 distributors and 114 retailers formally collaborating with GERES to help monitor sales, among other tasks. There are more distributors channeling GERES' ICS to an estimated 2,000 retailers nationally, but the latter are not willing or able to record transactions for GERES.

Grameen Shakti

www.gshakti.org



Grameen Shakti

Renewable energy solutions in Bangladesh

History of organization: Grameen Shakti (which means “Rural Energy”) is a sister organization of the Grameen Bank, with a fully independent management. It started in 1996 as a social business selling solar home systems (SHS), and in 2005 launched biogas plants and improved cook stoves to address the energy needs of the poor in rural Bangladesh (target monthly income of \$150/households). Initial challenges faced by Grameen Shakti were

- 1 lack of rural networks;
- 2 no awareness of solar power among the rural people;
- 3 lack of trained manpower;
- 4 high upfront cost of renewable energy technologies; and
- 5 lack of funding.

Grameen Shakti used Grameen Bank’s experience to develop a financial package based on payments through installments, though it ultimately decided to handle financing independently, not through Grameen Bank. Grameen Shakti also had to earn the goodwill of the rural people and did so notably by providing excellent after-sales services to ensure the success of its program, instead of investing in awareness building campaigns. Key for its early growth, Grameen Shakti initially received financial support from IFC (\$100k soft loan), USAID (\$1.5m grant), and other development banks and agencies (KfW, GTZ). It also received longer-term support from IDCOL⁸ in grants to test products, develop its training programs and finance part of the product acquisition for end customers. IDCOL still funds a declining subsidy per unit installed (from \$100 in 2003 to \$46 in 2010). Currently, Grameen Shakti is one of the largest and fastest growing rural based renewable energy companies in the world. By 2015, it aims to have sold 2m SHS, 200k biogas plants and 5m improved cook stoves.

Product/service offering and value proposition: Grameen Shakti aims to promote affordable, clean and sustainable renewable energy technologies for the rural people of Bangladesh:

- *Solar home systems (SHS)* provide light for less money than kerosene lamps (up to \$10 in savings/month once fully paid), are healthier than kerosene lamps as they do not give off smoke, can power various electrical appliances in addition to lighting and require little maintenance. SHS also allows shops or craftsmen and women to work longer hours, and create new business opportunities such as mobile phone charging shops, electronic repair shops and community television centers. Grameen Shakti sells SHS at a 10 to 130W capacity (a standard 50W system powers 4 lights, mobile phones and a television). A system includes solar PV panel, deep cycle tubular 30-130, battery, inverter, 2-12 CFL lights (LED light in option for the 10W system) or tube lights (7W), 12V plugs. The most popular SHS is the 40-50W model (15% of sales) and the 20W solar panel (now at 40% sales). SHS are priced approximately at \$115 for 10W system, \$340 for 50W and \$840 for 135W. Payment options include:
 - 15% down payment. 85% payable in 36 monthly installments with 8% flat rate service charge
 - 25% down payment. 75% payable in 24 monthly installments with 6% flat rate service charge
 - 35% down payment. 65% payable in 12 monthly installments with 5% flat rate service charge
 - 4% discount on package price for 100% down payment
 - 10% down payment for micro utility system 20, 40 and 50 Wp. 90% payable in 36 monthly installments with 5% flat rate service charge
 - 25% down payment. 75% payable in 12 monthly installments without any service charge (only for mosque/temple/pagoda/church)

8 Infrastructure Development Company Limited, set-up by the Bangladeshi government as a non-bank financing institution to bridge the financing gap for developing private medium and large-scale energy infrastructure and renewable energy projects in Bangladesh.

Technicians visit clients' home monthly to guarantee after-sales service (over 3 years) and collect repayment (over the duration of credit). After 3 years, customers are offered a maintenance contract for \$4/year. Grameen Shakti also offers long-term warranty (20 years for panels, 5 years for batteries and 3 years for charge controllers) plus buyback options where a client can return his system if the area becomes connected to the grid, or if flood or fire causes the SHS to default.

- *Improved cook stoves (ICS)* help reduce energy spending and improve health conditions as they require 50% less fuel and generate less indoor pollution, blackening and heat loss. ICS are popular among low/middle-income households as well as businesses. They are sold at \$12. Grameen Shakti sales agents provide after sales services for customers who request maintenance. There is no credit offered for ICS, however people can pay only 50% before stove installation and the remaining 50% once installation is complete.
- *Biogas plants* of 1.6 to 4.8m³ work with the natural process of anaerobic decomposition of poultry waste and cow dung (a 3m³ biogas plant can produce sufficient gas for ~7 cook stove hours and electricity for 8 to 24 hours a day). Grameen Shakti sells biogas plants at \$187 for a 1.6m³ plant and \$422 for a 4.8m³ plant. Payment scheme allows credit: 15% down payment and 24 monthly installments with 8% flat rate. Like for SHS, technicians provide after-sale service during monthly visits.

Value chain:

- *Product manufacturing:* Grameen Shakti designs itself its high quality, innovative products for rural populations. For the SHS, it imports solar panels from Japan (Kyocera) and China (Suntech). Lamps also are imported from Taiwan, Japan, and Thailand. High quality tubular batteries are serviced locally. Charge controllers, tube lights, inverters, mobile chargers and DC converters are assembled in local Grameen Technology Centers (GTCs). For the construction of improved cook stoves, Grameen Shakti has setup 104 manufacturing units in rural areas.
- *Recruitment and training:* Grameen Shakti trains its branch staff and independent technicians in its 46 GTCs, to market and produce or repair SHS and SHS accessories. The program also trains young women from underserved communities (over 3k to date). As of 2012, Grameen Shakti has trained 15k technicians of which it still directly employs 3k. In total, it employs more than 11k people, including 1.4k branch managers ("social engineers"), 2k local technicians, 5k sales agents and 150 regional managers.
- *Sales and after sales:* Grameen Shakti has 1.4k rural branches. The branch manager, or "social engineer," usually oversees four sales agents and two technicians, and is in charge of opening new villages by meeting opinion leaders. The sales agents, called "supervisors," are charged with further marketing the products, selling them, communicating with clients, ensuring customer satisfaction and liaising with technicians. Technicians can also do some commercial prospection, but mainly install and maintain SHS. During their maintenance visits they also collect the monthly payments of clients paying through installments. A different network of technicians install the improved cook stoves, and others biogas plants. Each branch covers about 30 to 40 villages of 1-1.5k people each.

Results: By end of November 2012 Grameen Shakti has reached a million homes (with an average 10% penetration rate) with solar powered electricity in Bangladesh. It will reach 2 million homes by the end of 2015. Grameen Shakti has already installed more than 70% of the total solar home systems in the country. More than 8 million rural people are now directly or indirectly benefitting from this initiative. It is inspired by the concept of social business and creates employment, fosters entrepreneurship, empowers women, youth and communities, breaks energy poverty and helps to limit environmental damages. SHS has simply extended the length of each day for more activities in rural areas. A 2002 survey indicated a 99% customer satisfaction. Grameen Shakti has also installed 24k bio gas plants, and 595k improved cook stoves (December 2012), with 2-digit year on year growth for its cook stoves and SHS sales.

Grameen Shakti became profitable within four years of operations, partly due to credit lines at subsidized rates for end users and output-based subsidies from public partners. A typical mature GS branch (i.e. more than three years of operation) generates sufficient margin to cover its operating expenses and overhead. In 2011, Grameen Shakti generated over \$80m (25% yoy growth) of sales revenues, plus \$10m subsidies, allowing a \$0.5m profit.

