D. light: “The Poor” Is a Special Consumption Group

Meigu County in the Liangshan Yi Prefecture of Sichuan Province is a remote area with low economic development. Some ethnic minorities live in the county, but due to the high cost of running electricity, there are none in the region. In September 2009, the One Foundation and D. light Company from the US launched a three-month solar-energy light trial project in the Maluo Village of Meigu County, bringing light as well as hope to the village.

Palemu, a villager in the area, is grateful for this project.

“Once there was a primary school in the village. However, due to its remote location and lack of electricity, the young teacher that was assigned to teach there cried and went back home. Since then we have seen no other teachers. Because we have no channel to learn knowledge from the outside world, nothing has changed in the village. We are still poor.

After we got solar-energy lights, we were able to continue with our farm work that we did not finish in the daytime. My child, Muguo, goes by foot to the primary school on the mountain. In the past, when he came back from school and finished supper, it was dark. He was not able to study well. Now he can do his homework and read books with the lights. In the past, the elders and children fell down frequently in the dark. Now we turn on the light at night and they don’t fall anymore.”

Market Demand

According to statistics, there are 1.6 billion people around the world who do not have a power supply. In addition, another 1 billion people do not have a stable electricity supply, most of which are in Africa and India. Many people live in darkness once the sun sets. Those who have the ability to buy lighting tools often choose kerosene lamps, the cost of which accounts for 5% to 30% of their family income.

However, the kerosene lamps cannot provide enough light to meet the living, study or production needs of the people. Moreover, this will lead to serious consequences, as the burning of kerosene may cause burns or start fires. It also does harm to people’s health, as the poisonous gas produced by the burning of kerosene can lead to

respiratory diseases, from which 1.5 million people die each year, more than half of which are children under the age of five. Besides respiratory diseases, indoor air pollution may easily lead to lung disease, throat disease, nasopharyngeal diseases, heart diseases and low birth weight of babies. In addition, every kerosene lamp produces 400 pounds of greenhouse gases per year, seriously polluting the environment.

Traditional commercial companies producing solar-energy lamps cannot solve this problem properly. The major reason is that it costs too much. Considering their pursuit of profits, the price set by commercial companies far exceeds what people can afford in the poorer markets. Secondly, the products of commercial companies are not designed to cater to the special needs of the poor, as they are not practical. Thirdly, the sales network of commercial companies can hardly reach the more remote areas.

Therefore, several students studying at the School of Business and School of Engineering of Stanford University decided to design a kind of light that the poor can afford and have fewer requirements for supporting facilities. In this way, D. light came into being.

The Social Responsibility of D. light

D. light Company was founded in 2007. By providing safe and efficient solar-energy lights at low cost, the company aims to serve the people living in areas that lack a stable electricity supply and improve their living conditions.

Compared with the commercial enterprises that produce solar-energy lights, D. light's design concept of "regarding customers as the centre" is the best interpretation of its social responsibilities. At the development and testing stages of the products, D. light cooperated with public organisations in remote areas that are devoted to the community development of villages, as they had a thorough understanding of the living habits and demands of lighting tools of the target audience. To this end, D. light made a detailed research guideline including how to do one-to-one interviews with their customers, what information and materials should be collected before they visit the customers, and how to provide adequate training to cooperative partners. At the end, their research results provided an important reference to their product design.

So far D. light has designed four kinds of products to meet the various demands of their target customers. In 2009, the company introduced the product S20, which is the most competitive solar-energy LED light in the world in terms of price. The price of the light is only US$10 . After a full charge, it can provide light for up to eight hours; its life expectancy is more than five years and is of a high-quality.

Challenges Encountered During the Initial Stages and Relevant Strategies

Like many other start-ups, the founding team of D. light did not lack ambition, but needed financial support. After its first-generation product came into being, D. light spent much time and energy on studying how to effectively enter the emerging markets in developing countries. We believe that the experiences of D. light will surely provide some hints to many other service-oriented public enterprises.