Exchange rate: 1 USD = 82 BDT

Sources:

Interview with Absar Kamal, Acting Managing Director, September 2012

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J.R. Siegel and Atiq Rahman, The Diffusion of Off-Grid Solar Photovoltaic Technology in Rural Bangladesh, Tufts University, 2011

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Grameen Shakti website: www.gshakti.org

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Greenlight Planet

www.greenlightplanet.com



Direct sales of solar lanterns in rural India

History of organization: Greenlight Planet is a for-profit company based in the US, started in 2005 with the objective to provide poor Indian households with solar energy, by 3 co-founders combining the necessary expertise. Patrick Walsh, the CTO, worked previously with Engineers without Borders on unelectrified areas of India, and had the initial idea. Anish Thakkar, an American of Indian descent, got involved out of interest for the business side of the project, after several years with ZS, a 2000-person global sales and marketing consulting firm. The founder of ZS believed in the venture from the start and was their first investor, also offering free consulting on their sales force organization. Finally, Mayank Sekhsaria was born in Mumbai and thus had a local understanding of the Indian context. After studying the rural needs on the ground, Greenlight designed a low-cost efficient solar lantern, the Sun King, and set up a manufacturing plant in Shenzhen, China. Commercialization started in 2009 in India, and since then the company has scaled-up quickly through multi-channel distribution in various countries. The company received a \$250k grant by Deutsche Bank Americas Foundation in 2010, the first prize in the Solar for All contest. They also got multiple awards for their products. In April 2012, Greenlight closed an investment round of \$4m with new investor Bamboo Finance, and is planning rapid expansion in the years to come.

Product/service offering and value proposition: Greenlight aims at offering “affordable luxury” for Indian rural households. The entry product is the Eco, a solar lamp with several levels of lighting adapted to rural people’s needs, which (1) provides up to 30 hours of light on 1 day’s charge (with an improved charging system for cloudy days), (2) is 2 times brighter than a kerosene lamp, (3) is robust (water-sealed polycarbonate) and has a longer lifespan than most of their competitors (3 years lifespan without maintenance, and up to 5 years). The Eco (including lamp, lithium-ion battery, and 5-volt solar panel) is sold for \$11, which makes it affordable through upfront payment, and enables a payback for customers within 4 months (in terms of kerosene savings). It is sold with 1 year limited warranty and after sales (within or outside of the warranty) is provided by Greenlight Planet’s distribution system, ensuring that all problems are solved within 10 days (in the process of being reduced to one week). The Sun King also exists in premium versions – the Sun King Solo, sold \$18, and the Sun King Pro, which enables mobile charging and costs \$32.

Value chain: Greenlight Planet employs 330 people between its R&D and distribution operations. Manufacturing is done in China. The Sun King is then distributed along 3 main channels: direct sales force in Orissa, Bihar, Uttar Pradesh and soon other parts of India, and 15 countries in Africa; via NGOs in India; and through bulk sales to distributors worldwide.

- For direct sales, Greenlight Planet employs “Team Leaders” (TL) who are in charge of recruiting, training and coaching part-time sales persons. These local salesperson – called Saathis – are chosen among “known trusted faces” in the villages; they must also be middle-income persons looking to earn extra money. They then earn commissions on sales (on average \$40/month for about 3 hours of Greenlight work per day) that supplement their main income. TLs encourage them to go beyond their own village so that they cover an area of several villages. The sales organization is pyramidal, with state level Zonal Business Managers overseeing Regional Sales Manager (RSM) in charge of District Sales Managers (DSM) who finally oversee TLs.
- NGO sales had initially been piloted in partnership with Pratham, a leading education network also in India. Greenlight minimizes subsidized sales or donations by its partners, to avoid undercutting its own market. Sales via NGOs in India represent less than 10% of total sales.
- Finally, Greenlight Planet sells its products in bulk to other distribution organizations worldwide, in particular in several African countries (LightingSA in South Africa, with expansion planned in Senegal, Kenya and other countries). Sales via foreign distributors now represent approximately 50% of Greenlight Planet volumes.

Results:

- *Social for clients:* Greenlight Planet reports to improve customers’ health, safety, ability to work at night, enable fuel savings, also create additional sources of income for Saathis, and reduce global CO₂ emissions. Customer satisfaction is proven by the (approximately 25%) clients who come back after a few months to buy a second light.

- *Social for Saathis*: Greenlight Planet provides well paid job opportunities for local people in rural areas, and offers them a sales training that will be an asset for life. As of November 2012, Greenlight had 1,400 Saathis supervised by more than 200 TLs. The sales force is growing rapidly.
- *Scale*: Greenlight Planet reached 500k customers (i.e. 100k lanterns sold) in March 2011, and 2.5m in November 2012, selling 40k to 50k units per month by then. Around 50% of these sales were through the direct channel in India, with penetration rate of up to 70-80% (on average around 30%) in villages where Greenlight Planet is active even though a Solo or Sun King Pro often represents more than one week of income for its clients. Greenlight Planet aims to reach 6m customers worldwide by 2016.
- *Economic*: Operations were profitable before Greenlight started rapid expansion and Greenlight expects to breakeven again within less than 2 years. The economics of the project should keep improving, as economies of scale should lower the lamp cost per unit while newly validated carbon credits under the CDM, should bring additional revenues.

Exchange rate: USD 1 = INR 50

Sources:

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Contact person for the project: Anish Thakkar, CEO: anish@greenlightplanet.com

Hydrologic

www.hydrologichealth.com



Ceramic water purifiers in Cambodia

History of organization: Hydrologic Social Enterprise is registered as a limited company in Cambodia. It has its roots in a ceramic water filter project implemented since 2001 by iDE, an international development organization based in the US, Canada, and the UK. iDE Cambodia introduced the clay-pot water filter technology to Cambodia from Central America with the help of the NGO, Potters for Peace. Adopting the brand name “Tunsai” (meaning “rabbit” in the Khmer language), iDE started producing/distributing the filter at a small scale in 2001. In Feb 2009, iDE began spinning off the market-based filter project as a separate commercial entity. Legal registration was completed in Dec 2010.

While iDE started with a basic ceramic water purifier, it introduced an upscale version (for about double the price) in January 2011 with financial and technical assistance from PATH, another NGO. Hydrologic is now present in 10 provinces (7 through retailers, and 3 through direct sales and 1 with both retail and direct sales).⁹

Product/service offering and value proposition:

- **Product:** Hydrologic offers two ‘clay pot’ ceramic water purifiers (the basic Tunsai, and an aspirational version, the Super Tunsai). The filters can remain effective for four years but, under conditions of rural household use, last two years on average, after which they need to be partly or fully replaced. The device effectively filters bacteria, protozoa, and turbidity but is less effective at removing viruses. The basic Tunsai (~3L per hour flow rate, 10L filter unit, 12L storage container, basic design) is sold at \$13-14, and the Super Tunsai (~3L per hour flow rate, 10L filter unit, 14L storage container, attractive design) at \$23-25. In terms of spare parts, the ceramic pot is sold at \$6.5 and the spigot at \$2.5.
- **Value proposition:** A Tunsai filter is an effective and convenient water treatment (alternative to boiling) for better health. It is accessible, affordable, and desirable (the basic Tunsai puts more emphasis on affordability and the Super Tunsai puts more emphasis on desirability).

Value chain: Hydrologic has almost fully integrated the supply chain, including production, distribution, marketing and sales.

On the production side, Hydrologic is now producing from a new factory (established with support from the USAID WaterSHED project) where it produces the ceramic pots and assembles them with a plastic bucket (sourced locally) and the spigot (imported from China). This factory has a capacity of 8,000 filters per month.

For the distribution and sales, Hydrologic also built 3 distinctive sales channels:

- iDE first started by selling its production to other (in-country) NGOs in Jul 2002. While the share of this channel has decreased over time, it still represented ~60% of the volume sales as of end 2011. Through this channel, it is exclusively the basic Tunsai version that is sold, as NGO programs typically aim to serve the poorest households. Sales to NGOs are typically discounted (to try match competition from filters produced by RDIC and CRC – two local NGOs that also produce similar ceramic filters). The products sold to NGOs are not monitored and Hydrologic has no control on where and how the products are distributed. A substantial portion of those are likely given away for free
- iDE began to promote the filters through a retail network in Feb 2003, first by having its own sales reps, and then shifting its approach to paying commissions and transportation costs only. This channel represented about 20% of volume sales as of end 2011 and has remained relatively constant over time. This channel is mostly targeting urban and semi-urban customers (~70%) and sells a mix of Tunsai (75%) and Super Tunsai (25%)

⁹ Retail: Siem Reap, Battambang, Banteay Mean Chey, Prey Veng, Phnom Penh, SvayRieng, Kampong Cham. Direct sales: Kampong Cham (where there is also retail operations), as well as Takeo, Kandal, and Kampong Speu.

- After an initial pilot in 2011 in one province, Hydrologic began to scale-up a direct sales channel in three other provinces in early 2012. In this channel, Hydrologic sales agents work in tandem with MFI loan officers to sell the product directly to households during village sales meetings. 99% of sales are made with a loan package. When given the choice between the basic Tunsai and the Super Tunsai in combination with credit, customers overwhelmingly (99%) choose the more aspirational Super Tunsai. This channel is growing rapidly (-20% of sales already as of end 2011).

In future, Hydrologic plans to reduce the share of sales to NGOs by putting its effort toward expanding the direct sales channel. There are a number of reasons for aiming to reduce the proportion of NGO sales:

- a) image – in a number of areas, water filters are perceived as a NGO product given to the poor,
- b) cannibalization of sales – Hydrologic cannot sell in areas where there is/has been an NGO distributing subsidized/free filters (i.e., about 2-3% of Cambodian villages), and
- c) lower margins on NGO sales.

Results: Total number of beneficiaries: iDE produced about 110,000 filters in 2001-2009, before shifting its operations to Hydrologic. From 2010 through mid-2012, Hydrologic sold an additional 120,000 filters, of which approximately 8,000 were Super Tunsai (actively promoted since Feb 2011). Sales increased from an average of less than 3,000 filters/month in 2010 to more than 4,000 filters/month at the end of 2011 with a target to reach the factory capacity of 8,000 filters/month by mid-2012.

Exchange rate: 1 USD= KHR4,000

Sources:

Field visit on 27-29 June 2012 (interviews with the management and sales & marketing team, visits of sales agents and retailers in Prey Veng province)

www.hydrologichealth.com

www.ide-cambodia.org

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Contact person for the project: Mr. Michael Roberts, Country Director, iDE Cambodia: mroberts@ide-cambodia.org

IVDP – HUL partnership

www.ivdpkrishnagiri.org
www.Pureitwater.com/IN/



Water filters and other beneficial products in India sold via Microfinance Institutions and Self Help Groups

History of the partner organizations:

- IVDP is an Indian non-profit organization created in 1979. It aims at helping the poor of Tamil Nadu in improving their economic, social and health status. In the early years IVDP focused on bringing water to areas suffering from recurrent rainfall shortage, building over 331 dams in 60 villages and reaching 40k+ people. Since 1989, IVDP also promotes the creation of Self Help Groups (SHGs). As of May 2012, IVDP's staff of 330 people was supporting 8.3k SHGs representing 150k women in 1.3k villages of 3 districts.¹⁰ It had facilitated access to close to \$500m in loans to its members (50% from members' savings, 48% from bank loans, and 2% from IVDP). In 2011-12 only, SHG members had access to \$84m in loans (up to \$77m in 2010-11). Additionally, among other causes, IVDP promotes health related products to its members, such as Pureit water filters (the main object of this case study), toilets for individual households, as well as sanitary napkins.¹¹ It also sells useful products such as solar lanterns. Via the 2% fee it gets on bank loans and a \$1.2 annual subscription from each member, IVDP is fully self sustainable.
- Hindustan Unilever Limited (HUL) is the Indian arm of Unilever, the global fast-moving consumer goods company. Its main areas of activities include nutrition, hygiene and personal care. HUL started selling water purifiers (Pureit) in 2005 through field-tests in Chennai before rolling out nationally in 2008. To reach low-income rural population, HUL has set up a dedicated sales channel called "Partnership", experimenting with various partners such as IVDP. IVDP, one of the first partnerships for Pureit, has also been one of the most successful to date.

Product/service offering and value proposition: During one of their bi-monthly meetings, SHG members are offered to purchase a Pureit device whose capacity matches the drinking needs (2 L/person/day) of an average family of 5 members.¹² Pureit is a popular water purifier for bacteriological contaminated water that does not require access to piped-in water or electricity, and provides water quality conforming to US-EPA standards thanks to a four-stage process of filtering and purifying. Using water from a Pureit device is thus "as safe as boiling" but more convenient and less costly as it does not require energy. HUL gives a 6-month warranty and ensures after-sales service for cartridge replacement, maintenance and repair through its own network. IVDP provides financing options via its SHG network, with bi-monthly repayments like other loans that members can take through this system, usually payment of \$2/month for around 20 months that can be adjusted to specific member needs.¹³

Value chain: Pureit is manufactured in one of the Pureit plants in Daman and Pondicherry in India. Devices are then dispatched to HUL depots, who then deliver to distributors, who in turn deliver clients (supermarkets, retailers or Pureit partners, including IVDP). On the marketing side, IVDP helps organize demonstrations by Pureit Water Experts (PWE) for its SHG members at monthly SHG meetings, verifies the credit history of interested members, aggregates orders twice a month, purchases the requested purifiers from HUL and finally sells them at cost on credit (0% interest rate) to its members, getting back the installments from the SHGs. IVDP is paid a small commission on each product

¹⁰ Krishnagiri with a coverage of around 50% of all households, Velaori with 10% coverage and Dharma with 5% coverage. Taken together these districts count 4-5 million people, out of which more than 1m are covered by IVDP.

¹¹ Other activities conducted by IVDP for the SHGs members include leadership trainings, creation of a life security fund, extended financial assistance for education service, financial support for housing, solace donations for hut fires or heart surgery.

¹² HUL has developed a range of Pureit for all income levels, costing between \$20 and \$138, with replacement cartridges (1 to 4 replacement per year depending on usage) between \$6 (1000L) and 14.5\$ (3000L). IVDP-HUL chose not to offer the smaller, cheaper filter that would require more frequent cartridge replacements and could create frustrations from households regarding the durability of the product, as well.

¹³ In other partnerships between HUL and other NGOs or MFIs, the financing can be in monthly or weekly installments, with or without interest rate, depending on the partner. In all cases HUL adapts its system to the operations of its partner.

sold. Any after sales issues are reported to IVDP branches, which contact HUL teams to come and do the necessary maintenance within 3 working days.

Results: Through this partnership IVDP has achieved safe water access for more than 60% of their members.¹⁴ The success of IVDP in disseminating beneficial products through SHGs has also been demonstrated with other products, e.g. IVDP has sold 38k Kiran solar lanterns (priced \$10.5, a discount of 5% compared to Maximum Retail Price) in as little as 6 months, and has managed to increase adoption of sanitary napkins in rural areas from 5% to 70% since 2006, selling 45m of them at 25% discount. The commission IVDP gets from its corporate partners has gone directly to the beneficiaries and not to the employees of IVDP.

Since inception, HUL has sold 6m Pureit filters and reached a market share of over 50% (volume) in India, becoming the market leader of water purifiers both in yearly volume and value in 2011 (competitors include Tata Swatch, Eureka Forbes Ltd, Philips, Whirlpool, Kent, Kenstar). HUL has started several new partnerships with large MFIs in 2011-12 that should allow to cover more of the BoP market. Pureit water filters are also sold in Bangladesh, Indonesia, Mexico, Brazil, Nigeria and Sri Lanka, through traditional channels.

Exchange rate: 1 USD= 50 INR

Sources:

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Partners' website: www.pureitwater.com/IN and www.ivdpkrishnagiri.org/

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¹⁴ See http://ivdpkrishnagiri.org/index.php?option=com_content&view=article&id=150&Itemid=559

KickStart

www.KickStart.org



Irrigation pumps, Kenya/Tanzania

History of organization: KickStart is an African-focused non-profit organization created by Martin Fisher and Nick Moon which designs and delivers affordable and effective tools that poor families can use to increase their incomes. Disappointed by the short-term and unsustainable nature of development projects they had encountered in their previous work in Africa, they founded ApproTEC in 1991 that would become KickStart in 2005. With a mission to lift millions of people out of poverty KickStart sells poor families locally-suited tools and equipment that the families can use to start productive enterprises and greatly increase their incomes. After six years of creating products (e.g. oil-seed press, building block-maker) which led to profitable businesses, Fisher and Moon realized that the greatest opportunity for impact could be found in irrigation mechanisms, since the vast majority of families in the region are small-holder farmers who depend on low-productivity rain-fed agriculture. In 1997, KickStart designed and began selling its first human powered irrigation pump. They branded the pumps MoneyMaker, and these simple pumps have become KickStart's best selling products.