Seed Capital

Through personal networks, the founder of D. light got $10,000 for the launching capital. However, that was far from enough; the product was then just a model and much still needed to be done in terms of product development, and so it was hard to find investors. The founders got some ideas after they participated in a brainstorm activity with some professors from Stanford University, deciding to make commercial planning contests the launch pad for D. light.

The contests not only helped D. light teams get the capital they needed, but more importantly they also helped the team re-examine their commercial plan again and again. With the comments and suggestions from the judges and mentors, they gradually improved their plan. Such experience gave them a chance to practice for the future lobbying they would need to do in order to get investment. In addition, these contests offered the team a good platform to show off their products, helping to expose the products to the public to a certain extent.

A good start is half way to success. In May 2007 the two founders graduated from Stanford. They devoted themselves wholeheartedly to the management of D. light, and after 5 months of effort, D. light got $1.6 million of seed capital from six start-up foundations and four investors.

Market Promotion

When D. light had its first high-quality product with a low price and tried to enter the Indian market, new challenges emerged. As a new company promoting a product that was unfamiliar to the public, how were they to build a brand and gain the customers' recognition?

D. light thinks that the key is the high quality of their products and the long-term commitment which the company can make to the customers. As a result, they developed three measures.

1. Choose suitable sales partners with a good reputation

D. light cooperated with BPCL, the second largest petroleum company in India. BPCL not only sells petroleum, but also coal gas. Its network stretches across the country and includes remote areas. Half of the families in India go to the designated retail

outlets to pick up their gas tanks. The other half require that the gas tanks be sent to their homes. Therefore, D. light puts their products in the designated retail outlets of BPCL and sells the products via the carriers.

2. Nurture respected community members to be sales representatives

In order to improve their sales performance in a short period of time and offer added value to the sales partners, D. light nurtures a group of local salesmen. They sell the products in retail outlets or through a door-to-door method. These salesmen were strictly selected, needing a good reputation and to be respected in the local community. D. light provided training courses to improve their sales skills.

Of course, D. light does not expect these salesmen to sell many solar-energy lights. What D. light wants to see is that these people can earn the trust from the local residents as a representative of the company. In addition, these salesmen, who are deeply rooted in the local communities, can help D. light collect feedback from the users about the products and services, which will in turn help the company establish their brand.

3. Reduce risks for the customers and reduce their anxiety toward the products

People are always confused about new things; trial use can best solve this problem. D. light has chosen to offer a one-month trial use of the solar-energy lights to students in the exam season. It turned out that 70% to 80% of the families involved in the trial chose to buy the lights. The lights allowed students to study for a longer period of time, which meant their performances improved and so giving users results that they could really see. In addition, the one-month trial of the lights made the users believe in the quality of the D. light products.

Another practical measure was to prolong the quality guarantee period to make it reach beyond the expectation of the users and far exceed similar products on the market. At present, the quality guarantee period of the solar-energy lights produced by D. light has been extended, from an initial six months, to two years; one of the leading policies in the industry. This change also reflects the confidence of D. light in its products.

D. light Gained Success in the Global Market

<u>Region Coverage</u>

At present, more than 40 countries in the world sell the products of D. light. Besides its headquarters in the US, D. light has also established branches in India, Kenya, Hong Kong and other regions, and also set up a plant in Shenzhen.

Social Benefits

According to statistics, the beneficiaries of D. light have exceeded 36 million, among which more than 9 million are school age children. The amount of work and study time that has been extended thanks to the lights has reached 13 billion hours. According to a report by the World Bank, the solar-energy lights prolonged the study time of students, who subsequently now perform better in school, their passing rate having increased from 57% to 100%, which is very exciting.

By replacing kerosene lamps, D. light has saved more than $1.2 billion of energy spending for the poor in the world. It has also helped to reduce more than 2.85 million tons of carbon dioxide emissions and create renewable energy that equals more than 50,000 megawatts.

Successful Financing

In 2008, D. light raised $6 million from its A round of investment. It successfully attracted many famous US and overseas venture investors. In 2010, D. light completed its B round of fund raising, from which it collected $5.5 million. The B round was led by Omidyar Network, the world-leading social development fund, and included most of the investors that took part in the A round. In February 2014, D. light completed its C round of fund raising which collected $11 million, most of which came from existing investors.