KickStart's major programs are in Kenya and Tanzania. It has a small program in Mali and Burkina Faso and is establishing a new program in Zambia. In addition it sells pumps through wholesale shops in 14 other African countries and to NGO buyers across Africa and in Asia. It fundraises from small offices in New York and San Francisco.

Product/service offering and value proposition: As of today, KickStart's value proposition is focused on selling high quality irrigation pumps and accessories, generally for cash. KickStart has also been testing a "lay away" program using mobile payments.

KickStart's foot-powered pump, called the Super-MoneyMaker can irrigate nearly one hectare (2 acres) and costs around \$110, plus \$35 for accessories (hosepipes, nozzle and spares). The cheaper HipPump (a hip-powered version) irrigates a half hectare (1.25 acres) and costs around \$70 with all the attachments. These are the lowest cost irrigation systems on the market, and they enable farmers to grow and sell high value produce throughout the year and especially in the dry seasons when the prices are highest.

KickStart is currently exploring how to broaden its offering to include agronomy advice, farmer friendly financing and other inputs.

In Kenya, KickStart offers an incremental micro-savings payment system that bypasses the risks involved in expensive and sometimes unavailable microcredit loans. This unique "layaway" program provides a secure saving environment free from theft, unexpected impulses or relatives. Customers save money for a pump by texting small amounts into an electronic bank account, a service managed by Vodafone's mobile banking service M-PESA. Once they have saved the full amount they collect their pump.

Value chain: KickStart designs its products in-house, outsources manufacture in China and imports pumps to Africa where it sells them to local dealers, wholesalers and NGOs.

KickStart has established a network of dealers/stockists that are supported by a team of sales agents (51 in Kenya) who visit potential customers and organize demonstration events on farms and during market days to raise awareness and understanding.

Since 2006, a "B2B" channel (i.e. Global Institutional Partnerships) focusing on institutional sales to wholesalers, NGOs and governments operating outside of Kenya and Tanzania, has generated significant additional sales; 37% of total sales in 2011.

Results: To date, KickStart has sold over 215,000 pumps (Kenya: 75k, Tanzania: 52k, Malawi: 32K Mali: 9k, etc) to small-holder farmers, sometimes through NGOs and government agencies. Additional growth is projected as KickStart expands its countries of operation and pursues B2B channels and institutional sales. In regions where it has carried out intensive sales activities it has achieved up to 13% penetration. Customers who use the pumps successfully (over 80% of buyers) have seen their average annual net farm incomes increase by on average \$750/year after the first 18 months using the pump to grow and sell vegetables in the dry seasons. If used correctly the pump can easily repay its full price in the first 3-4 month growing season. KickStart relies on donor funds to pay for the market development activities needed to reach critical scale.

Exchange rate: 1 USD= 84.4KSH

Sources:

Field visits to KickStart Kenya operations, June 2011. Interviews with Martin Fisher, CEO; Alexandre de Carvalho, COO; Oscar Ochieng, Budgets & Grants Finance Officer, June to November 2011

KickStart website: www.kickstart.org

Contact person for the project: Alexandre de Carvalho, COO: alexandre.de-carvalho@kickstart.org

Living Goods

www.livinggoods.org



Door-to-door healthcare in Uganda

History of organization: Living Goods (LG) was launched in 2007 in Uganda via a partnership with BRAC (a world-leading NGO with over 100k staff) by Chuck Slaughter, a successful American entrepreneur. It aims to distribute door-to-door healthcare in Uganda through a micro-franchising model. In 2009, LG started a second network of LG-owned and operated branches “LG Direct”, independent from the partnership with BRAC. LG Direct now aims to expand to other African countries – starting with Kenya in 2013– and grow its network across Uganda and Kenya from 900 to 2,000 sales agents in the next 2 years. LG is currently launching a 2.0 model, targeting higher coverage and profitability

Product/service offering and value proposition: LG’s motto is “Empowering micro-entrepreneurs to deliver life-saving and life-changing products to the doorsteps of the poor.” CHPs sell health treatment (infectious diseases, wound care, cough and cold medicine, deworming tablets), health-related products for prevention (fortified foods, hygiene products, bed nets or condoms) as well as consumer goods (soaps, sanitary pads) and durable goods (cook stoves, water filters and solar lanterns). The current product mix includes over 70 items across four key categories:

- *Treatment:* ORS, ACT, de-worming, amoxicillin, paracetamol.
- *Prevention/ Nutrition:* Water filters, bed nets, condoms, vitamin A, iron, safe delivery kits, oral contraceptives, fortified foods, sanitary pads.
- *Productivity:* Solar lanterns, clean cook stoves, solar phone chargers, reading glasses.
- *Fast Moving Consumer Goods:* Soap, sanitary pads, diapers, toothpaste, laundry soap, lotions.

LG products are typically sold 10 to 30% below market price CHPs sometimes offer informal installments for more expensive household products (e.g. solar lamps).

LG 2.0 will focus largely on the same products including pregnancy care. It will exclude treatment products (specifically for malaria and ARI) that require more monitoring and quality control and therefore enable it to support more agents at lower cost.

Gross margins are very different across products. Incentives between LG and CHPs (wholesale and retail margins) are relatively aligned. The average retail margin for certain treatments is roughly double the average retail margin for products. The introduction of cook stoves in the portfolio resulted in an upward shift of gross margins.

Value chain: As of September 2012, 30 local branches (staffed with a branch manager) support a network of 825 CHPs in Uganda. Living Goods Direct oversees approximately 300 Community Health Promoters (240 from LG 1.0, 60 in LG 2.0, 600 from BRAC). 24 branches are in the BRAC partnership and 6 are LG owned and operated branches. LG buys from a few manufacturers (including d.light for solar lanterns). Products are sent to LG local branches where CHPs re-supply once or twice a week. Most sales are then operated door-to-door. LG CHPs also have signage for home stores, occasionally sell through groups and leverage markets to set up “pop up shops”.

Results: In 2011, LG reached ~100k households (each of its 650 CHPs reach ~160 households, majority of sales are made to ~60-100 households). In Q4 2011, LG Direct reached sustainability at the branch level. A RCT impact study is currently being conducted by J-PAL to measure impact on under-5 child mortality. LG aims to serve 3m poor consumers in the next 5 years.

Exchange rate: 1 USD= 2500 UGX

Sources:

Field visits to Living Goods operations, June 2011. Interviews with Chuck Slaughter, CEO; Molly Christiansen, Director of Research and Partnerships; Chris Murphy, Director of Marketing & Development, June to November 2011

Contact person for the project: Molly Christiansen, Director of Research and Partnerships: mchristiansen@livinggoods.org

Project Dharma

www.dharma.net.in/



Multi product distribution channel in rural India

History of organization: Project Dharma (PD) was founded in September 2009 in Sangli by 8 young professionals motivated by social impact (including current CEO Gaurav Mehta), in partnership with Pratham, one of India's largest NGO, and Reuters Market Light, a division of Reuters working on creating rural information services in India. The initial company goal was mainly to create employment for the rural youth while providing a local sales channel to RML. Now based in Delhi, the company has created a rural distribution network for rural households at the Bottom of the Pyramid (BoP) that provides them with a whole range of customized products and services meant to enhance quality of life, at a socially affordable price point. PD is supported by the Shell Foundation and is active in 15 districts in Maharashtra, 5 districts in Bihar, 9 districts in Uttar Pradesh and 4 districts in Karnataka.

Product/service offering and value proposition: Project Dharma defines itself as “the best interface between rural consumers and product and service providers who want to target the rural market”. It offers both consumer durables and FMCGs. It targets villages with population below 5,000, to sell solar lights (solar lanterns from \$8 to 33\$ – in areas where manufacturers do not have their own distribution channel), Envirofit smokeless chula (cookstove) for 26\$ to 38\$, Pureit water purifiers from \$24 to 44\$, solar home lighting for \$80, farmer information services for 2 to 20\$, a cooling solution for 80\$, and fortified food for 0.05\$ per sachet. Since 2012, it is also piloting sales of productive durables such as bicycles, sewing machines and solar home systems to target groups among MFI clients with consumer financing, and sales of other health-related FMCGs such as anti-bacterial soap. So far it has not been offering financing to its clients in its mainstream operations, but has piloted various financing options for its durable goods offer, for example for the sales of solar lanterns to school students, the sales of improved cook stoves to rural farmers using wood as a primary cooking fuel, or the sales of Pureit water purifiers to the client base of MFI clients. Product warranty (e.g. 6 months on solar lamps and water purifiers) and after sales are taken care of by the manufacturers, with products returned by PD team in case of customer complaint.

Value chain:

- **Sourcing and distribution:** Project Dharma sources its products from various suppliers. It stocks them at state-level “Carrying & forwarding agents” (C&F, in effect stocking points) until they are sold to local distributors (primary billing of project Dharma, corresponding to the company's turnover). Distributors then sell the goods to PD 600 village-level entrepreneurs (VLEs) and 1.4k local retailers concentrated in 4-5 districts, delivered at their doorstep by the intermediary sales force management team.
- **Sales force:** The VLEs, often chosen among local underprivileged youth with at minimum a high school degree, are trained in entrepreneurial skills by PD. They have to pay upfront for the products in a “Cash & carry” model designed to incentivize sales. They earn on average 1800 INR (\$36)/month when they are helped by financing schemes, and 800 INR (\$16) otherwise. Each 8 of them are closely supervised by a Block Supervisor (BS), who visits them twice a week on average, to deliver the necessary goods at their doorsteps, assist them in sales (in particular to close difficult leads), conduct village meetings, and help develop the relationship of the VLE (and PD in general) with the village authorities. 4-6 BS are then supervised by a District Sales Manager (DSM), in turn managed by a Territory Sales Manager (TSM). Teams are informed of sales results in other districts to foster competition. Currently, more than 650 people are directly engaged with the project (including 20 at headquarters, 35 sales supervisors and 600 VLEs, and not counting the more than 1.4k retailers selling PD products).
- **Marketing:** PD provides leaflets and posters to shop owners and sellers explaining product benefits. Product manufacturers sometimes organize initial sales events to kick start sales, or provide their own promoters to support VLEs (in the case of Pureit for example, who send their Pureit water experts to assist VLEs to sell in partnership with MFIs).

Results: Project Dharma trained more than 900 underprivileged VLEs (25% being women, 40% being previously unemployed, with 600 still active today), and is also working through more than 1.4k retailers. The company has reached more than 250,000 consumers with its social impact products. The year on year sales growth is above 100%, and the company is attempting to reach operational break-even by FY2013-14. Solar lights and smokeless cook stoves have enabled Project Dharma to save an aggregate of more than 1k tons of CO₂ per year so far.

Exchange rate: 1 USD= 50 INR

Sources:

Field visit to Aurangabad operations in Bihar, August 30-31, 2012; with Pankaj Kumar, Product Development & Research Manager; Saurav Kumar, DSM; Mritunjay Kumar Vaday and Amit Kumar, BS; Gautam Kumar Pandey, Anil Kumar Pandey, and Sashibushan Kumar, VLEs; and several clients.

Interview with Gaurav Mehta, CEO, September 7, 2012

Contact person for the project: Gaurav Mehta, CEO: gmehta@dharma.net.in

Sakhi Retail Private Limited (SRPL)

www.sspindia.org/SSP-SB-SakhiRetail.html



Rural retail distribution network for innovative products in India

History of organization: In the aftermath of the earthquake that shook Maharashtra, India in 1993, NGO Swayam Shikshan Prayog (SSP – “Self Education for Empowerment”) was established in the region of Latur to help the reconstruction process in close collaboration with the community, with a specific focus on involving women. Over the years, following demand from women members, it helped them create Self-Help Groups (SHG) and set up an MFI (SSK) to serve their needs. In 2005, SSP had organized a vast network of women, which prompted British Petroleum to request their help on designing and prototyping an improved cook stove that would fit the Indian rural market. The Oorja stove was launched in 2007, and SSP was again asked for help on distribution. In 2008, BP decided to exit the BP Oorja venture. In 2009, SSP decided to create Sakhi Retail (SRPL), a distribution network for the Oorja stove and other innovative, socially beneficial products, with the dual goal of making such devices available to underserved populations, and to offer a new income stream and build the entrepreneurial skills of low income, low literacy women, the Sakhi ladies.¹⁵

Product/service offering and value proposition: SRPL offers products that are otherwise not available via local women who can also provide advice on these products. Products sold today on the SRPL distribution network include biomass pellets for Oorja stoves (\$1 per 5kg), Oorja stoves (\$19 for the basic model), Honeywell solar water heaters (between \$350 and \$750 depending on the model), Unilever’s Pureit water purifier (\$20 for the basic one), d.light solar lanterns (between \$10 and \$30 depending on the lantern), and other innovative products (Aquatabs, Godrej’s ChotuKool mini-fridge, organic fertilizers, cattle feed supplement etc). All technology products come with a 6-month manufacturer warranty, and clients can access a technician at the warehouses in case of product problem. No credit is provided for them, however SHG members can access credit via their organization.

Value chain: 7 employees and 3 warehouses support a door-to-door delivery distribution network of ~400 Sakhi ladies operating in 700 villages in Maharashtra. Warehouses purchase products at a price negotiated between the suppliers and SRPL. SRPL delivers products directly to the Sakhis, who then market and sell to end-customers, conducting demonstrations and if necessary door-to-door for new products, and then selling from their home. Sakhis, as micro-franchisees, purchase their own inventory (~\$200 initial investment, financed through a loan for close to 40% of them). The margin from sales (-10-20% of retail price, depending on the product) is shared between the Sakhis (60%) and SRPL (40%). Customers can also buy products directly at warehouses, which have been transformed into showrooms since 2010 (actually mostly richer urban customers purchase higher price products such as solar water heaters directly from warehouses).

Results: SRPL reached 70k+ households at its peak, through the 850 Sakhis it had initially trained. Among these clients, more than 60% did not know the product before buying it, while another 20% learnt about it at a marketing event or SHG meeting organized by the Sakhis, showing that Sakhis are effectively convincing users to buy. They themselves report having improved their business skills through SRPL.

In 2011-12, SRPL downscaled and closed 4 of its 7 warehouses, victim of its own success as most Sakhis had saturated their area with successful products (solar lights and cook stoves). Following these closures, around 100 Sakhis remained active in FY 2011-12. SRPL is now refining its business model before scaling back up, in particular by adding “pull products” (ie products already in demand such as sari and jewelry) to its product range to ensure a sustained income to its Sakhis and to SRPL. In FY 2009-10 and 2010-11, it generated over \$250k, with sales down to \$55k (incl tax)

¹⁵ Sakhi ladies are not chosen among the poorest of the poor, they are usually more at the “Top of the BoP” in terms of household income level, with a good standing in their community.

in FY 2011-12, following these closures and an unfavorable regulatory context regarding solar water heaters.¹⁶ In addition, SRPL generated \$16k in consulting revenues from companies willing to enter the rural market, and plans to expand this practice to 40% of its revenues in the coming years. In October 2012, SSP, the sister NGO of Sakhi Retail, was awarded funding of more than 1 million USD by USAID/India's 'wPOWER' program (with the objective of empowering women to engage in economic growth opportunities related to clean energy) to create 1,000 Sakhis and reach 200,000 customers in the states of Bihar and Maharashtra. Having proved with the experience of the Oorja stove that transforming competent women into a local sales force can achieve very high penetration for beneficial products even without financing mechanisms, SRPL now has the opportunity to use its 3 years of funding to refine its mix of products and sales force organization to make its Sakhis as well as SRPL financially viable without the need for further grants.