Social Recognition

D. light received many international awards and gained a lot of public support. For example, the founders were awarded the Social Entrepreneur of 2014 by the Schwab Foundation, received the Zayed Future Energy Prize in 2013, and the company was named by Business Week as one of the social enterprises with the most potential to succeed.

D. light in China

Market in China

At first, D. light did not choose China as its target market, only establishing a production plant in Shenzhen. The major reason for this is that China's electricity grid has good coverage, with only 0.5% of the Chinese population living without an electricity supply. Compared with 80% in Bangladesh, 44% in India and 60% in Nigeria, China is not a market that has urgent demand for the products. However, China does have a large population base, meaning that there are still 6 to 7 million people in China without an electricity supply, which is still a huge market.

For example, the Liangshan Yi Autonomous Prefecture in southwest Sichuan Province is the area with the largest ethnic minority population, biggest problems of poverty and the most number of poor people in the province. To this day, there are still nearly 800 villages there that have no electricity supply, and nearly 400 villages which only have a partial power supply. There are more than 140,000 households living without electricity and more than 600,000 people live in darkness.

The local residents generally have no entertainment activities at night. The children cannot study and the adults cannot work. Most of the local students go to the village primary school to study, learning grade 1 to grade 3 content from temporary teachers who are only middle school or high school graduates. They cannot finish their homework due to lack of light, and therefore the students' performance is very poor. When they graduate from primary school, the students' level is only equal to children in grade 3 or grade 4 in other areas. The adults here can only work in the daytime, with nothing to do at night. They have no entertainment and cannot continue with their farm work at night.

Kerosene lamps and pine lamps are their lighting tools, but not many have them. These two types of lamp are not bright and also produce large amounts of black smoke while they burn which pollutes the environment. At the same time, the people need to cut down pine trees to make the pine lamps, which also does harm to the environment. There is an urgent need to find a substitute for kerosene lamps and pine lamps in this region.

More often than not, places without an electricity supply, such as the Liangshan Yi Autonomous Prefecture, have natural advantages in using the solar energy because they are located at a high altitude with more sunshine and do not experience frost seasons. The environment-friendly and energy-saving solar-energy lights need to receive 8 hours of sunshine every day to provide 4 to 8 hours of light at night. The intensity of illumination is equal to 10W energy-saving lamps; easily good enough for children to study and adults to work under. Therefore, using solar-energy lights is suitable and indeed the best way to solve the problem of no electricity in these areas. This means that D. light has a broad market in China, as well as the other previously mentioned countries.

A Trial in the Chinese Market

Between May 2009 and October 2011, with the support of the One Foundation and the monitoring of Venture Avenue, the Women's and Children's Development Centre in the Liangshan Yi Autonomous Prefecture launched the project, "Bringing brightness and lighting up hope" twice in Meigu County, Liangshan Yi Prefecture in Sichuan Province. The project covered 22,000 households in Meigu County and Jinyang County who did not have an electricity supply. It also provided training for more than 300 community workers at night, teaching them how to maintain their health, become

literate and how to implement practical agricultural techniques. The Yi people who had long lived in areas without electricity got their right to have light, as well as hope for change.

After the launch of the project, the solar-energy lights brought several positive changes to the Yi counties:

- It changed their lifestyle by prolonging their work and study time. In the past, they would go to sleep when it became dark and get up when the sun rose. Now that the adults can work with the lights at night, their average family income has increased by 20%. In addition, the children can now do their homework or play in the light. They study 3 hours more per night which has improved their performance in school.
- It helps save energy, raise energy efficiency and ease poverty. Before using the solar-energy lights, every household spent around 15 to 40 yuan on kerosene, diesel oil or batteries every month. With the solar-energy lights, they save a lot of energy and a lot of money.
- At the same time, the villages organise night schools to help combat illiteracy, inform them about how to avoid AIDS and drugs and involve them in agricultural technique training programs and other cultural activities. All this has changed the nightlife of the villagers, brought knowledge to their life and promoted the construction of new villages.