Exchange rate: 1 USD= INR 50

Sources:

Field visit to SRPL, May 24-26, 2012. Interview with Patil Upmanyu, CEO, May 25, 2012

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Contact person for the project: Upmanyu Patil, CEO: upmanyupatil@gmail.com

¹⁶ Solar water heater sales went down from close to \$50k to only around \$10k, due to new incentives reserved to India-manufactured solar water heaters, which was not the case of the model promoted by SRPL.

SaniShop

www.worldtoilet.org/wto/index.php/our-works/sanishop



Home toilets, Cambodia

History of organization: SaniShop is an initiative of the World Toilet Organization (WTO) started in 2008 in Cambodia to promote the sale of affordable home toilets throughout South East Asia. The initial pilot – funded by USAID - was launched together with LIEN and the University of Carolina in K. Speu province late 2009. This pilot was relying extensively on public officials to conduct the sales and monitoring, and was purely grant-based. Late 2010, SaniShop decided to experiment with a different approach in the province of K. Chhnang, leveraging the product and network it had developed by then, but relying less on public officials. Doing so, it left the continuation of the K. Speu pilot to WaterSHED (a USAID-funded program). SaniShop is now shifting to a market-based approach, whereby it will try to recover part of its operating costs by charging a franchise fee to latrine producers. It is piloting this approach in 6 new provinces starting early 2012.

SaniShop started its international expansion end 2011 in India (where it works through a master franchisor - eKutir (a social business engaging local entrepreneurs to provide various goods and services to farmers, leveraging IT solutions), and Vietnam in 2012 (relying on the local communist party to organize the network of salespersons, while SaniShop owns and operates the manufacturing itself). Nigeria is also planned for 2012.

Product/service offering and value proposition: In Cambodia, SaniShop has organized a local supply chain of home toilets¹⁷ at a price that is about 30% lower than any other commercial alternative (mid-2012, the price was ~\$40 for a one-pit concrete latrine, excl. the shelter structure, home delivered within 3 days).

In addition to the latrines, various types of shelters are available for a wide range of prices (\$5 to 200+), but SaniShop does not organize the provision of those; rather, it identifies - for the sales agents - workshops that can supply those to their customers. Latrine installation can also be performed for an extra \$5-10 (typically by the latrine manufacturer's workers or local work force). 1-pit latrines need to be emptied every 3-5 years, in which case villagers need to pay for the service (\$5 the pit) to the district entrepreneur who provides this type of service in the area.

SaniShop offers middle/low-income customers quality latrines at an affordable price, enabling them to afford what they thought was only for the richest people in the village. The value proposition of the SaniShop toilet is that of a quality latrine, delivered and installed within 3 days max., for 30% cheaper than other commercial alternatives (and up to 80% less than the 'perceived price', i.e. the price that villagers think a typical concrete latrine costs).

Value chain: In Cambodia, SaniShop has organized the local supply chain through a model of 'social franchise', i.e. it identifies, selects, trains and supports local masons (i.e. SaniShop franchisees) in manufacturing SaniShop toilets, and builds a network of salespersons to promote the product among villagers.

To do so, it works closely with provincial governments, including: assessment of feasibility and need among local rural population; identification of masons; identification and enrollment of sales persons; WASH campaigns.

Once the local entrepreneurs and partners are identified, SaniShop proceeds to a final selection of masons and salespersons (along set criteria), trains them, supports them actively for 3 months, before gradually withdrawing and solely tracking sales results.

In addition, for the latrine manufacturers, SaniShop identifies and provides linkages with a number of manufacturers/importers (e.g. the metallic molds and ceramic parts).

¹⁷ SaniShop is technology-agnostic – in Cambodia, the technology used is the single pit latrine (which can be later converted to a double-pit latrine).

Results: Through its network of franchisees and partners, SaniShop has sold 23k latrines in 8 provinces and about 2800 villages, as of April 2012. It now sells at an average of 1140 latrines per month¹⁸ in the 6 provinces where it is actively promoting the SaniShop franchise (through 636 sales agents and 57 manufacturers).

Given it facilitates a local value chain, rather than operating it, SaniShop manages to scale up its operations on a limited budget (5 local staff, for a total projected operating budget of \$86k in 2012 – or about \$5-6 per latrine sold). After 3 years of operations, SaniShop is testing the feasibility of charging a \$2 'franchise fee' per latrine sold to its manufacturers, to cover its operating costs. Hence, it still has very limited visibility on a) whether and to what extent this approach will work; b) whether other models would be more successful in the longer-run (e.g. a commission on sales is more acceptable than an upfront fee, however as the value of the franchisor decreases over time, SaniShop might encounter increasing difficulties in charging the commission).

Given it aims at building a local, commercially viable supply chain, SaniShop franchisees and salespersons focus first and foremost on customers able and willing to pay. That means, in terms of profile, that the majority of customers belong to the middle-income group (with a few exceptions among poorer customers)¹⁹. Given that this is a little segment in rural Cambodia (10-20% of population) SaniShop achieves about 13% penetration in its first year of operations, but this drops dramatically the 2nd year (an incremental 6% in average).

Sales performance in a given location seems to be primarily shaped by 3 factors:

- *Presence of subsidized latrines programs:* The performance in some provinces dropped dramatically after the introduction of large-scale subsidized programs (e.g., in K. Chhnang)
- *Ratios of villages per manufacturer and per sales agents:* Based on the ratios of past 3 years (taking actual penetration as the benchmark criteria), it appears that there should be no less than an average of 3 villages per sales agent, and 30 villages per manufacturer to keep the level of individual sales high enough to be motivating. This ratio needs to be even higher the second year of operations (when the less performing entrepreneurs should exit the program). Hence, the SaniShop team could be more selective to have only a few partners, but well performing ones
- *Profile of sales persons:* Public officials, for reasons of access, knowledge and credibility, often fare much better than local self-entrepreneurs chosen among villagers. Among public officials, commune counsels (responsible for the whole commune), are able to cover best a handful of villages; village chiefs come second
- *Level of support provided by the SaniShop team:* Since early 2012, the SaniShop team went for an aggressive scale-up strategy (with 7 provinces covered by 2 trainers). This seems to result in lower penetration, as it has not yet found ways to have the more successful manufacturers/ agents coach the less performing ones
- *Seasonality:* 90% of sales happen during 7 months of the year.

¹⁸ Estimated full year average (taking into account seasonality).

¹⁹ A middle-income family typically lives in a traditional wooden/bamboo house, earns \$1000-2000 a year, has land (2-4 ha), a motorbike, TV, more than 1 mobile phone (typically \$10-30 monthly top-up). It sometimes buys safe water (especially for the children), uses fire wood for cooking and a battery for lighting. A high-income family lives in a concrete house, has plenty land (over 3-4ha), owns cows, a TV, a truck, one or more motorbikes. A poor family lives in a small traditional house, earns \$500 cash a year, has little or no land (1 ha max), and often has 1 mobile phone (\$5 top-up a month maximum).

Most potential targeted customers (over 80%) say they prefer the very expensive shelter option (i.e. cement for \$200+) – and they either wait to save enough money to pay for it and do not buy the latrine, or buy the latrine (because they feel it is a great deal and fear that prices will go up) and store it in the meanwhile (about 40% of all customers who buy a latrine). This indicates that people want to pay for status, rather than health.

SaniShop does not monitor the health impact, or actual usage of latrines. This is considered a responsibility of the government.