The success of the project in China could not have been achieved without the cooperation of multiple parties including D. light, foundations, local governments, non-profit social organisations and the third-party monitoring institutions. In this model, all the parties play a different role:

- As the initiator of the project, One Foundation introduced D. light and invited local governments and NGOs to participate. It also provided funding to purchase the solar-energy lights and operate the project.
- As the supplier of the solar-energy lights, D. light offered necessary training and technological guidance to the distribution branches.
- The local government acted as group leaders of the project by providing official promotion, policy support, official training and part of the capital. For example, the head of the Meigu Country was the group leader of the project and other officials in the county were core members of the group.
- As the project was included in the government's work plan, official documents were released in the name of the county government and the county party committee. Related departments then had meetings to promote and coordinate the project, as well as specify the responsibility of each party. The Civil Affairs Bureau and the county's Office of Poverty Alleviation provided and examined the list of low-income families and people receiving government subsidies. The organisation department and the propaganda department of the county party

committee, the party schools of the prefecture, the cadre schools of the prefecture and other related units provided teachers and training materials for cadres. They trained people in the use of the solar-energy lights in the night schools.

- As the local NGO, the Women's and Children's Development Centre of the Yi Autonomous Prefecture of Liangshan was mainly responsible for distributing the lights and training people in the use of the lights.
- As the third-party management institution, Venture Avenue was responsible for monitoring the progress of the project and evaluating the effect of the project through interviews, questionnaires and other methods, laying a solid foundation for future promotion in a broader area.

From the above analysis, we can see the effectiveness of the project and the feasibility of the multi-party cooperation model. It lays a foundation for future imitation of the model nationwide.

Expectations for Future Expansion

We still have a long way to go from bringing lights to 22,000 households who had no electricity to bringing lights to 6 to 7 million Chinese people without an electricity supply. How to continue effective promotion and gain more donators? In order to reach the goal of 100% electricity coverage as soon as possible, we put forward the following possible models:

- The "Enterprise-Foundation-Schools" Model
  - Enterprises and foundations become the co-donators of a certain school, in which an enterprise helps half of the students and a foundation helps the other half.
  - Features: (1) With the school as a unit, we can once and for all gather the beneficiary families. People receiving the donation can be contacted, classified conveniently and the information will be more transparent. (2) With the enterprise donating for half of the students and the foundation responsible for the other half, we can inspire more enterprises to join the action, increasing their confidence in the project.

- The "Enterprise-Customers-Foundation-Schools" Model
  - The enterprise buys the products of D. light and gives them to their customers as presents, finds a matching school and makes the donation in the name of the customers. Half of the students are covered by this donation and the other half will be the responsibility of the foundation.
  - Features: (1) Unlike traditional gifts to customers such as notebooks and calendars, the solar-energy lights of D. light have a profound meaning related to energy conservation, environmental protection, poverty alleviation, helping the poor and improving the poverty-stricken mountainous areas. This will help enhance the relationship with the customers. (2) With the participation of the customers, the project of "delivering brightness" will get more attention and

attract more enterprises.

- The “Employee-Enterprise-NGO-Family” Model
  - The enterprise encourages the employees to establish a one-to-one relationship with a family and donate the D. light solar-energy lights. The enterprise will donate as much capital as the donation or help as many families as the donation. The process will be coordinated and managed by the local NGOs.
  - Features: It will give employees a strong sense of participation and make them feel the positive impacts brought by the donation.

Conclusion

As a service-oriented social enterprise providing living necessities to residents living in extreme poverty, D. light gives us some key inspiration with its success case:

- Service-oriented enterprises must put their customers at the very core. They must be rooted in the demand of the direct customers, conduct good research on the users, have a deep understanding of their core demands and design products and services that cater to their needs.
- They need to establish a sales network and an after-sales service network that cover “the last one kilometre”. This is the key to ensuring success for service-oriented enterprises and it is also the key to expanding their scale.
- They need to begin with schools in their incubation period. Enough attention needs to be paid to the establishment of an Angel Investment Channel that targets “future social entrepreneurs”.