Exchange rate: 1 USD=4000 KHR

Sources:

Field visit with the SaniShop Cambodia team on 22-24 May 2012 (Komchania district, Prey Veng province); Interviews with Mr. Pich Sen (latrine manufacturer) and Yam Yorn (sales agent)

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Contact person for the project: Sokun Sum, Country Programme Manager: sokun@worldtoilet.org

SELCO

www.selco-india.com

Sustainable energy solutions and services in India



History of organization: SELCO was founded in 1995 by Dr. Harish Hande as a company distributing solar home systems (SHS) in the Indian state of Karnataka. Based in Bangalore, it defines itself as a “system integrator and service provider, selling to poor rural customers, with a focus on quality rather than quantity”. Over the years, SELCO’s social impact has gained international recognition. It was notably a winner of the Ashden Award for Sustainable Energy in 2005 and for “Outstanding Achievement” in the energy sector in 2007, while Harish received the Social Entrepreneur of the Year Award in 2007 and the Ramon Magsaysay Award (sometimes compared to the Nobel Prize for Asia) in 2011, among other prizes. Over the course of its existence, SELCO’s economic model has also raised the interest of the social investment space, materialized by investments of \$1.7 million (in total) received from the Good Energies Foundation, the Lemelson Foundation and E+Co, the pioneering investment fund in energy for the poor.

Product/service offering and value proposition: SELCO offers a range of customizable models of solar systems (including solar panel, battery, controller, and lamps) tailored to clients’ needs and capacity to repay, with strong customer service (all customers are in a two-hour traveling time from the local branch so that all complaints can be answered within 24 hours and technicians intervene within 48 hours of call). The 4-light system (the best seller system, representing more than 50% of products sold in volume) is sold ~\$330, including installation, 1-year maintenance, 8-year warranty on the panel and 5-year warranty on the rest of the system. SELCO helps customers who cannot pay cash access credit, via regular banks (mostly regional rural banks) for 70% of clients or through their existing Self-Help Groups. Typical loan conditions would be in a 15% upfront payment, up to 5 years installments, and ~13% interest rate. SELCO also offers credit guarantee for the clients who are too poor to pay the 15% down payment, on a case-to-case and merit basis (done for ~5% of SELCO customers).

- 80% of SELCO sales are made on such SHS for households.
- 10% of sales are made on solar systems for community building (schools, hospitals etc) or larger houses (i.e. richer clients).
- 10% of sales are made on solar water heaters.

Value chain: SELCO sources all the components of its solar home systems from various Indian companies. Final assembly is done by SELCO technicians on client premises. SELCO is organized in 28 local branches (called Energy Service Center) staffed with ~160 employees (60 technicians, 45 sales reps, 28 branch managers and 28 administrators), plus 20 people at the head office, plus ~ 60 active “business associates” commissioned on sales (bringing around 10% of total revenues), and “technical associates” offering repair services for a fee. Each branch covers a radius of 25-50km. 23 branches are located in Karnataka (the others are in Gujarat and Kerala). Each local branch manages marketing (done mainly via demonstrations and other below the line activities), sales, installation and maintenance of SHS. Each 5 local branches report to 1 regional branch. Hiring is currently done either by regional managers, or centrally when there is a large need.

Results: Since 1995, SELCO has sold SHS to 135k rural homes, businesses and institutions (schools, seminaries, clinics). SHS enable money savings (once the system has paid back in kerosene savings), better health compared to using kerosene, improvements in education for children who can study at night and increase of economic activities from a better light at night.²⁰ In 2011, SELCO generated \$2.9m in sales (down 2% compared to 2010 due to a focus on poorer consumers who buy smaller systems, even though sales volume increased by close to 15%), and \$90k in profit (+60% thanks to a decrease in cost of solar systems). Repayment rates are over 97%. SELCO also sells carbon credit on the voluntary market to The Carbon Neutral Company. On the social impact front, SELCO clients report more time

20 WRI impact study 2007

for children to study at night in better conditions, more time to work (especially for women who work at home to manufacture various products) and thus increased productivity and higher income, and finally less smoke and less danger than kerosene lamps. SELCO is conducting additional social impact assessment surveys to gather customer feedback and measure client satisfaction. Today, SELCO is continuing its expansion in Karnataka where it plans to open 8 new centers in FY 2012 (in addition to its existing 28 ones), while slowly diversifying in other energy products (e.g. solar water heaters, cook stoves) and launching an incubation center for products addressing specifically the needs of the poor. SELCO aims to reach 200k systems sold by 2014.

Exchange rate: 1 USD= INR 50

Sources:

Field visit to SELCO operations, May 17-19. Interviews with Sree Harsha Karanam, Senior Manager; Ananth Aravamudan, Senior Technical Manager at SELCO Labs; Mrs. Ramamani Rao, Manager – Mission Projects; Mr. Krishnaraj, Puttur Branch Manager, Mr. Radhakrishna, Sullia Branch Manager

SELCO website: www.selco-india.com

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Soluciones Comunitarias (SolCom) A Community Enterprise Solutions social enterprise

www.cesolutions.org

www.solucionescomunitarias.com

Sales of Health, Energy and Food Security-Related Solutions
via the Micro-Consignment Model (MCM)



History of organization

Van Kirk and Glickley were Peace Corps Volunteers in Guatemala from 2001 to 2003. There Van Kirk recognized that tourists were regularly visiting the Guatemalan town of Nebaj where he was working, but were leaving quickly without spending any money locally due to a lack of infrastructure. So he invested some of his own funds to start several tourism businesses: they would help the local economy by creating jobs and motivating tourists to stay longer in Nebaj spending money on goods and services. The long term strategic vision was local entrepreneurs earning ownership of the ventures through sweat equity, and taking over when financial and administrative self-sustainability was achieved. This happened in early 2004. These ventures continue to function profitably to this day.

Van Kirk donated profits of these tourism businesses to a wood-burning stove project. He realized, however, that merely donating stoves limited the capacity for distribution. He thus developed what would become the Micro Consignment Model (MCM) to empower local entrepreneurs to manufacture, market and sell cook stoves. Materials would be provided to local entrepreneurs on consignment and sold to low-income families on an interest-free basis. This model would not only provide an essential, high-quality product at an affordable cost to villagers but would provide new income-generating opportunities to local individuals as entrepreneurs. Soon after this was launched, Glickley joined Van Kirk to further develop and expand this initiative, amongst others.

In March of 2004, Van Kirk and Glickley were contracted by Scojo Foundation (now VisionSpring) to find an effective way to distribute reading glasses to low income villagers in El Salvador, a large need as an estimated 90% of people over 40 require such glasses. Van Kirk and Glickley developed and applied the MCM as VisionSpring's means of distribution. They realized that the MCM could work as a unique means to provide villagers with access to potentially myriad products and services. They established Community Enterprise Solutions (CE Solutions) as a US non-profit organization 2004 as the engine to test, develop, implement and expand the MCM, to create access to life-changing products and services in isolated villages throughout the developing world.

In 2005, a sister social enterprise called Social Entrepreneur Corps was created to provide CE Solutions with additional human capital and financing support. Over 550 students from over 50 universities have now participated in this program to help CE Solutions in the field.

In 2006, CE Solutions founded Guatemalan-owned Soluciones Comunitarias (SolCom) to manage future MCM initiatives in the region. SolCom is a social enterprise owned and managed by entrepreneurs who have risen up in the ranks through MCM and have earned their role through sweat equity. CE Solutions does not repatriate any sales proceeds from the MCM but rather utilizes these to ensure long term sustainability and local growth. CE Solutions and Social Entrepreneur Corps are the strategic partners for SolCom.

CE Solutions expanded to Ecuador in 2009, Nicaragua in 2010, South Africa in 2011 and the Dominican Republic and Haiti in 2012. Pilots have been introduced for expansion in Peru and Mexico.

Product/service offering and value proposition: The goods SolCom provides must meet strict criteria to be considered solutions that can be distributed by MCM. The products being sold through the MCM ARE NOT being sold by any other organizations in the geographies where implemented. The MCM is a first mover that opens new markets. In addition, the social and economic benefits of the good (i.e. productivity gains and savings) must be immediately understood. Currently, SolCom in Guatemala creates access to improved cookstoves (introduced in

2004), near vision eyeglasses (2004), UV protective eyeglasses (2005), eye drops (2006), water purification buckets (2008), vegetable seeds (2008), energy efficient light bulbs (2008), solar lamps (2010), family nutrition kits (2011), rocket stoves (2012) and solar home energy systems (2012). SolCom is currently analyzing mosquito nets, various other solar products including complete home systems, different water filtration products, new improved cook stoves and earplugs. For products above \$100 (cookstoves and drip irrigation systems) as well as for some water purifiers, SolCom offers an installment plan of up to six months at a 0% interest rate.

Value chain: SolCom offers the opportunity to become an MCM entrepreneur creating access to life-changing products and services. More than 300 entrepreneurs have participated in training to date with approximately 70 active in Guatemala. The focus of the last four years has been scaling product and service solutions for each entrepreneur rather than scaling the number of entrepreneurs. Regional coordinators, often initially supported by CE Solutions field consultants, identify, train, equip and provide ongoing support to entrepreneurs. Training is a self-selection process that takes approximately six to eight weeks of “classroom” and field training before entrepreneurs are able to hold their first independent village access campaign. Entrepreneurs, known as “Asesores Comunitarias” (ACs), are tasked with identifying community needs, which are discussed with the regional coordinator. SolCom then looks for appropriate solutions, testing them both technically and with the community. Once selected, products are ordered in bulk from manufacturers and dispatched to regional offices where once a month ACs collect their product inventory and pay for the products they have sold. The product vetting process can either come from the field or from CE Solutions investigations and network. It is either a need looking for a solution or a potential solution seeking to fit a potential need. This is the value of the relationship established through the MCM mechanism. All parties are aligned.

When entering a new village, ACs first meet with local authorities to secure support, including a public location for their village access campaign. They then advertise for the campaign with local radio, flyers and posters and speak with community members and leaders. Community leaders become advocates. During the campaign, normally held within five days of initial advertising, ACs often start by giving free eye exams and demonstrate how to use the various products offered. For larger products such as cookstoves, ACs must qualify demand, referring groups of at least five interested individuals to their regional office. SolCom leadership will then conduct a demonstration, make the sales and build the stoves on-site (new rocket stoves are prefabricated). Regional offices often include an MCM Village Store that carries MCM products, including those that are more difficult to distribute through MCM’s traditional campaign model, e.g. irrigation systems, large cookstoves and water filtration products. This creates a “pull” mechanism to complement the initial “push” of the ACs.

ACs are overseen by regional coordinators (one for up to 15 ACs). Most ACs work in pairs for security (women may feel uncomfortable travelling alone), motivation, risk mitigation and for better efficiency (e.g. one conducts eye exams while the other sells).

Results: (note: these results are only for Guatemala)

- *For end-clients:* SolCom has created access to approximately 100,000 products in 3,000 village campaigns since inception, with these products resulting in more than \$3 million in cost savings or productivity gains (net economic impact),²¹ according to CE Solutions. In 2011-2012 SolCom sold approximately 30,000 products in Guatemala and impacted more than 80,000 direct beneficiaries.

21 CE Solutions Intro from Peery Film Fellows on Vimeo <http://vimeo.com/30551159>, figures updated with 2012 results.

- *For entrepreneurs:* SolCom has trained over 300 entrepreneurs, approximately 70 of whom are currently active in Guatemala.²² Together they have earned over \$150,000 through their work to support their families. Each pair of ACs earns on average \$65 per month for 4-5 days of work (2 days per campaign, 2 campaigns a month and 1 day of prospection), corresponding to approximately minimum wage for full time work. Top ACs can earn up to \$140/month. In addition, entrepreneurs report having gained an enhanced sense of pride in their role as trusted ACs providing needed solutions to the community. Entrepreneurs have a yearly churn of 20%, remarkably low among such part-time commission based models.
- *For SolCom:* SolCom made approximately \$450,000 in 2011 and 2012 combined gross revenues and plans to earn approximately \$300,000 in revenues in 2013. The company reinvests earnings for growth and is currently break even.

Exchange rate: 1USD= 7.82Q

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²² Summer 2012 Impact Report.

<http://www.socialentrepreneurcorps.com/Documents%20PDF/SocialEntrepreneurCorps2012ImpactReport.pdf>

Toyola Energy Ltd

www.toyolaenergy.com

Efficient biomass cook stoves in Ghana and neighboring countries



History of organization: Ghanaian entrepreneurs Suraj Wahab and Ernest Kyei received training in stove manufacturing skills in 2003 with Enterprise Works (an NGO backed by USAID), along with more than 70 other stove makers. When the training ended in 2006, they decided to set up their own company and registered Toyola Energy Ltd. Initially selling 3k stoves per year, a loan from social investor E+Co allowed Toyola to grant credit to its distributors, themselves passing it on to customers, which boosted sales. Toyola is now expanding in other West African countries, and since 2008 has diversified in selling solar lighting products.

Product/service offering and value proposition: Clients can choose between 5 types of efficient cook stoves, 2 restaurant stoves and 3 household stoves (all allowing a 30-40% decrease in charcoal use), made of locally available materials (scrap metal and fired clay liners) and local techniques. Customers pay \$7-12 (12-20 GHC) depending on the stove size, with a \$1 (2 GHC) premium for payment on credit, and a \$1 (2 GHC) premium covering extra distribution costs in remote areas (in the North). They can pay over a month (without any down payment), by placing the savings made on charcoal in the “Toyola Money box” (a simple cardboard or metal box), that agents will collect on their next visit (a family of 5-6 people will spend around 0.5 GHC on charcoal a day with a medium stove, saving about the same amount each day, thus having saved about 15 GHC at the end of the month). The stove comes with a 6-month warranty, and usually lasts 3-5 years before the ceramic liner breaks. Toyola offers to replace it at 30% of the cost of the overall system.

Value chain: Toyola buys stoves in one of the 5 production centers in Ghana or from 1 in Togo, 1 in Nigeria and 1 in Benin, from the manufacturers it has trained. Toyola also has “mobile production teams” who can take the parts to a distant place once they know there is enough demand, and build the finished products on site (notably at the depots). This allows transporting about three times as many stoves in parts as finished products per vehicle, thus limiting transport costs. Toyola agents, who collect them at one of the production centers or depots, then distribute the stoves in peri-urban areas via local retailers, and in rural communities through direct delivery. As of January 2012, Toyola had trained around 30 Key sales agents, 16 of which are still active (with 12 currently working) and one of which has become process administrator. Agents are entirely paid on commission (around \$1 on average or 1-3GHC per stove sold), to serve both retailers and rural villagers. Often satisfied customers spread the word on the stoves in their communities, aggregate orders and can go as far as collecting the money from all the new clients, greatly simplifying the work of the marketer-distributor. Once they have brought 10 clients they officially become “Evangelists” and are rewarded for their effort (e.g., by getting a free stove for 10 sold, or 1 GHC per stove sold). Agents collect the money after one month, when usually the stoves have nearly been fully repaid by fuel savings. Agents can use one of the 11 Toyola’s vehicles, with capacity of 100 to 1000 stoves each.

Results: Toyola crossed the 200k cook stove landmark mid 2011. In Ghana, sales reached 65k in 2011, and Toyola started new production centers in Togo in February 2011, Benin, in August and Nigeria in December 2011 (where Toyola already exported stoves). Repayment rate is over 95% (as claimed by founder Suraj Wahab: “sometimes people pay late but they always pay: they cannot afford to lose the trust of their fellow villagers by not paying”) for the 80-90% of sales on credit. In 2012, waiting for carbon finance to kick in to finance the rising costs of scrap and for its new procurement methods to start (metal sheet from Chinese suppliers and purchase of the clay mine), Toyola is selling more through retailers who pay cash or with a shorter payment delay, with only about 10% of sales made on credit. The year ended with nearly 100,000 cook stoves sold in Ghana alone. Toyola registered a profit of 7% in 2011 thanks to carbon credits, down from net profit of 9% of sales in 2010 and more than 20% in previous years.

Exchange rate: 1 USD= 1.8 GHC

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